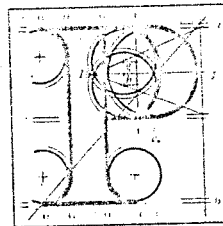


Our Case Number: ABP-318802-24
Planning Authority Reference Number:



**An
Coimisiún
Pleanála**

Cork Geological Association
c/o Bettie Higgs
Beechwood House
St. Philomena's Road
Crosshaven
Co. Cork

Date: 19 November 2025

Re: Proposed development of a resource recovery centre (including waste-to-energy facility)
in Ringaskiddy, County Cork.

Dear Sir / Madam,

An Coimisiún Pleanála has received your recent submission in relation to the above mentioned proposed development and will take it into consideration in its determination of the matter. Please accept this letter as a receipt for the fee of €50 that you have paid.

The Commission will revert to you in due course with regard to the matter:

Please be advised that copies of all submissions / observations received in relation to the application will be made available for public inspection at the offices of the local authority and at the offices of An Coimisiún Pleanála when they have been processed by the Commission.

More detailed information in relation to strategic infrastructure development can be viewed on the Commission's website: www.pleanala.ie.

If you have any queries in the meantime please contact the undersigned officer of the Commission. Please quote the above mentioned An Coimisiún Pleanála reference number in any correspondence or telephone contact with the Commission.

Yours faithfully,

Kevin McGettigan
Executive Officer
Direct Line: 01-8737263

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From: Dr. Bettie Higgs, Chairperson Cork Geological Association,
Beechwood House
St. Philomena's Road
Crosshaven
Co. Cork

To: An Coimisiun Pleanala,
64 Marlborough Street,
Dublin 1
D01 V902

Planning application: PA04.318802 Applicant: Indaver Ireland

Introduction

This submission highlights some key gaps, deficiencies and inconsistencies in the Indaver 2025 Environmental Impact Statement (EIS). While the documentation is extensive, the underlying evidence base is inconsistent between sections, sometimes contradictory, and in places overly reliant on broad assumptions, leading to speculative statements.

The Indaver EIS omits to show how irreparable damage to a County Geological Heritage site (CK077) will be prevented.

The coastal defence proposed by Indaver, along the eastern boundary of the Indaver site, would encroach on a County Geological Heritage site. This site is recommended by the national body, Geological Survey Ireland, to have the additional status of Natural Heritage Area (NHA). Maps clearly show this includes Gobby Beach and Golden rock. https://gsi.geodata.gov.ie/downloads/Geoheritage/Reports/CK077_Cork_CGS_Ringaskiddy.pdf Indaver has correctly stated that this site is a County Geological Heritage site, but has omitted to say that in the same audit and government publication it has been recommended as a Natural Heritage Area (NHA).

In the Cork Development Plan (Cork CDP 2022 Volume 1: Main Policy Material, Chapter 15) it states "NHA sites and proposed NHA sites are of national importance and they generally support a range of habitats, plant and animal species and, in some cases, geological features" and goes on to say that when designation is complete the County Council will prevent inappropriate development.

Indaver states that approximately 1,150m³ of sacrificial material will be placed over part of the site. It labels the impact as "moderate/slight" and then "imperceptible", although admits the placement is irreversible and involves direct physical alteration of the heritage fabric. This is inconsistent, as permanent loss of part of a designated heritage site cannot rationally be imperceptible. The loss of heritage is a contradiction of the statutory protection intent.

The GSI County Heritage report also says of this site “It is popular as a geology field trip destination, with regular visits from Irish and overseas universities”. Many professional geologists, including myself, can vouch for that, having led many such educational fieldtrips.

The Indaver EIS omits the physical properties of the shingle proposed as beach nourishment and coastal erosion barrier. There is no geomorphological baseline study, or detailed shingle beach management plan that prevents loss of habitats, and damage or fragmentation of heritage.

‘Shingle’ is an informal term and can include a wide variation in size, shape, texture and composition of the clasts. These clast characteristics have a significant influence on the clast movement when exposed to wave and current action. The current EIS uses the informal non-committal term ‘shingle’ and avoids being specific.

The Indaver EIS references Pye and Blott (2018) without explaining how they would implement the authors’ findings. The authors state best practice is to have shingle as near as possible to the existing beach shingle. The existing beach material is wave-reworked glacial till which has evolved over the past 10,000 years. There is no ready source/supply of such material in Ireland to make a 1,150m³ barrier. In the previous EIS (2016) Indaver named O’Neill’s Quarry as the source of ‘beach nourishment’. It was pointed out that the size, shape and composition of the gravel in O’Neill’s Quarry is very different to Gobby Beach and the Golden rock County Heritage Site, as it formed by a very different process. Using such material would cause irreparable damage to the heritage site. The Indaver EIS avoids addressing this point.

It is important to know the source and nature of the shingle Indaver propose to use. Pye and Blott (2018) state “Key attributes of the shingle and shingle features need to be understood and taken into account in developing an appropriate shingle management strategy for flood and coastal erosion risk management”.

Pye and Blott (2018) cited in the current Indaver EIS mainly deal with protection and conservation of *natural* shingle banks and platforms in Wales. In Sections 7, 8, 9 and 10 of their report they deal with Flood and Coastal Erosion Risk Management (FCERM) in Wales. Their detailed case studies and discussions are alarming and are a cause for concern. In all examples where FCERM is considered of medium or high importance, shingle barriers have associated rock armour hard support, except for two locations where there is a policy of managed realignment towards a natural environment. In all examples, over-topping occurs, and in most examples shingle barriers progressively move landward due to storms and rising sea-level, unless squeezed against concrete sea-wall defences. Thrown pebbles have blocked roads, and damaged adjacent infrastructure. Pye and Blot (2018) state “This risk is likely to increase as sea-level rises and barriers move landward by rollover”.

The Welsh coastal defences described by Pye and Blott (2018) were constructed in the past to protect **existing** important high-value infrastructure and assets. There are no examples of building shingle barriers to protect **planned** infrastructure in vulnerable locations. Concluding best practice in coastal areas (Pye and Blot, 2018) is to move from *Hold-the-line* strategy to *Managed realignment* to *No Direct intervention*. That is, allow natural processes to take place, and re-position existing infrastructure landward. This is good for the natural environment and can prove to be the least expensive option.

The Indaver EIS omits addressing how increased erosion of vulnerable cliffs immediately to the south of the site will be prevented.

Indaver states that there will be no negative impact on adjoining areas, as only shingle nourishment is proposed. Dynamic modelling has not been carried out to substantiate this claim.

Any imported shingle or fixed rock armour at the Indaver site, no matter what material, will upset the natural erosional equilibrium. Rock or shingle will deflect wave energy to adjacent unprotected coastline. This increased erosion is a well-known phenomenon when coastal defence is implemented. Rock armour increases local turbulence and deflects wave energy, concentrating the erosion and causing undercutting at the unprotected adjacent cliffs. The adjacent cliffs are up to 15m in height and made of easily eroded glacial till (identified as the 'Ringaskiddy Drumlin' in publications). Increased erosion will reduce buttressing, encouraging increased local landslips.

Given the proximity of unconsolidated Quaternary cliffs immediately to the south, and the absence of quantified modelling in the EIS there is insufficient evidence that a coastal defence installation would not accelerate erosion of the southern cliffs.

Meteorologists and climate scientists are united in warning of increased storm frequency and severity. Since this is already an actively eroding site, Indaver do not state what their future strategy will be with respect to rock armour. The EIS adopts a uniform linear rate of erosion of 0.5m/yr (based on smoothed data) yet acknowledges episodic failure of 12m in a single event. A linear retreat assumption for the next 30 years is unjustified when erosion is influenced by extreme storm events and climate change. The Indaver EIS has no measurable thresholds that would trigger enhanced mitigation.

Indaver EIS states in their expert review (13.5) that they do not know what will happen if there is slumping onto their shingle nourishment. The EIS assumes no negative impact, without any assessment.

If rock armour were ever installed at the Indaver site (either as future reinforcement of the proposed 'soft' solution or as part of emergency works) it would interrupt the littoral sediment supply, increase reflected/deflected wave energy, and scour near the

southern boundary, and potentially destabilise the Quaternary till cliffs south of Gobby Beach through toe erosion and groundwater imbalance.

Indaver has not adequately addressed these potential impacts in the 2025 EIS documentation.

Indaver states that coastal protection measures (beach nourishment) will prevent further erosion, and assumes success in order to classify the risk as negligible. This is a circular argument. Mitigation using 'beach nourishment' has not been proven or modelled, and so the impact assessment is speculative at best.

In summary, installation of any rock armour at the Indaver site would likely intensify erosion and instability in the Quaternary till cliffs to the south, through sediment interruption and wave reflection/deflection. Hence, there is an underestimate of the erosion hazard. The current EIS does not address or model these impacts.

The EIS significantly underestimates the probability of rapid cliff failure south of the Indaver site. Statements like "no effects are expected within 30 years" are speculative only and uncover a credibility gap.

Landslip susceptibility and impact is inconsistent

The Indaver EIS identifies "moderately high landslide susceptibility" but downplays this by stating "no visible slope failures in Areas 2-4". A walk along the Gobby Beach and to the south on any day, and especially after a storm, will display evidence of fresh landslip/erosion.

No quantitative slope stability modelling or safety analysis is presented in the EIS to demonstrate resilience. This is especially necessary before excavation or ground level raising, and taking into consideration heavy rainfall, sea toe erosion, or dewatering.

Groundwater assertions are not substantiated

Indaver EIS does not substantiate the groundwater assertions. For example the EIS states contamination from the adjacent Hammond Lane site will not impact the Indaver site, contradicting the observed groundwater flow direction. There is no hydrological modelling to support the EIS claim. Tidal influence, interacting with groundwater, will affect both sites. The conceptual site model classified the environment as "passive" despite evidence of dynamic influences: tidal fluctuations in groundwater levels, saline intrusion, and coastal recession. Recent monitoring and analysis of groundwater/tidal interactions in sufficient boreholes across the area, showing seasonal variation, has not been undertaken for the 2025 EIS.

This EIS does not meet EPA (2022 3.4-3.5) requirements for a current and representative baseline on which to assess risk. Borehole data is not linked to geological formations and their transmissivity characteristics. Groundwater's contribution to cliff instability is

assumed (at 50%) rather than modelled. There is an arbitrary 50/50 wave-groundwater erosion ratio assumed.

The EIS demonstrates a lack of integration of interacting processes. Hydrology, hydrogeology and coastal processes are assessed independently, and not as the interacting systems that they are. For example, in the EIS dewatering effects and raised ground levels are not linked to potential increased hydraulic gradients towards the coast. This may mean that cumulative or feedback effects are missed.

In the EIS flood analysis focuses on tidal flood risk in isolation, ignoring the joint flood events of tidal+surge+pluvial. Pluvial can include heavy rainfall and increased impervious surfaces.

Cumulative impact assessment (required under EPA 2022 2.4) is therefore weakened.

Soil contamination

The EIS relies on the 2001 investigations by K.T. Cullen who found 'clean soil' while the EIS does not apply the precautionary principle to new evidence which finds made ground of unknown origin and adjacent industrial contamination.

The indaver EIS does not comply with current Land Use intention

The 2025 Flood Risk Assessment cites the County Development plan 2022-2028 and Ballincollig-Carrigaline Municipal District LAP (2017) as the operative planning policy. The Ringaskiddy site has been rezoned for educational, research and innovation uses (reflecting the presence of the National Maritime College and UCC Beaufort Laboratory, key neighbouring land uses) rather than heavy industrial use. The site context has shifted to a knowledge and educational zone rather than traditional industrial estate. The coastal zone from Loughbeg to Paddy's Point is ideal for an integrated Biodiversity, Geodiversity, Coastal erosion, Climate change natural laboratory. This would be appropriate for primary, secondary, tertiary and research educational use.

The area's public amenity and tourism role has become more explicit, conflicting with industrial expansion, increasing the argument that the coastal zone should be preserved for community and heritage use. The direct and indirect impacts of the proposed incinerator undermine the integrity and contradict the objectives of the Cork Harbour SPA.

Since 2016, Ringaskiddy has evolved from an industrial fringe to a mixed-use and educational hub within Cork Harbour's Innovation corridor. The rezoning of land for educational and research purposes, combined with updated flood and erosion risks, makes the proposed incinerator inconsistent with the County Development Plan (2022-2028) and local planning strategy. Indaver have not stated how they would ensure this area is left undisturbed for authentic educational use.

Indaver has not fully addressed the increased obligation demanded by the EPA (2022) and EU Directive 2014/52/EU on applicants to demonstrate climate resilience and cumulative impacts at this site.

The Indaver EIS is lacking in Data un/certainty

There is a gap in data certainty in various parts of the Indaver EIS, as the EIS repeatedly asserts “no significant effects are expected” or that residual impacts are “imperceptible” despite high baseline risks (eg. coastal erosion and groundwater vulnerability). For example the site is described as having extreme groundwater vulnerability and moderately high landslide susceptibility, yet the effects of planned excavation, dewatering and loading are considered only “slight”. The EIS underplays the combined risk. Where there is thin overburden, coastal exposure and tidal influence, the EIS fails to acknowledge a higher degree of uncertainty.

The EIS claims “no significant residual effects” for all features including a coastline with active recession, highly vulnerable groundwater and heavy construction. The blanket conclusion is implausible and undermines the credibility of the impact rating process. The EIS downplays the sensitivity of this setting and underestimates the risks.

Conclusion

Repeated false confidence demonstrated in the Indaver EIS, together with inconsistencies and avoidance of essential detail undermines the credibility of this application. The identification of cumulative risks is lacking from the EIS, as interacting processes are not assessed. Climate resilience is not adequately addressed. The proposed development does not comply with the rezoning objectives and the County Development Plan. All available evidence, including that in the Indaver EIS itself, suggests the proposed location of this infrastructure is unsuitable. The application should not be granted.

Reference: Pye, K. and Blott, S. J. 2018. Advice on Sustainable Management of Coastal Shingle Resources. NRW Report No: 273, 167pp, NRW, Cardiff

Signed: Bettie Higgs

Dr. Bettie Higgs

Chairperson, Cork Geological Association

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