This Report has been cleared for submission to the Board by Programme Manager, Marie O'Connor

Signed: Marie O'Connor ***Date: 2 March 2023***

OFFICE OF ENVIRONMENTAL SUSTAINABILITY

INSPECTOR'S REPORT ON AN INDUSTRIAL EMISSIONS LICENCE REVIEW, LICENCE REGISTER NUMBER W0232-02

TO: DIRECTORS

FROM: JENNIFER COPE	**DATE: 02 MARCH 2023**

Applicant:	Dublin Waste to Energy Limited
CRO number:	399060
Location/address:	Pigeon House Road, Poolbeg Peninsula, Dublin 4
Application date:	27 June 2019
Classes of Activity (under EPA Act 1992 as amended):	11.3 (a) Disposal or recovery of waste in waste incineration plants or in waste co-incineration plants for non-hazardous waste with a capacity exceeding 3 tonnes per hour. 11.1 The recovery or disposal of waste in a facility, within the meaning of the Act of 1996, which facility is connected or associated with another activity specified in this Schedule in respect of which a licence or revised licence under Part IV is in force or in respect of which a licence under the said Part is or will be required.
Category of activity under IED (2010/75/EU):	5.2 (a) Disposal or recovery of waste in waste incineration plants or in waste co-incineration plants: for non-hazardous waste with a capacity exceeding 3 tonnes per hour.
CID:	Commission Implementing Decision (EU) 2019/2010 of 12 November 2019 establishing the best available techniques (BAT) conclusions, under Directive 2010/75/EU of the European Parliament and of the Council, for waste incineration.

All relevant CIDs, BREF documents and National BAT notes are listed in the appendix of this report.

Activity description/background: Dublin Waste to Energy Limited is an existing installation which operates a non-hazardous waste incineration plant with energy recovery at Poolbeg in Dublin City.		
Additional information received:	Yes (06/04/2020, 15/10/2020, 09/04/2021, 23/04/2021, 26/01/2022, 18/05/2022, 02/09/2022, 13/01/2023)	
No of submissions received:	1	
Environmental Impact Assessment required: Yes		Stage 2 Appropriate Assessment required: Yes
Environmental Impact Assessment Report submitted (EIAR): Yes 09/04/2021 and 18/05/2022		Natura Impact Statement (NIS) submitted: Yes (18/05/2022)
Site visit: 03/08/2022		Site notice check: 18/07/2019

1. Description of activity

Dublin Waste to Energy Limited (hereafter referred to as DWtE) is an existing installation which operates a non-hazardous waste incineration plant with energy recovery at Poolbeg in Dublin City. It is located on the Poolbeg Peninsula in Dublin Bay on the eastern side of Dublin City (see Figure 1.).

Figure 1. Location of the installation

DWtE has applied to the Agency for an Industrial Emissions licence review, to increase the permitted maximum annual quantity of waste to be accepted at the installation from 600,000 tonnes per annum (tpa) to 690,000 tpa (an increase of 15%). There are no physical amendments required to the installation to facilitate the increase in tonnage requested.

The installation operates 24 hours a day, 7 days a week, 365 days a year. However, waste deliveries are only accepted Monday to Saturday 0800hrs to 2200 hrs.

Operation Description

The main processes at DWtE are waste acceptance, waste intake and storage, thermal processing, energy recovery and flue gas cleaning.

The main process building has two identical waste-to-energy lines, each with separate boilers and flue gas cleaning. The two lines supply steam to one high-voltage turbine/generator that is connected to the electrical grid. Cooling of the exhaust steam from the turbine takes place in a water-cooled condenser. The net (electrical) power from DWtE is approximately 62-63 MW which would increase to 69 MW with the proposed increase of 15% in waste accepted at the installation. A schematic for the installation is presented in Figure 2 below:

A schematic of the DWtE facility is shown in Figure 2

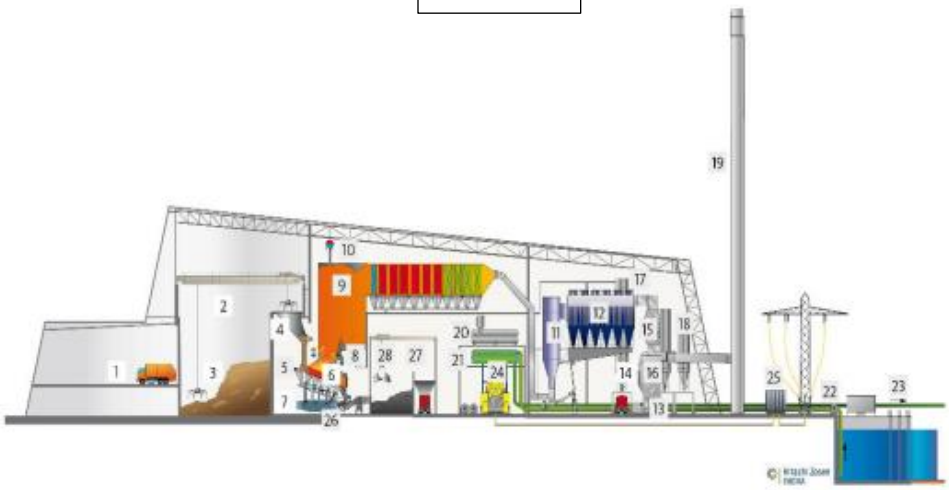


Figure 2 – **Schematic diagram of the waste to energy process.**

1. Tipping hall
2. Waste bunker
3. Waste crane for feeding the boiler grate
4. Waste hopper
5. Ram feeder
6. Hitachi Zosen Inova grate
7. Primary air
8. Secondary air
9. Four-pass boiler
10. Boiler drum
11. SemiDry reactor
12. Fabric filter
13. Induced draft fan
14. Silencer
15. Flue gas heat exchanger
16. Wet scrubber
17. Residue silo
18. Additive silos
19. Stack
20. Feed water tank
21. Water cooled condenser
22. Cooling water pump
23. Fish screen and return system/water intake filter
24. Turbine
25. Transformer
26. Bottom ash extractor
27. Bottom ash bunker
28. Bottom ash crane

Source: Revised Attachment 4.8.1 Operational Report of the licence review application W0232-02.

Waste is unloaded in the tipping hall directly into the bunker. The waste reception hall is kept under constant negative pressure to minimise odours/diffuse emissions. Waste is mixed in the bunker prior to thermal treatment. Combustion takes place on the water cooled moving grates. Incinerator bottom ash is deposited in the bottom ash bunker. The hot gas from the combustion process is fed through the boiler. The heat energy from the gases turns the water into steam, which is fed into the steam turbine. The steam turbine drives a generator producing electricity.

In the future, some of this heat will be exported to the Dublin District Heating Scheme, when the external infrastructure is completed. Heat export pipework and shell and tube heat exchangers are installed and ready for connection at the lower level of the installation. The installation will be the baseload for the Dublin District Heating System, which on its own will supply a heat source for over 50,0000 homes. Once this is operational, DWtE will have a net energy efficiency of over 88%.

The main emissions from the installation are emissions to air and cooling water discharge to surface water.

2. Scope of Review

The licensee proposes to increase the permitted maximum annual quantity of waste (residual municipal non-hazardous solid waste) to be accepted at the installation from 600,000 tonnes per annum (tpa) to 690,000 tpa (a 15% increase). The licensee also proposes the inclusion of a number of municipal, commercial and industrial list of waste codes, which are discussed below. There are no physical interventions, alterations or changes to the operational processes proposed. The licensee has not proposed any increase in emission limit values to emissions to air, water or noise.

3. Planning Status

An Bord Pleanála (ABP) granted parent permission for a non-hazardous waste incineration plant with energy recovery at Poolbeg in Dublin City (ABP reference number PL29S.EF2022) in November 2007. ABP granted permission (ABP reference number ABP-309812-21) to increase the capacity at DWTE from 600,000 tonnes per annum to 690,000 tonnes per annum on 17 December 2021.

The licensee has submitted the EIAR associated with planning permission reference number ABP-309812-21. Having reviewed the planner's report for the parent planning permission, it is considered that the EIAR submitted with the licence application, along with the licence application and further information received, contains adequate information to inform the Agency's assessment, and the EIAR relating to previous planning permission is not required for the Agency's assessment.

The Agency has had regard to the reasoned conclusions reached by An Bord Pleanála in undertaking its environmental impact assessment of the activity.

3.1 Licensee requested scope of waste to be accepted

DWtE updated the List of Waste (LOW) codes proposed for acceptance at the installation from 66 to 75 on 13 January 2023, which included the proposed removal of 14 LoW Codes permitted in its existing licence (see Appendix 7 for details), and the acceptance of an

additional 23 new LoW codes (see below). The proposed additional 23 LoW codes are discussed below.

An Bord Pleanála (ABP) in its grant of planning permission (PL29S.EF2022) (parent planning permission), granted in November 2007, included the following condition in relation to the waste, which can be accepted at the installation:

> Condition 1: "*The waste thermally treated at the facility shall be in the form of municipal non-hazardous residual waste generated primarily in the Dublin Waste Management Region as proposed in the application.*

ABP in its grant of planning permission (ABP-309812-21), granted on 17 December 2021, included the following condition in relation to the waste which can be accepted at the installation:

> Condition 4: "*For the avoidance of doubt, the waste thermally treated at the facility shall be in the form of municipal non-hazardous residual waste generated primarily in the Dublin Waste Management Region as proposed in the application and permitted under the parent permission for the facility that was granted approval by An Bord Pleanála under reference number PL29S.EF2022."*

Definition of municipal waste

The scope of 'municipal waste' is defined in the Waste Management Act 1996 as amended:

"'municipal waste' means: (a) mixed waste and separately collected waste from households, including paper and cardboard, glass, metals, plastics, bio-waste, wood, textiles, packaging, waste electrical and electronic equipment, waste batteries and accumulators, and bulky waste, including mattresses and furniture; (b) mixed waste and separately collected waste from other sources, where such waste is similar in nature and composition to waste from households; ***Municipal waste does not include waste from production, agriculture, forestry, fishing, septic tanks and sewage network and treatment, including sewage sludge, end-of-life vehicles or construction and demolition waste. This definition is without prejudice to the allocation of responsibilities for waste management between public and private actors.***

Definition of Residual Waste

"In the context of intake to an incinerator/WtE plant, is waste that has been subjected to pre-treatment (including, inter alia, pre-segregation, sorting, mechanical-biological treatment) to extract, to the maximum practical and available extent having regard to BAT, the recyclable/reusable components."

The licensee proposed to accept the following eight sludges from on-site effluent treatment at the installation and which are not included in the RD:

LOW codes	waste description
2	WASTES FROM AGRICULTURE, HORTICULTURE, AQUACULTURE, FORESTRY, HUNTING AND FISHING, FOOD PREPARATION AND PROCESSING
02 02 04	sludges from on-site effluent treatment
02 05 02	sludges from on-site effluent treatment
02 06 03	sludges from on-site effluent treatment
7	WASTES FROM ORGANIC CHEMICAL PROCESSES
07 01 12	sludges from on-site effluent treatment other than those mentioned in 07 01 11
07 04 12	sludges from on-site effluent treatment other than those mentioned in 07 04 11
07 07 12	sludges from on-site effluent treatment other than those mentioned in 07 07 11
19	WASTES FROM WASTE MANAGEMENT FACILITIES, OFF-SITE WASTE WATER TREATMENT PLANTS AND THE PREPARATION OF WATER INTENDED FOR HUMAN CONSUMPTION AND WATER FOR INDUSTRIAL USE
19 08 12	sludges from biological treatment of industrial waste water other than those mentioned in 19 08 11
19 08 14	sludges from other treatment of industrial waste water other than those mentioned in 19 08 13

Technical Amendment C issued on 25 April 2019 provided for the acceptance of sludges from on-site effluent treatment (List of Waste codes 07 02 12 and 07 05 12) and which are not included in the RD.

The existing licence provided for the acceptance of sludges from on-site effluent treatment (LoW codes 02 03 05, 02 07 05 and 06 05 03) and sludges from treatment of urban waste water (LoW code 19 08 05) and which are not included in the RD.

The issue of sewage sludge acceptance was addressed under the current licence application (W0232-01) and according to the W0232-01 Oral Hearing Report "*It is unclear if sewage sludge as an input (13% per annum) was considered in the initial project design as the EIS does not specifically mention it and ABP did not consider it part of the application before them. Although DCC contended that the design and operational implications of accepting sludge was addressed by DCC there is no description within the application or provided at the oral hearing as to the characteristics of the sludge (dry/wet) or other non MSW wastes, the means (conveyor, spray into furnace, mix in bunker) by which the sludge will be introduced into the furnace or an impact assessment in relation to emissions (including odour), energy balance, sludge handling etc. DCC indicated that this was a contingency arrangement should the option to landspread sludge not be available and thus full details are not available at this time.*"

The licensee provided no details in the licence application on the characteristics of the sludge (dry/wet), whether any dry/dewatering of sludge is proposed at the installation, the means (conveyor, spray into furnace, mix in bunker) by which the sludge will be introduced into the furnace or an impact assessment in relation to emissions (including odour), energy balance and sludge handling and storage.

The CID 2019/2010 defines 'sewage sludge' *as residual sludge from the storage, handling and treatment of domestic, urban or industrial waste water. For the purposes of these BAT conclusions residual sludge constituting hazardous waste are excluded.* The WI CID

2019/2010 provides for BAT-associated energy efficiency levels for the boiler efficiency for the incineration of sewage sludge and which was not considered by the licensee as part of the BAT assessment submitted with the licence review application.

Therefore, the following sludges waste types have not been included in the RD:

- the four sludges (List of Waste codes 19 08 05, 02 03 05, 02 07 05 and 06 05 03) specified in the existing licence;
- the two sludges (List of Waste codes 07 02 12 and 07 05 12) provided by Technical Amendment C; and,
- the licensee's proposed eight sludges from on-site effluent treatment.

The licensee proposed to accept the following municipal, commercial, and industrial ten LoW Codes and which are not included in the RD:

LOW codes	waste description
2	WASTES FROM AGRICULTURE, HORTICULTURE, AQUACULTURE, FORESTRY, HUNTING AND FISHING, FOOD PREPARATION AND PROCESSING
02 01 02	animal-tissue waste
02 01 06	animal faeces, urine and manure (including spoiled straw), effluent, collected separately and treated off-site
02 03 04	materials unsuitable for consumption or processing
17	CONSTRUCTION AND DEMOLITION WASTES (INCLUDING EXCAVATED SOIL FROM CONTAMINATED SITES)
17 06 04	insulation materials other than those mentioned in 17 06 01 and 17 06 03
18	WASTES FROM HUMAN OR ANIMAL HEALTH CARE AND/OR RELATED RESEARCH (except kitchen and restaurant wastes not arising from immediate health care)
18 01 04	wastes whose collection and disposal is not subject to special requirements in order to prevent infection (for example dressings, plaster casts, linen, disposable clothing, diapers)
18 01 09	medicines other than those mentioned in 18 01 08
18 02 08	medicines other than those mentioned in 18 02 07
19	WASTES FROM WASTE MANAGEMENT FACILITIES, OFF-SITE WASTE WATER TREATMENT PLANTS AND THE PREPARATION OF WATER INTENDED FOR HUMAN CONSUMPTION AND WATER FOR INDUSTRIAL USE
19 06 04	digestate from anaerobic treatment of municipal waste
19 06 06	digestate from anaerobic treatment of animal and vegetable waste
20	MUNICIPAL WASTES (HOUSEHOLD WASTE AND SIMILAR COMMERCIAL, INDUSTRIAL AND INSTITUTIONAL WASTES) INCLUDING SEPARATELY COLLECTED FRACTIONS
20 01 32	medicines other than those mentioned in 20 01 31

The licensee provided no details on the handling, pre-treatment or storage of wastes in the table above. There was no justification provided for the inclusion of these waste types, some of which are potentially odorous, and a number of these waste types are outside the scope of the definition of 'municipal waste' as defined in the Waste Management Act 1996 as amended (see above for definition).

It is noted that Technical Amendment D (TA(D)) of W0232-01 provided for the acceptance of non-hazardous wastes (LoW codes 18 01 04 and 18 01 09) expected to originate from

sources such as hospitals, healthcare facilities and COVID-19 testing facilities on a temporary basis. According to the TA (D) of W0232-01 the acceptance of these LoW codes is limited to the date specified in the Health Act 1947 (Section 31A -Temporary Restrictions) (COVID-19) Regulations 2020 (S.I. No. 121 of 2020), as amended. S.I. No. 217 of 2021 and S.I. No 218 of 2021 have been revoked by the Health Act 1947 (Regulations relating to certain restrictions under Section 31A)(COVID-19) Regulations 2022 (S.I. No. 27 of 2022). Therefore, the RD does not include these waste types as the timeframe as set out in the COVID-19 regulations has passed.

I recommend that the above proposed additional LoW codes are not included in the RD.

I recommend that five of the proposed 23 additional LoW codes (see table below) are included as I consider they do fall within the definition of municipal waste and are similar to the LoW codes permitted in the existing licence (W0232-01).

LOW codes	waste description
8	WASTES FROM THE MANUFACTURE, FORMULATION, SUPPLY AND USE (MFSU) OF COATINGS (PAINTS, VARNISHES AND VITREOUS ENAMELS), ADHESIVES, SEALANTS AND PRINTING INKS
08 03 18	waste printing toner other than those mentioned in 08 03 17
19	WASTES FROM WASTE MANAGEMENT FACILITIES, OFF-SITE WASTE WATER TREATMENT PLANTS AND THE PREPARATION OF WATER INTENDED FOR HUMAN CONSUMPTION AND WATER FOR INDUSTRIAL USE
19 09 05	saturated or spent ion exchange resins
20	MUNICIPAL WASTES (HOUSEHOLD WASTE AND SIMILAR COMMERCIAL, INDUSTRIAL AND INSTITUTIONAL WASTES) INCLUDING SEPARATELY COLLECTED FRACTIONS
20 01 28	paint, inks, adhesives and resins other than those mentioned in 20 01 27
20 01 30	detergents other than those mentioned in 20 01 29
20 02 03	other non-biodegradable wastes

Based on the above the RD specifies 50 list of waste codes (see Appendix 7 for details). The waste types specified in the RD include the List of Waste codes considered as part of An Bord Pleanála planning permission (ABP-309812-21), granted on 17 December 2021 and have been carried forward from the existing licence with the exception of the 14 waste codes requested by the licensee to be removed, and the sludges (LoW codes 07 02 12, 07 05 12, 19 08 05, 02 03 05, 02 07 05 and 06 05 03) and clinical waste (18 01 04 and 18 01 09) permitted in the existing licence (W0232-01).

The licensee proposed to increase the annual tonnage of commercial, & industrial wastes limit of 10,000 tonnes per annum per individual waste code specified in its current licence (W0232-01) to 12,000 tonnes per annum. As specified above, DWtE has applied to the Agency for an Industrial Emissions licence review, to increase the permitted maximum annual quantity of waste to be accepted at the installation from 600,000 tonnes per annum (tpa) to 690,000 tpa (an increase of 15%). Therefore, I consider it reasonable to increase the annual tonnage of commercial, & industrial wastes limit by 15%, which is 11,500 tonnes per annum, an increase from 10,000 tonnes per annum. The RD specifies that the annual tonnage of commercial, & industrial wastes shall be limited to 11,500 tonnes per annum per individual waste code.

4. EIA Screening

In accordance with Section 83(2A) of the Environmental Protection Agency Act 1992, as amended (hereafter referred to as the EPA Act), the Agency must ensure that before a licence or revised licence is granted, that the application is made subject to an environmental impact assessment (EIA), where the activity meets the criteria outlined in Section 83(2A)(b) and 83(2A)(c).

In accordance with the EIA Screening Determination, the Agency has determined that the activity is likely to have a significant effect on the environment, and accordingly is carrying out an assessment for the purposes of EIA.

The activity exceeds the threshold of project type 10 in Part 1 of Schedule 5 of the Planning and Development Regulations 2001 as amended: Waste disposal installations for the incineration or chemical treatment as defined in Annex IIA to Directive 75/442/EEC under heading D9, of non-hazardous waste with a capacity exceeding 100 tonnes per day.

An EIAR was submitted to the Agency as part of the application on 9 April 2021 and an updated EIAR on 18 May 2022. This is dealt with in the EIA Section later in this report.

5. Best Available Techniques

BAT for the installation was assessed against the BAT conclusions contained in Commission Implementing Decision (EU) 2019/2010 of 12 November 2019 establishing the best available techniques (BAT) conclusions, under Directive 2010/75/EU of the European Parliament and of the Council, for waste incineration (hereafter referred to as (WI BATC) and in any other relevant BREF documents specified in the appendices of this report. A detailed BAT assessment was carried out by the licensee and is included in the revised attachment 4.7.2 of the application form. Additional conditions to be incorporated into the RD to address BAT Conclusions are detailed in the appendices of this report. Any relevant BAT-AELs are specified in the emissions sections of this report.

I consider that the applicable BAT Conclusion requirements are addressed through the technologies and techniques as described in the application, as well as the conditions and limits specified in the RD.

6. Emissions

6.1 Emissions to Air

This section addresses emissions to air from the installation and the environmental impact of those emissions.

6.1.1 Channelled Emissions to Air

Assessment

There are two existing main channelled emissions points (A2-1 and A2-2) at the installation. These main emissions points are the twin stack emissions associated with each of the combustion lines, which discharge at a rate of 275,000 m^3/hour. The combustion of waste produces or has the potential to produce a number of emissions including nitrogen dioxide, sulphur dioxide, particulates, carbon monoxide, carbon dioxide,

total volatile organic carbon (as C), hydrogen chloride (HCl), hydrogen fluoride (HF), dioxins and heavy metal compounds (Cd, Tl, Hg, Sb, As, Pb, Cr, Co, Cu, Mn, Ni, V).

There is one emergency generator on-site, emission point (A4-1) which operates less than 500 hours per year and therefore is exempt from the emission limit values specified in the Medium Combustion Plant Regulations. The RD requires the licensee to monitor for carbon monoxide every 1,500 hours of operation in line with the MCP Regulations.

There are other emission points to air at the installation which, due to their emission characteristics are not considered environmentally significant and are therefore regarded as minor emissions. These minor emissions are not considered as part of this impact assessment.

Air dispersion modelling

As part of the application, air dispersion modelling was carried out to predict the ambient pollutant concentrations resulting from all main emissions. The modelling carried out was in accordance with published Agency guidance and was considered sufficiently detailed and conservative to assess the impact of the main emissions to air.

Emissions were modelled using ADMS 5 and the model was run at 100% and 75% of the maximum volumetric flow rate. Modelling was also undertaken to consider the cumulative impact of the installation alongside other emissions sources in its vicinity, and the impact of unplanned event operations.

The air dispersion modelling software ADMS 5 used does not allow the coastline module to operate in tandem with the building module. Therefore, the process contribution (PC) and predicted environmental concentration (PEC) were provided with (1) the coastline module active and the buildings module inactive; (2) the buildings module active and the coastline module inactive; and both the buildings module and coastline module inactive. The report shows that comparison of the PC with the ADMS buildings module active demonstrates that building downwash has a greater effect on the dispersion of emissions from the installation, with a greater PC for the majority of pollutants and averaging periods, and was used in the tables below detailing the worse-case predicted impacts of the main channelled emissions to air.

Air dispersion modelling was carried out for the scenarios below using five years of hourly meteorological data (2015-2017 and 2020-2021) from Dublin airport meteorological station.

Half-hourly emission limit values in Column B and periodic emission limit values specified in the existing licence (W0232-01)

The table below gives details of the worse-case predicted impacts of the main channelled emissions to air based on the half-hourly emission limit values in column B and periodic emission limit values specified in the existing licence (W0232-01).

Table 6.1

Main channelled emissions impact						
Parameter	Averaging Period	Background concentration ($\mu g/m^3$)	Process contribution to PEC ($\mu g/m^3$)	Predicted Environmental Concentration (PEC) ($\mu g/m^3$)	PEC as % of Air Quality Standard	Air Quality Standards/ Guidelines ($\mu g/m^3$)
Nitrogen Dioxide (as NO_2)	1-hour	45.2	30	75.2	38%	200 Note 1
	Annual	22.6	7.7	30.3	**76%**	40 Note 1
Sulphur Dioxide (SO_2)	1 hour (99.73%ile)	8.6	14.8	23.4	6.7%	350 Note 1
	24 hour (99.18%ile)	8.6	10	18.6	15%	125 Note 1
PM_{10}	Daily (90.4%ile)	26.2 Note 3	1.2	27.4	55%	50 Note 1
	Annual	13.1	0.4	13.5	34%	40 Note 1
$PM_{2.5}$	Annual	9.5	0.4	9.9	40%	25 Note 1
Carbon monoxide (CO)	Maximum 8 hour	2,000	39	2,039	20%	10,000 Note 1
Total Volatile Organic Carbon (as C) (as Benzene)	Annual	1.7	0.4	2.1	42%	5 Note 1
HCL	Max 1 hour	0.5	8.4	8.9	1.2%	750 Note 2
HF	Max 1 Hour	0.02	0.8	0.82	0.5%	160 Note 2
	Monthly	0.02	0.1	0.12	0.8%	16 Note 2
Dioxins (PCDD/F)	Annual	5.6×10^{-8}	3.8×10^{-9}	6.0×10^{-8}	n/a	n/a
Hg	Annual	0.001	0.0019	0.0029	<1%	1 Note 4
Cd	Annual	0.001	0.0019	0.0029	58%	0.005 Note 1
As	Annual	0.001	0.0038	0.0048	**80%**	0.006 Note 1
V	Max 24 hour	0.01	0.1	0.11	11%	1 Note 4

Note 1: Air Quality Standards Regulations, SI 58/2009 and 180/2011, unless otherwise stated.
Note 2: UK Environmental Agency (published 2016 and last updated September 2021) Environmental Assessment Levels.
Note 3: Short term background contributions are double the long-term contributions.
Note 4: WHO Guideline level.

Half-hourly emission limit values in Column A specified in the existing licence

The table below gives details of the worse-case predicted impacts of the main channelled emissions to air based on the short-term half-hourly emission limit values in column A specified in the existing licence (W0232-01).

Table 6.2

Main channelled emissions impact						
Parameter	Averaging Period	Background concentration ($\mu g/m^3$)	Process contribution to PEC ($\mu g/m^3$)	Predicted Environmental Concentration (PEC) ($\mu g/m^3$)	PEC as % of Air Quality Standard	Air Quality Standards/ Guidelines ($\mu g/m^3$)
Nitrogen Dioxide (as NO_2)	1-hour	45.2	60	105.2	53%	200 Note 1
Sulphur Dioxide (SO_2)	1 hour (99.73%ile)	8.6	59.4	68	19%	350 Note 1
	24 hour (99.18%ile)	8.6	40.1	48.7	39%	125 Note 1
PM_{10}	Daily (90.4%ile)	26.2	3.5	29.7	59%	50 Note 1
HCL	Max 1 hour	0.5	50.3	50.8	6.8%	750 Note 2
HF	Max 1 Hour	0.02	3.4	3.4	2.1%	160 Note 2
	Monthly	0.02	0.5	0.6	3.4%	16 Note 2

Note 1: Air Quality Standards Regulations, SI 58/2009 and 180/2011, unless otherwise stated.
Note 2: UK Environmental Agency (published 2016 and last updated September 2021) Environmental Assessment Levels.

Modelling was undertaken at the maximum emission concentrations and maximum flow rates permitted in the existing licence register No. W0232-01. As can be seen from the tables above, the results demonstrate that under normal operations the half-hourly short term emission limit values in column A PECs are higher than the half-hourly short term emission limit values in column B. However, the PECs are within the relevant air quality standards for nitrogen dioxide (NO_2), sulphur dioxide (SO_2), carbon monoxide (CO), particulate matter (PM_{10} and $PM_{2.5}$), total volatile organic carbon (as C), hydrogen chloride (HCl), hydrogen fluoride (HF), dioxins (PCDD/F), mercury (Hg), cadmium (Cd), arsenic (As) and vanadium (V) for both scenarios.

It is noted that the air dispersion model assessment showed the PEC is 76% of the long term AQS for nitrogen dioxide (as NO_2), however this is mainly due to high background NO_2 levels (57%) as the process contribution accounts for only 19% of the PEC. It is noted that the air dispersion model assessment showed the PEC is 80% of the long term AQS for arsenic, the background arsenic levels accounts for 17%, with the process contribution accounting for 63% of the PEC.

The contour plots supplied with the modelling report provide valuable context, for parameters where the PEC approaches the corresponding air quality standard or guideline. In the table 6.1 above, the PEC values for long term nitrogen dioxide and long term arsenic have been highlighted in bold and the relevant plots have been attached in Appendix 5(a) of this report. The contour plots demonstrate the location and extent of the areas where the maximum PEC applies, and also the rate of drop in ambient concentration with distance from the location of the maximum.

Modelling undertaken at key air quality sensitive receptor locations (see Appendix 5(b)) demonstrated that all pollutants are below their respective AQS's. The PEC was less than

61% of the long term AQS for nitrogen dioxide (as NO_2) and less than 30% of the long term AQS for arsenic.

Air dispersion modelling – assessment of impacts on ecological sensitive sites

Main channelled emissions impact						
Parameter	Averaging Period	Background concentration ($\mu g/m^3$)	Process contribution to PEC ($\mu g/m^3$)	Predicted Environmental Concentration (PEC) ($\mu g/m^3$)	PEC as % of Air Quality Standard	Air Quality Standards/ Guidelines ($\mu g/m^3$)
Oxides of Nitrogen	Annual	37.2	2.0	39.2	**131%**	30 Note 1
Sulphur Dioxide (SO_2)	Annual	4.8	0.5	5.3	27%	20 Note 1
Ammonia	Annual	1.7	0.1	1.8	60%	3 Note 2

Note 1: Air Quality Standards Regulations, SI 58/2009 and 180/2011, unless otherwise stated.
Note 2: UK Environmental Agency (published 2016 and last updated September 2021) Environmental Assessment Levels.

The licensee included an assessment of oxides of nitrogen, ammonia and sulphur dioxide on ecological sensitive sites. The air dispersion model assessment showed the PEC is 131% of the AQS for oxides of nitrogen (critical levels for the protection of vegetation annual average for oxides of nitrogen is 30 $\mu g/m^3$) in SI 180/2011. This is mainly due to high background NO_x levels (124% of the AQS) as the process contribution accounts for only 7% of the annual AQS for oxides of nitrogen. The PECs are within the relevant environmental assessment level and air quality standard for ammonia and sulphur dioxide respectively.

Sensitivity Assessment (operating at 75% of maximum flow rate)

Modelling was undertaken to consider the operation of the installation operating at 75% of its stacks anticipated flow rates. In comparison with the 100% flow rate scenario, the process contributions are generally lower in the 75% flow rate scenario and the PECs for all pollutants are within the relevant air quality standards.

Cumulative scenario

Modelling was undertaken to consider the cumulative impact of the installation alongside the nearby gas combustion plants from which the primary pollutants are emissions of nitrogen dioxide (as NO_2) and carbon monoxide. The results reported in the air dispersion model demonstrate that with the cumulative sources in place, the PC for short term NO_2 at the location of maximum offsite impact is less than 20% of the applicable AQS and the PC for long term NO_2 is less than 35% of the AQS. The short term NO_2 PEC accounts for around 41% of the AQS. The cumulative assessment identified that the long term NO_2 PEC is around 90% of the AQS at the point of maximum off-site impact, which occurs at a location in Dublin Bay, to the northeast of the installation. The elevated PEC is predominantly due to the NO_2 background concentration, which already comprises approximately 57% of the AQS. Modelling was undertaken at a number of human health sensitive receptors, i.e., residential properties and at the worst affected human health sensitive receptor, where there is relevant sensitive exposure, the PEC (62% of the AQS) for NO_2 is within the long term AQS for NO_2.

Impact of unplanned event operations

Modelling was undertaken to consider the impact of unplanned event operations. Modelling demonstrates that in the unlikely event that unplanned events were to coincide with the worst dispersion conditions, the process contributions and the PECs of all pollutants would be within the relevant air quality standards.

In light of the above, the Recommended Determination (RD) maintains half-hourly emission limit values in Column A and Column B as specified in the existing licence (W0232-01) and in accordance the Part 3 of Annex VI of the Industrial Emissions Directive (as transposed by the European Union (Waste Incineration Plants and Waste Co-incineration Plants) Regulations 2013 (SI No. 148 of 2013). In accordance the WI CID, and as proposed by the licensee, the daily average and periodic emission limit values have been tightened where relevant and an emission limit value for ammonia is specified in the RD (see Appendix 6 for details). The RD includes a footnote in *Schedule B.1: Emissions to Air* which specifies that in accordance with Article 3(13) of the IED 2010/75/EU *'emission limit levels associated with the best available techniques' means the range of emission levels obtained under normal operating conditions using a best available technique or a combination of best available techniques, as described in the BAT conclusions, expressed as an average over a given period of time, under specified reference conditions.*

Continuous monitoring of ammonia is specified in the RD in line with the WI CID. The licensee proposed to reduce the monitoring frequency of antimony (as Sb), arsenic (as As), lead (as Pb), chromium (as Cr), cobalt (as Co), copper (as Cu), manganese (as Mn), nickel (as Ni), and vanadium (as V) and their compounds from quarterly to once every six months and provided monitoring data to support this proposal. The RD specifies biannual monitoring of antimony (as Sb), arsenic (as As), lead (as Pb), chromium (as Cr), cobalt (as Co), copper (as Cu), manganese (as Mn), nickel (as Ni), and vanadium (as V) and their compounds which is in accordance with the WI CID.

In relation to mercury monitoring, BAT 4 of the WI CID states that *for plants incinerating waste with proven low and stable mercury content, the continuous monitoring of emissions may be replaced by long-term sampling or periodic measurements with a minimum frequency of once every six months*. The licensee provided summary emissions to air monitoring data (five years) for mercury to demonstrate that the wastes incinerated at the installation have a low and stable mercury content. The data provided is not considered to be sufficient to demonstrate that the waste feed has a "proven low and stable mercury content". The RD maintains quarterly monitoring of mercury until 11 November 2023 and continuous monitoring of mercury from 12 November 2023. The RD specifies that the continuous monitoring of mercury emissions may be replaced by long-term sampling (no EN standard is available for long-term sampling of Hg) or periodic measurements with a minimum frequency of once every six months, following the preparation and submission of a detailed assessment report to the Agency, which demonstrates that the waste feed has a proven low and stable mercury content and with the written approval of the Agency to amend the monitoring frequency.

In line with BAT 4 of the WI CID, the RD specifies a monitoring frequency for dioxin-like PCBs as once every six months, however monitoring of dioxin-like PCBs shall not apply where the emissions of dioxin-like PCBs are proven to be less than 0.01 ng WHO-TEQ/Nm^3, following approval by the Agency. In accordance with BAT 4 of the WI CID, the RD requires the continuous measurement of hydrogen fluoride, however the RD specifies that this may be replaced by periodic measurements with a minimum frequency of once every six months if the HCl emission levels are proven to be sufficiently stable.

6.1.2 **Diffuse Emissions and Odour**

Diffuse Emissions of dust may arise from site access roads and general traffic. However, dust is not predicted to be a significant issue.

The RD requires the licensee:

- To provide and maintain effective site roads to ensure the safe and nuisance free movement of vehicles within the installation.
- If sludges are being accepted, to ensure that an enclosed tank is provided for storage of sludge to ensure safe coupling systems for loading/unloading from road tankers.

In addition to the limits and monitoring requirements specified above, Condition 6 of the RD requires the licensee to prepare and implement a programme for the identification and reduction of diffuse emissions using all the appropriate techniques listed in BAT 21 of CID 2019/2010.

6.1.3 **Odour**

All operations with the potential to cause odour nuisance such as the waste intake, waste storage, bottom ash storage, chemical storage and residue storage occur within the process building. The installation is totally enclosed within the negative air pressure process building. Air from the waste reception hall and waste bunkers is used as draft air for the burners and therefore prevents odour emissions. Therefore, odour is not predicted to be a significant issue.

The RD specifies the following odour control conditions:

- Condition 3 of the RD requires the licensee to provide adequate measures for the control of odours from the installation including the maintenance of negative pressure at the waste reception, waste bunker, waste storage and incinerator residue storage/loading areas of the incineration plant to ensure no significant escape of odours or dust; and an odour and diffuse dust management system to include periods when process lines and /or induced draft fans are not operational.
- Condition 5 of the RD prohibits the licensee from allowing a nuisance to be caused by odour emissions from the installation.

6.2 Emissions to Water/Ground/Sewer

6.2.1 **Emissions to Surface Waters**

There are no direct discharges to surface water of process effluent, sewage or storm water from the installation. All process waste waters (e.g. boiler blow down, boiler water treatment reject water, and scrubber water) are collected for recycling in the Flue Gas Treatment System or used for humidification/cooling of the bottom ash outlet.

The licensee uses cooling water, which is abstracted from the Liffey Estuary Lower at Dublin Port, to condense steam from the turbine. The cooling water is dosed with very low levels of sodium hypochlorite to prevent biofouling. Cooling water from the installation is discharged to the Liffey Estuary via emission point reference number SW-1.

The table below gives full details on the installation's direct emissions to waters; the processes which contribute to the emissions, and the proposed maximum daily flows, as well as details of the receiving water.

Process emissions				
Emission Reference	Process Description	Max. volume (m^3/day)	Parameter	ELV in RD
SW1	Cooling water	570,000	Temperature rise (Δ T) relative to intake	9.0 °C
			Total Residual Chlorine (as HOCl)	0.5mg/l and 0.2mg/l (as 24 hour average)

Details of the receiving water		
Receiving water name and code: Liffey Estuary Lower (IE_EA_090_0300)		
Waterbody type: transitional		
WFD status: (2013-2018) Good	WFD risk: Review	WFD target date:2027

WFD protected areas:	Distance from emission:
North Dublin Bay SAC	3.2 km
North Bull Island SPA	3.2 km
South Dublin Bay and River Tolka Estuary SPA	857 m
Liffey Estuary (Nutrient Sensitive Area)	Direct Discharge
Tolka Estuary (Nutrient Sensitive Area)	857 m

Trophic status: Intermediate (2018-2020) Biological status (good), supporting chemistry conditions (good)
General comment: The installation has not been identified as a significant pressure as part of the Water Framework Directive characterisation process. The installation is not a significant source of nutrients to the estuary. The 3rd Cycle WFD initial characterisation has identified Urban Waste Water (Ringsend WWTP and combined sewer overflows) as a potential significant pressure.

The licensee proposes no changes to the cooling water discharges to the Liffey Estuary. The impact of the cooling water discharge on the Liffey Estuary was assessed as part of the existing licence.

The RD requires continuous flow, temperature and pH monitoring of the cooling water discharge. The RD requires that the discharge will not result in a temperature increase at

the edge of the mixing zone of greater than 1.5 ^{o}C and specifies that the extent of the mixing zone shall be no greater than 25% of the estuarine cross-sectional area at any point. The requirements as regards the mixing zone have applied to these discharges since the first licence in December 2008 (W0232-01) and comply with the requirements of the EO Surface Waters Regulations, including the WFD's requirements for Protected areas, as well as the requirements of the Industrial Emissions Directive and BAT for the sector.

OEE confirmed that the licensee assessed the feasibility of an air-cooled system in accordance with Condition 3.25 of the existing licence, therefore this requirement is not included in the RD.

The RD carries forward all the limits, controls and monitoring requirements set out in the existing licence.

6.2.2 Emissions to ground/groundwater

There are no process emissions to ground/groundwater from the installation.

6.2.3 Emissions to sewer

In the event of exceptional storm conditions excess storm water will be discharged to sewer (otherwise storm water is reused in process) (see storm water section of this report). Uisce Éireann confirmed in a letter dated 05 March 2020, as the licensee is not proposing as part of the application, to provide for the discharge of process effluent/trade effluent to sewer, DWtE does not require Uisce Éireann consent to discharge to sewer in accordance with Section 99E of the EPA Act 1992, as amended.

6.3 Storm water

Storm water run-off from building roofs, roads, and parking areas is stored in a 725 m^3 attenuation tank for re-use in the process. Overflow from the attenuation tank discharges to the neighbouring Ringsend Municipal Wastewater Treatment Plant (MWWTP). The licensee has requested that the storm water monitoring frequency be reduced from continuous to a grab sample prior to discharge of the overflow to Ringsend MWWTP. The licensee states that there is no automatic pumping function between the attenuation tank at the installation and Ringsend MWWTP. Following consultation with the Office of Environmental Enforcement, the RD specifies a monitoring frequency of 'grab sample prior to discharge to Ringsend MWWTP'. The requirement to establish suitable trigger levels for parameters in the storm water are not included in the RD as the overflow from the attenuation tank discharges to the neighbouring Ringsend MWWTP.

The RD requires the licensee to maintain the storm water/drainage system. The RD also requires that the storm water discharge is visually inspected and monitored for pH and TOC prior to discharge to Ringsend MWWTP, in accordance with *Schedule C.2.3 Monitoring of Storm Water Emissions.*

The RD contains standard conditions in relation to the storage and management of materials and wastes. The RD also requires that accident and emergency response procedures are put in place. The controls pertaining to accidents and emergencies are addressed in Prevention of Accidents section later in this report.

6.4 Noise

The installation is located in an industrial area on Poolbeg Peninsula on the east side of Dublin city. The nearest noise sensitive location is a residential area approximately 900 m away. There is a proposed future residential development approximately 500 m away.

The installation is totally enclosed with all waste activities taking place inside the process building. The main sources of noise at the installation are associated with external operations such as air handling units, boiler operation and vehicular movement. The proposed increase in waste to be accepted at the installation will not result in any additional noise sources or changes to noise emissions from the installation.

Noise surveys at noise sensitive locations do not provide an indication of noise impact from the installation due to noise from traffic and port/other industrial activities. The licensee has requested that the noise sensitive location N1 and N6 are no longer monitored as it is not possible to assess the contribution of the installation to noise levels at sensitive receptors due to high levels of residual noise.

As part of the existing licence, a noise monitoring survey is carried out biannually at individual installation boundary locations, as well as at noise sensitive locations outside the site boundary. Historical data from these surveys indicate that the installation is consistently compliant with the licence limits. There has been no history of noise complaints in recent years at the installation. Following consultation with the Office of Environment Enforcement, the requirement to carry out a noise survey has been reduced from 'biannually' to 'as required by the Agency' in the RD and no change in monitoring locations is proposed. The licensee is required to prepare, maintain and implement a noise management plan.

Noise conditions and emission limit values, which apply at the noise sensitive locations, have been included in the RD. In accordance with the EPA document "Guidance Note for Noise: Licence Applications, Surveys and Assessments in relation to Scheduled Activities (NG4)" (2016), the daytime ELV has been changed from 55dB L_{Aeq},T to 55dB L_{Ar}T, to allow for corrections for tonal noise, and an evening time ELV has been introduced.

7. Waste generation

Incinerator Bottom ash (IBA), boiler ash, fly ash and Air Pollution Control Residues (APCR) are generated during the waste to energy process. The total quantity of IBA, boiler ash and APCR generated during 2021 was 108,568, 277 and 25,124 tonnes respectively. Both IBA and APCR are exported from Ireland to authorised facilities in the EU for recycling (in the case of IBA) or recovery (in the case of APCR). The proposed increase in the permitted maximum annual quantity of waste to be accepted will result in an increase of incinerator ash and residues relative to the amount of waste processed at the installation (i.e., 15%). The licensee requested to reduce the monitoring frequency of bottom ash, fly ash, boiler ash and flue gas treatment residues from 'per consignment' to 'every three months'. Following consultation with OEE, the RD specifies monthly monitoring of bottom ash, fly ash, boiler ash and flue gas treatment residues.

Condition 8 of the RD requires the licensee to develop and maintain and implement a Waste and Materials Storage Plan.

As evidenced in the EIAR, and in accordance with the hierarchy specified in the IED, waste generated at the site will, in order of priority, be minimised, be prepared for re-use, recycling, recovery or disposal.

8. Energy Efficiency and Resource Use

The installation produces electricity and the waste combusted is its primary fuel. The operation of the installation involves the consumption of non-hazardous waste, diesel and electricity. The estimated future quantities used per calendar year are given below.

Resource	Quantity per annum
Electricity Purchased	2,500 MWh
Total renewable Electricity generated and used at the installation	610,000 MWh
Waste	690,000 tonnes
Diesel	2,000 m^3
Surface Water	121,979,520 m^3
Public Supply	50,000 m^3
Rainwater	20,000 m^3

Energy

The boilers are fuelled by non-hazardous waste, producing steam which drives a steam turbine coupled directly to a generator to produce electricity. The plant is also built with large district heating capability. District heating is specifically mentioned in the Climate Action Plan 2023, whereby it aims to generate up to 0.8 TWh of district heating installed capacity by 2025 and up to 2.5 TWh by 2030 (see Section 15.4.7 Climate for details).

Water

The main process uses for the water is flue gas treatment, bottom ash humidification and boiler make up. Rainwater is collected on site and used in the process.
Surface water from the Liffey estuary is used in the cooling system and discharges back into the estuary again. The abstraction is registered with the EPA (Register No. R00181-01), see the Emissions to Water section of this report for further information on the cooling water abstraction. The regulation of abstraction is outside the scope of the IE licence.

The licensee employs a variety of technologies to maximise the efficient use of energy within the installation, including a water cooling condenser. In the future the installation plans on exporting heat to the Dublin District Heating Scheme, when the external infrastructure is completed.

In the application of BAT, Condition 7 of the licence provides for the efficient use of resources and energy in all site operations. It requires an energy audit to be carried out annually and the recommendations of the audit to be incorporated into the Schedule of Environmental Objectives and Targets as outlined in Condition 2 of the licence. The RD requires the licensee to carry out a performance test, after each modification of the

incineration plant that could significantly affect the energy efficiency, the gross electrical efficiency or the gross energy efficiency. Where a performance test at full load cannot be carried out for technical reasons, the gross electrical efficiency or the gross energy efficiency can be determined taking into account the design values at performance test conditions. Condition 7 specifies BAT-associated energy efficiency levels for the incineration of waste.

9. Prevention of Accidents

A certain amount of accident risk is associated with the licensable activity. The table below specifies the potential accidents/emergencies relevant to the activity and outlines the measures for the prevention and limitation of environmental consequences.

Potential accidents & measures for prevention/limitation of consequences	
Potential for an accident or hazardous/ emergency situation to arise from activities at the installation.	Potential for fire at the installation due to large quantities of waste stored within the waste reception hall and bunker, caused by self-heating of waste, the presence of flammable materials such as aerosols; fuel (diesel/Liquefied petroleum gas) storage; fire in the flue gas treatment system, fire in the fabric filter system. Potential for the release of contaminated firewater, diesel, spillages of materials and out of specification cooling water to the environment. Potential for an explosion from liquefied petroleum gas or release of gas from cylinders used on-site for start-up burners Potential for the release of unabated emissions to air.
Preventative/Mitigation measures to reduce the likelihood of accidents and mitigate the effects of the consequences of an accident at the installation.	Preventative/mitigation measures: • A CCTV system within the waste reception hall is continuously monitored by site operators, to detect material which should not be present and fires/smouldering materials. • Thermal imaging cameras are used by operators to check for hot spots forming within the bunker. An infrared flame detection system is located throughout the waste handling areas, which is connected to an automatically operated sprinkler system. • A firewater distribution main is installed throughout the site, with hydrant connections providing a supply of firewater to all buildings. • A foam system is also installed in the waste handling area, which suppresses fires by excluding oxygen when deployed. Foam firefighting systems require less water than a conventional firewater system, generating less contaminated firewater for containment. Remotely operated water cannons cover all areas of the waste

Potential accidents & measures for prevention/limitation of consequences	
	bunker if a fire is detected. The waste bunker has a capacity of approximately 65,000 m^3 and significant volumes of firewater can be retained in the bunker in the event of an incident. • Firewater generated on site would be held in primary containment (waste handling bunker), secondary containment (bunds) and tertiary containment systems (attenuation tank and closed drainage system). • In the event of a fire/emergency, an automatic shutoff valve will prevent any discharge of firewater/spillages through the sites storm water drainage system. • All tanks are double skinned / bunded and pipework is located within contained areas. • The bund pit, site surfacing and storm water drainage systems have been designed to fully contain a release of diesel, either directly or contained in firewater. • Two Class 1 interceptors have been installed in the surface water drainage system, which would collect diesel in the event of a loss of containment • All compressed gas cylinders used on site are regularly inspected and replaced when necessary by suitably trained and experienced operators. The gas cylinders are subject to inspection for leaks and leak detection procedures prior to use. • The flue gas treatment system is continuously monitored by suitably qualified operations personnel, to ensure the concentration of pollutant emissions remains within the limits specified in the licence. • The process has a series of alarms and trips so as to protect the integrity of the filtration system from elevated temperatures. • Hydrated lime is kept dry at all times in a dedicated silo. • The ammonia and sodium hypochlorite tanks are double-lined and fitted with a leak detection system. • Ammonia solution would initially be contained within the integral bund and secondly within the building. If both the secondary and tertiary containment measures were to fail, ammonia solution could enter site drains where it would be isolated (due to the storm water isolation valve system) and recovered for safe disposal.
Additional measures provided for in the RD	Waste and Material storage plan (Condition 8) Accident prevention and emergency response requirements (Condition 9).

Potential accidents & measures for prevention/limitation of consequences	
	Integrity of tanks to be assessed every 3 years and maintenance carried out as required (Condition 6) Firewater retention risk assessment (Condition 3).

Condition 9 of the RD requires procedures to be put in place to prevent accidents with a possible impact on the environment and to respond to emergencies so as to minimise the impact on the environment.

In accordance with Agency Environmental Liabilities guidance[1], a Environmental Liabilities Risk assessment (ELRA) was submitted to the Agency. (see Fit and Proper Person Assessment section for further details).

10. Cessation of Activity

A certain amount of environmental risk is associated with the cessation of any licensable activity (site closure). In accordance with Agency Environmental Liabilities guidance, a Closure, Restoration and Aftercare Management Plan (CRAMP) was submitted to the Agency. (see Fit and Proper Person Assessment section for further details).

Condition 10 of the RD requires the proper closure of the activity with the aim of protecting the environment.

Baseline Report

The installation covers an area of approximately 5.5 ha in an area which has been reclaimed from the sea. The site was part occupied by a small metal scrap operation and molasses storage tanks. In general, during the construction of the installation, the top 0.5m of soil from outside the footprint of the main process building and between 0.5m and 1m of soil was removed from within the main process building to meet design requirements. Deeper excavations were required in certain areas to meet design requirements such as the waste bunker, bottom ash bunker and surface water attenuation tank. The excavated soil was stockpiled on site, sampled and was found to be within the limits set by the soil reuse criteria, with the exception of a small quantity of asbestos tiles. A total of 80,851 m^3 of soil was excavated from across the site. All excavated soils were found to be within the Category B criteria (materials used in areas of hardstanding or capped under a 1m clean capping layer under soft landscape material). The majority of soil (50,031 m^3) was reused on site with the remaining excess (30,820 m^3) disposed off-site as non-hazardous waste. The asbestos tiles were disposed of to a hazardous waste licenced facility.

Where an activity involves the use, production or release of Relevant Hazardous Substances, and having regard to the possibility of soil and groundwater contamination at the site of the installation, the IED requires operators to prepare a baseline report. A

[1] Guidance on Assessing and Costing Environmental Liabilities (EPA 2014)

baseline screening assessment was undertaken by the licensee, in accordance with Stages 1 to 3 of European Commission Guidance[2].

Three relevant hazardous substances were identified following stage 2 screening:

- Ammonia solution;
- Diesel; and
- Sodium hypochlorite.

As a result of the site storage facilities, containment and handling practices, the likelihood of possible contamination of soils and groundwater from the relevant hazardous substances on site is very low.

The screening assessment determined that, taking into account the type and quantity of substances used as part of the activity, the location of these substances on the site, in view of the soil and groundwater characteristics, and the measures to be taken to prevent accidents and incidents (see Prevention of Accidents section for details on mitigation measures in place), the possibility of soil and groundwater contamination at the site of the installation is considered to be very low. The Agency is satisfied that a full baseline report (stages 4 to 8) is not required.

Nonetheless, upon cessation of the activity, Condition 10 of the RD requires the licensee to take certain measures to ensure that there is, to the satisfaction of the Agency, no remaining risk of environmental pollution at the site. Monitoring of relevant hazardous substances is required in Condition 6 and *Schedules C.7.1* (groundwater) and *C.7.3* (soils) of the RD.

11. Fit & Proper Person

Technical Ability

The licensee has provided details of the qualifications, technical knowledge and experience of key personnel. The licence application also includes information on the on-site management structure. It is considered that the licensee has demonstrated the technical knowledge required.

Legal Standing

On the 26th of March 2018, the Environmental Protection Agency prosecuted Dublin Waste to Energy Limited at Dublin Metropolitan Court for breaches of its Industrial Emissions Licence (Reg. No. W0232-01).

The company pleaded guilty to the following:

On dates from the 1st day of June 2017 to the 2nd day of June 2017 (both dates inclusive) -

- Failing to ensure, in the event of an incident occurring on the facility, that your facility manager notified the Agency as soon as practicable and, in any case, not

[2] European Commission Guidance concerning baseline reports under Article 22(2) of Directive 2010/75/EU on industrial emissions.

later than 10.00 a.m. the following working day after the occurrence of any incident; and

- Failing to notify the Agency, in a format as may be specified by the Agency, without delay after the occurrence of any breach of one or more of the conditions attached to the said Licence.

Dublin Waste to Energy Limited was convicted on the above charge and imposed a fine of €1,000 and the Probation Act to two other charges. Costs of €14,133 were also awarded to the Agency.

ELRA, CRAMP and Financial Provision

The installation was assessed for the requirements of Environmental Liabilities Risk Assessment (ELRA), Closure, Restoration and Aftercare Management Plan (CRAMP) and Financial Provision (FP), in accordance with Agency guidance. Under this assessment it has been determined that ELRA, CRAMP and FP were required.

Under the existing licence (W0232-01), the licensee commissioned a CRAMP and an ELRA and have financial provision in place. The OEE confirmed that the installation is compliant with its requirements for CRAMP, ELRA and FP.

Fit & Proper Conclusion
It is my view, and having regard to the provisions of section 84(5) of the EPA Act, and the Conditions of the RD, that the licensee can be deemed a Fit & Proper Person for the purpose of this review.

Having regard to the provisions of Section 84(5) of the EPA Act, and the Conditions of the RD, the Agency is satisfied for the reasons set out in the inspector's report that the licensee has the expertise and resources necessary to comply with its licence. The Agency considers that it would be disproportionate to refuse its licence on account of the convictions in relation to prescribed offences in 2018, and the Agency therefore regards it as a fit and proper person for the purpose of this application.

12. Submission

There was one valid submission made on this licence application.
While the main points raised in the submission are briefly summarised in the table below, the original submission should be referred for greater detail.

The issues raised in the submission are noted and addressed in this Inspector's Report and the submission was taken into consideration during the preparation of the Recommended Determination/ Decision (RD).

Submissions			
1.	**Name & Position**	**Organisation:**	**Date received:**
	Ms. Trish Smullen and Dr Clare Glanville, Senior Geologist	Geological Survey of Ireland (GSI), Beggars Bush, Haddington Road, Dublin	**27/08/2021**
	Issues raised: *The submission from the GSI did not raise any specific points of concern in relation to the licence application. GSI records show that there are no County Geological sites in the vicinity of the installation. GSI notes that long term ground movement has been recorded at Ringsend and at the margins of the installation and at the water treatment plant site immediately to the east of the installation.* **Agency response:** I have carried out an in-depth examination of the documentation associated with the licence application and concluded that if the activity is carried out in accordance with the licence and the conditions attached, the operation will not cause environmental pollution.		

13. Consultations

13.1 Cross Office Consultation

I consulted OEE Inspectors, Brian Duggan and Oliver Gray in relation to this site and individual licence conditions, and Patrick Chan in relation to financial provision. In general, the OEE have no concerns regarding the proposed changes to the licensable activity.

13.2 Transboundary Consultations

There were no transboundary consultations undertaken as there were no transboundary impacts identified.

14. Appropriate Assessment

Appendix 2 lists the European Sites assessed, their associated qualifying interests and conservation objectives along with the assessment of the effects of the activities on the European Sites.

A screening for Appropriate Assessment was undertaken to assess, in view of best scientific knowledge and the conservation objectives of the site, if the activities, individually or in combination with other plans or projects are likely to have a significant effect on any European Site. In this context, particular attention was paid to the European Site specified in Appendix 2.

The activities are not directly connected with or necessary to the management of any European Site and the Agency considered, for the reasons set out below, that it cannot be excluded, on the basis of objective information, that the activities, individually or in combination with other plans or projects, will have a significant effect on any European Site and accordingly determined that an Appropriate Assessment of the activities was required, and for this reason determined to require the applicant to submit a Natura Impact Statement.

A Natura Impact Statement was received by the Agency on 18 May 2022.

This determination is based on the proximity of the installation to European Sites and the potential for significant effects on their qualifying interests.

An Inspector's Appropriate Assessment has been completed and has determined, based on best scientific knowledge in the field and in accordance with the European Communities (Birds and Natural Habitats) Regulations 2011 as amended, pursuant to Article 6(3) of the Habitats Directive, that the activities, individually or in combination with other plans or projects, will not adversely affect the integrity of any European Site, in particular, those sites specified in Appendix 2, having regard to their conservation objectives and will not affect the preservation of these sites at favourable conservation status if carried out in accordance with this recommended determination and the conditions attached hereto for the following reasons:

- Air dispersion modelling was assessed as part of the licence review and concluded that there would not be a significant impact on air quality as a result of the activities at the installation.
- The licence specifies emission limit values and controls for emissions to air.
- There will be no increase in noise emissions compared to what is currently licensed. The licence specifies noise emission limit values at noise sensitive locations, and the noise modelling assessment demonstrated that these limits can be complied with to avoid disturbance of qualifying interest species.
- The licence contains standard conditions in relation to the storage and management of materials and wastes.
- The licence specifies limits and controls regarding flow and temperature in the cooling water discharges.
- The licence requires that all storm water discharges, other than from roofs, from the installation pass through silt traps and oil separator before discharge.
- Condition 9 requires the licensee to maintain a documented Accident Prevention Procedure that addresses the hazards on-site, particularly in relation to the prevention of accidents with a possible impact on the environment.
- No significant in-combination effects are predicted; therefore, no additional mitigation measures are required.

In light of the foregoing reasons no reasonable scientific doubt remains as to the absence of adverse effects on the integrity of those European Sites specified in Appendix 2 of this report.

15. Environmental Impact Assessment

15.1 EIA Introduction

This assessment is being undertaken in accordance with the requirements of Directive 2014/52/EU amending Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment. The application was accompanied by an Environmental Impact Assessment Report (EIAR) (see section EIA screening of this report for details).

As part of this environmental impact assessment, I have carried out an examination, analysis and evaluation of all the information provided by the licensee (including the EIAR), the existing licence, Register Number: W0232-01; information received through consultation, the documents associated with the assessments carried out by ABP, and the issues that interact with the matters that were considered by ABP and which relate to the activity, written submission, as well as considering any supplementary information, where appropriate. All of the documentation received was examined and I consider that the EIAR complies with the provisions of Article 5 of the 2014 EIA Directive when considered in conjunction with the additional material submitted with the application.

I am satisfied that the information contained in the EIAR has been prepared by competent experts and that the environmental effects arising as a consequence of the activity have been satisfactorily identified, described and assessed.

Having specific regard to EIA, this Inspector's report as a whole is intended to identify, describe and assess for the Agency the likely significant direct and indirect effects of the activity on the environment, as respects the matters that come within the functions of the Agency, for each of the following environmental factors: population and human health, biodiversity, land, soil, water, air and climate, the landscape, material assets and cultural heritage.

This Inspector's report addresses the interaction between those effects. The cumulative effects, with other developments in the vicinity of the activities have also been considered, as regards the combined effects of emissions. In addition, the vulnerability of the activity to risks of major accidents and/or disasters has been considered. The mitigation measures proposed to address the range of predicted significant effects arising from the activity have been outlined. This Inspector's report provides conclusions to the Agency in relation to such effects.

A summary of the submission made by a third party has been set out above in the Submissions Section of this report.

I am satisfied that the public have been given early and effective opportunity to participate in the environmental decision-making process.

15.2 Consultation with Planning Authorities in relation to EIA

Consultation was carried out between An Bord Pleanála and the Agency under the relevant section of the EPA Act.

An Bord Pleanála did not provide any observations to the Agency on the licence application and EIAR.

15.3 Alternatives

The matter of alternatives is addressed in Chapter 4 of the EIAR. DWtE is an existing development and has the capacity to accept and process the increase waste quantities within the specification of its current design, no additional land resources would be required to facilitate the increase of waste accepted at the installation. The EIAR assesses alternative processes including disposal (landfill), increase in recycling capabilities, export of waste overseas, thermal coprocessing (cement kilns) and the do nothing alternative. In this regard I consider that the matter of the examination of alternatives has been satisfactorily addressed.

15.4 Likely Significant Direct and Indirect Effects

The likely significant direct and indirect effects of the activities on the following factors as set out in Article 3 of the EIA Directive are considered in this section:

(a) population and human health;

(b) biodiversity, with particular attention to species and habitats protected under Directive 92/43/EEC and Directive 2009/147/EC;

(c) land, soil, water, air and climate;

(d) material assets, cultural heritage and the landscape;

(e) the interaction between the factors referred to in points (a) to (d).

15.4.1 Population & Human Health

Identification, Description and Assessment of Effects

Population and human health are addressed in Chapter 5 of the EIAR. The potential direct and indirect effects on population and human health are associated with emissions to air, dust, odour, noise emissions, emissions to water, and accidental emissions. Should emissions exceed environmental quality standards, this could have implications for population and human health. The effects identified and described above have been assessed in the following section of this report: Emissions to Air, Emissions to Water and Ground, Noise, Waste Generation, Accidents, Cessation and Environmental Impact Assessment.

There is also the potential for accidental emissions to the environment, due to fire, explosion, or spillages. Accidental emissions to air/water/ground could occur if fire, spillages or leaks occur, causing deterioration to water and/or air quality in the vicinity of the installation. This is addressed in Prevention of Accidents section of this report.

Cumulative effects of the activity in relation to population and human health have been assessed and is considered that there is not likely to be a significant cumulative effect from the activity and other activities/developments. There are no likely significant direct, indirect or cumulative effects identified.

Mitigation and Monitoring
Mitigation measures and monitoring in relation to population and human health are detailed in the following sections of this report: Emissions to Air, Emissions to Water/Sewer/Ground, Noise, Waste Generation, Prevention of Accidents.

Conclusions
I have examined all the information on population and human health, provided by the licensee/applicant, received through consultations, written submissions, as well as considering any supplementary information, where appropriate. I am satisfied that the potential effects identified will be avoided, managed and mitigated by the measures identified and through the proposed conditions of the Recommended Determination. I am, therefore, satisfied that the operation of the activity is not likely to have any unacceptable direct or indirect effects in terms of population and human health.

15.4.2 **Biodiversity**

Identification, Description and Assessment of Effects

Biodiversity is addressed in Chapter 8 of the EIAR. The EIAR describes the habitats and species at and in the vicinity of the installation. DWtE is an existing installation located entirely on made ground. The licensee has applied to the Agency for an Industrial Emissions licence review, to increase the permitted maximum annual quantity of waste to be accepted at the installation from 600,000 tonnes per annum (tpa) to 690,000 tpa (an increase of 15%). There are no physical amendments required to the installation to facilitate the increase in tonnage requested. There are no significant semi-natural vegetated areas within the installation boundary. A toxicity survey was completed in 2018 and 2019 and the results showed no adverse effects on marine biota. A biological survey carried out in September 2022 (report dated October 2022) was also carried out on behalf of the licensee, this included fish and benthic surveys, and concluded that "*The results from this fish survey compare well with previous surveys considering the water temperature and salinity levels recorded at the time of the survey. Considering the level of modification and anthropogenic inputs, the Liffey estuary still supports a reasonable diversity of fish species*." (AQUAFACT, 2022). It was also determined that results from the benthic survey from four grab samples taken upstream and downstream of the cooling water discharge point, were all "*typical of organically enriched or physically disturbed habitats in areas of reduced salinity with relatively low species richness*" (AQUAFACT, 2022).

The existing installation adjoins the compensatory grassland in its south-eastern corner at which point the installation is separated from the compensatory grassland by an existing (permanent) paladin boundary fence. Surveys from 2007 to 2014 found this area to hold significant Special Conservation Interest (SCI) feeding populations of pale-bellied Brent goose, and occasionally other SCI waders such as curlew *Numenius arquata*, and black-tailed godwit *Limosa* (AECOM, 2019; AECOM 2022)

The licensee also submitted a Natura Impact Statement (Refer to the Appropriate Assessment section of this report).

The potential direct and indirect effects on biodiversity are related to effects on aquatic flora and fauna and their habitats due to effects on water quality, disturbance to fauna due to noise emissions, and effects due to air emissions. The effects identified and described above have been assessed in the following sections of this report: Emissions to Water, Emissions to Air, Noise, Waste Generation and Appropriate Assessment.

There is also the potential for accidental emissions to the environment, due to fire, explosion, or spillages, which may impact biodiversity. This is addressed in the Prevention of Accidents section of this report.

Cumulative effects of the activity in relation to biodiversity have been assessed and it is considered that there is not likely to be a significant cumulative effect from the activity and other activities/developments. There are no likely significant direct, indirect or cumulative effects identified.

Mitigation and Monitoring

Mitigation measures and monitoring in relation to biodiversity are detailed in the following sections of this report: Emissions to Air, Emissions to Water/Ground /Sewer, Noise, Waste Generation, Prevention of Accidents.

Conclusions

I have examined all the information on biodiversity, provided by the licensee, received through consultations, written submissions, as well as considering any supplementary information, where appropriate. I am satisfied that the potential effects identified will be avoided, managed and mitigated by the measures identified and through the proposed conditions of the Recommended Determination. I am, therefore, satisfied that the operation of the activity is not likely to have any unacceptable direct or indirect effects in terms of biodiversity.

15.4.3 Land and Soil

Identification, Description and Assessment of Effects

Land and soil are addressed in Chapter 6 of the EIAR. The installation is located in an industrial area on Poolbeg Peninsula on the east side of Dublin city. The installation covers an area of approximately 5.5 ha, in an area which has been reclaimed from the sea. The site was part occupied by a small metal scrap operation and molasses storage tanks. DWtE is an existing installation located entirely on made ground and the underlying bedrock is dark limestone and shale of the Lucan Formation of Dinantian age (early carboniferous era). In general, during the construction of the installation, the top 0.5m of soil from outside the footprint of the main process building and between 0.5m and 1m of soil was remove from within the main process building to meet design requirements. Deeper excavations were required in certain areas to meet design requirements such as the waste bunker, bottom ash bunker and surface water attenuation tank. The excavated soil was stockpiled on site, sampled and was found to be within the limits set by the soil reuse criteria with the exception of a small quantity of asbestos tiles. A total of 80,851 m^3 of soil was excavated from across site, all excavated soils were found to be within the Category B criteria (materials used in areas of hardstanding or capped under a 1m clean capping

layer under soft landscape material). The majority of soil (50,031 m^3) was reused on site with the remaining excess (30,820 m^3) disposed off-site as non-hazardous waste. The asbestos tiles were disposed of to a hazardous waste licenced facility.

The installation is underlain by the Dublin groundwater body, which is described as a "poorly productive bedrock".

The potential direct and indirect effects on land and soil are associated with emissions to air, emissions to water, and accidental emissions. Should emissions exceed environmental quality standards, this could have implications for land and soil. The effects identified and described above have been assessed in the following section of this report: Emissions to Air, Emissions to Water/Ground/Sewer, Prevention of Accidents.

There is also the potential for accidental emissions to the environment. Accidental emissions to water/ground could occur due to a fire or spillages, which may impact land and soil. This is addressed in the Prevention of Accidents section of this report.

Cumulative effects of the activity in relation to land and soil have been assessed and it is considered that there is not likely to be a significant cumulative effect from the activity and other activities/developments. There are no likely significant direct, indirect or cumulative effects identified.

Mitigation and Monitoring
Mitigation measures and monitoring in relation to land and soil are detailed in the following sections of this report: Emissions to Air, Emissions to Water/Sewer/Ground, Prevention of Accidents.

Conclusion
I have examined all the information on land and soil, provided by the licensee/applicant, received through consultations, written submissions, as well as considering any supplementary information, where appropriate. I am satisfied that the potential effects identified will be avoided, managed and mitigated by the measures identified and through the proposed conditions of the Recommended Determination. I am therefore satisfied that the operation of the activity is not likely to have any unacceptable direct or indirect effects on land and soil.

15.4.4 Water (including Waste Water, Emissions to Sewer, Storm Water, Emissions to Ground)

Identification, Description and Assessment of Effects

Water is addressed in Chapter 7 of the EIAR. All process waste waters (e.g. boiler blow down, boiler water treatment reject water, and scrubber water) are collected for recycling in the Flue Gas Treatment System or used for humidification/cooling of the bottom ash outlet. The potential direct and indirect effects on water relate to cooling water discharge to water and storm water emissions. Should the emissions cause an exceedance of Water Quality Standards in the receiving water, this could have potential effects on water quality, aquatic biodiversity and human health. The effects identified and described above have been assessed in the following section of this report: Emissions to Wate/Ground/Sewer.

There is also the potential for accidental emissions to water or groundwater, which could occur in the event of a chemical spill as a result of bund failure, causing potential to affect surface water/groundwater quality as well as aquatic habitats. However, the likelihood of accidental emissions to water is considered low, in light of the measures outlined in the "Prevention of Accidents" section above and in light of the conditions in the RD. This is addressed in Prevention of Accidents section of this report.

Cumulative effects of the activity in relation to water have been assessed and is considered that there is not likely to be a significant cumulative effect from the activity and other activities/developments. There are no likely significant direct, indirect or cumulative effects identified.

Mitigation and Monitoring

Mitigation measures and monitoring in relation to water are detailed in the following sections of this report: Emissions to Water/Sewer/Ground, Prevention of Accidents.

Conclusions

I have examined all the information on water (including Emissions to Water//Ground and storm water) provided by the licensee, received through consultations, written submissions, as well as considering any supplementary information, where appropriate. I am satisfied that the potential effects identified will be avoided, managed and mitigated by the measures identified and through the proposed conditions of the Recommended Determination. I am, therefore, satisfied that the operation of the activity is not likely to have any unacceptable direct or indirect effects on water.

15.4.5 Noise and Vibration

Identification, Description and Assessment of Effects

Noise and vibration are addressed in Chapter 11 of the EIAR. The installation is located in an industrial area on the Poolbeg Peninsula on the east side of Dublin city. The nearest noise sensitive location is a residential area approximately 900m away. There is a proposed future residential development approximately 500m away.

The installation is totally enclosed with all waste activities taking place inside the process building. The potential direct and indirect effects of noise and vibration associated with the operation of the activity are associated with external operations such as chiller units, air handling units, boiler operation and vehicular movement. Noise arising from the installation could have the potential to cause nuisance for those living near the activity or to affect noise sensitive species. The effects have been assessed in the noise section of this report.

There is also the potential for accidental noise emissions. This is addressed in Prevention of Accidents section of this report.

Cumulative effects of the activity in relation to noise and vibration have been assessed and it is considered that there is not likely to be a significant cumulative effect from the

activity and other activities/developments. There are no likely significant direct, indirect or cumulative effects identified.

Mitigation and Monitoring

Mitigation measures and monitoring in relation to noise are detailed in the following section of this report: Noise. No mitigation measures in relation to vibrations have been proposed by the licensee, as there are no activities on site which give rise to vibration to any discernible degree.

Conclusions

I have examined all the information on noise and vibration provided by the licensee/applicant, received through consultations, written submissions, as well as considering any supplementary information, where appropriate. I am satisfied that the potential effects identified will be avoided, managed and mitigated by the measures identified and through the proposed conditions of the Recommended Determination. I am, therefore, satisfied that the operation of the activity is not likely to have any unacceptable direct or indirect effects in terms of noise and vibration.

15.4.6 Air (including Dust and Odour)

Identification, Description and Assessment of Effects

Air is addressed in Chapter 9 of the EIAR. The potential direct and indirect effects on air, including dust and odour are associated with two existing main channelled emissions points (A2-1 and A2-2) and the waste intake, waste storage, bottom ash storage, chemical storage and residue storage, which occur within the process building. Should emissions exceed Air Quality Standards this could have implications for air quality, population and human health and biodiversity within and beyond the installation boundary. General site dust and odour emissions have the potential to impact human health and cause nuisance. The effects identified and described above have been assessed in the following section of this report: Emissions to Air.

There is also the potential for accidental emissions to the environment, due to fire, or explosion causing deterioration to air quality in the vicinity of the installation. This is addressed in Prevention of Accidents section of this report.

Cumulative effects of the activity in relation to air have been assessed and is considered that there is not likely to be a significant cumulative effect from the activity and other activities/developments. There are no likely significant direct, indirect or cumulative effects identified.

Mitigation and Monitoring

Mitigation measures and monitoring in relation to air are detailed in the following sections of this report: Emissions to Air and Prevention of Accidents.

Conclusions

I have examined all the information on Air (including Dust and Odour) provided by the licensee, received through consultations, written submissions, as well as considering any supplementary information, where appropriate. I am satisfied that the potential effects

identified will be avoided, managed and mitigated by the measures identified and through the proposed conditions of the Recommended Determination. I am therefore satisfied that the operation of the activity is not likely to have any unacceptable direct or indirect effects in terms of Air (including Dust and Odour).

15.4.7 **Climate**

Identification, Description and Assessment of Effects

Chapter 10 of the EIAR addresses climatic factors. Climate change is a significant global issue which affects weather and environmental conditions (air, water and soil) which consequently affects population and human health, material assets, cultural heritage, the landscape and biodiversity. Climate change is caused by warming of the climate system by enhanced levels of atmospheric greenhouse gases (GHG) due to human activities. GHG's are carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), nitrogen trifluoride (NF_3) and sulphur hexafluoride (SF_6).

The Irish Government published "*Ireland's Climate Action Plan 2023: Changing Ireland for the Better"* (Climate Action Plan 2023) on 21 December 2022 (updated on 19 January 2023), under the Climate Action and Low Carbon Development (Amendment) Act 2021, which will support Ireland's transition to Net Zero, and achieve a climate neutral economy by no later than 2050. District heating is specifically mentioned in the Climate Action Plan 2023, whereby it aims to generate up to 0.8 TWh of district heating installed capacity by 2025 and up to 2.5 TWh by 2030.

The licensee employs a variety of technologies to maximise the efficient use of energy within the installation, including in the future the installation plans on exporting heat to the Dublin District Heating Scheme, when the external infrastructure is completed. Heat export pipework and shell and tube heat exchangers are installed and ready for connection at the lower level of the installation. The installation will be the baseload for the Dublin District Heating System, which on its own will supply a heat source for over 50,000 homes. Once this is operation the DWtE will have a net energy efficiency of over 88%.

The potential direct and indirect effects on climate are the emissions from the twin stack associated with each of the combustion lines and cooling. Carbon dioxide (CO_2) is the primary GHG applicable to the installation. As part of the EIAR the licensee carried out an Lifecycle GHG impact assessment, in accordance with the Institute of Environmental Mangement and Assessment Guidance, to assess the impact of the proposed increase in waste acceptance from 600,000 tpa to 690,000 tpa. It is anticipated that the gross annual CO_2 emissions from the installation will increase by 72,893 tonnes CO_2 equivalent (tCO_2e). When the avoided emissions from waste disposal and displaced grid electricity are considered, the net annual increase in emissions is reduced to 5,866.52 tCO_2e with the capacity at 690,000 tpa. This does not include the addition savings arising from by-product metal recycling and potential district heating. The assessment concluded that as the emissions would be less than 25,000 tCO_2e per year the magnitude of the effects of the operation would be low and the significance of the effects minor adverse.

The installation has a number of pieces of equipment containing fluorinated greenhouse gases primarily AC chillers. F-gases are controlled under the F-Gas regulations (F-Gas Regulation (EU) No 517/2014) and are not addressed in the RD.

The installation does not operate under a GHG Emissions Permit in accordance with the European Communities (Greenhouse Gas Emissions Trading) Regulations 2004, (S.I. 437 of 2004 and amendments). Therefore, this site is not subject to the European Communities (Greenhouse Gas Emissions Trading) Regulations 2012, (S.I. 490 of 2012 and amendments). It is therefore a requirement of IED to investigate how emissions of CO_2 might be minimised.

The licensee states that it will continue to implement alternative waste disposal methods with reduced GHGs impacts (e.g. reuse and recycling) for both installation waste and by-products.

In relation to cumulative effects, any combustion process will inevitably produce quantities of gases, including greenhouse gases (GHG), which have the potential to impact on air quality. However, it is usually the other combustion gases that negatively impact air quality as opposed to the greenhouse gases. In this assessment, it has already been determined that air emissions from the installation will not significantly affect local air quality, individually or cumulatively.

However, any discussion of GHG emissions must be extended to national and global climate impact. In the context of climate change, any activity which produces greenhouse gases must be regarded as contributing to the current significant cumulative global impact on climate.

As part of the non-ETS sector the GHG emissions from this site are covered by Ireland's commitments under the Effort Sharing Decision (Decision No 406/2009/EC) and the Effort Sharing Regulation (Regulation (EU) 2018/842) from 2021. Condition 2 and condition 7 of the RD deal with energy efficiency matters at the installation.

The installation uses non-hazardous municipal waste as a fuel and the thermal energy generated by waste incineration is recovered and converted to electricity for export to the national grid. There are GHG emissions from the combustion of waste, however, there is a direct benefit in terms of GHG emissions which would have been released from power stations and it also reduces the amount of waste going to landfill. In the future some of the heat will be exported to the Dublin District Heating Scheme, when the external infrastructure is completed.

It is considered that the likelihood of accidental emissions occurring which could affect climate is low in light of the measures outlined in the "Prevention of Accidents" section above and the proposed conditions in the RD.

Therefore, there are no likely significant direct, indirect or cumulative effects identified.

Mitigation and Monitoring

Mitigation measures and monitoring in relation to climate are detailed in the following sections of the licence assessment part of this report: Emissions to Air, Prevention of Accidents, Energy Efficiency and Resource Use. The licensee states that it will continue to Implement alternative waste disposal methods with reduced GHGs impacts (e.g. reuse and recycling) for both installation waste and by-products.

Conclusions

I have examined all the information on climatic factors provided by the licensee, received through consultations, written submissions, as well as considering any supplementary information, where appropriate. I am satisfied that the potential effects identified will be avoided, managed and mitigated by the measures identified and through the proposed conditions of the Recommended Determination. I am, therefore, satisfied that the operation of the activity is not likely to have any unacceptable effects in terms of air and climatic factors.

15.4.8 **Material Assets, Cultural Heritage and the Landscape**

15.4.8.1 Material Assets (including resource use and waste generation)

Identification, Description and Assessment of Effects

Material Assets are addressed in Chapter 15 of the EIAR. The potential direct and indirect effects on material assets are the use of natural resources. The activity will require the consumption of electricity, water and diesel. The amounts used are listed in section 8 of this report. The activity will lead to the generation of the following wastes: Incinerator Bottom ash (IBA), boiler ash, fly ash and Air Pollution Control Residues. The increase in use of natural resources by the increase in waste acceptance will not be significant. The effects identified and described above have been assessed in the following section of this report: Energy Efficiency and Resource Use.

No significant cumulative effects on material assets have been identified.

Material assets such as roads and traffic and built services are dealt with in the decision of the An Bord Pleanála to grant permission for the development and are not controlled by the Agency. The Planning Authority has considered the effect to be acceptable.

Therefore, there are no likely significant direct, indirect or cumulative effects identified.

Mitigation and Monitoring

Mitigation measures and monitoring in relation to material assets are detailed in the following sections of the licence assessment part of this report: Energy Efficiency and Resource Use, Prevention of Accidents.

Material Assets Conclusions

I have examined all the information on Material Assets provided by the licensee/applicant, received through consultations, written submissions, as well as considering any supplementary information, where appropriate. I am satisfied that the potential effects identified will be avoided, managed and mitigated by the measures identified and through the proposed conditions of the Recommended Determination. I am therefore satisfied that the operation of the activity is not likely to have any unacceptable direct or indirect effects in terms of Material Assets.

An Bord Pleanála has also identified, described and assessed the likely significant direct and indirect effects of the development on material assets. Their assessment concluded that "*I have considered all the written submissions made in relation to material assets, in addition to those specifically identified in this section of the report. I am*

satisfied that they have been appropriately addressed in terms of the application and that no significant adverse effect is likely to arise."

15.4.8.2 Cultural Heritage

Identification, Description and Assessment of Effects

Cultural Heritage is addressed in Chapter 17 of the EIAR. There are no national monuments, protected structures, Record of Monuments and Places or National Inventory of Architectural Heritage located within the installation boundary. According to the EIAR "*Previous cultural heritage assessment identified a low rubble stone wall approximately 80 cm in height (sea wall Record of Monuments and Places (RMP) no. DU019:029-01), which according to historic and cartographic sources correlates within or approximately to the location of earlier sea walls (RMP no. DU019:029-02) constructed along the line of Pigeon House Road (Eslam Engineering, 2006). A number of granite blocks are located within the Facility boundary and form part of the existing landscaping. The providence of granite blocks is unknown; however, could be remnants of the sea wall recorded monument. These granite blocks have been identified as being of nominal to low archaeological significance (Frazer, 2008).*

There are no potential direct and indirect effects on cultural heritage as no physical works or alterations are proposed as part of the increase in tonnage.

Any loss of archaeological or architectural heritage could impact negatively on human beings. These matters are dealt with in the decision of the planning authority to grant planning permission for the developments on site and are not controlled by the Agency. The planning authority has considered the effect to be acceptable.

It is very difficult to envisage any pathway by which emissions from the operation of the activity could impact any feature which might be present.

No significant cumulative effects on the cultural heritage have been identified. Therefore, there are no likely significant direct, indirect or cumulative effects identified.

Mitigation and Monitoring

There are no specific mitigation measures or monitoring proposed in the RD.

Cultural Heritage Conclusions

An Bord Pleanála has identified, described and assessed the likely significant direct and indirect effects of the development on cultural heritage. Their assessment concluded that "*No submissions were made in relation to cultural heritage. I have identified the relevant issues in this section of the report and I am satisfied that they have been appropriately addressed in terms of the application and that no significant adverse effect is likely to arise*". The Recommended Determination does not propose to include any additional mitigation measures in relation to material assets and cultural heritage.

15.4.8.3 The Landscape

Identification, Description and Assessment of Effects

Landscape is addressed in Chapter 17 of the EIAR. Any disturbance of the landscape has the potential to impact on human beings and their enjoyment of the surrounding area due

to visual impacts. These matters are dealt with in the decision of the planning authority to grant planning permission for the developments on site and are not controlled by the Agency. The planning authority has considered the effects to be acceptable.
The installation is located in an industrial area on the Poolbeg Peninsula on the east side of Dublin city. The principal industrial activities on the peninsula consist of power generation and utilities infrastructure, storage and port facilities. Emissions from the operation of the activity will not affect the landscape of the area.

No significant cumulative effects on the landscape have been identified

Therefore, there are no likely significant direct, indirect or cumulative effects identified.

Mitigation and Monitoring
There are no specific mitigation measures or monitoring proposed in the RD.

The Landscape Conclusions
An Bord Pleanála has identified, described and assessed the likely significant direct and indirect effects of the development on the landscape. Their assessment concluded that "*No submissions were made in relation to landscape and visual amenity. I have identified the relevant issues in this section of the report, and I am satisfied that they have been appropriately addressed in terms of the application and that no significant adverse effect is likely to arise."*
The Recommended Determination does not propose to include any additional mitigation measures in relation to landscape and visual impact.

Overall Conclusions for Material Assets, Cultural Heritage and the Landscape
I have examined all the information on material assets, cultural heritage and the landscape provided by the licensee, received through consultations, written submissions, as well as considering any supplementary information, where appropriate. I am satisfied that the potential effects identified will be avoided, managed and mitigated by the measures identified. I am, therefore, satisfied that the operation of the activity is not likely to have any unacceptable direct or indirect effects in terms of Material Assets, Cultural Heritage and the Landscape.

15.4.9 Interactions Between Environmental Factors

Interactions of effects are considered in Chapter 17 of the EIAR. The most significant interactions between the factors as a result of the activity are summarised below:

<u>Population and human health, waste management, climate, air and biodiversity</u>
Negative impacts on air quality could affect human health, climate and biodiversity through the combustion of waste at the installation and emissions to air, diffuse and odour emissions from the activities. Noise arising from the installation could have the potential to cause nuisance for those living in the vicinity of the activity or on noise sensitive species near the site. As demonstrated such effects are considered not to be likely or significant.

Water, soil, biodiversity and population & human health

Accidental discharges or spills may directly and indirectly effect soil, ground water quality, surface water, aquatic habitats and aquatic flora and fauna. As demonstrated above, in earlier parts of this Inspector's report such effects are considered not to be likely or significant.

Conclusions
I have considered the interaction between population and human health, biodiversity, land, soil, water, air, climate, landscape, material assets, cultural heritage and the interaction of the likely effects identified throughout this report. I am satisfied that the potential effects identified will be avoided, managed and mitigated by the measures identified and through the proposed conditions of the Recommended Determination. I am, therefore, satisfied that the operation of the activity is not likely to have any unacceptable direct or indirect effects in terms of the interaction between the foregoing environmental factors.

15.4.10 Vulnerability of the Project to Risks of Major Accidents and or Disasters

The EIAR describes the expected effects deriving from the vulnerability of the activity to risks of major accidents and/or disasters that are relevant to the activity. This is dealt with in Chapter 16 of the EIAR. The EIAR identified and assessed the risk of a number of major accidents /disasters that may pose a risk to the site, which are listed in Tables 16.1 and 16.2 of the EIAR (e.g. vulnerability of the activity to climate change, such as increased ambient temperatures, rising river and sea levels, fire and/or explosion, release of firewater/chemicals to the environment) and described the mitigation measures in place.

The Seveso Directive and Regulations are not applicable to the installation. The EIAR examined the vulnerability of the installation to accident at the site such as fires, release of firewater to the environment and explosions. The risks of accidents associated with the activities are dealt with in the Prevention of Accidents section of this report.

Mitigation and Monitoring

The mitigation and monitoring measures in relation to the vulnerability of the project to risks of major accidents and disasters specified in the RD are outlined in Section 9 of this report.

Conclusions
I have examined all the information on major accidents and/or disasters provided by the licensee, received through consultations, written submissions, as well as considering any supplementary information, where appropriate. I am satisfied that the potential effects identified will be avoided, managed and mitigated by the measures identified and through the proposed conditions of the Recommended Determination. I am therefore satisfied that the operation of the activity is not likely to have any unacceptable direct or indirect effects as a result of major accidents and/or disasters.

15.5 Reasoned Conclusion on the significant effects

Having regard to the examination of environmental information contained above, and in particular to the content of the EIAR and supplementary information provided by the licensee, and third party in the course of the application, it is considered that the potential significant direct and indirect effects of the activities on the environment are as follows:

- Emissions to air from the combustion of waste (including odour emissions);
- Noise emissions;
- Accidental leakages or spillages;
- Major accidents and disasters (e.g. fire and/or explosion).

Having assessed those potential effects, I have concluded as follows:

- Emissions to air are mitigated through: imposing emission limit values to ensure compliance with ambient air quality standards; and implementing monitoring, maintenance and control measures;
- Noise emissions will be mitigated through: imposing daytime, evening-time and night-time noise limits at noise sensitive locations; and implementing monitoring, maintenance and control measures;
- Accidental leakages or spills will be mitigated through inspection and maintenance of bunds and tanks and accident and emergency requirements specified in the RD.
- Major accidents and disasters through implementing monitoring, maintenance and control measures.

Having regard to the effects (and interactions) identified, described and assessed throughout this report, I consider that the monitoring, mitigation and preventative measures proposed will enable the activities to operate without causing environmental pollution, subject to compliance with the Recommended Determination. The conditions of the RD and the mitigation measures proposed will significantly reduce the likelihood of accidental emissions occurring and limit the environmental consequences of an accidental emission should one occur.

16. EPA Charges

The annual enforcement charge recommended in the RD is €35,006, which reflects the anticipated enforcement effort required and the cost of monitoring. This represents an increase when compared to the Agency's 2022 enforcement charge of €32,946. This is due to a higher cost base and an adjustment for inflation.

17. Recommendation

The Agency, in considering an application for a licence or the review of a licence, shall have regard to Section 83 of the EPA Act. The Agency shall not grant a licence or revised licence unless it is satisfied that emissions comply with relevant emission limit values and standards prescribed under regulation. In setting such limits and standards, the Agency must ensure they are established based on the stricter of both the limits and controls required under BAT, and those required to comply with any relevant environmental quality standard. The Agency shall perform its functions in a manner consistent with Section 15 of the Climate Action and Low Carbon Development Acts 2015 as amended.

The RD specifies the necessary measures to provide that the installation shall be operated in accordance with the requirements of Section 83(5) of the EPA Act, and has regard to the AA and EIA. The assessment is consistent with Section 15 of the Climate Action and Low Carbon Development Plan 2015 as amended. The RD gives effect to the requirements of the EPA Act and has regard to submissions made.

I recommend that a Proposed Determination be issued subject to the conditions and for the reasons as drafted in the RD.

Signed

Jennifer Cope

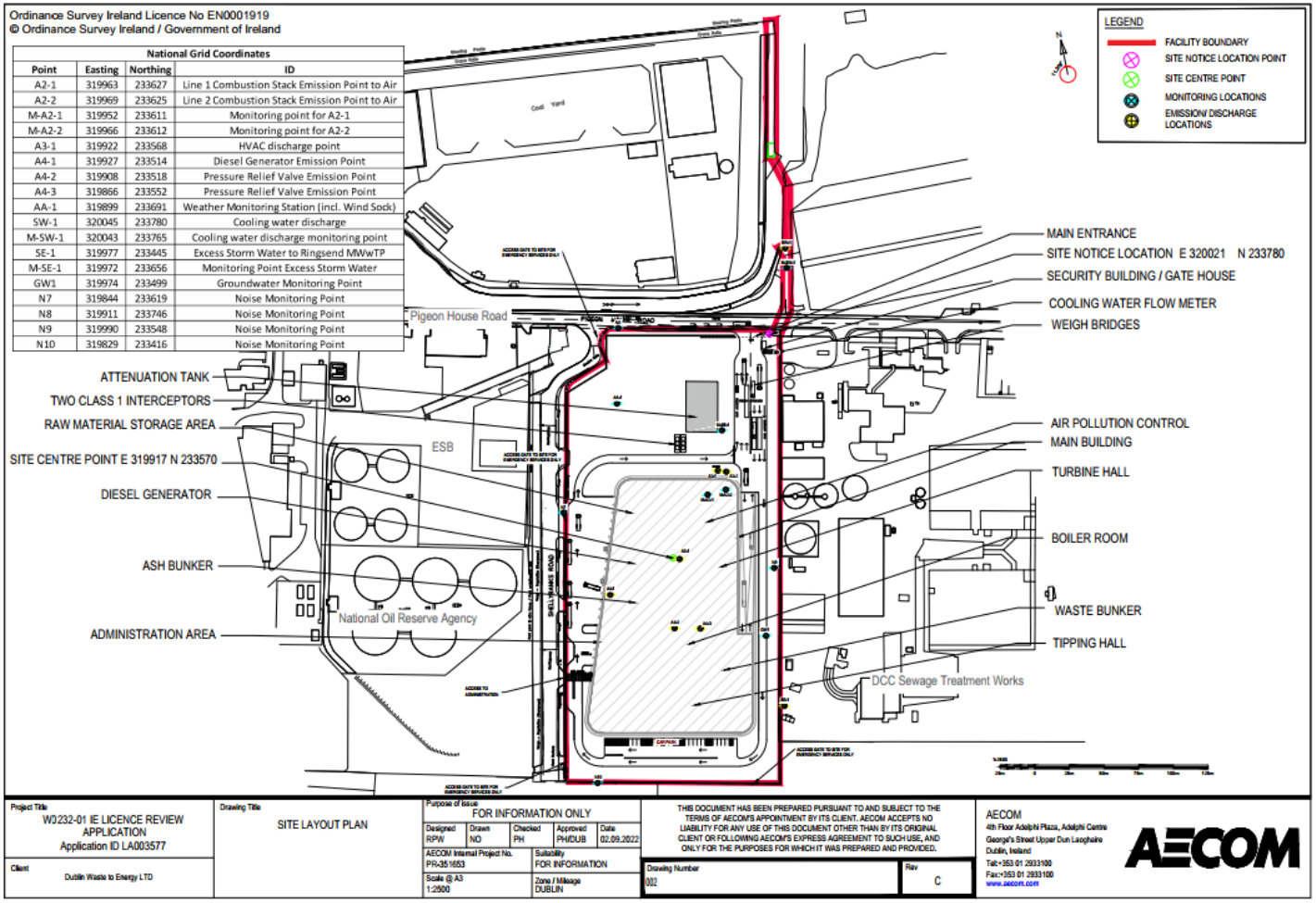
Jennifer Cope

Procedural Note

In the event that no objections are received to the Proposed Determination on the application, a licence will be granted in accordance with Section 87(4) of the EPA Act, as soon as may be after the expiration of the appropriate period.

Appendices

Appendix 1 Site Layout



Source: W0232-02 Applicant RFI response received 02/09/2022.

Appendix 2 Appropriate Assessment

Appendix 2: Assessment of the effect(s) of the activities on European sites and proposed mitigation measures.

Site Name (site code)	**South Dublin Bay SAC (Site Code 000210)**
Distance To (km)	Approximately 320 m south of the installation
Conservation Objectives	NPWS (2013) Conservation Objectives: South Dublin Bay SAC 000210. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
Qualifying Interests **(* denotes a priority habitat)**	**Assessment**
Habitats [1140] Tidal Mudflats and Sandflats [1210] Annual vegetation of drift lines [1310] *Salicornia* and other annuals colonising mud and sand [2110] Embryonic shifting dunes	The potential for impacts on the qualifying interests of the SAC include degradation of air and water quality upon which their conservation status depends. **<u>Emissions to sewer/storm water</u>** There are no process emissions to sewer pathway between the installation and South Dublin SAC. Overflow from the stormwater attenuation tank discharges to the neighbouring Ringsend Municipal Wastewater Treatment Plant (MWWTP) which ultimately discharges to the Dublin Bay following treatment in the Ringsend MWWTP. *Mitigation* The RD requires the licensee to maintain the storm water/drainage system. The RD also requires that the storm water discharge is visually inspected and monitored for pH and TOC prior to discharge to Ringsend MWWTP, in accordance with Schedule C.2.3 *Monitoring of Storm Water Emissions.* **<u>Emissions to Water</u>** Discharges to the SAC include cooling water from the installation, discharged to the Liffey Estuary via emission point reference number SW-1. The main potential for impact would arise from changes in water quality which could affect the habitats directly. *Mitigation* The RD, as proposed, requires that the following controls are in place to protect the qualifying interests of the SAC: • Emissions may be made from specified emission points set out in *Schedule B: Emission Limits*, subject to compliance with the Emission Limit Values specified in that Schedule. • The licensee shall maintain silt traps and oil separators at the installation. • Limits have been set to achieve the environmental objectives of the European Communities Environmental Objectives (Surface Waters) Regulations 2009 including protected area objectives for conservation areas.

	• Condition 3 of the RD requires that all tank, container and drum storage areas shall be rendered impervious to the materials stored therein. **<u>Emissions to Air</u>** There are main emission points to air (see emissions to air section of this report). There is potential for diffuse emissions during operational phases of the activities. The main potential for impact would arise from changes in air quality which could affect the habitats directly. Refer to emissions to air section of this Inspector's report. Air dispersion modelling demonstrates that the impact of emissions from the installation will be below the relevant air quality standards and standards for protection of vegetation (refer to emissions to air section). *Mitigation* The RD, as proposed, requires that the following controls are in place to protect the qualifying interests of the SAC: • Emissions may be made from specified emission points set out in *Schedule B: Emission Limits*, subject to compliance with the Emission Limit Values specified in that Schedule. • The licence requires the licensee to prepare and implement a programme for the identification and reduction of diffuse emissions using all appropriate techniques listed in BAT 21 of CID 2019/2010. • Maintenance of negative air pressure at the waste reception, waste bunker, waste storage and incinerator residue/loading areas of the incineration plant to ensure no significant escape of odours and dust. **<u>Potential for Accidents to Arise</u>** There is the potential for accident/hazardous and emergency situations arising from the operation of this installation which could affect the habitats. Refer to prevention of accidents and cessation of activity sections of this Inspector's report. *Mitigation* The RD, as proposed, requires that the following controls are in place to protect the qualifying interests of the SAC: • A documented Accident Prevention Procedure is in place that addresses hazards on-site, particularly in relation to the prevention of accidents with a possible impact on the environment. • A documented Emergency Response Procedure in place that addresses any emergency situation on-site which should include provision for minimising the effects of any emergency on the environment.

	• All tank, container and drum storage areas shall be rendered impervious to the materials stored therein. Bunds shall be designed having regard to Agency guidelines '*Storage and Transfer of Materials for Scheduled Activities*' (2004), which will minimise the potential for contamination of soil/groundwater.
Site Name (site code)	**South Dublin Bay and River Tolka Estuary SPA (004024)**
Distance To (km)	Part of this European site adjoins the installation.
Conservation Objectives	NPWS (2015) Conservation Objectives: South Dublin Bay and River Tolka Estuary SPA 004024. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
Qualifying Interests (* denotes a priority habitat)	**Assessment**
Birds A144 Sanderling *(Calidris alba)* A157 Bar-tailed Godwit *(Limosa lapponica)* A149 Dunlin *(Calidris alpina)* A162 Redshank *(Tringa totanus)* A179 Black-headed Gull *(Chroicocephalus ridibundus)* A143 Knot *(Calidris canutus)* A192 Roseate Tern *(Sterna dougallii)* A046 Light-bellied Brent Goose *(Branta bernicla hrota)* A141 Grey Plover *(Pluvialis squatarola)* A130 Oystercatcher *(Haematopus ostralegus)* A194 Arctic Tern *(Sterna paradisaea)* A193 Common Tern *(Sterna hirundo)* A137 Ringed Plover *(Charadrius hiaticula)*	The potential for impacts on the qualifying interests of the SPA include degradation of air and water quality upon which their conservation status depends and noise disturbance. **<u>Emissions to sewer/storm water</u>** There are no process emissions to sewer pathway between the installation and SPA. Overflow from the stormwater attenuation tank discharges to the neighbouring Ringsend Municipal Wastewater Treatment Plant (MWWTP) which ultimately discharges to the Dublin Bay following treatment in the Ringsend MWWTP. *Mitigation* The RD requires the licensee to maintain the storm water/drainage system. The RD also requires that the storm water discharge is visually inspected and monitored for pH and TOC prior to discharge to Ringsend MWWTP, in accordance with Schedule C.2.3 *Monitoring of Storm Water Emissions.* **<u>Emissions to Water</u>** Discharges to the Dublin Bay include cooling water from the installation, is discharged to the Liffey Estuary via emission point reference number SW-1. The main potential for impact would arise from changes in water quality which could affect the habitats and species directly or could affect the water dependent prey on which the qualifying species depend. *Mitigation* The RD, as proposed, requires that the following controls are in place to protect the qualifying interests of the SPA: • Emissions may be made from specified emission points set out in *Schedule B: Emission Limits*, subject to compliance with the Emission Limit Values specified in that Schedule. • The licensee shall maintain silt traps and oil separators at the installation.

Habitats Wetlands	• Limits have been set to achieve the environmental objectives of the European Communities Environmental Objectives (Surface Waters) Regulations 2009 including protected area objectives for conservation areas. • Condition 3 of the RD requires that all tank, container and drum storage areas shall be rendered impervious to the materials stored therein. **<u>Emissions to Air</u>** There are main emission points to air (see emissions to air section of this report). There is potential for diffuse emissions during operational phases of the activities. The main potential for impact would arise from changes in air quality which could affect the habitats directly. Refer to emissions to air section of this Inspector's report. Air dispersion modelling demonstrates that the impact of emissions from the installation will be below the relevant air quality standards and standards for protection of vegetation (refer to emissions to air section). Noise modelling demonstrates that the activities can comply with the limits specified in the licence to avoid any disturbance of qualifying interests (refer to noise section of this report). *Mitigation* The RD, as proposed, requires that the following controls are in place to protect the qualifying interests of the SPA: • Emissions may be made from specified emission points set out in *Schedule B: Emission Limits*, subject to compliance with the Emission Limit Values specified in that Schedule. • The licence requires the licensee to prepare and implement a programme for the identification and reduction of diffuse emissions using all appropriate techniques listed in BAT 21 of CID 2019/2010. • Maintenance of negative air pressure at the waste reception, waste bunker, waste storage and incinerator residue/loading areas of the incineration plant to ensure no significant escape of odours and dust. • The licence specifies noise emission limit values at noise sensitive locations. The licensee shall carry out a noise survey as required by the Agency. **<u>Potential for Accidents to Arise</u>** There is the potential for accident/hazardous and emergency situations arising from the operation of this installation which could affect the habitats. Refer to prevention of accidents and cessation of activity sections of this Inspector's report. *Mitigation* The RD, as proposed, requires that the following controls are in place to protect the qualifying interests of the SPA: • A documented Accident Prevention Procedure is in place that addresses hazards on-site, particularly in relation to the prevention of accidents with a possible impact on the environment.

	• A documented Emergency Response Procedure in place that addresses any emergency situation on-site which should include provision for minimising the effects of any emergency on the environment. All tank, container and drum storage areas shall be rendered impervious to the materials stored therein. Bunds shall be designed having regard to Agency guidelines '*Storage and Transfer of Materials for Scheduled Activities*' (2004), which will minimise the potential for contamination of soil/groundwater.
Site Name (site code)	**North Dublin Bay SAC (Site Code 000206)**
Distance To (km)	Approximately 2.6 km north of the installation
Conservation Objectives	NPWS (2013) Conservation Objectives: North Dublin Bay SAC 000206. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
Qualifying Interests (* denotes a priority habitat)	**Assessment**
Habitats [1140] Tidal Mudflats and Sandflats [1210] Annual Vegetation of Drift Lines [1310] *Salicornia* Mud [1330] Atlantic Salt Meadows [1410] Mediterranean Salt Meadows [2110] Embryonic Shifting Dunes [2120] Marram Dunes (White Dunes) [2130] Fixed Dunes (Grey Dunes)* [2190] Humid Dune Slacks [1395] Petalwort (*Petalophyllum ralfsii*)	**<u>Emissions to sewer/storm water</u>** There are no process emissions to sewer pathway between the installation and the SAC. Overflow from the stormwater attenuation tank discharges to the neighbouring Ringsend Municipal Wastewater Treatment Plant (MWWTP) which ultimately discharges to the Dublin Bay following treatment in the Ringsend MWWTP. *Mitigation* The RD requires the licensee to maintain the storm water/drainage system. The RD also requires that the storm water discharge is visually inspected and monitored for pH and TOC prior to discharge to Ringsend MWWTP, in accordance with *Schedule C.2.3 Monitoring of Storm Water Emissions.* **<u>Emissions to Water</u>** Cooling water from the installation is discharged to the Liffey Estuary via emission point reference number SW-1. The main potential for impact would arise from changes in water quality which could affect the habitats directly. *Mitigation* The RD, as proposed, requires that the following controls are in place to protect the qualifying interests of the SAC: • Emissions may be made from specified emission points set out in *Schedule B: Emission Limits*, subject to compliance with the Emission Limit Values specified in that Schedule. • The licensee shall maintain silt traps and oil separators at the installation.

	• Limits have been set to achieve the environmental objectives of the European Communities Environmental Objectives (Surface Waters) Regulations 2009 including protected area objectives for conservation areas. • Condition 3 of the RD requires that all tank, container and drum storage areas shall be rendered impervious to the materials stored therein. **<u>Emissions to Air</u>** There are main emission points to air (see emissions to air section of this report). There is potential for diffuse emissions during operational phases of the activities. The main potential for impact would arise from changes in air quality which could affect the habitats and species directly. Refer to emissions to air section of this Inspector's report. Air dispersion modelling demonstrates that the impact of emissions from the installation will be below the relevant air quality standards and standards for protection of vegetation (refer to emissions to air section). *Mitigation* The RD, as proposed, requires that the following controls are in place to protect the qualifying interests of the SAC: • Emissions may be made from specified emission points set out in *Schedule B: Emission Limits*, subject to compliance with the Emission Limit Values specified in that Schedule. • The licence requires the licensee to prepare and implement a programme for the identification and reduction of diffuse emissions using all appropriate techniques listed in BAT 21 of CID 2019/2010. • Maintenance of negative air pressure at the waste reception, waste bunker, waste storage and incinerator residue/loading areas of the incineration plant to ensure no significant escape of odours and dust. **<u>Potential for Accidents to Arise</u>** There is the potential for accident/hazardous and emergency situations arising from the operation of this installation which could affect the habitats. Refer to prevention of accidents and cessation of activity sections of this Inspector's report. *Mitigation* The RD, as proposed, requires that the following controls are in place to protect the qualifying interests of the SAC: • A documented Accident Prevention Procedure is in place that addresses hazards on-site, particularly in relation to the prevention of accidents with a possible impact on the environment. • A documented Emergency Response Procedure in place that addresses any emergency situation on-site which should include provision for minimising the effects of any emergency on the environment.

	• All tank, container and drum storage areas shall be rendered impervious to the materials stored therein. Bunds shall be designed having regard to Agency guidelines '*Storage and Transfer of Materials for Scheduled Activities*' (2004), which will minimise the potential for contamination of soil/groundwater.
Site Name (site code)	**North Bull Island SPA (Site Code 004006)**
Distance To (km)	Approximately 2.7 km north of the installation
Conservation Objectives	NPWS (2015) Conservation Objectives: North Bull Island SPA 004006. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
Qualifying Interests **(* denotes a priority habitat)**	**Assessment**
Birds A160 Curlew (*Numenius arquata*) A149 Dunlin (*Calidris alpina*) A157 Bar-tailed Godwit (*Limosa lapponica*) A162 Redshank (*Tringa totanus*) A179 Black-headed Gull (*Chroicocephalus ridibundus*) A144 Sanderling (*Calidris alba*) A156 Black-tailed Godwit (*Limosa limosa*) A143 Knot (*Calidris canutus*) A169 Turnstone (*Arenaria interpres*) A054 Pintail (*Anas acuta*) A046 Light-bellied Brent Goose (*Branta bernicla hrota*) A048 Shelduck (*Tadorna tadorna*) A052 Teal (*Anas crecca*) A141 Grey Plover (*Pluvialis squatarola*) A056 Shoveler (*Anas clypeata*) A130 Oystercatcher (*Haematopus ostralegus*)	The potential for impacts on the qualifying interests of the SPA include degradation of air and water quality upon which their conservation status depends and noise disturbance. **<u>Emissions to sewer/storm water</u>** There are no process emissions to sewer pathway between the installation and SPA. Overflow from the stormwater attenuation tank discharges to the neighbouring Ringsend Municipal Wastewater Treatment Plant (MWWTP) which ultimately discharges to the Dublin Bay following treatment in the Ringsend MWWTP. *Mitigation* The RD requires the licensee to maintain the storm water/drainage system. The RD also requires that the storm water discharge is visually inspected and monitored for pH and TOC prior to discharge to Ringsend MWWTP, in accordance with *Schedule C.2.3 Monitoring of Storm Water Emissions.* **<u>Emissions to Water</u>** Discharges to Dublin Bay include cooling water from the installation, discharged to the Liffey Estuary via emission point reference number SW-1. The main potential for impact would arise from changes in water quality which could affect the habitats and species directly or could affect the water dependent prey on which the qualifying species depend. *Mitigation* The RD, as proposed, requires that the following controls are in place to protect the qualifying interests of the SPA: • Emissions may be made from specified emission points set out in *Schedule B: Emission Limits*, subject to compliance with the Emission Limit Values specified in that Schedule. • The licensee shall maintain silt traps and oil separators at the installation. • Limits have been set to achieve the environmental objectives of the European Communities Environmental Objectives (Surface Waters) Regulations 2009 including protected area objectives for conservation areas.

A140 Golden Plover (*Pluvialis apricaria*) **Habitats** Wetlands	• Condition 3 of the RD requires that all tank, container and drum storage areas shall be rendered impervious to the materials stored therein. **<u>Emissions to Air</u>** There are main emission points to air (see emissions to air section of this report). There is potential for diffuse emissions during operational phases of the activities. The main potential for impact would arise from changes in air quality which could affect the habitats and species directly. Refer to emissions to air section of this Inspector's report. Air dispersion modelling demonstrates that the impact of emissions from the installation will be below the relevant air quality standards and standards for protection of vegetation (refer to emissions to air section). Noise modelling demonstrates that the activities can comply with the limits specified in the licence to avoid any disturbance of qualifying interests (refer to noise section of this report). *Mitigation* The RD, as proposed, requires that the following controls are in place to protect the qualifying interests of the SPA: • Emissions may be made from specified emission points set out in *Schedule B: Emission Limits*, subject to compliance with the Emission Limit Values specified in that Schedule. • The licence requires the licensee to prepare and implement a programme for the identification and reduction of diffuse emissions using all appropriate techniques listed in BAT 21 of CID 2019/2010. • Maintenance of negative air pressure at the waste reception, waste bunker, waste storage and incinerator residue/loading areas of the incineration plant to ensure no significant escape of odours and dust. • The licence specifies noise emission limit values at any noise sensitive locations. The licensee shall carry out a noise survey as required by the Agency. **<u>Potential for Accidents to Arise</u>** There is the potential for accident/hazardous and emergency situations arising from the operation of this installation which could affect the habitats. Refer to prevention of accidents and cessation of activity sections of this Inspector's report. *Mitigation* The RD, as proposed, requires that the following controls are in place to protect the qualifying interests of the SPA: • A documented Accident Prevention Procedure is in place that addresses hazards on-site, particularly in relation to the prevention of accidents with a possible impact on the environment.

	• A documented Emergency Response Procedure in place that addresses any emergency situation on-site which should include provision for minimising the effects of any emergency on the environment. • All tank, container and drum storage areas shall be rendered impervious to the materials stored therein. Bunds shall be designed having regard to Agency guidelines '*Storage and Transfer of Materials for Scheduled Activities*' (2004), which will minimise the potential for contamination of soil/groundwater.
Site Name (site code)	**Rockabill to Dalkey Island SAC (Site Code 003000)**
Distance To (km)	Approximately 7.4 km south of the installation
Conservation Objectives	NPWS (2013) Conservation Objectives: Rockabill to Dalkey Island SAC 003000. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
Qualifying Interests **(* denotes a priority habitat)**	**Assessment**
Habitats 1170 Reefs **Species** 1351 Harbour Porpoise *(Phocoena phocoena)*	The potential for impacts on the qualifying interests of the SAC include degradation of air and water quality upon which their conservation status depends and noise disturbance. **<u>Emissions to sewer/storm water</u>** There are no process emissions to sewer pathway between the installation and SAC. Overflow from the stormwater attenuation tank discharges to the neighbouring Ringsend Municipal Wastewater Treatment Plant (MWWTP), which ultimately discharges to Dublin Bay following treatment in the Ringsend MWWTP. *Mitigation* The RD requires the licensee to maintain the storm water/drainage system. The RD also requires that the storm water discharge is visually inspected and monitored for pH and TOC prior to discharge to Ringsend MWWTP, in accordance with *Schedule C.2.3 Monitoring of Storm Water Emissions.* **<u>Emissions to Water</u>** Discharges to Dublin Bay include cooling water from the installation, which is discharged to the Liffey Estuary via emission point reference number SW-1. The main potential for impact would arise from changes in water quality which could affect the habitats and species directly or could affect the water dependent prey on which the qualifying species depend. *Mitigation* The RD, as proposed, requires that the following controls are in place to protect the qualifying interests of the SAC: • Emissions may be made from specified emission points set out in *Schedule B: Emission Limits*, subject to compliance with the Emission Limit Values specified in that Schedule.

	• The licensee shall maintain silt traps and oil separators at the installation. • Limits have been set to achieve the environmental objectives of the European Communities Environmental Objectives (Surface Waters) Regulations 2009 including protected area objectives for conservation areas. • Condition 3 of the RD requires that all tank, container and drum storage areas shall be rendered impervious to the materials stored therein. Bunds shall be designed having regard to Agency guidelines '*Storage and Transfer of Materials for Scheduled Activities*' (2004), which will minimise the potential for contamination of soil/groundwater. **Emissions to Air** There are main emission points to air (see emissions to air section of this report). There is potential for diffuse emissions during operational phases of the activities. The main potential for impact would arise from changes in air quality which could affect the habitats and species directly. Refer to emissions to air section of this Inspector's report. Air dispersion modelling demonstrates that the impact of emissions from the installation will be below the relevant air quality standards and standards for protection of vegetation (refer to emissions to air section). Noise modelling demonstrates that the activities can comply with the limits specified in the licence to avoid any disturbance of qualifying interests (refer to noise section of this report). *Mitigation* The RD, as proposed, requires that the following controls are in place to protect the qualifying interests of the SAC: • Emissions may be made from specified emission points set out in *Schedule B: Emission Limits*, subject to compliance with the Emission Limit Values specified in that Schedule. • The licence requires the licensee to prepare and implement a programme for the identification and reduction of diffuse emissions using all appropriate techniques listed in BAT 21 of CID 2019/2010. • The licence specifies noise emission limit values at noise sensitive locations. The licensee shall carry out a noise survey as required by the Agency. **Potential for Accidents to Arise** There is the potential for accident/hazardous and emergency situations arising from the operation of this installation which could affect the habitats. Refer to prevention of accidents and cessation of activity sections of this Inspector's report. *Mitigation* The RD, as proposed, requires that the following controls are in place to protect the qualifying interests of the SAC:

	• A documented Accident Prevention Procedure is in place that addresses hazards on-site, particularly in relation to the prevention of accidents with a possible impact on the environment. • A documented Emergency Response Procedure in place that addresses any emergency situation on-site which should include provision for minimising the effects of any emergency on the environment. • All tank, container and drum storage areas shall be rendered impervious to the materials stored therein. Bunds shall be designed having regard to Agency guidelines '*Storage and Transfer of Materials for Scheduled Activities*' (2004), which will minimise the potential for contamination of soil/groundwater.
Site Name (site code)	**Howth Head SAC (Site Code 000202)**
Distance To (km)	Approximately 7.7 km north of the installation
Conservation Objectives	NPWS (2016) Conservation Objectives: Howth Head SAC 000202. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs.
Qualifying Interests (* denotes a priority habitat)	**Assessment**
Habitats 1230 Vegetated sea cliffs of the Atlantic and Baltic coasts 4030 European dry heaths	The potential for impacts on the qualifying interests of the SAC include degradation of air. **Emissions to sewer/storm water** Howth Head SAC lies outside the zone of influence of the storm water emissions from the installation. **Emissions to Water** Howth Head SAC lies outside the zone of influence of the cooling water discharge to the Liffey Estuary from the installation. **Emissions to Air** There are main emission points to air (see emissions to air section of this report). There is potential for diffuse emissions during operational phases of the activities. The main potential for impact would arise from changes in air quality which could affect the habitats and species directly. Refer to emissions to air section of this Inspector's report. Air dispersion modelling demonstrates that the impact of emissions from the installation will be below the relevant air quality standards and standards for protection of vegetation (refer to emissions to air section). *Mitigation* The RD, as proposed, requires that the following controls are in place to protect the qualifying interests of the SAC: • Emissions may be made from specified emission points set out in *Schedule B: Emission Limits*, subject to compliance with the Emission Limit Values specified in that Schedule.

	• The licence requires the licensee to prepare and implement a programme for the identification and reduction of diffuse emissions using all appropriate techniques listed in BAT 21 of CID 2019/2010. **<u>Potential for Accidents to Arise</u>** There is the potential for accident/hazardous and emergency situations arising from the operation of this installation which could affect the habitats. Refer to prevention of accidents and cessation of activity sections of this Inspector's report. *Mitigation* The RD, as proposed, requires that the following controls are in place to protect the qualifying interests of the SAC: • A documented Accident Prevention Procedure is in place that addresses hazards on-site, particularly in relation to the prevention of accidents with a possible impact on the environment. • A documented Emergency Response Procedure in place that addresses any emergency situation on-site which should include provision for minimising the effects of any emergency on the environment. • All tank, container and drum storage areas shall be rendered impervious to the materials stored therein. Bunds shall be designed having regard to Agency guidelines '*Storage and Transfer of Materials for Scheduled Activities*' (2004), which will minimise the potential for contamination of soil/groundwater.
Site Name (site code)	**Howth Head Coast SPA (Site Code 004113)**
Distance To (km)	Approximately 10.1 km north of the installation
Conservation Objectives	NPWS (2022) Conservation objectives for Howth Head Coast SPA [004113]. First Order Site-specific Conservation Objectives Version 1.0. Department of Housing, Local Government and Heritage.
Qualifying Interests (* denotes a priority habitat)	**Assessment**
Birds A188 Kittiwake (*Rissa tridactyla*)	The potential for impacts on the qualifying interests of the SPA include degradation of air. **<u>Emissions to sewer/storm water</u>** Howth Head Coast SPA lies outside the zone of influence of the storm water emissions from the installation. **<u>Emissions to Water</u>** Howth Head Coast SPA lies outside the zone of influence of the cooling water discharge to the Liffey Estuary from the installation. **<u>Emissions to Air</u>**

	There are main emission points to air (see emissions to air section of this report). There is potential for diffuse emissions during operational phases of the activities. The main potential for impact would arise from changes in air quality which could affect the species directly. Refer to the emissions to air section of this Inspector's report. Air dispersion modelling demonstrates that the impact of emissions from the installation will be below the relevant air quality standards and standards for protection of vegetation (refer to emissions to air section). *Mitigation* The RD, as proposed, requires that the following controls are in place to protect the qualifying interests of the SPA: • Emissions may be made from specified emission points set out in *Schedule B: Emission Limits*, subject to compliance with the Emission Limit Values specified in that Schedule. • The licence requires the licensee to prepare and implement a programme for the identification and reduction of diffuse emissions using all appropriate techniques listed in BAT 21 of CID 2019/2010. **<u>Potential for Accidents to Arise</u>** There is the potential for accident/hazardous and emergency situations arising from the operation of this installation which could affect the habitats. Refer to prevention of accidents and cessation of activity sections of this Inspector's report. *Mitigation* The RD, as proposed, requires that the following controls are in place to protect the qualifying interests of the SPA: • A documented Accident Prevention Procedure is in place that addresses hazards on-site, particularly in relation to the prevention of accidents with a possible impact on the environment. • A documented Emergency Response Procedure in place that addresses any emergency situation on-site which should include provision for minimising the effects of any emergency on the environment. • All tank, container and drum storage areas shall be rendered impervious to the materials stored therein. Bunds shall be designed having regard to Agency guidelines '*Storage and Transfer of Materials for Scheduled Activities*' (2004), which will minimise the potential for contamination of soil/groundwater.
Site Name (site code)	**Baldoyle Bay SAC (Site Code 000199)**
Distance To (km)	Approximately 8.1 km north of the installation
Conservation Objectives	NPWS (2012) Conservation Objectives: Baldoyle Bay SAC 000199. Version 1.0. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht
Qualifying Interests (* denotes a priority habitat)	**Assessment**

Habitats 1140 Mudflats and sandflats not covered by seawater at low tide 1310 *Salicornia* and other annuals colonising mud and sand 1330 Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) 1410 Mediterranean salt meadows (*Juncetalia maritimi*)	The potential for impacts on the qualifying interests of the SAC include degradation of air. **Emissions to sewer/storm water** Baldoyle Bay SAC lies outside the zone of influence of the storm water emissions from the installation. **Emissions to Water** Baldoyle Bay SAC lies outside the zone of influence of the cooling water discharge to the Liffey Estuary from the installation. **Emissions to Air** There are main emission points to air (see emissions to air section of this report). There is potential for diffuse emissions during operational phases of the activities. The main potential for impact would arise from changes in air quality which could affect the qualifying interests directly. Refer to the emissions to air section of this Inspector's report. Air dispersion modelling demonstrates that the impact of emissions from the installation will be below the relevant air quality standards and standards for protection of vegetation (refer to emissions to air section). *Mitigation* The RD, as proposed, requires that the following controls are in place to protect the qualifying interests of the SAC: • Emissions may be made from specified emission points set out in *Schedule B: Emission Limits*, subject to compliance with the Emission Limit Values specified in that Schedule. • The licence requires the licensee to prepare and implement a programme for the identification and reduction of diffuse emissions using all appropriate techniques listed in BAT 21 of CID 2019/2010. **Potential for Accidents to Arise** There is the potential for accident/hazardous and emergency situations arising from the operation of this installation which could affect the habitats. Refer to prevention of accidents and cessation of activity sections of this Inspector's report. *Mitigation* The RD, as proposed, requires that the following controls are in place to protect the qualifying interests of the SAC: • A documented Accident Prevention Procedure is in place that addresses hazards on-site, particularly in relation to the prevention of accidents with a possible impact on the environment. • A documented Emergency Response Procedure in place that addresses any emergency situation on-site which should include provision for minimising the effects of any emergency on the environment.

	• All tank, container and drum storage areas shall be rendered impervious to the materials stored therein. Bunds shall be designed having regard to Agency guidelines '*Storage and Transfer of Materials for Scheduled Activities*' (2004), which will minimise the potential for contamination of soil/groundwater.
Site Name (site code)	**Baldoyle Bay SPA (Site Code 004016)**
Distance To (km)	Approximately 8.1 km north of the installation
Conservation Objectives	NPWS (2013) Conservation Objectives: Baldoyle Bay SPA 004016. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
Qualifying Interests (* denotes a priority habitat)	**Assessment**
Birds A137 Ringed Plover *(Charadrius hiaticula)* A048 Shelduck *(Tadorna tadorna)* A140 Golden Plover *(Pluvialis apricaria)* A157 Bar-tailed Godwit *(Limosa lapponica)* A141 Grey Plover *(Pluvialis squatarola)* A046 Light-bellied Brent Goose *(Branta bernicla hrota)* **Habitats** Wetlands	The potential for impacts on the qualifying interests of the SPA include degradation of air. **Emissions to sewer/storm water** Baldoyle Bay SPA lies outside the zone of influence of the storm water emissions from the installation. **Emissions to Water** Baldoyle Bay SPA lies outside the zone of influence of the cooling water discharge to the Liffey Estuary from the installation. **Emissions to Air** There are main emission points to air (see emissions to air section of this report). There is potential for diffuse emissions during operational phases of the activities. The main potential for impact would arise from changes in air quality which could affect the qualifying interests directly. Refer to emissions to air section of this Inspector's report. Air dispersion modelling demonstrates that the impact of emissions from the installation will be below the relevant air quality standards and standards for protection of vegetation (refer to emissions to air section). *Mitigation* The RD, as proposed, requires that the following controls are in place to protect the qualifying interests of the SPA: • Emissions may be made from specified emission points set out in *Schedule B: Emission Limits*, subject to compliance with the Emission Limit Values specified in that Schedule. • The licence requires the licensee to prepare and implement a programme for the identification and reduction of diffuse emissions using all appropriate techniques listed in BAT 21 of CID 2019/2010. **Potential for Accidents to Arise** There is the potential for accident/hazardous and emergency situations arising from the operation of this installation which could affect the habitats. Refer to prevention of accidents and cessation of activity sections of this Inspector's report.

	Mitigation The RD, as proposed, requires that the following controls are in place to protect the qualifying interests of the SPA: • A documented Accident Prevention Procedure is in place that addresses hazards on-site, particularly in relation to the prevention of accidents with a possible impact on the environment. • A documented Emergency Response Procedure in place that addresses any emergency situation on-site which should include provision for minimising the effects of any emergency on the environment. • All tank, container and drum storage areas shall be rendered impervious to the materials stored therein. Bunds shall be designed having regard to Agency guidelines '*Storage and Transfer of Materials for Scheduled Activities*' (2004), which will minimise the potential for contamination of soil/groundwater.
Site Name (site code)	**Dalkey Islands SPA (Site Code 004172)**
Distance To (km)	Approximately 9.7 km south of the installation
Conservation Objectives	NPWS (2022) Conservation objectives for Dalkey Islands SPA [004172]. First Order Site-specific Conservation Objectives Version 1.0 Department of Housing, Local Government and Heritage.
Qualifying Interests (* denotes a priority habitat)	**Assessment**
Birds A194 Arctic Tern *(Sterna paradisaea)* A193 Common Tern *(Sterna hirundo)* A192 Roseate Tern *(Sterna dougallii)*	The potential for impacts on the qualifying interests of the SPA include degradation of air. **<u>Emissions to sewer/storm water</u>** Dalkey Islands SPA lies outside the zone of influence of the storm water emissions from the installation. **<u>Emissions to Water</u>** Dalkey Islands SPA lies outside the zone of influence of the cooling water discharge to the Liffey Estuary from the installation. **<u>Emissions to Air</u>** There are main emission points to air (see emissions to air section of this report). There is potential for diffuse emissions during operational phases of the activities. The main potential for impact would arise from changes in air quality which could affect the qualifying interests directly. Refer to emissions to air section of this Inspector's report. Air dispersion modelling demonstrates that the impact of emissions from the installation will be below the relevant air quality standards and standards for protection of vegetation (refer to emissions to air section). *Mitigation*

	The RD, as proposed, requires that the following controls are in place to protect the qualifying interests of the SPA: • Emissions may be made from specified emission points set out in *Schedule B: Emission Limits*, subject to compliance with the Emission Limit Values specified in that Schedule. • The licence requires the licensee to prepare and implement a programme for the identification and reduction of diffuse emissions using all appropriate techniques listed in BAT 21 of CID 2019/2010. **<u>Potential for Accidents to Arise</u>** There is the potential for accident/hazardous and emergency situations arising from the operation of this installation which could affect the habitats. Refer to prevention of accidents and cessation of activity sections of this Inspector's report. *Mitigation* The RD, as proposed, requires that the following controls are in place to protect the qualifying interests of the SPA: • A documented Accident Prevention Procedure is in place that addresses hazards on-site, particularly in relation to the prevention of accidents with a possible impact on the environment. • A documented Emergency Response Procedure in place that addresses any emergency situation on-site which should include provision for minimising the effects of any emergency on the environment. • All tank, container and drum storage areas shall be rendered impervious to the materials stored therein. Bunds shall be designed having regard to Agency guidelines '*Storage and Transfer of Materials for Scheduled Activities*' (2004), which will minimise the potential for contamination of soil/groundwater.
Site Name (site code)	**Ireland's Eye SAC (Site Code 002193)**
Distance To (km)	Approximately 11.4 km north of the installation
Conservation Objectives	NPWS (2017) Conservation Objectives: Ireland's Eye SAC 002193. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs
Qualifying Interests (* denotes a priority habitat)	**Assessment**
Birds 1220 Perennial vegetation of stony banks 1230 Vegetated sea cliffs of the Atlantic and Baltic coasts	Ireland's Eye SAC lies outside the zone of influence of the emissions to air emissions from the installation.
Site Name (site code)	**Ireland's Eye SPA (Site Code 004117)**
Distance To (km)	Approximately 11.2 km north of the installation

Conservation Objectives	NPWS (2022) Conservation objectives for Ireland's Eye SPA [004117]. Generic Version 9.0. Department of Housing, Local Government and Heritage. CO004117.pdf (npws.ie)
Qualifying Interests (* denotes a priority habitat)	**Assessment**
Birds A017 Cormorant (*Phalacrocorax carbo)* A184 Herring *Gull (Larus argentatus)* A188 Kittiwake (*Rissa tridactyla)* A199 Guillemot (*Uria aalge*) A200 Razorbill (*Alca torda)*	Ireland's Eye SPA lies outside the zone of influence of the emissions to air, water and noise emissions from the installation.
Site Name (site code)	**Malahide Estuary SAC (Site Code 000205)**
Distance To (km)	Approximately 11.7 km north of the installation
Conservation Objectives	NPWS (2013) Conservation Objectives: Malahide Estuary SAC 000205. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht
Qualifying Interests (* denotes a priority habitat)	**Assessment**
Habitats 1140 Mudflats and sandflats not covered by seawater at low tide 1310 *Salicornia* and other annuals colonising mud and sand 1330 Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) 1410 Mediterranean salt meadows (*Juncetalia maritimi*) 2120 Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes) 2130 Fixed coastal dunes with herbaceous vegetation (grey dunes)*	Malahide Estuary SAC lies outside the zone of influence of the emissions to air and water emissions from the installation.

Site Name (site code)	**Malahide Estuary SPA (Site Code 004025)**
Distance To (km)	Approximately 12.4 km north of the installation
Conservation Objectives	NPWS (2013) Conservation Objectives: Malahide Estuary SPA 004025. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.
Qualifying Interests (* denotes a priority habitat)	**Assessment**
Birds A048 Shelduck *(Tadorna tadorna)* A054 Pintail *(Anas acuta)* A067 Goldeneye *(Bucephala clangula)* A130 Oystercatcher *(Haematopus ostralegus)* A162 Redshank *(Tringa totanus)* A143 Knot *(Calidris canutus)* A157 Bar-tailed Godwit *(Limosa lapponica)* A156 Black-tailed Godwit *(Limosa limosa)* A140 Golden Plover *(Pluvialis apricaria)* A046 Light-bellied Brent Goose *(Branta bernicla hrota)* A149 Dunlin *(Calidris alpina)* A141 Grey Plover *(Pluvialis squatarola)* A069 Red-breasted Merganser *(Mergus serrator)* A005 Great Crested Grebe *(Podiceps cristatus)* **Habitats** Wetlands	Malahide Estuary SPA lies outside the zone of influence of the emissions to air, water and noise emissions from the installation.
Site Name (site code)	**Wicklow Mountains SAC (Site Code 002122)**
Distance To (km)	Approximately 12.5 km south of the installation

Conservation Objectives	NPWS (2017) Conservation Objectives: Wicklow Mountains SAC 002122. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs.
Qualifying Interests (* denotes a priority habitat)	**Assessment**
Habitats [3110] Oligotrophic Waters containing very few minerals [3160] Dystrophic Lakes [4010] Wet Heath [4030] Dry Heath [4060] Alpine and Subalpine Heaths [6130] Calaminarian Grassland [6230] Species-rich *Nardus* Grassland* [7130] Blanket Bogs (Active)* [8110] Siliceous Scree [8210] Calcareous Rocky Slopes [8220] Siliceous Rocky Slopes [91A0] Old Oak Woodlands [1355] Otter (*Lutra lutra*)	Wicklow Mountains SAC lies outside the zone of influence of the emissions to air and noise emissions from the installation.
Site Name (site code)	**Wicklow Mountains SPA (Site Code 004040)**
Distance To (km)	Approximately 12.7 km south of the installation
Conservation Objectives	NPWS (2022) Conservation objectives for Wicklow Mountains SPA [004040]. First Order Site-specific Conservation Objectives Version 1.0. Department of Housing, Local Government and Heritage.
Qualifying Interests (* denotes a priority habitat)	**Assessment**
Birds A098 Merlin (*Falco columbarius*) A103 Peregrine *(Falco peregrinus)*	Wicklow Mountains SPA lies outside the zone of influence of the emissions to air and noise emissions from the installation.
Site Name (site code)	**Knocksink Wood SAC (Site Code 00725)**
Distance To (km)	Approximately 14.1 km south of the installation
Conservation Objectives	NPWS (2021) Conservation Objectives: Knocksink Wood SAC 000725. Version 1. National Parks and Wildlife Service, Department of Housing, Local Government and Heritage.
Qualifying Interests (* denotes a priority habitat)	**Assessment**

Habitats 7220 Petrifying springs with tufa formation (Cratoneurion)* 91A0 Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles 91E0 Alluvial forests with *Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae)**	Knocksink Wood SAC lies outside the zone of influence of the emissions to air emissions from the installation.
Site Name (site code)	**Glenasmole Valley SAC (Site Code 001209)**
Distance To (km)	Approximately 14.3 km south of the installation
Conservation Objectives	NPWS (2021) Conservation Objectives: Glenasmole Valley SAC 001209. Version 1. National Parks and Wildlife Service, Department of Housing, Local Government and Heritage.
Qualifying Interests (* denotes a priority habitat)	**Assessment**
Habitats 6210 Semi-natural dry grasslands and scrubland facies on calcareous substrates (*Festuco-Brometalia*) (* important orchid sites) 6410 *Molinia* meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*) 7220 Petrifying springs with tufa formation (C*ratoneurio*n)	Glenasmole Valley SAC lies outside the zone of influence of the emissions to air emissions from the installation.
Site Name (site code)	**Ballyman Glen SAC (Site Code 000713)**
Distance To (km)	Approximately 14.7 km south of the installation
Conservation Objectives	NPWS (2019) Conservation Objectives: Ballyman Glen SAC 000713. Version 1. National Parks and Wildlife Service, Department of Culture, Heritage and the Gaeltacht.
Qualifying Interests (* denotes a priority habitat)	**Assessment**

Habitats [7220] Petrifying Springs* [7230] Alkaline Fens	Ballyman Glen SAC lies outside the zone of influence of the emissions to air emissions from the installation.

Appendix 3 Relevant Legislation

The following European instruments are regarded as relevant to this application assessment and have been considered in the drafting of the Recommended Determination.
Industrial Emissions Directive (IED) (2010/75/EU)
Environmental Impact Assessment (EIA) Directive (2011/92/EU as amended by 2014/52/EU)
Habitats Directive (92/43/EEC) & Birds Directive (79/409/EC)
Water Framework Directive [2000/60/EC]
Waste Framework Directive (2008/98/EC)
Air Quality Directives (2008/50/EC and 2004/107/EC)
Energy Efficiency Directive (2018/2002/EU)
Environmental Liability Directive (2004/35/CE)
Medium Combustion Plant Directive (EU) 2015/2193

Appendix 4 Relevant CID, BAT and BREF

Appendix 4 (a): Waste Incineration CID (2019/2010) BAT Conclusions, and BAT compliance Condition/Schedule in the RD.

BAT requirements not relevant to the site are annotated as not applicable.

BAT Conclusions for waste incineration		
BAT No.	BAT Requirement	Condition/Schedule
1.	Environmental Management System	Condition 2.2.2 / Amendments to Condition 2.2.2
2.	Determine gross electrical efficiency, gross energy efficiency or boiler efficiency	Condition 7
3.	Monitor key process parameters for emissions to water	Condition 6 and Schedule C
4.	Monitoring of emissions to air	Condition 6 and Schedule C
5.	Monitoring of emissions to air during OTNOC	Schedule C
6.	Monitor emissions to water from FGC and/or bottom ash treatment	Not applicable
7.	Monitor content of unburnt substances in slags and bottom ashes	*Schedule C.8*
8.	Analysis of hazardous waste	Not applicable
9.	Waste stream management techniques	Condition 2.2.2
10.	Output quality management for bottom ash treatment plant	Not applicable
11.	Monitor waste deliveries as part of waste acceptance procedures	Condition 2.2.2, Condition 8 Material Handling, Condition 11, *Schedule A.2 Waste Acceptance*
12.	Reception, handling and storage of waste	Condition 8 Waste and Materials storage plan. Condition 8 Waste storage and holding practices
13.	Storage and handling of clinical waste	Not applicable
14.	Reduce content of unburnt substances in slags and bottom ashes and reduce emissions to air. BAT- AEPLs for TOC or loss on ignition	*Condition 3 and Schedule C.4 Monitoring of Incinerator residues, C.8 Environmental Performance Levels*
15.	Procedures for the adjustment of plant settings to control performance	Condition 3
16.	Operational procedures to limit shutdown and start-up operations	Condition 3
17.	Appropriate design, operation and maintenance of Flue-gas cleaning (FGC) system	Condition 3

18.	OTNOC management plan	Condition 2 EMS
19.	Use of heat recovery boiler	Condition 7
20.	Measures to increase energy efficiency and BAT-AEEL	Condition 7
21.	Measure to prevent or reduce diffuse emissions including odour	Condition 3 and 6
22.	Diffuse emissions of volatile compounds from handling of gaseous and liquid wastes	Not applicable
23.	Management system to prevent or reduce diffuse dust emissions to air from the treatment of slags and bottom ash	Condition 2 EMS
24.	Techniques to prevent or reduce diffuse dust emissions to air from the treatment of slags and bottom ash	Not applicable
25.	Reduction of channelled dust emission to air (dust, metals and metalloids) and compliance with BAT-AELs	*Schedule B Emissions to air and Schedule C Control and Monitoring*
26.	Reduction of channelled dust emission to air from the enclosed treatment of slags and bottom ashes and compliance with BAT-AEL	Not applicable
27.	Techniques to reduce channelled emissions to air (HCl, HF and SO_2) techniques	Condition 3 and *Schedule C*
28.	Techniques to reduce channelled peak emissions to air (HCl, HF and SO_2), optimise reagent use and compliance with BAT-AELs	*Schedule B and Schedule C*
29.	Techniques to reduce channelled emissions to air of NO_x, N_2O and NH_3 and compliance with BAT-AELs	*Schedule B and Schedule C*
30.	Techniques to reduce channelled emissions to air of organic compounds including dioxins/furans and PCBs and compliance with BAT-AELs	*Schedule B and Schedule C*
31.	Techniques to reduce channelled emissions to air of mercury and compliance with BAT-AELs	*Schedule B and Schedule C*
32.	Segregate waste water streams to prevent contamination	Condition 7
33.	Techniques to reduce water usage and prevent or reduce the generation of waste water	Condition 7
34.	Techniques to reduce emissions to water from FGC and/or from storage and treatment of slags and bottom ashes and compliance with BAT-AELs	Not applicable

35.	Handle and treat bottom ashes separately from FGC residues	Condition 2 EMS Residue Management Plan, Condition 8.
36.	Techniques for the treatment of slags and bottom ashes	Not applicable
37.	Techniques to prevent or reduce noise emissions	Condition 6, *Schedule B.4 and Schedule C.5*

Appendix 4(b) Other CIDs/BREF/BAT documents relevant to this assessment

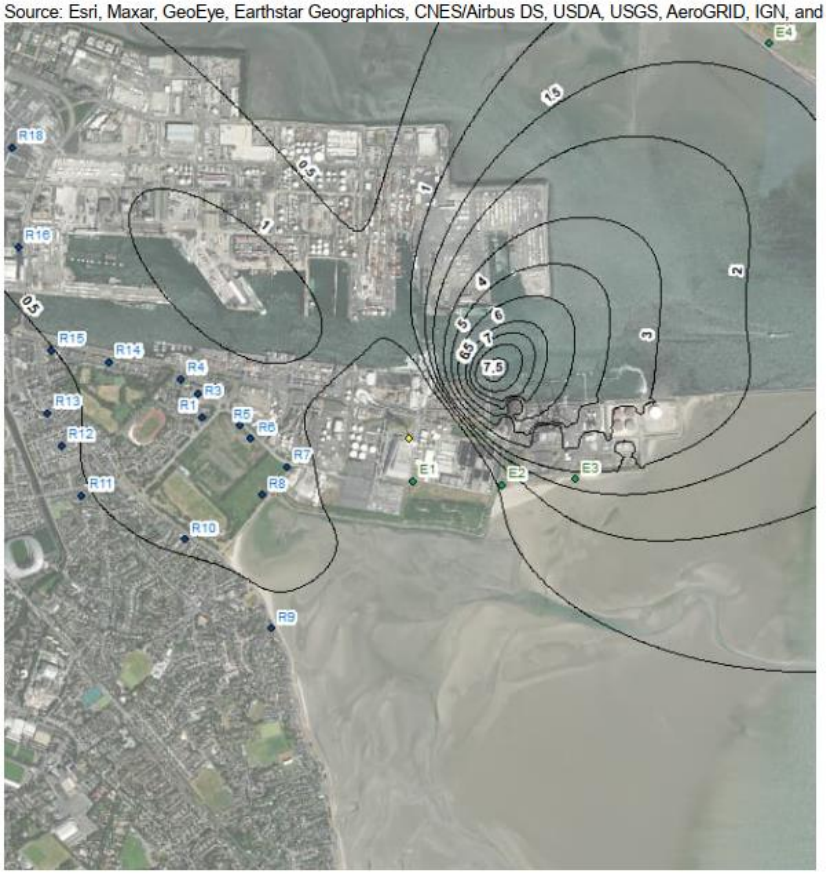
Commission Implementing Decisions	Publication Date
COMMISSION IMPLEMENTING DECISION of 12 November 2019 establishing the best available techniques (BAT) conclusions, under Directive 2010/75/EU of the European Parliament and of the Council, for waste incineration ((EU) 2019/2010)	December 2019
Horizontal BREF	**Publication date**
Reference Document on the Best Available Techniques on Emissions from Storage	July 2006
Reference Document on the Best Available Techniques for Energy Efficiency	February 2009
Reference Document on the application of Best Available Techniques to Industrial Cooling Systems	December 2001

Appendix 5 (a) Air dispersion modelling contour plots

Figure 1: Annual Mean NO_2 Process contribution (with buildings scenario) 2015

Figure 4.1 Annual Mean NO_2 Process Contribution (with buildings scenario) 2015

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



Prepared for: Dublin Waste to Energy Limited

Source: Applicant RFI response received 02/09/2022.

Figure 2: Annual Mean Arsenic Process contribution (with buildings scenario) 2015

Source: Applicant RFI response received 02/09/2022.

Appendix 5 (b) Location of modelled air quality residential and ecologically sensitive receptors

Figure 3: Location of modelled air quality residential and ecologically sensitive receptors

Figure 3.2 Location of Modelled Air Quality Sensitive Receptors

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Source: Applicant RFI response received 02/09/2022.

Appendix 6 Air Emission Limit Values

The relevant emission limit standards for waste incineration are from the BAT conclusions for waste incineration (CID 2019/2010 EU) (BAT Associated Emission Levels (BAT-AEL) and from Chapter VI of the Industrial Emissions Directive (as transposed by the European Union (Waste Incineration Plants and Waste Co-incineration Plants) Regulations 2013 (SI No. 148 of 2013).

Emission Point Reference Nos.: A2-1 and A2-2 (twin stack emissions, one for each incinerator line)

Parameter	**Units**	**Daily Average**			**BAT-AEL range**
		Existing licence	**ELV in RD**		
Total dust	mg/m^3	10	**5**		<2-5
Total volatile organic carbon, expressed as C (TVOC)	mg/m^3	10 (TOC)	10		<3-10
Hydrogen chloride (HCl)	mg/m^3	10	**8**		<2-8
Hydrogen fluoride (HF)	mg/m^3	1	**<1**		<1
Sulphur dioxide (SO_2)	mg/m^3	50	**40**		5-40
NO_x, expressed as NO_2	mg/m^3	200	**180**		50-150 Note 1
Carbon monoxide (CO)	mg/m^3	50	50		10-50
Ammonia (NH_3)	mg/m^3	10	10		2-10
Parameter		**Periodic**			
		Existing licence	**ELV in RD**		
The sum of Cadmium (as Cd) and thallium (as Tl), and their compounds	mg/m^3	0.05	0.05 Note 2	**0.02** Note 3	0.005-0.02
Mercury (as Hg) and its compounds	mg/m^3	0.05	0.05 Note 2	**0.02** Note 3	<0.005-0.02
The sum of antimony (as Sb), arsenic (as As), lead (as Pb), chromium (as Cr), cobalt (as Co), copper (as Cu), manganese (as Mn), nickel (as Ni), and vanadium (as V) and their compounds	mg/m^3	0.5	0.5 Note 2	**0.3** Note 3	0.01-0.3
Arsenic and its compounds	mg/m^3	0.2	0.2		-
Dioxins/furans (PCDD/F) (I-TEQ)	ng/m^3	0.1	0.1 Note 2	**0.06** Note 3	<0.01-0.06

Note 1: The higher end of the BAT-AEL range is 180 mg/Nm^3 where Selective Catalytic Reduction is not applicable.

Note 2: Emission limit value applicable until 11 November 2023.

Note 3: Emission limit value applicable from 12 November 2023.

Appendix 7 Waste Acceptance

Permitted 66 waste types in the existing licence W0232-01

LOW codes	waste description
02	WASTES FROM AGRICULTURE, HORTICULTURE, AQUACULTURE, FORESTRY, HUNTING AND FISHING, FOOD PREPARATION AND PROCESSING
02 01 03	plant-tissue waste
02 01 04	waste plastics (except packaging)
02 01 07	wastes from forestry
02 02 02	animal-tissue waste
02 02 03	materials unsuitable for consumption or processing
02 03 02	wastes from preserving agents
02 03 03	wastes from solvent extraction
02 03 05	sludges from on-site effluent treatment
02 05 01	materials unsuitable for consumption or processing
02 06 01	materials unsuitable for consumption or processing
02 06 02	wastes from preserving agents
02 07 01	wastes from washing, cleaning and mechanical reduction of raw materials
02 07 02	wastes from spirits distillation
02 07 03	wastes from chemical treatment
02 07 04	materials unsuitable for consumption or processing
02 07 05	sludges from on-site effluent treatment
03	WASTES FROM WOOD PROCESSING AND THE PRODUCTION OF PANELS AND FURNITURE, PULP, PAPER AND CARDBOARD
03 01 01	waste bark and cork
03 01 05	sawdust, shavings, cuttings, wood, particle board and veneer other than those mentioned in 03 01 04
03 03 01	waste bark and wood
03 03 07	mechanically separated rejects from pulping of waste paper and cardboard
03 03 08	wastes from sorting of paper and cardboard destined for recycling
04	WASTES FROM THE LEATHER, FUR AND TEXTILE INDUSTRIES

04 02 09	wastes from composite materials (impregnated textile, elastomer, plastomer)
04 02 10	organic matter from natural products (for example grease, wax)
04 02 15	wastes from finishing other than those mentioned in 04 02 14
04 02 17	dyestuffs and pigments other than those mentioned in 04 02 16
04 02 21	wastes from unprocessed textile fibres
04 02 22	wastes from processed textile fibres
06	WASTES FROM INORGANIC CHEMICAL PROCESSES
06 05 03	sludges from on-site effluent treatment other than those mentioned in 06 05 02
07	WASTES FROM ORGANIC CHEMICAL PROCESSES
07 02 12	sludges from on-site effluent treatment other than those mentioned in 07 02 11
07 02 13	waste plastic
07 05 12	sludges from on-site effluent treatment other than those mentioned in 07 05 11
08	WASTES FROM THE MANUFACTURE, FORMULATION, SUPPLY AND USE (MFSU) OF COATINGS (PAINTS, VARNISHES AND VITREOUS ENAMELS), ADHESIVES, SEALANTS AND PRINTING INKS
08 01 12	waste paint and varnish other than those mentioned in 08 01 11
08 01 18	wastes from paint or varnish removal other than those mentioned in 08 01 17
08 01 20	aqueous suspensions containing paint or varnish other than those mentioned in 08 01 19
08 03 08	aqueous liquid waste containing ink
08 03 13	waste ink other than those mentioned in 08 03 12
08 04 10	waste adhesives and sealants other than those mentioned in 08 04 09
08 04 16	aqueous liquid waste containing adhesives or sealants other than those mentioned in 08 04 15
12	WASTES FROM SHAPING AND PHYSICAL AND MECHANICAL SURFACE TREATMENT OF METALS AND PLASTICS
12 01 05	plastics shavings and turnings
15	WASTE PACKAGING; ABSORBENTS, WIPING CLOTHS, FILTER MATERIALS AND PROTECTIVE CLOTHING NOT OTHERWISE SPECIFIED
15 01 09	textile packaging
15 02 03	absorbents, filter materials, wiping cloths and protective clothing other than those mentioned in 15 02 02
16	WASTES NOT OTHERWISE SPECIFIED IN THE LIST

16 01 03	end-of-life tyres
16 01 19	Plastic
16 01 22	components not otherwise specified
16 03 04	inorganic wastes other than those mentioned in 16 03 03
16 03 06	organic wastes other than those mentioned in 16 03 05
19	WASTES FROM WASTE MANAGEMENT FACILITIES, OFF-SITE WASTE WATER TREATMENT PLANTS AND THE PREPARATION OF WATER INTENDED FOR HUMAN CONSUMPTION AND WATER FOR INDUSTRIAL USE
19 02 03	premixed wastes composed only of non-hazardous wastes
19 02 10	combustible wastes other than those mentioned in 19 02 08 and 19 02 09
19 05 01	non-composted fraction of municipal and similar wastes
19 05 02	non-composted fraction of animal and vegetable waste
19 05 03	off-specification compost
19 08 01	Screenings
19 08 05	sludges from treatment of urban waste water
19 08 09	grease and oil mixture from oil/water separation containing only edible oil and fats
19 10 04	fluff-light fraction and dust other than those mentioned in 19 10 03
19 10 06	other fractions other than those mentioned in 19 10 05
19 12 01	paper and cardboard
19 12 04	plastic and rubber
19 12 07	wood other than that mentioned in 19 12 06
19 12 08	Textiles
19 12 10	combustible waste (refuse derived fuel)
19 12 12	other wastes (including mixtures of materials) from mechanical treatment of wastes other than those mentioned in 19 12 11
20	MUNICIPAL WASTES (HOUSEHOLD WASTE AND SIMILAR COMMERCIAL, INDUSTRIAL AND INSTITUTIONAL WASTES) INCLUDING SEPARATELY COLLECTED FRACTIONS
20 03 01	mixed municipal waste
20 03 02	waste from markets
20 03 03	street-cleaning residues
20 03 07	bulky waste

14 List of Waste codes proposed by the licensee to remove from the licence

LoW codes	Waste description
02	WASTES FROM AGRICULTURE, HORTICULTURE, AQUACULTURE, FORESTRY, HUNTING AND FISHING, FOOD PREPARATION AND PROCESSING
02 07 02	wastes from spirits distillation
02 07 03	wastes from chemical treatment
03	WASTES FROM WOOD PROCESSING AND THE PRODUCTION OF PANELS AND FURNITURE, PULP, PAPER AND CARDBOARD
03 01 01	waste bark and cork
03 01 05	sawdust, shavings, cuttings, wood, particle board and veneer other than those mentioned in 03 01 04
03 03 01	waste bark and wood
03 03 07	mechanically separated rejects from pulping of waste paper and cardboard
04	WASTES FROM THE LEATHER, FUR AND TEXTILE INDUSTRIES
04 02 10	organic matter from natural products (for example grease, wax)
04 02 15	wastes from finishing other than those mentioned in 04 02 14
04 02 17	dyestuffs and pigments other than those mentioned in 04 02 16
07	WASTES FROM ORGANIC CHEMICAL PROCESSES
07 02 13	waste plastic
08	WASTES FROM THE MANUFACTURE, FORMULATION, SUPPLY AND USE (MFSU) OF COATINGS (PAINTS, VARNISHES AND VITREOUS ENAMELS), ADHESIVES, SEALANTS AND PRINTING INKS
08 04 10	waste adhesives and sealants other than those mentioned in 08 04 09
08 04 16	aqueous liquid waste containing adhesives or sealants other than those mentioned in 08 04 15
15	WASTE PACKAGING; ABSORBENTS, WIPING CLOTHS, FILTER MATERIALS AND PROTECTIVE CLOTHING NOT OTHERWISE SPECIFIED
15 01 09	textile packaging
16	WASTES NOT OTHERWISE SPECIFIED IN THE LIST
16 01 03	end-of-life tyres

List of Waste codes (50) specified in the RD

LoW codes	Waste description
02	WASTES FROM AGRICULTURE, HORTICULTURE, AQUACULTURE, FORESTRY, HUNTING AND FISHING, FOOD PREPARATION AND PROCESSING
02 01 03	plant-tissue waste
02 01 04	waste plastics (except packaging)
02 01 07	wastes from forestry
02 02 02	animal-tissue waste
02 02 03	materials unsuitable for consumption or processing
02 03 02	wastes from preserving agents
02 05 01	materials unsuitable for consumption or processing
02 06 01	materials unsuitable for consumption or processing
02 06 02	wastes from preserving agents
02 07 01	wastes from washing, cleaning and mechanical reduction of raw materials
02 07 04	materials unsuitable for consumption or processing
03	WASTES FROM WOOD PROCESSING AND THE PRODUCTION OF PANELS AND FURNITURE, PULP, PAPER AND CARDBOARD
03 03 08	wastes from sorting of paper and cardboard destined for recycling
04	WASTES FROM THE LEATHER, FUR AND TEXTILE INDUSTRIES
04 02 09	wastes from composite materials (impregnated textile, elastomer, plastomer)
04 02 21	wastes from unprocessed textile fibres
04 02 22	wastes from processed textile fibres
08	WASTES FROM THE MANUFACTURE, FORMULATION, SUPPLY AND USE (MFSU) OF COATINGS (PAINTS, VARNISHES AND VITREOUS ENAMELS), ADHESIVES, SEALANTS AND PRINTING INKS
08 01 12	waste paint and varnish other than those mentioned in 08 01 11
08 01 18	wastes from paint or varnish removal other than those mentioned in 08 01 17
08 01 20	aqueous suspensions containing paint or varnish other than those mentioned in 08 01 19
08 03 08	aqueous liquid waste containing ink
08 03 13	waste ink other than those mentioned in 08 03 12

08 03 18	waste printing toner other than those mentioned in 08 03 17
12	WASTES FROM SHAPING AND PHYSICAL AND MECHANICAL SURFACE TREATMENT OF METALS AND PLASTICS
12 01 05	plastics shavings and turnings
15	WASTE PACKAGING; ABSORBENTS, WIPING CLOTHS, FILTER MATERIALS AND PROTECTIVE CLOTHING NOT OTHERWISE SPECIFIED
15 02 03	absorbents, filter materials, wiping cloths and protective clothing other than those mentioned in 15 02 02
16	WASTES NOT OTHERWISE SPECIFIED IN THE LIST
16 01 19	Plastic
16 01 22	components not otherwise specified
16 03 04	inorganic wastes other than those mentioned in 16 03 03
16 03 06	organic wastes other than those mentioned in 16 03 05
19	WASTES FROM WASTE MANAGEMENT FACILITIES, OFF-SITE WASTE WATER TREATMENT PLANTS AND THE PREPARATION OF WATER INTENDED FOR HUMAN CONSUMPTION AND WATER FOR INDUSTRIAL USE
19 02 03	premixed wastes composed only of non-hazardous wastes
19 02 10	combustible wastes other than those mentioned in 19 02 08 and 19 02 09
19 05 01	non-composted fraction of municipal and similar wastes
19 05 02	non-composted fraction of animal and vegetable waste
19 05 03	off-specification compost
19 08 01	Screenings
19 08 09	grease and oil mixture from oil/water separation containing only edible oil and fats
19 09 05	saturated or spent ion exchange resins
19 10 04	fluff-light fraction and dust other than those mentioned in 19 10 03
19 10 06	other fractions other than those mentioned in 19 10 05
19 12 01	paper and cardboard
19 12 04	plastic and rubber
19 12 07	wood other than that mentioned in 19 12 06
19 12 08	Textiles
19 12 10	combustible waste (refuse derived fuel)

19 12 12	other wastes (including mixtures of materials) from mechanical treatment of wastes other than those mentioned in 19 12 11
20	MUNICIPAL WASTES (HOUSEHOLD WASTE AND SIMILAR COMMERCIAL, INDUSTRIAL AND INSTITUTIONAL WASTES) INCLUDING SEPARATELY COLLECTED FRACTIONS
20 01 28	paint, inks, adhesives and resins other than those mentioned in 20 01 27
20 01 30	detergents other than those mentioned in 20 01 29
20 02 03	other non-biodegradable wastes
20 03 01	mixed municipal waste
20 03 02	waste from markets
20 03 03	street-cleaning residues
20 03 07	bulky waste