ARUP
80 YEARS

Indaver

Ringaskiddy Resource Recovery Centre

Response to Request for Further Information Report

Reference:

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Job number 307174-00

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1. Introduction

This report has been prepared to provide a detailed response to the request for further information (RFI) received from An Coimisiún Pleanála (ACP) in correspondence dated 20 July 2026. The sections below address each of the RFI items, providing detailed responses and referencing, as appropriate, relevant attachments which contain updated EIS chapters, appendices and supporting information.

Please note that all references to the EIS herein, unless otherwise stated, refer to the updated EIS documents included in the attachments.

The RFI item is first stated with the response to each item then provided.

2. RFI Item 1 – R1 Calculation

2.1 RFI

The RFI from ACP, with respect to the R1 calculation, is as follows:

'1. The EU Waste Framework Directive (EU 2018/851, amending EU 2008/98/EC) and European Communities (Waste Directive) Regulations 2011 together stipulate that for incineration facilities dedicated to the processing of municipal solid waste and which were permitted after 31st December 2008, in order to constitute 'recovery' a minimum efficiency rating of 0.65 must be achieved. Where the application documents state that the proposed development will be designed to achieve this minimum efficiency rating, the applicant is requested to demonstrate such compliance, by reference to the R1 calculation formula contained within both the Directive and Regulations.'

2.2 Applicant Response

The minimum efficiency factor to meet the R1 recovery status of 0.65 (for all plants permitted after 31st December 2008) is calculated with reference to the formula below which originates from the Waste Framework Directive (WFD) 2008/98/EC and in the Guidance document from the EU entitled "*Guidelines on the interpretation of the R1 energy efficiency formula for incineration facilities dedicated to the processing of Municipal Solid Waste according to Annex II of Directive 2008/98/EC on waste*[1]";

[1] EU Guidelines on the interpretation of the R1 Energy Efficiency Formula

$$\text{Energy efficiency} = \frac{E_p - (E_f + E_i)}{0.97 * (E_w + E_f)}$$

In which:

E_p *means annual energy produced as heat or electricity. It is calculated with energy in the form of electricity being multiplied by 2.6 and heat produced for commercial use multiplied by 1.1 (GJ/year)*
E_f *means annual energy input to the system from fuels contributing to the production of steam (GJ/year)*
E_w *means annual energy contained in the treated waste calculated using the net calorific value of the waste (GJ/year)*
E_i *means annual energy imported excluding E_w and E_f (GJ/year)*
0.97 *is a factor accounting for energy losses due to bottom ash and radiation*

In addition, Annex II of the WFD highlights that this formula shall be applied in accordance with the Reference Document on Best Available Techniques for Waste Incineration (BREF WI).

The question as to whether the proposed development would be classified as either a recovery or disposal facility was posed at the Oral Hearing in 2016 and Indaver provided a response to the hearing on 27 April 2016 by means of a calculation for three different annualised waste inputs. These calculations are included as Attachment 1.1 to this response and demonstrate that the proposed development will meet the criteria for a recovery facility.

The calculations also show that in all three cases, the calculated values are above the required threshold of 0.65 both before and after the Climate Correction Factor (CCF) is applied. The CCF was introduced via The Commission Directive (EU) 2015/1127 of 10 July 2015, amending Annex II to Directive 2008/98/EC of the European Parliament and allows for the use of climate correction factors.

Under Commission Directive (EU) 2015/1127, the calculated R1 value is multiplied by a Climate Correction Factor (CCF) based on the facility's Heating Degree Days (HDD). There are two sets of factors to be applied but for installations permitted after 31 August 2015 — the relevant category for the proposed development — the CCF is calculated as per **Table 2-1** below.

The value of HDD should be taken as the average annual HDD (Heating Degree Days) values for the facility location, calculated for a period of 20 consecutive years before the year for which CFF is calculated:

Table 2-1 Climate Correction Factor Calculation

Heating Degree Days	Climate Correction Factor
HDD ≥ 3,350	1.000
2,150 < HDD < 3,350	CCF = -(0.12 / 1,200) × HDD + 1.335
HDD ≤ 2,150	1.120

The resulting calculation should be rounded to three decimal places.

The average value of the HDD from Eurostat[2] for Ireland, for the years 2006 to 2025 was 2,729 HDD's. Following the application of the relevant formula in **Table 2-1** above, the resulting CCF is 1.062.

[2] Eurostat database for Cooling and Heating Degree Days by Country

The climate correction factor calculated for the oral hearing in 2016 was based on the average of the 20 years previous (1996 to 2015) and although the average value for the HDD was different, the results of the calculation are very similar today when compared to 10 years ago. This comparison is shown in **Table 2-2** below and demonstrates that the updated calculated R1 with CCF is above 0.7 in all three cases. It should also be noted that Indaver's municipal waste to energy facility in Carranstown has retained its recovery status year on year, since commencing operation under the IE Licensing process with the EPA.

Table 2-2 R1 Calculations from Oral Hearing 2016 with updated CCF

Waste Stream	Tonnes	CV (MJ/kg)	R1	R1 with CCF (Previous)	R1 with CCF (Updated)
Municipal Waste	180,000	9.65	0.663	0.707	0.704
Hazardous Aqueous Waste	8,500	0			
Hazardous Solids	11,500	13			
Hazardous Sludges	4,000	1			
Non Hazardous sludges	6,000	1			
Other Industrial wastes	30,000	16			
Total	240,000	9.902			

Waste Stream	Tonnes	CV (MJ/kg)	R1	R1 with CCF (Previous)	R1 with CCF (Updated)
Municipal Waste	195,000	9.65	0.674	0.719	0.716
Hazardous Aqueous Waste	8,500	0			
Hazardous Solids	11,500	13			
Hazardous Sludges	4,000	1			
Non Hazardous sludges	6,000	1			
Other Industrial wastes	15,000	16			
Total	240,000	9.505			

Waste Stream	Tonnes	CV (MJ/kg)	R1	R1 with CCF (Previous)	R1 with CCF (Updated)
Municipal Waste	210,000	9.65	0.679	0.724	0.721
Hazardous Aqueous Waste	8,500	0			
Hazardous Solids	11,500	13			
Hazardous Sludges	4,000	1			
Non Hazardous sludges	6,000	1			
Other Industrial wastes	-	16			
Total	240,000	9.108			

It should be noted that all calculations are theoretical at this stage, and the true value of the R1 factor will only be known when the plant is commissioned and run for the first year of full operations. The calculations are then verified through the IE Licensing requirements for the facility, and the EPA must be satisfied with the calculations before confirming whether the facility meets the requirements for a recovery facility or not. It should also be noted that when procuring a facility, such as the one proposed in this application, meeting the R1 criteria is a basic performance guarantee that the contractor delivering the project must demonstrate compliance with. With the large focus on energy efficiency and recovery in the industry over the past 10 years, there has been an overall improvement in the thermal to electrical conversion efficiency which will also have a positive effect on the R1 calculations in the future.

As detailed above, Attachment 1.1 which was a submission by Indaver at the An Bord Pleanála oral hearing on 27 April 2016, also supports this response.

New Document – Attachment to this response	Attachment
27th April 2016 Cork Theoretical Model for R1 Calculation for Various Scenarios	Attachment 1.1

This response comprehensively addresses RFI Item 1. Nothing in this response has any effect on the findings and conclusions of the EIS.

3. RFI Item 2 - Noise

3.1 RFI

The RFI from ACP with respect to Noise, is as follows:

"2. Where the Noise impact assessment contained within Chapter 10 of the EIS is largely based on baseline surveys undertaken in 2018, the applicant is requested to submit an updated noise impact assessment that is based on updated baseline noise surveys."

3.2 Applicant Response

Updated baseline surveys were completed by the Applicant in August 2026. These surveys have been used to inform preparation of an updated chapter, **Chapter 10 *Noise and Vibration*** which is included in Attachment 2, together with other supporting documents as detailed below:

Updated Document	Attachment
Chapter 10 – Noise and Vibration (updated)	2.1
Appendix 10.1 – Baseline Noise (updated)	2.2
Chapter 10 (Noise) Figure 10.1 (updated)	2.3

This updated chapter comprehensively addresses Item 2 of the RFI. The updated assessment does not result in any changes to the conclusions of the assessment, including the cumulative effects assessment.

4. RFI Item 3 – Climate

4.1 RFI

The RFI from ACP in respect of Climate is as follows:

"3. The applicant is requested to submit an updated Climate impact assessment (Chapter 9 of the EIS) that includes a full lifecycle assessment of the proposed facility, in accordance with guidance contained within Transport Infrastructure Ireland publication 'Climate Guidance for National Roads, Light Rail, and Rural Cycleways (Offline & Greenways)."

4.2 Applicant Response

An updated Climate chapter (**Chapter 9 *Climate*** of the EIS) has been prepared and is included in Attachment 3, as detailed below:

Updated Document	Attachment
Chapter 9 – Climate (updated)	3.1

The Climate chapter now includes the lifecycle assessment requested and can be found in **Section 9.5.1.1.2** of the updated **Chapter 9 *Climate*** of the EIS. This updated chapter comprehensively addresses Item 3 of the RFI. The updated assessment does not result in any changes to the conclusions of the assessment, including the cumulative effects assessment.

5. RFI Item 4 – Material Assets

5.1 RFI

The RFI from ACP in respect of Material Assets is as follows:

"4. The applicant is requested to submit an updated Material Assets (Chapter 15 of the EIS) impact assessment that addresses the impact on national landfill capacity of annual disposal of bottom ash, in the event that this is the chosen means of final disposal."

5.2 Applicant Response

An updated Material Assets chapter (**Chapter 15 *Material Assets*** of the EIS) has been prepared and is included in Attachment 4, as detailed below:

Updated Document	Attachment
Chapter 15 – Material Assets (updated)	4.1

The requested updates can be found in **Section 15.5.3.9** of the updated **Chapter 15 *Material Assets*** of the EIS. This updated chapter comprehensively addresses Item 4 of the RFI. The updated assessment does not result in any changes to the conclusions of the assessment, including the cumulative effects assessment.

6. RFI Item 5 – Air Quality (incl. Odour)

6.1 RFI

The RFI from ACP in respect of Air Quality (incl. Odour) is set out below. It is in a number of parts and a detailed response in respect of each individual part is provided.

"5. The applicant is required to submit an updated Air Quality impact assessment (Chapter 8 of the EIS) that addresses the following: -

5.1 Demonstration of alignment of the dispersion modelling process with EPA guidance 'Air Dispersion Modelling from Industrial Installations Guidance Note (AG4)' (2019), including meteorological data, model selection, building downwash, cumulative assessments, accuracy and uncertainty considerations, and reporting requirements. As part of the updated assessment, consideration shall be given to the use of updated meteorological, terrain and land use datasets that have become available since submission of the original application.

5.2 Incorporation of the BA T-AEL ranges set out in the BAT Conclusions for Waste Incineration (2019) for all key pollutants, including NOx, SO_2, dust, HCI and dioxins, and demonstration of how operations will comply with those ranges under normal operating conditions.

5.3 Assessment of compliance with the 2030 emission limit values under Directive (EU) 2024/2881 at sensitive receptors near the proposed facility, including residential areas and designated habitats, with an explanation of the methodology and assumptions applied.

5.4 Tabulated flagpole receptor results for discrete sensitive receptor locations, including residential properties (with identification of clusters), designated habitats within 15 km of the facility, and the coastal and water interface, supported by a nested Cartesian receptor grid of appropriate resolution, established in line with AG4 guidance.

The applicant shall specify and justify the applied grid configuration, including domain extents and spacing at each nested level, and demonstrate that the grid density is sufficient to resolve predicted concentration peaks at all sensitive locations.

5.5 Assessment of the combined deposition impacts on designated habitats within 15 km of the facility arising from all relevant pollutants, including oxides of nitrogen, ammonia, sulphur dioxide, hydrogen chloride and hydrogen fluoride, addressing both dry and wet deposition pathways and the combined effects of nutrient loading and acidification.

5.6 Consideration of the risks arising in the near and mid-field regions from the discrepancy between the Good Engineering Practice building height of 114.25 m, determined within the assessment, and the proposed stack height of 70 m, including the implications for ground-level concentrations at sensitive receptors in the vicinity of the facility.

5.7 Validation of baseline air quality data collected by the applicant in accordance with EPA AG4 guidance and accepted validation techniques, including a full analysis comparing on-site data with Met Eireann station data within the area.

5.8 A comparison of the proposed facility's predicted emission profile - including congener profile, particle size distribution and key pollutant concentrations - with operational data from existing waste-to-energy facilities in Ireland from 2014 to date, taking into account similarities and differences in feedstock and abatement technology across the facilities.

5.9 Assessment of odour impacts from the facility in line with EPA guidance AG4 and AG9, including consideration of process and fugitive odour emissions and the measures proposed to control fugitive emissions during the planned shutdown of the combustion process."

6.2 Applicant Response

This response has been prepared by Dr. Edward Porter. Dr. Edward Porter is Director with responsibility for Air Quality with AWN Consulting. He holds a BSc from the University of Sussex (Chemistry), has completed a PhD in Environmental Chemistry (Air Quality) in UCD where he graduated in 1997 and is a Chartered Chemist and a Full Member of the Royal Society of Chemistry (MRSC CChem), the Institute of Environmental Sciences (MIEnvSc) and the Institute of Air Quality Management (MIAQM). He specialises in the fields of air quality, climate and air dispersion modelling.

In the first instance, RFI Item 5 requests that:

"5. The applicant is required to submit an updated Air Quality impact assessment (Chapter 8 of the EIS) that addresses the following: …."

To address this and to support the response to the issues raised under RFI Item No.5, updated (and some new) documents have also been prepared and are included in Attachment 5 as follows:

Updated/New Document	Attachment
Chapter 8 – Air Quality (updated)	5.1
Appendix 8.1 – Air Quality Study (updated)	5.2
Appendix 8.2 – Description of Aermod Model (updated)	5.3
Appendix 8.4 – Cumulative Impact Assessment (updated)	5.4
Appendix 8.5 – Sensitivity Assessment of Modelling Input Parameters (updated)	5.5
Appendix 8.10 – Air Modelling Assessment – Stack Height of 114.25m (new appendix)	5.6
Appendix 8.11 – Air Modelling Validation Study Using Roches Point Meteorological Station (new appendix)	5.7

Updated/New Document	Attachment
Appendix 8.12 – Odour Impact Assessment (new appendix)	5.8
Appendix 8.13 – Comparison of Predicted Emissions Profile with Existing WTE Facilities in Ireland (new appendix)	5.9

The response to each of the issues raised under RFI Item No. 5 is set out under the key headings of the RFI as follows:

6.2.1 RFI Item 5.1 and Detailed Response

"5.1 Demonstration of alignment of the dispersion modelling process with EPA guidance 'Air Dispersion Modelling from Industrial Installations Guidance Note (AG4)' (2019), including meteorological data, model selection, building downwash, cumulative assessments, accuracy and uncertainty considerations, and reporting requirements. As part of the updated assessment, consideration shall be given to the use of updated meteorological, terrain and land use datasets that have become available since submission of the original application."

Response

EPA guidance *'Air Dispersion Modelling from Industrial Installations Guidance Note (AG4)'* (2019) has been reviewed to demonstrate alignment of the modelling process with this guidance, with specific reference to the factors raised in the RFI and to consider relevant updated datasets in the updated assessment:

Meteorological Data

AG4 (EPA, 2019) details the key factors to consider in the selection of appropriate meteorological data are:

- Proximity of the meteorological station to the modelling domain;
- The complexity of the terrain;
- The exposure of the meteorological monitoring site;
- The period of time during which data is collected.

The closest meteorological stations to the facility are Cork Airport station located 12 km west of the site and Roches Point station which is located 5km south-east of the site. However, Roches Point is an automatic station and thus does not record cloud cover data which is important in characterising the atmosphere for air dispersion modelling purposes as detailed in **Section 8.3.2.3** of **Appendix 8.1** of the EIS.

When the impact assessment was undertaken in mid-2025, meteorological data was available up to 2024. Currently, data is now available up to 2025 and thus the modelling has been updated to cover the most recent five-year period in line with AG4 (EPA, 2019) guidance. In addition, **Appendix 8.5** of the EIS has been updated to include Cork Airport (2021 – 2025) and Roches Point (2021 – 2025) (with the missing cloud cover data substituted with Cork Airport data for the same time period) in addition to the 2007 onsite meteorological data (based on cloud cover data from Cork Airport for the same time period).

Model Selection

AG4 (EPA, 2019) detailed the most appropriate model from tall industrial stacks is either USEPA AERMOD model or the CERC ADMS model. The USEPA AERMOD model was selected for the modelling assessment and the model is currently the approved regulatory model[3].

[3] Air Quality Dispersion Modeling - Preferred and Recommended Models | US EPA

As detailed in Section 6.10 of AG4 (EPA, 2019), AERMOD should be run using the most recently available model version and using the regulatory defaults. This approach has been adopted for the updated impact assessment (refer to **Section 8.3.2.2** of **Appendix 8.1** to the EIS).

Building Downwash

AG4 (EPA, 2019) detailed the appropriate building downwash algorithm is PRIME as outlined below which is taken from Section 6.3.2 of AG4 (EPA, 2019):

"The Plume Rise Model Enhancements (PRIME) plume rise and building downwash algorithms have been incorporated into AERMOD. The building input processor BPIP-PRIME produces the parameters which are required in order to run PRIME. The model takes into account the position of each stack relative to each relevant building and the projected shape of each building for 36 wind directions (at 10º intervals). The model determines the change in plume centreline location with downwind distance based on the slope of the mean streamlines and coupled to a numerical plume rise model."

The AERMOD model was run using the latest version of the PRIME building downwash algorithm in line with the USEPA guidance "*USEPA (2024) Guidelines on Air Quality Models, Appendix W to Part 51, 40 CFR Ch.1*" (refer to **Section 8.3.2.7** of **Appendix 8.1** to the EIS).

Cumulative Assessment

A cumulative assessment was undertaken based on the guidance outlined in Appendix E of AG4 (EPA, 2019). The Executive Summary of **Appendix 8.1** of the EIS outlines the approach and details the relevant nearby industrial facilities included in the cumulative assessment. Full details of the cumulative results are detailed in the updated **Appendix 8.4** of the EIS.

Accuracy And Uncertainty Considerations

AG4 (EPA, 2019) outlined that the appropriate approach to accuracy and uncertainty is as outlined below which is taken from Section 6.11 of AG4 (EPA, 2019):

"Models are subject to both reducible and inherent (non-reducible) uncertainties. The first reducible uncertainty (and also the most important for the modeller) is within the set of model input parameters. The input parameters which can be prone to error and are of most concern are:

- *Errors in the emission rate can lead to large errors in the modelling results. As a result, it is prudent to assume continuous operation (8760 hours/annum) at the maximum allowable emission rate as outlined in the EPA licenced sites. Where emission rates vary on an hourly, daily or seasonal basis, the frequency of operation can be reduced to replicate this when comparing to annual mean limit values (though not for short-term limit values);*
- *Inappropriate meteorological data – selecting an inappropriate meteorological station can lead to error particularly where the mean wind speed varies significantly between the source and meteorological station;*
- *Ignoring terrain features - terrain features can lead to significantly higher ambient concentrations compared to flat terrain. Where the terrain is greater than 10% of the effective stack height, digital terrain data will be required;*
- *Ignoring building downwash – where the stack height is less than the GEP stack height, building downwash will need to be considered. Building downwash will typically give significantly higher ambient concentrations relative to a stack release not subjected to building downwash."*

The current impact assessment has been undertaken based on the following approach:

- Modelling has assumed operations for 8760 hours per year at the maximum allowable emission level in the IED as detailed in **Section 8.1.1** of the updated **Appendix 8.1** in the EIS. This is a very conservative approach as most emissions are well below the allowable emission level for the vast majority of the year.

- Meteorological data has been selected based on the approach outlined in AG4 (EPA, 2019) with all available meteorological stations within the modelling domain selected. Cork Airport (2021-2025), Roches Point (2021-2025) and the onsite station (2007) were all investigated with a sensitivity study undertaken to ensure that results were not under reported as detailed in **Section 8.2.3.2** of the updated **Appendix 8.1** in the EIS.
- Terrain features were input into the model using the latest version of the USEPA AERMAP module (EPA, 2024) as detailed in **Section 8.3.2.5** of the updated **Appendix 8.1** in the EIS. The terrain data was obtained from the Shuttle Radar Topography Mission (SRTM) which is a digital elevation data set that spans the globe from 60° north latitude to 56° south latitude. It has a horizontal grid spacing of 1 arc-seconds (approximately 30m).
- The AERMOD model was run using the latest version of the PRIME building downwash algorithm in line with the USEPA guidance "*USEPA (2024) Guidelines on Air Quality Models, Appendix W to Part 51, 40 CFR Ch.1*" as detailed in **Section 8.3.2.7** of the updated **Appendix 8.1** in the EIS.

In line with AG4 (EPA, 2019) modelling was undertaken taking into account the uncertainty in the model with the Process Contribution (PC) results from the modelling of the facility as outlined in Section 6.11 of AG4 (EPA, 2019):

"When modelling a facility, the uncertainty in the model should be considered. If the facility is operated continually at close to the maximum licenced mass emission rate (i.e. maximum concentration and maximum volume flow) the process contribution (PC) should be less than 75% of the ambient air quality standard and less than this where background levels account for a significant fraction of the ambient air quality standard based on the formula:"

Maximum Allowable PC = 0.75*(AQS)

where there is no significant background concentration

Maximum Allowable PC = 0.75*(AQS – BC)

where there is a significant background concentration

Results from the modelling of the proposed facility in isolation, as detailed in **Section 8.5** of the updated **Appendix 8.1** in the EIS, show that PC range from less than 1% to a maximum of 68% of the ambient air quality standard, including background concentrations, in line with AG4 (EPA, 2019).

Reporting Requirements

As per the guidance in AG4 (EPA, 2019) reporting of the air dispersion modelling assessment was undertaken in the updated **Chapter 8** ***Air Quality*** of the EIS, in line with Section 6.12 of AG4 (EPA, 2019), including the following:

- aims of the study, as detailed in **Section 8.1** of **Appendix 8.1** of the EIS;
- details on the relevant regulatory regime and the appropriate ambient air quality standards, as detailed in **Section 8.2** of **Appendix 8.1** of the EIS.
- discussion on the existing environment including background concentrations of pollutants, meteorology and geophysical considerations (terrain, land use), as detailed in **Section 8.4** of **Appendix 8.1** of the EIS;
- identification and location of sensitive receptors, as detailed in **Section 8.3.2.4** of **Appendix 8.1** of the EIS;

- summary of meteorological data, average and range of wind speeds, number of calm hours, etc, as detailed in **Section 8.3.2.3** of **Appendix 8.1** of the EIS;
- local designated habitats, as detailed in **Section 8.3.3** of **Appendix 8.1** of the EIS;
- building and source information including building elevations, heights, layout; sources process information (exit velocity, temperature, stack diameter, volume flow, emission rates of pollutants, information on frequency, duration and magnitude of emissions), source location (UTM), as detailed in **Section 8.3.2** of **Appendix 8.1** of the EIS;
- emission data – source of data, accuracy and variability of data, as detailed in **Section 8.1.1** and **Section 8.3.2.8** of **Appendix 8.1** of the EIS and **Appendix 8.6** of the EIS;
- stack height information, as detailed in **Section 8.3.2.7** and **Section 8.3.2.8.3** of **Appendix 8.1** of the EIS.
- receptor grid location and resolution, size & nesting options, sensitive receptors, boundary receptors, flagpole receptors if relevant, as detailed in **Section 8.3.2.4** of **Appendix 8.1** of the EIS;
- surface parameters used in the dispersion model (surface roughness, albedo, Bowen ratio), as detailed in **Section 8.2.2** of **Appendix 8.1** of the EIS;
- model selection methodology and assumptions, discussions in regards to regulatory options, defaults or non-defaults, screening assumptions or detailed analysis, as detailed in **Section 8.3.2.2** of **Appendix 8.1** of the EIS, **Appendix 8.2** of the EIS and **Appendix 8.6** of the EIS;
- model results including in tabular format, as detailed in **Section 8.5** and **Section 8.6** of **Appendix 8.1** of the EIS and **Appendix 8.5** of the EIS:
  - process contributions for each modelled year for each relevant averaging period, background concentrations used for each averaging period;
  - modelled results for typical operations, maximum and abnormal where relevant;
  - predicted ambient concentrations both in absolute terms and as a percentage of the ambient air quality standards;
  - summary of meteorological data;
  - summary of results from any sensitivity studies which were conducted.
- model results in graphical format, as detailed in **Sections 8.5, 8.6** and **8.7** of **Appendix 8.1** of the EIS:
  - contour plots for each pollutant and averaging period appropriate to the ambient air quality standards;
  - site plan showing buildings, sources, boundary, receptor grid (**Figure 8.1** of **Appendix 8.1** of the EIS shows buildings, sources and boundary);
  - 3-D terrain plot and land use plot (**Figure 8.5** of **Appendix 8.1** of the EIS);
  - wind rose plots for all meteorological years modelled (**Figure 8.4** of **Appendix 8.1** of the EIS).
- model discussion of results including, as detailed in **Sections 8.5, 8.6** and **8.7** of **Appendix 8.1** of the EIS and **Appendix 8.5** of the EIS:
  - model results compared to the ambient air quality standards taking into account model accuracy;
  - discussion of the location of worst-case receptors;
  - meteorological conditions under which worst-case results occur;
  - significance of building downwash or terrain in the modelling.

In terms of updated meteorological, terrain and land use datasets that have become available since submission of the 2025 EIS, as detailed above, meteorological data for the full year of 2025 has now become available and thus the assessment has been updated to account for this. In terms of terrain and land use datasets, the model currently uses the most recent compatible data that is available as detailed in **Sections 8.3.25** and **8.3.2.6**, respectively, of the updated **Appendix 8.1** in the EIS.

6.2.2 RFI Item 5.2 and Detailed Response

"5.2 Incorporation of the BAT-AEL ranges set out in the BAT Conclusions for Waste Incineration (2019) for all key pollutants, including NOx, SO_2, dust, HCI and dioxins, and demonstration of how operations will comply with those ranges under normal operating conditions".

Response

As detailed in Table-6-1 below, the facility will comply with the most recent BAT-AEL ranges for a *new plant* as detailed in the BAT Conclusions for Waste Incineration (2019) under normal operating conditions. These BAT-AEL's are equivalent or lower than the emission limits detailed in the Industrial Emissions Directive (2010/75/EU). Modelling in the updated **Appendix 8.1** of **Chapter 8** ***Air Quality*** of the EIS has confirmed that all emissions will comply with the IED emission limits and will lead to ambient air quality concentrations which are in compliance with the ambient air quality standards. Thus, as the BAT-AEL's are equivalent or lower emissions than the IED, all BAT-AEL emissions will lead to ambient air quality concentrations which are in compliance with the ambient air quality standards.

Modern waste to energy facility design fully considers the new requirements of the BREF and the reduced BAT AEL's required for a "New Plant". The requirements are also specified in the procurement contracts and measured during the commissioning phase prior to handover of the plant to the operator. The new BAT AEL's will be reflected in the IE Licence issued by the EPA for the proposed development and as such, the facility will have to comply, or the facility will not be able to operate. New facilities are consequently able to comply fully with these reduced BAT AEL's. The BAT AEL's for "existing plants" (with emission limit values for key pollutants lower than those in the IED) have already been applied successfully to the two operational waste to energy plants in Ireland via the IE licensing process.

Table-6-1 BAT-AEL Emission Limits

Emission Point Code	Parameter	Monitoring Point Code	Proposed Emission Limits					How was the Proposed Emission Limit Derived?	BAT Associated Emission Range (if applicable)
			Max. Hourly	Average Hourly	Average Daily	Average Monthly	Average Annual		
A2-1	Flow	A2-1	211,000 Nm3/hr	161,977 Nm3/hr	3,887,448 Nm3/day	118,256,168 Nm3/ month (average daily x 30.42 days)	1,418,918,520 Nm3/year (average daily x 365 days)	N/A	N/A
A2-1	Total Dust	A2-1	30 mg/Nm3 Note 1	10 mg/Nm3 Note 2	10 mg/Nm3 Note 5	-	-	IE Directive (2010/75/EU)	1-20 mg/Nm3 (1/2 hour average) Note 3
					5 mg/Nm3 Note 6			BAT-AEL's for a New Plant	1-7 mg/ Nm3 (24 hour average) Note 4
A2-1	Gaseous & Vaporous organic substances expressed as total organic carbon (TOC)	A2-1	20 mg/Nm3 Note 1	10 mg/Nm3 Note 2	10 mg/Nm3 Note 5 10 mg/Nm3 Note 6	-	-	IE Directive (2010/75/EU) BAT-AEL's for a New Plant	1-20 mg/Nm3 (1/2 hour average) Note 3 3-10mg/ Nm3 (24 hour average) Note 4
A2-1	Hydrogen chloride (HCI)	A2-1	60 mg/Nm3 Note 1	10 mg/Nm3 Note 2	10 mg/Nm3 Note 5 6 mg/Nm3 Note 6	-	-	IE Directive (2010/75/EU) BAT-AEL's for a New Plant	1-50 mg/Nm3 (1/2 hour average) Note 3 2-8 mg/ Nm3 (24 hour average) Note 4
A2-1	Hydrogen fluoride (HF)	A2-1	4 mg/Nm3 Note 1	2 mg/Nm3 Note 2	1 mg/Nm3 Note 5 1 mg/Nm3 Note 6	-	-	IE Directive (2010/75/EU) BAT-AEL's for a New Plant	<2 mg/Nm3 (1/2 hour average) Note 3 <1 mg/ Nm3 (24 hour average) Note 4

Emission Point Code	Parameter	Monitoring Point Code	Proposed Emission Limits					How was the Proposed Emission Limit Derived?	BAT Associated Emission Range (if applicable)
			Max. Hourly	Average Hourly	Average Daily	Average Monthly	Average Annual		
A2-1	Sulphur dioxide (SO_2)	A2-1	200 mg/Nm3 Note 1	50 mg/Nm3 Note 2	50 mg/Nm3 Note 5 30 mg/Nm3 Note 6	-	-	IE Directive (2010/75/EU) BAT-AEL's for a New Plant	1-150 mg/Nm3 (1/2 hour average) Note 3 5-40 mg/ Nm3 (24 hour average) Note 4
A2-1	Oxides of Nitrogen (NO and NOx expressed as NO_2	A2-1	400 mg/Nm3 Note 1	200 mg/Nm3 Note 2	200 mg/Nm3 Note 5 120 mg/Nm3 Note 6	-	-	IE Directive (2010/75/EU) BAT-AEL's for a New Plant	30-350 mg/Nm3 (1/2 hour average) Note 3 50-180 mg/Nm3 (24 hour average) Note 4
A2-1	Ammonia (NH_3)	A2-1			10 mg/Nm3 Note 6	-	-	BAT-AEL's for a New Plant	2-15 mg/Nm3 (24-hour average) Note 4
A2-1	Cadmium (as Cd) and thallium (as TI), and their compounds	A2-1	-	-	0.05 mg/Nm3 Note 5 0.02 mg/Nm3 Note 6	-	-	IE Directive (2010/75/EU) BAT-AEL's for a New Plant	0.005 – 0.05 mg/Nm3 Note 3 0.005 – 0.02 mg/Nm3 Note 4
A2-1	Mercury (as Hg) and its compounds	A2-1	-	-	50 µg/Nm3 Note 5	-	-	IE Directive (2010/75/EU)	<50 µg/Nm3 Note 3
					20 µg/Nm3 Note 6	-	-	BAT-AEL's for a New Plant	1-20 µg/Nm3 (24 hour average) Note 4

Emission Point Code	Parameter	Monitoring Point Code	Proposed Emission Limits					How was the Proposed Emission Limit Derived?	BAT Associated Emission Range (if applicable)
			Max. Hourly	Average Hourly	Average Daily	Average Monthly	Average Annual		
A2-1	Sum of Metals	A2-1	-	-	0.5 mg/Nm3 Note 5 0.3 mg/Nm3 Note 6	-	-	IE Directive (2010/75/EU) BAT-AEL's for a New Plant	0.005 – 0.5 mg/Nm3 Note 3 0.01 – 0.3 mg/Nm3 Note 4
A2-1	Dioxins/ furans	A2-1	-	-	0.1 ng/Nm3 (I-TEQ) Note 5 0.04 ng/Nm3 (I-TEQ) Note 6	-	-	IE Directive (2010/75/EU) BAT-AEL's for a New Plant	0.01 – 0.1 ng/Nm3 Note 3 0.01 – 0.8 ng/Nm3 Note 4
A2-1	Carbon monoxide (CO)	A2-1	150 mg/Nm3 (10 minute average)	100 mg/Nm3 (30 minute average)	50 mg/Nm3 Note 5 50 mg/Nm3 Note 6	-	-	IE Directive (2010/75/EU) And BAT-AEL's for a New Plant	5-100 mg/Nm3 (1/2 hour average) Note 3 10-50 mg/ Nm3 (24 hour average) Note 4

Note 1: Half hourly average for all samples, OR

Note 2: Half hourly average for 97% of sample.

Note 3: BAT ELV Range based on BREF for Waste Incineration 2006

Note 4: BAT ELV Range based on WI BAT Conclusions Document June 2019

Note 5: ELV's based on IED 2010/75/EU for Effective Operating Time (EOT)

Note 6: ELV's based on BAT-AEL's for Normal Operating Conditions (NOC)

6.2.3 RFI Item 5.3 and Detailed Response

"3.Assessment of compliance with the 2030 emission limit values under Directive (EU) 2024/2881 at sensitive receptors near the proposed facility, including residential areas and designated habitats, with an explanation of the methodology and assumptions applied."

Response

The EU ambient air quality standards which are currently in force in Ireland are shown in **Table 8.1** of the updated **Appendix 8.1** of the EIS in addition to the revised EU standards which will come into force by 2030. The relevant ambient air quality standards which have been updated since the previous standards are NO_2, CO, PM_{10}/$PM_{2.5}$, SO_2 and benzene. All other standards are unchanged since Council Directive 2008/50/EC.

As shown in **Table 8.1** of **Appendix 8.1** of the EIS, the ambient air quality standards which apply in designated habitats are the NO_X and SO_2 ambient air quality standards for the protection of vegetation / ecosystems. These standards in 2030, under Directive (EU) 2024/2881, are unchanged from the standards which applied prior to 2030 and thus there is no change to these results which are detailed in **Section 8.7** of **Appendix 8.1** of the 2025 EIS with the exception that the five years of modelling has been updated from 2020 – 2024 to 2021 – 2025.

As detailed in **Section 8.3.2.4** of the updated **Appendix 8.1** of the EIS, in relation to human health, including nearby residential receptors, the model has a three tier grid of increasing density as it approaches the facility. In addition, nearby specific receptors are explicitly modelled in addition to boundary receptors spaced every 20 metres. As detailed in **Section 8.5.1.4** of the updated **Appendix 8.1** of the EIS, 133 sensitive receptors have been included in the model. In relation to the tiered grid, the outer grid is 20 km x 20 km spaced every 500m, the middle grid is 8 km x 8 km spaced every 100 m whilst the inner grid is 2.5 km x 2.5 km spaced every 50 m. Overall, for each model run, there are 18,429 individual receptor points recording the ambient air quality concentration.

In terms of human health, there is also no change to these results which are detailed in **Section 8.5** of **Appendix 8.1** of the EIS with the exception that the five years of modelling has been updated from 2020 – 2024 to 2021 – 2025, as the modelling has already been undertaken using the 2030 air quality standards as outlined in Directive (EU) 2024/2881.

All five years of modelling results based on Cork Airport 2021 - 2025, in addition to the modelling results based on the onsite meteorological data from 2007, have been detailed for the relevant pollutants (NO_2, NO_X, CO, SO_2, PM_{10}, $PM_{2.5}$) in **Appendix 8.1** of the EIS. As was detailed in **Appendix 8.1** of the EIS, all results are in compliance with the 2030 Ambient Air Quality Standards.

6.2.4 RFI Item 5.4 and Detailed Response

"4. Tabulated flagpole receptor results for discrete sensitive receptor locations, including residential properties (with identification of clusters), designated habitats within 15 km of the facility, and the coastal and water interface, supported by a nested Cartesian receptor grid of appropriate resolution, established in line with AG4 guidance. The applicant shall specify and justify the applied grid configuration, including domain extents and spacing at each nested level, and demonstrate that the grid density is sufficient to resolve predicted concentration peaks at all sensitive locations."

Response

All discrete receptors within 1.0km from the facility have been specifically modelled both at breathing height and first floor/roof level with the maximum of these reported in **Table 8.36, Table 8.37** and **Table 8.38** of **Appendix 8.1** of the EIS. Clusters in the village of Ringaskiddy have been specifically mapped with a total of 133 individual receptors included in the model. Modelling results indicate that the ambient ground level concentrations are below these ambient standards for the protection of human health under maximum operation of the facility as detailed in **Table 8.36, Table 8.37** and **Table 8.38** of **Appendix 8.1** of the EIS.

Thus, no adverse effect on public health or the environment is likely to occur under these conditions at all nearby receptors. Emissions at maximum operations equate to ambient NO_2 concentrations (including background concentrations) which are 15.4% of the maximum ambient 1-hour limit value (measured as a 99.97th%ile) at the worst-case sensitive receptor (520m to the southwest of the stack) and 42.1% of the maximum ambient 24-hour limit value (measured as a 95.1th%ile) at the worst-case receptor (1150m to the southwest of the stack). The annual average NO_2 concentration (including background concentration) is also below the limit value for the protection of human health accounting for 51% of the annual limit value at the worst-case receptor which is located 1100m to the west of the facility. All results are lower than the maximum results which were reported in **Table 8.34** of **Appendix 8.1** of the EIS.

In relation to human health, as detailed in **Section 8.3.2.4** of the updated **Appendix 8.1** of the EIS, including nearby residential receptors, the model has a three tier grid of increasing density as it approaches the facility. In addition, nearby specific receptors are explicitly modelled in addition to boundary receptors spaced every 20 metres. In relation to the tiered grid, the outer grid is 20 km x 20 km spaced every 500m, the middle grid is 8 km x 8 km spaced every 100 m whilst the inner grid is 2.5 km x 2.5 km spaced every 50 m. Overall, for each run, there is 18,429 individual receptor points recording the ambient air quality concentration. This approach is in line with AG4 (EPA, 2019) which states that:

"Nesting of receptor grids can be performed with AERMOD, while ADMS 5 allows for variable Cartesian grids which perform the same function. The multi-tiered grid should have a fine resolution near the source (or near the point of maximum ground level concentration) with a progressively coarser grid as one moves away from this maximum."

In terms of designated habitats within 15 km of the facility, as detailed in **Section 8.3.3** of **Appendix 8.1** of the EIS and in **Figure 8.7** of **Appendix 8.1** of the EIS, all designated habitat within 15km was included in the assessment. The updated results are shown in **Section 8.7** of **Appendix 8.1** of the EIS.

In terms of the coastal and water interface, the receptor grid covers all of the coastal and water interface within 20km of the facility based on the nested grid as detailed above.

As a check on the appropriateness of the grid resolution, the grid resolution has been increased at the location of the maximum concentration to a minimum of 10m. The results are shown in **Table 6-2**.

Table 6-2 Dispersion Model Results – Maximum 1-Hour NO_2 Concentration (as a 99.7th%ile) ($\mu g/m^3$)

Modelling Scenario	Receptor	Onsite 2007	Cork Airport 2021	Cork Airport 2022	Cork Airport 2023	Cork Airport 2024	Cork Airport 2025
EIS Result	Maximum 1-Hr	20.9	20.5	21.4	21.4	19.7	21.8
	Receptor Spacing At Maximum Location	25	50	25	25	25	500
Grid Resolution Test Scenario	Maximum 1-Hr	21.0	21.4	21.5	21.6	20.0	22.2
	Receptor Spacing At Maximum Location	10	10	10	10	10	10

As shown in **Table 6-2** when the resolution is decreased to 10m compared to the original resolution of 25m for most years with the exception of 50m for Cork Airport 2021 and 500m for Cork Airport 2025 (the original resolution is based on where the maximum ground level is located) the ambient concentration increases by no more than 4% of the original concentration. The results confirm that the original grid was appropriate as it is line with the recommendation in AG4 (EPA, 2019) which states:

"Guidance suggests that an optimum grid resolution should be sought such that any increase in grid resolution does not increase the maximum ground level concentration by greater than 10%."

6.2.5 RFI Item 5.5 and Detailed Response

"5. Assessment of the combined deposition impacts on designated habitats within 15 km of the facility arising from all relevant pollutants, including oxides of nitrogen, ammonia, sulphur dioxide, hydrogen chloride and hydrogen fluoride, addressing both dry and wet deposition pathways and the combined effects of nutrient loading and acidification".

Response

Modelling of the dry deposition impacts of oxides of nitrogen, ammonia and sulphur dioxide in designated sites out to 15km are included in **Section 8.7** of **Appendix 8.1** of the EIS and have been updated to cover the period 2021 – 2025 in line with AG4 (EPA, 2019) and AQTAG06 (UK Environment Agency 2014).

AQTAG06, in its publication "*Technical Guidance on Detailed Modelling Approach for an Appropriate Assessment for Emissions to Air*" details the approach to deposition modelling for these pollutants. In regards to wet deposition, the guidance states:

*"**Wet deposition flux***

It is considered that the wet deposition of SO_2, NO_2 and NH_3 is not significant within a short range. However, wet deposition for HCl and HNO_3 should be considered where a process emits these species."

In this context, short range would be 15-20km and thus wet deposition for these pollutants (SO_2, NO_2 and NH_3) has been ruled out. However, wet deposition modelling for HCl (and HF) has been undertaken as detailed in **Section 8.7.5.2** of **Appendix 8.1** of the EIS in addition to dry deposition modelling for HCl and HF.

Section 8.7.5.2 of **Appendix 8.1** of the EIS outlines the dry deposition results for both HCl and HF in terms of $\mu g/m^2/s$ and keq/ha/year based on the conversion factor as outlined in A3 of AG4 (EPA, 2019) which is taken from AGTAG06 (EA, 2014) for HCl and assuming an equivalent conversion factor for HF.

Table 8.110 of **Appendix 8.1** of the EIS outlines the initial screening acid deposition as a proportion of the minimum CL function (keq/ha/yr) for the Cork Harbour SPA. The results indicate that for the Cork Harbour SPA, initial screening results peak at 5.5% of the minimum CL function before including background and rises to 20.2% of the minimum CL function when background levels are included.

Table 8.111 of **Appendix 8.1** of the EIS outlines the appropriate assessment acid deposition result as a proportion of the maximum CL function (keq/ha/yr) for the Cork Harbour SPA. The results indicate that for the Cork Harbour SPA, appropriate assessment acid deposition results peak at 1.2 % of the minimum CL function before including background and rises to 2.4% of the minimum CL function when background levels are included. In conclusion, the combined impact on nutrient loading and acidification is not significant and well below the relevant critical loads.

6.2.6 RFI Item 5.6 and Detailed Response

"6. Consideration of the risks arising in the near and mid-field regions from the discrepancy between the Good Engineering Practice building height of 114.25 m, determined within the assessment, and the proposed stack height of 70 m, including the implications for ground-level concentrations at sensitive receptors in the vicinity of the facility".

Response

In terms of the impact on human health, as detailed in **Appendix 8.1** of the EIS all results are in compliance with the ambient air quality standards based on a stack height of 70m above local ground level. The results are detailed in **Section 8.6** of **Appendix 8.1** of the EIS.

Good Engineering Practice (GEP) was introduced by the USEPA under the Clean Air Act of 1972 to prevent the use of excessively tall stacks to reduce ground-level concentrations. Stacks above GEP were required to be modelled at the GEP stack height thus ensuring that facilities addressed air emissions via abatement or control rather than through taller stacks to disperse pollution.

All pollutants have been re-run based on a stack height of 114.25m which is the theoretical height at which no building downwash occurs for the proposed development. The results of this assessment are detailed in **Appendix 8.10** of the EIS. Results remain in compliance with the ambient air quality standards at a stack height of 114.25m. Compared to a stack height of 70m results are marginally lower. However, at a stack height of 70m results are well below the ambient air quality standards and thus increasing the stack height to 114.25m is unwarranted.

6.2.7 RFI Item 5.7 and Detailed Response

"7. Validation of baseline air quality data collected by the applicant in accordance with EPA AG4 guidance and accepted validation techniques, including a full analysis comparing on-site data with Met Eireann station data within the area".

Response

As detailed in **Section 8.3** of **Chapter 8** ***Air Quality*** of the EIS, an extensive baseline survey was carried out in the region of the proposed development over the period August 2024 – January 2025. This data supplements the extensive baseline surveys undertaken previously. These surveys focused on the significant pollutants likely to be emitted from the proposed development, and which have been regulated in Council Directive 2010/75/EU. The substances monitored over these survey periods were NO_2, NO_X, PM_{10}, $PM_{2.5}$, benzene, SO_2, heavy metals, HCl, HF and PCDDs/PCDFs. Full details of the monitoring methodology, assessment and results are detailed in **Section 8.4** of **Appendix 8.1** to **Chapter 8** ***Air Quality*** of the EIS. The monitoring data was validated in accordance with AG4 via accepted validation techniques.

In summary, baseline ambient concentrations are in compliance with the ambient air quality standards which are based on the protection of the environment and human health.

In terms of the modelled air quality assessment, as detailed in **Appendix 8.1** of the EIS all results are in compliance with the ambient air quality standards based on a stack height of 70m above local ground level. The results are detailed in **Sections 8.6 – 8.8** of **Appendix 8.1** of the EIS. The modelling was undertaken using Cork Airport meteorological data from 2021 – 2025 in addition to the onsite meteorological station which collected a full year of meteorological data in 2007.

The only other meteorological station operated by Met Éireann within the modelling domain is Roches Point which is located in a very exposed location 5.5km south-east of the facility. Roches Point is an automatic station and thus does not collect cloud cover which is required by the air dispersion model (AERMOD). In the absence of this data, cloud cover data for Cork Airport has been substituted for the same time period (2021 – 2025).

All pollutants have been re-run based on meteorological data from Roches Point and compared to the results based on the Cork Airport data from 2021 – 2025 and the onsite data from 2007.

The results of this assessment are detailed in Appendix 8.11 of the EIS. Results remain in compliance with the ambient air quality standards based on data from Roches Point. Compared to Cork Airport results and the onsite station, for some averaging periods results are marginally lower and for some averaging periods and pollutants results are a little higher but overall, for all stations, results are similar and, moreover, for all meteorological stations and time periods ambient results are well below the ambient air quality standards.

Currently, in the absence of the facility, the baseline monitoring data will relate only to existing background sources. Comparing meteorological data to the baseline data, in the absence of the facility, is not a valid approach and will give you no understanding of the impact of the facility on the ambient ground level concentration of the relevant pollutants.

A direct comparison between the modelled results and the baseline data is also not possible. The modelling is based on the facility being in operation which it currently is not. The baseline data is measuring the background ambient air quality in the absence of the facility. Thus, there will be no correlation between the baseline data and the process contribution (PC) from the facility.

Baseline data is often comparable to the predicted environmental concentration (PEC). However, where this occurs, it is a reflection of the fact that the main contributor to the PEC is the background concentration which is derived from the baseline data and the predicted PC is a small contributor to the overall PEC.

6.2.8 RFI Item 5.8 and Detailed Response

"8. A comparison of the proposed facility's predicted emission profile - including congener profile, particle size distribution and key pollutant concentrations with operational data from existing waste-to-energy facilities in Ireland from 2014 to date, taking into account similarities and differences in feedstock and abatement technology across the facilities".

Response

Congener Profile

As outlined in **Appendix 8.13** of the EIS, operational data is available for the Carranstown waste to energy (WTE) facility over the period 2014 – 2026 for dioxin emission concentrations and congener profiles. The congener profile and actual emissions measured from the Carranstown facility demonstrate that a very conservative approach has been taken in the EIS for the proposed development and that an even more stringent BAT AEL for Dioxins of 0.04 ng/Nm^3 for the proposed development will be imposed by the IE Licensing process.

Particle Size Distribution

As outlined in **Appendix 8.13** of the EIS, the IED (2010/75/EC) outlines a Total Dust emission rate of 30 mg/m^3 as a 30-minute average and an emission rate of 10 mg/m^3 as a daily average. In contrast, Directive (EU) 2024/2881 has set ambient air quality standards in the form of an ambient limit value for PM_{10} and $PM_{2.5}$ as detailed in **Table 8.1** of **Appendix 8.1** of the EIS. Data reviewed from Carranstown WTE, shows that data is collected in the form of Total Dust in line with the IED and in line with the BAT Conclusions for Waste Incineration (2019).

However, in order to ensure a worst case scenario assessment, it has been assumed that when comparing emissions from the Ringaskiddy WTE to the ambient air quality standards for PM_{10}, all Total Dust emissions have been assumed to be PM_{10} or less. Similarly, in order to ensure a worst case scenario assessment, it has been assumed that when comparing emissions from the Ringaskiddy WTE to the ambient air quality standards for $PM_{2.5}$, all Total Dust emissions have been assumed to be $PM_{2.5}$ or less.

Key Pollutant Concentrations

As outlined in **Appendix 8.13** of the EIS, operational data is available for the Carranstown WTE over the period 2021 – 2026 for continuously monitored emission concentrations.

In summary, the long-term average shows that Carranstown WTE facility is complying with the BAT Conclusions for Waste Incineration (2019) whilst all results over the period 2021-2026 are in compliance with the limits outlined in Council Directive 2010/50/EC and all results comply with the *BAT Conclusions for Waste Incineration (2019) for Existing Plants* in this period. In terms of Ringaskiddy WTE, modelling is based on the IED emission limits as a worst-case and under this scenario all ambient levels are predicted to be in compliance with the ambient air quality standards.

6.2.9 RFI Item 5.9 and Detailed Response

"3. Assessment of odour impacts from the facility in line with EPA guidance AG4 and AG9, including consideration of process and fugitive odour emissions and the measures proposed to control fugitive emissions during the planned shutdown of the combustion process".

Response

In terms of the odour impact from the facility, as detailed in **Appendix 8.12** of the EIS, the odour impact of the facility has been modelled using the AERMOD dispersion model based on the measured odour emission rate from Carranstown WTE facility. The results are detailed in **Appendix 8.12** of the EIS.

In summary, with regard to odour, the modelling assessment has found that ambient odour concentrations are in compliance with the relevant limit values, reaching at most 18% of the 1-hour limit value (measured as a 98^{th}%ile) at the worst-case sensitive receptor.

The control of fugitive odour emissions during operations and planned shutdowns is addressed in the draft Odour Management Plan as Attachment 1 to **Appendix 8.12** and is based on the operational knowledge and experience from Indaver's Carranstown WTE facility built up over the past 15 years of operation.

7. RFI Item 6 - PFAS

7.1 RFI

The RFI from ACP in respect of PFAS is set out below. It is in a number of parts and a detailed response in respect of each individual part is provided.

"6. European Commission Joint Research Centre technical assessment (European Commission – Joint Research Centre (JRC) EUR 30710 EN (JRC125254) Published May 2021) indicates that PFAS compounds are detectable in flue gas, bottom ash, fly ash and scrubber effluent from municipal solid waste incinerators, and that effective PFAS destruction requires conditions (temperatures exceeding 1, 100-1,200°C, residence times of more than 2 seconds, and high excess oxygen) that may not consistently be achieved in conventional MSW incineration. The applicant is requested to submit, as part of the updated Air Quality impact assessment, an assessment of PFAS emissions from the proposed facility, addressing the following: -

6.1 A qualitative review of the types and approximate quantities of PFAS-containing materials likely to be present in the anticipated waste streams, based on the applicant's waste acceptance criteria and characterisation data.

6.2 A description of how the proposed combustion and abatement technology is designed to minimise PFAS emissions, including the combustion temperatures and residence times achievable under normal and worst-case operating conditions, with reference to published technical guidance on the conditions required for effective PFAS destruction.

6.3 A description of the proposed approach to PFAS monitoring across flue gas, bottom ash, fly ash and scrubber effluent, including commitments to emissions testing during commissioning and operation, in line with emerging best practice.

6.4 A preliminary assessment of the potential pathways by which PFAS could enter the environment from the facility via air, ash and aqueous effluent, including the proposed management measures for each pathway, with tabulated results presented for the discrete sensitive receptor locations identified under Fl 1 above.

6.5 A statement of the applicant's awareness of the current regulatory gap regarding PFAS from incineration and the proposed approach to tracking and responding to evolving EU requirements, including any BAT-AELs that may be introduced during the facility's operational lifetime."

7.2 Applicant Response

To address RFI Item 6 and to support the response to the issues raised therein, a new appendix to **Chapter 8 *Air Quality*** has been prepared and is included in Attachment 6 as follows:

New Document	Attachment
Appendix 8.9 PFAS Air Modelling Assessment (new appendix)	6.1

Detailed responses to each of the individual items raised under RFI Item 6 are provided below.

In relation to the technical report, JRC 125254 (2021) referenced by ACP, the report does not address PFAS destruction during municipal solid waste incineration or the fate of PFAS in process outputs and residues. Therefore, this report does not provide evidence relevant to the matters under consideration in this assessment.

7.2.1 RFI Item 6.1 and Detailed Response

"6.1 A qualitative review of the types and approximate quantities of PFAS-containing materials likely to be present in the anticipated waste streams, based on the applicant's waste acceptance criteria and characterisation data".

Response

As outlined in **Sections 4.5.1** and **4.6.2** of **Chapter 4 *Description of the Proposed Development*** in the 2025 EIS, the proposed development will primarily accept residual municipal solid waste (MSW) and comparable residual commercial and industrial wastes, with a permitted annual capacity of 240,000 tonnes per annum, of which a maximum of 24,000 tonnes may consist of suitable hazardous wastes. The proposed development is, in essence, a conventional municipal waste-to-energy installation comparable to modern grate-fired facilities operating throughout Europe, including Indaver's existing facility in Co. Meath which has been successfully treating both MSW and suitable hazardous waste streams in accordance with its EPA Industrial Emissions licence for more than 10 years. The complete list of waste codes proposed for acceptance is included in **Appendix 4.1 *List of Waste Codes Proposed by Indaver for Acceptance*** of the 2025 EIS.

The suitable hazardous wastes proposed for acceptance are restricted to so-called low-hazard waste streams that are suitable for treatment in a municipal waste grate furnace. These are described in **Section 4.6.2** of **Chapter 4 *Description of the Proposed Development*** in the 2025 EIS and include contaminated personal protective equipment/clothing, filters, absorbents, redundant over-the-counter preparations, medicines, and raw materials such as sugars, starches and gelatine tablet coatings. These streams are classified as hazardous in compliance with the List of Waste (LoW) Codes[4] due to their chemical or physical properties, but they are materially different from concentrated PFAS production wastes or highly fluorinated industrial wastes requiring specialist hazardous waste treatment at temperatures in excess of 1,100°C.

As a result, the proposed development will not accept concentrated PFAS production wastes, PFAS manufacturing residues, nor waste streams arising directly from primary PFAS production or formulation activities. These wastes are treated in high temperature rotary kiln incinerators (HTIs) dedicated for the treatment of hazardous waste (such as highly chlorinated/fluorinated wastes with a halogen content greater than 1% by composition) at temperatures of 1,100°C or greater. PFAS-containing firefighting foam is an example of a concentrated PFAS-containing waste that would be treated in a HTI.

[4] EPA Waste Classification List of Waste & Determining if Waste is Hazardous or Non-hazardous

PFAS may nevertheless occur at low concentrations in the waste streams proposed for acceptance because of their widespread use in everyday consumer and commercial products. Examples include non-stick cookware, baking paper and food packaging, waterproof clothing, personal protective equipment, carpets, cosmetics and pharmaceutical products.

A Dutch study undertaken by Arcadis5 in 2021 examined 129 samples of products, industrial materials and waste streams in which PFAS were expected to occur. For products of the kind that may be present in MSW, total detectable PFAS concentrations were reported to be well below 100 µg/kg (100 ppb). The results illustrate the low and diffuse concentrations in which PFAS may occur in ordinary residual waste, as distinct from concentrated PFAS wastes.

It is therefore generally accepted that as a result of their use in common consumer products such as those listed above, that low concentrations of PFAS are a characteristic component of residual household and comparable commercial waste streams, albeit practically impossible to quantify due to the diffuse way in which they are distributed in the solid residual municipal and commercial waste streams, and in such low concentrations. As a result, it is important to acknowledge the presence of these PFAS compounds in the waste and then to consider how they should be treated to minimise their effects on the environment.

Furthermore, the applicant's waste acceptance procedures will ensure that incoming waste streams will be in accordance with the site's Industrial Emissions licence, which is the responsibility of the EPA as defined in section 34(2)(c) of the Planning and Development Act 2000 (as amended) that "*...the control of emissions arising from [a licensed] activity is a function of the Environmental Protection Agency*".

7.2.2 RFI Item 6.2 and Detailed Response

"6.2 A description of how the proposed combustion and abatement technology is designed to minimise PFAS emissions, including the combustion temperatures and residence times achievable under normal and worst-case operating conditions, with reference to published technical guidance on the conditions required for effective PFAS destruction."

Response

The proposed development has been designed in accordance with the requirements of the Industrial Emissions Directive (IED) and the Waste Incineration BAT Conclusions as described in **Section 4.20** of **Chapter 4** ***Description of the Proposed Development*** in the 2025 EIS. The thermal treatment process is designed to promote the oxidation and destruction of organic constituents present in the incoming waste stream, including fluorinated organic compounds such as PFAS at low concentrations in the waste (as described in the response to RFI Item 6.1 above, see **Section 7.2.1** herein).

For municipal waste incineration plants, the furnace and combustion chamber are designed to ensure that, after the final injection of combustion air, the flue gases are maintained at a temperature of at least 850°C for a minimum residence time of two seconds, under controlled and homogeneous conditions. These combustion requirements are intended to achieve complete combustion and high destruction efficiency for organic pollutants.

In modern municipal waste-to-energy facilities, actual gas-phase temperatures in the combustion chamber are typically above the regulatory minimum of 850°C and are generally in the range of approximately 900°C to 1,100°C. The proposed development will operate within this established temperature range.

The effectiveness of municipal waste incineration in treating PFAS is supported by evidence from full-scale operating facilities. A 2025 study, "Behaviour of PFAS in Waste Incineration Plants"[6] which was conducted jointly by researchers from Gemeinschaftskraftwerk Schweinfurt GmbH (GKS), RWTH Aachen University and the Karlsruhe Institute of Technology (KIT), examined PFAS behaviour at the Schweinfurt municipal waste-incineration facility in Germany.

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[5] PFAS in Products and Waste Streams in the Netherlands (Arcadis, 2021)

[6] Behaviour of PFAS in Waste Incineration Plants

Acknowledging that is not possible to quantify exactly the PFAS loading in municipal solid waste, the study deliberately increased the PFAS loading (in the incoming waste) by a known amount and then measured the PFAS in the outputs (in air emissions, ash etc.). These results were compared to the reference condition of the measured PFAS outputs when the plant was treating just municipal solid waste. The study stated that the temperature range at which the Schweinfurt facility was operating during the study was between 900°C and 1,100°C. The study estimated a destruction/removal efficiency in excess of 99.99% for PFAS in the incoming waste, therefore acting as a sink for PFAS.

This provides operational evidence from a full-scale municipal waste-incineration plant that municipal waste incinerators can achieve a very high destruction/removal efficiency at the typical operating temperatures of between 900°C and 1,100°C.

The combustion process is followed by a multi-stage flue-gas cleaning system incorporating proven Best Available Techniques (BAT). The system includes reagent injection, activated carbon treatment and high-efficiency baghouse filtration. The flue-gas treatment process is described in **Section 4.9** of **Chapter 4** ***Description of the Proposed Development*** of the 2025 EIS.

Activated carbon is a well-established technology for the adsorption of trace organic contaminants, including PFAS, that may remain in the flue gas after combustion. The activated carbon, together with the substances adsorbed onto it, is then removed by the high-efficiency bag filter. These residues removed by the bag filter are referred to as flue gas cleaning residues (FGCR) or air pollution control residues (APCR).

Based on the design of the proposed development, the mandatory combustion conditions required under the IED, the application of BAT-compliant flue gas cleaning systems and the available evidence from full-scale operating facilities, PFAS emissions will be minimised.

Against the backdrop of the current alternative with residual municipal wastes containing PFAS compounds being sent to landfill, the proposed development represents a more sustainable long-term solution for the removal of low concentration PFAS compounds in municipal waste.

7.2.3 RFI Item 6.3 and Detailed Response

"6.3 A description of the proposed approach to PFAS monitoring across flue gas, bottom ash, fly ash and scrubber effluent, including commitments to emissions testing during commissioning and operation, in line with emerging best practice".

Response

The applicant recognises the increasing regulatory and scientific interest in PFAS and fully supports the development of a robust and harmonised monitoring framework for PFAS emissions from waste treatment facilities. The proposed development will comply with all applicable monitoring and reporting requirements imposed through the Industrial Emissions Directive (IED), the facility's EPA licence and any future legally binding PFAS monitoring obligations that may be introduced by the relevant competent authorities.

At present, the scientific and regulatory framework for PFAS monitoring in thermal treatment facilities continues to evolve. Meaningful and comparable monitoring requires three essential elements:

- a standardised and validated sampling and analytical methodology,
- clearly defined regulatory parameters and target compounds, and
- an appropriately developed assessment framework or emission standards against which results can be interpreted.

Any future PFAS monitoring obligations will be implemented using recognised and validated sampling and analytical methodologies. Where monitoring is required, the applicant will utilise accredited laboratories and recognised analytical procedures to ensure the quality and reliability of the resulting data.

The monitoring of flue gas, bottom ash, fly ash, air pollution control residues, will be implemented in accordance with the applicable permit conditions and regulatory requirements. Any PFAS-related monitoring requirements introduced during commissioning or operation will be implemented as required by the competent authority and in line with the prevailing best available scientific and technical guidance.

There will be no wet scrubber in the flue gas treatment system as described in **Section 4.9** of **Chapter 4** ***Description of the Proposed Development*** in the 2025 EIS and also no process effluent from the proposed development.

7.2.4 RFI Item 6.4 and Detailed Response

"6.4 A preliminary assessment of the potential pathways by which PFAS could enter the environment from the facility via air, ash and aqueous effluent, including the proposed management measures for each pathway, with tabulated results presented for the discrete sensitive receptor locations identified under Fl 1 above."

Response

A preliminary assessment of the potential pathways through which PFAS could enter the environment has been undertaken based on the nature of the proposed development, the anticipated waste inputs, the combustion and flue gas cleaning systems described above and the operational experience available from comparable municipal waste-to-energy facilities.

The principal potential pathways by which PFAS could leave the treatment process are:

1. treated flue gas discharged through the stack; and
2. solid residues generated through combustion and flue-gas cleaning.

There is no process effluent discharge from the proposed development and therefore no wastewater discharge pathway is possible.

Atmospheric pathway

The atmospheric pathway is controlled through the high-temperature combustion and multi-stage flue-gas treatment described in the response to RFI Item 6.2 (see **Section 7.2.2** above).

Chapter 8 ***Air Quality*** of the EIS has been updated to incorporate an assessment of PFAS emissions on the ambient air quality. The assessment is included as a new **Appendix 8.9** to the EIS and the assessment is included as Attachment 6.1 to this response document.

As outlined in **Section 8.2.6** of the updated **Chapter 8** ***Air Quality***, the assessment found that over a six year period at the worst-case location anywhere offsite, the process contribution (PC) concentration peaked at less than 0.33 pg/m^3 for Total PFAS which is less than 0.075% of the ambient air assessment criteria. The assessment in Attachment 6.1 demonstrates that even with a worst case assumption of the total PFAS emission (40 ng/Nm^3) to air, the modelled outputs at the point of maximum impact (at site boundary) when compared to lowest available guideline value of 440 pg/Nm^3 contributes only 0.075% and that concentrations decrease rapidly from this point.

Solid residue pathway

Solid residues arising from the process include bottom ash, boiler ash/fly ash and air-pollution-control residues. These materials are managed through established waste management procedures, as described in **Sections 15.5.3.9** and **15.5.3.10** of **Chapter 15** ***Material Assets*** of the EIS and in accordance with the future IE licence requirements for the proposed development.

Operational data from existing waste-to-energy installations provides additional context regarding the occurrence of PFAS in solid residues from waste to energy plants. A Swedish study[7] investigated PFAS occurrence in solid residues from 27 waste-incineration facilities, representing 31 total incineration lines.

[7] PFAS in waste residuals from Swedish incineration plants (2021).

Five bottom ash samples were collected from each line over a two-week period and combined to produce a representative sample for each incineration line. The resulting samples were analysed for 27 different PFAS compounds. PFAS compounds were detected in bottom ash from 9 of the 31 incineration lines, while the remaining 22 samples were below the compound-specific analytical limits of detection. None of the PFAS compounds regulated under Annexes I and IV of the POP Regulation (EU) 2019/1021 exceeded the applicable concentration limits in the bottom ash samples from the 9 incineration lines.

The same study reported more frequent detection of PFAS in boiler fly ash (at higher concentrations than found in bottom ash), with detections in fly ash from 15 of the 31 incineration lines. While flue gas treatment residues were not included in the study, PFAS are expected to be present in these residues given their function in removing residual organic compounds from the flue gas stream. Given the potential for PFAS to occur in both fly ash and flue gas treatment residues, the management of these materials is an important consideration. As described in **Section 15.5.3.10** of **Chapter 15 *Material Assets*** of the EIS, the boiler ash (fly ash) and flue gas treatment residues from the proposed development will be considered hazardous and will be sent to an appropriately licensed facility. Accordingly, any PFAS associated with these residues would be managed within the existing hazardous waste regulatory framework.

In summary, the identified PFAS pathways (to air and fly ash/flue gas cleaning residues) are subject to multiple independent layers of control through the waste acceptance procedures, high-temperature combustion and advanced flue gas cleaning system identified in the responses to RFI Items 6.1 and 6.2 above (see **Sections 7.2.1** and **7.2.2** herein), in addition to the controlled residue management and regulatory requirements identified here. Taken together, they provide a robust means of managing the low concentrations of PFAS that may be present in the incoming waste streams proposed for acceptance.

7.2.5 RFI Item 6.5 and Detailed Response

"6.5 A statement of the applicant's awareness of the current regulatory gap regarding PFAS from incineration and the proposed approach to tracking and responding to evolving EU requirements, including any BAT-AELs that may be introduced during the facility's operational lifetime."

Response

The applicant is aware of the current position regarding the regulation of PFAS emissions from waste incineration, including the fact that the Waste Incineration BAT Conclusions[8] do not presently specify PFAS-specific BAT-Associated Emission Levels (BAT-AEL's). The establishment of any additional regulatory requirements for PFAS, including monitoring requirements, emission limit values or BAT-AEL's, is a matter for the relevant European and national regulatory authorities.

The proposed development will operate under an Industrial Emissions licence issued and enforced by the Environmental Protection Agency. The EPA is the competent authority responsible for regulating emissions from the licensed activity and for ensuring continuing compliance with applicable environmental legislation and Best Available Techniques (BAT).

Accordingly, the tracking and implementation of any new legally binding EU requirements relating to PFAS from waste incineration will be addressed through the established EPA licensing regime. If future EU legislation, revised BAT Conclusions, PFAS-specific BAT-AEL's or other applicable requirements introduce additional monitoring, emission-control or reporting obligations, the EPA can give effect to those requirements through the Industrial Emissions licensing system, including by amendment of licence conditions where necessary. The proposed development will comply with all such applicable requirements within the timescales established by the relevant regulatory authorities.

This is not a project-specific issue. Any generally applicable requirements introduced for the waste-incineration sector would fall to be implemented by the EPA, as the licensing and enforcement authority, across the Irish incineration facilities to which those requirements apply. The proposed development will therefore be regulated within the same national Industrial Emissions licensing framework as other EPA-regulated waste-incineration installations in Ireland.

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[8] BAT Conclusions for Waste Incineration (EU, 2019)

This approach ensures that the proposed development remains subject throughout its operational life to the environmental standards and Best Available Techniques applicable to the sector, with compliance secured through an independent and legally enforceable EPA licensing regime.

This response, together with the new **Appendix 8.9** in Attachment 6.1comprehensively addresses Item 6 of the RFI. The updated assessment does not result in any changes to the conclusions of the assessment, including the cumulative effects assessment.

8. RFI Item 7 – Coastal Recession

8.1 RFI

The RFI from ACP in respect of coastal recession is as follows:

"7. (a) Having regard to the uncertainties identified in relation to the assessment of coastal recession, the applicant is requested to submit a revised Coastal Erosion Assessment and corresponding amendments to Chapter 13 (Soils, Geology, Hydrogeology, Hydrology and Coastal Recession), Chapter 16 (Cumulative Impacts, Other Impacts and Interactions) and Appendix 13.3 (Coastal Erosion Study) of the EIS. The revised assessment shall demonstrate, using an appropriately validated and site-specific methodology, the potential extent of cliff toe and cliff top recession over the lifetime of the proposed development, including the construction period, and under longer-term climate change and sea level rise scenarios. The assessment shall include a clear evaluation of uncertainty, spatial variability, episodic failure mechanisms, groundwater and wave-driven erosion processes, and shall identify credible upper-bound coastal recession scenarios for use in the planning and environmental assessment of the proposed development. The applicant shall also provide a detailed assessment of the role of groundwater seepage and other hydrogeological processes in influencing both cliff toe erosion and cliff top recession, including how these processes may change under future climate conditions and whether they could contribute to accelerated instability, erosion or slope failure within the study area. The EIS shall be updated, as necessary, to reflect the findings of the revised assessment.

(b) Where the revised assessment alters the understanding of coastal recession processes, shoreline position, or the delineation of the present-day High Water Mark relied upon in the application documentation, the applicant shall address potential implications for land ownership, development boundaries, and the applicable statutory consenting regime. The submission shall demonstrate whether any part of the application site lies within the maritime area as defined under the Maritime Area Planning Act 2021 and shall assess the implications of projected coastal recession over the combined construction and operational lifetime of the proposed development for the relationship between the development and the maritime area. The submission should clarify any requirement for consent, licence, or other authorisation under the Maritime Area Planning Act 2021, including engagement with the Maritime Area Regulatory Authority, where appropriate."

8.2 Applicant Response

The Applicant response to this RFI is provided below in two parts.

8.2.1 RFI Item 7a and Detailed Response

"7. (a) Having regard to the uncertainties identified in relation to the assessment of coastal recession, the applicant is requested to submit a revised Coastal Erosion Assessment and corresponding amendments to Chapter 13 (Soils, Geology, Hydrogeology, Hydrology and Coastal Recession), Chapter 16 (Cumulative Impacts, Other Impacts and Interactions) and Appendix 13.3 (Coastal Erosion Study) of the EIS.

The revised assessment shall demonstrate, using an appropriately validated and site-specific methodology, the potential extent of cliff toe and cliff top recession over the lifetime of the proposed development, including the construction period, and under longer-term climate change and sea level rise scenarios. The assessment shall include a clear evaluation of uncertainty, spatial variability, episodic failure mechanisms, groundwater and wave-driven erosion processes, and shall identify credible upper-bound coastal recession scenarios for use in the planning and environmental assessment of the proposed development. The applicant shall also provide a detailed assessment of the role of groundwater seepage and other hydrogeological processes in influencing both cliff toe erosion and cliff top recession, including how these processes may change under future climate conditions and whether they could contribute to accelerated instability, erosion or slope failure within the study area. The EIS shall be updated, as necessary, to reflect the findings of the revised assessment."

Response

A detailed response to this RFI item is provided in a new appendix to the EIS – **Appendix I** to **Appendix 13.3** ***Coastal Erosion Study***, see Attachment 7 herein. The following documents have also been updated to reflect this response and are enclosed as attachments:

Updated/New Document	Attachment
Chapter 13 – Soils, Geology, Hydrogeology, Hydrology and Coastal Recession (updated)	7.1
Appendix 13.3 of the EIS (updated) and including the new Appendix I referenced above	7.2
Figures 13.19a (updated) and 13.19b (new)	7.3
Figure 13.26	7.4

The response included in **Appendix I** of **Appendix 13.3** ***Coastal Erosion Study*** details how, given the complex nature of the physical processes involved in the retreat of the cliffs located at the site, different methods have been used to model and assess their behaviour and predict future cliff retreat. The previous assessment in the 2025 EIS has been reinforced with the following additional assessments:

- A specific cliff retreat numerical model (SCAPE) to assess the spatial variability of the predicted retreat of the cliffs; and
- a geotechnical cliff stability assessment to assess with further detail the influence of ground and groundwater conditions and sea level rise on the stability of the cliff, have been undertaken.
- The updated Coastal Recession Assessment (**Appendix I** to **Appendix 13.3** of the EIS) confirms the understanding of coastal recession processes assessed in the 2025 EIS submission and refines the predicted location of the retreat of the cliffs in future climate scenarios confirming the conservative upper boundary for cliff retreat at the site boundary over the lifetime of the proposed development including its construction phase as identified in the 2025 EIS submission. This assessment also reduces the uncertainty associated with the estimation of cliff retreat based on topographic information.

The role of groundwater seepage and other hydrogeological processes are also addressed in **Appendix I** (see **Section 3.3.5** therein) of **Appendix 13.3** of the EIS, where it is demonstrated that these are not significant in terms of slope instability. *"...and whether they could contribute to accelerated instability, erosion or slope failure within the study area."*

The updated assessment concludes that the impact of a rise in sea and groundwater levels on failure of the cliff compared to the baseline condition is marginal and does not impact the location of the 30-year and 40-year recession lines based on the 2025 erosion assessment.

Given this conclusion, no changes are required to **Chapter 16** ***Cumulative Effects*** and the conclusions therein remain as per the 2025 EIS.

8.2.2 RFI Item 7b and Detailed Response

"(b) Where the revised assessment alters the understanding of coastal recession processes, shoreline position, or the delineation of the present-day High Water Mark relied upon in the application documentation, the applicant shall address potential implications for land ownership, development boundaries, and the applicable statutory consenting regime. The submission shall demonstrate whether any part of the application site lies within the maritime area as defined under the Maritime Area Planning Act 2021 and shall assess the implications of projected coastal recession over the combined construction and operational lifetime of the proposed development for the relationship between the development and the maritime area. The submission should clarify any requirement for consent, licence, or other authorisation under the Maritime Area Planning Act 2021, including engagement with the Maritime Area Regulatory Authority, where appropriate."

Response

Indaver confirms that the revised coastal erosion assessment prepared pursuant to request 7(a), which is included at **Appendix I** of **Appendix 13.3 *Coastal Erosion Study*** of the EIS (see Attachment 7.2 as referenced above), does not alter the understanding of coastal recession processes, shoreline position, or the delineation of the present-day High Water Mark relied upon in the application documentation.

There are no changes to the predicted impacts which were identified in the 2025 EIS. Accordingly, the position remains as set out at Page 10 of Indaver's Response to Third Party Submissions dated 18 March 2026, which confirmed that "*the sacrificial material proposed for the Indaver development will be placed above the High Water Mark (HWM) as shown on Drawing 1434-101 and during the placement of this material the construction plant and equipment will also remain above this HWM*".

There will be no beach nourishment works below the High Water Mark and no part of the proposed development lies within the "*maritime area*" as defined in section 3 of the Maritime Area Planning Act 2021 (as amended), which is,

"that area of the State…extending from the high water of ordinary or medium tides of the sea to the outer limit of the continental shelf, and includes – (a) the sea and tidal areas of internal waters of the State as construed in accordance with the Act of 2021,(b) the territorial seas of the State as construed in accordance with the Act of 2021,(c) the exclusive economic zone as construed in accordance with the Act of 2021, and (d) the continental shelf as construed in accordance with the Act of 2021."

Accordingly, Indaver is not required to obtain a consent, licence, or other authorisation under the Maritime Area Planning Act 2021 as amended, and the proposed development is outside of the remit of the Maritime Area Regulatory Authority (MARA).

9. RFI Item 8 – EIS Updates and Relevant Guidance

9.1 RFI

The RFI in respect of EIS Updates and relevant guidance is set out below:

"8. Updates to the EIS should be presented in a manner consistent with the EPA guidance document 'Guidelines on the information to be contained in Environmental Impact Assessment Reports' (2022), including with reference to the consideration and application of significance categories set out in Table 3.4 and the information required to describe such effects, as contained in Table 3.5 of these Guidelines."

9.2 Applicant Response

We confirm that all updates to the EIS provided herein are consistent with the EPA guidance document '*Guidelines on the information to be contained in Environmental Impact Assessment Reports'* (2022), including Tables 3.4 and 3.5 of these Guidelines.