Inspector's Report PA0045.

Development	Resource Recovery Centre development, comprising a Waste to Energy Facility (waste incinerator with energy recovery) for the treatment of non-hazardous and hazardous waste. The development also includes an upgrade to a section of the L2545 road; coastal protection measures on Gobby Beach; a connection to the national electricity distribution grid; the raising the ground levels in part of the site; the provision of an amenity walkway along the eastern and part southern boundary of the site and associated works.
Location	Ringaskiddy, County Cork.
Applicant	Indaver Ireland.
Type of Application	Application to the Board pursuant to section 37E.
Dates of Site Inspection	14th March 2016, 5th April 2016, 21st April 2016, 6th September 2016
Inspector	Derek Daly.

1.0 SITE LOCATION AND DESCRIPTION

1.1 The site is located approximately 15km to the south-east of Cork City, in the townland of Ringaskiddy at the eastern extremity of the Ringaskiddy Peninsula in the lower part of Cork Harbour. The site is located approximately 800m east of the village of Ringaskiddy. The Ringaskiddy area includes a large number of industries and commercial activities including pharmaceutical industries, a car ferry terminal and a deep water port facility. Ringaskiddy is connected to Cork and the wider national road network via the N28 National Primary Route.

1.2 There is an alternative and secondary access to the Ringaskiddy area via the R619 from Carrigaline a regional road, which is quite narrow and is substandard in alignment and which terminates at a junction with the N28 at Ringaskiddy village.

1.3 The N28 itself commences on the Cork southern ring road the N40 at the Bloomfield Interchange by-passing Douglas village and continues south to the Shannonvale roundabout. At this roundabout traffic for Carrigaline a major dormitory town leaves the N28. The overall N28 varies in both width and alignment from the Broomfield junction to Ringaskiddy. North of Shannonpark roundabout, along a section referred to as Carr's Hill, it is quite narrow and rural in character and overtaking manoeuvres are difficult.

1.4 The L2545 is an eastern continuation of the N28 to Haulbowline Island and although having a lower designation the carriageway of the road is of a width to provide for an adequate passing facility for two large vehicles. The L2545 defines the northern boundary of the site. The eastern boundary of the site extends to the foreshore of Cork Lower Harbour along Gobby Beach. The road turns north immediately to the west of the beach area to serve both Rocky Island and Haulbowline Island. There is a public car park adjoining the right angle bend and pedestrian access from the car park onto Gobby Beach. This car park is within the confines of the appeal site.

1.5 The lands to the immediate south and west of the site under consideration are in agricultural use and at a higher level to the site. On these lands beyond the site's southern boundary there is a high voltage electricity line. In addition, to the south of the site is a Martello tower. There is a walkway through the site from the car park to the Martello Tower. On the higher sections of the site there are extensive views over the outer and middle areas of Cork Harbour and the islands in the harbour including Great Island (Cobh), Haulbowline and Spike Island.

1.6 The site itself is irregular in configuration and surrounds and wraps around an existing commercial development the Hammond Lane Metal Recycling Co. Ltd. Facility, which has independent access onto the L2545. The site in effect bounds the Hammond Lane facility on three of the Hammond Lane site boundaries.

1.7 The site is currently covered in scrub with some pockets of trees and open grass areas and there is a rise in level southwards on the site which has a stated area of approximately 13.55 hectares. There is a particular defined rise in level on the site after an initial level area immediately adjoining the public road.

1.8 On the opposite (northern side) of the L2545 are the National Maritime College of Ireland (NMCI), the Irish Maritime and Energy Resource Cluster (IMERC) campus, and warehousing some of which are accessed from the section of road running northwards to Haulbowline Island.

1.9 On the western approach to Ringaskiddy Village fronting onto the N28 there are industrial/pharmaceutical industries, most notably Pfizer which is located on a large campus and which has an extensive road frontage.

2.0 THE PROPOSED DEVELOPMENT

2.1 The proposed development as submitted on the 13th of January 2016 and as referred to in public notices provides for the following elements,

2.1.1 A Resource Recovery Centre development, comprising a Waste to Energy Facility (WTE) for the treatment of non-hazardous and hazardous waste.

The proposed development consists principally of a waste-to-energy facility for the treatment of up to 240,000 tonnes per annum of residual household, commercial, industrial, non-hazardous and suitable hazardous waste. Of the 240,000 tonnes of waste, up to 24,000 tonnes per annum of suitable hazardous waste will be treated at the facility.

Examples of suitable hazardous waste it is indicated include materials from industry such as 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 European Waste Catalogue due to their chemical or physical properties. However, this does not imply that they are dangerous to handle (i.e. they may be handled by householders and businesses regularly). Energy and ferrous and non-ferrous metals will be recovered at the facility.

The WTE facility which is located in the eastern area of the site between the Hammond Lane facility and Gobby Beach provides for the following elements,

- The process building, which include the main stages of the WTE process including waste acceptance and tipping area; the conveyance of material for combustion; the furnace and boiler area. In addition, the building includes a warehouse for spare parts storage, an administration area containing facilities and offices for the waste-to-energy operations staff and a laboratory, and a workshop. The building it is stated is up to 11,255m² in total floor area.

- The main process building will be up to 176m x 81m in plan and up to 45.7m in height, with a stack extending to 75m above Ordnance Datum (70m above ground level) located at the west of the building.
- The administration building and security gate house and weighbridges located to the northwest of the process of the process building. The building is a two-storey building located to the west of the main entrance. The building primarily provides office space and meeting rooms for staff but will also have a visitors' centre and a training centre. The building including the gate house is stated as up to 998m² total floor area with a maximum height of 8.2m high above ground level. The security gate house is single storey in height.
- The turbine hall with a stated floor area of 375m² and up to 16m high and aero-condenser structure located to the south of the process building will house the steam turbine.
- The aero-condenser structure which is single-storey, 482m² in area and up to 16m high will be located adjacent to the turbine hall and will support the air cooled condenser fans.
- Firewater storage tank, 2,200m³ in volume, up to 11m high and pump house in the southeastern corner of the site. The Pump House is single-storey, up to 157m² in floor area and up to 6m high.
- Surface water attenuation tank and firewater retention tank for the storage of surface water and potentially contaminated water, following use in fighting a fire, will be located underneath the administration building car park in the northern part of the site.
- Light fuel oil storage tank, aqueous ammonia storage tank and unloading area, nitrogen generation and storage to the south of the main process building and west of the aero-condenser structure.
- Aqueous waste storage tank and tanker unloading area to the south of the main process building and west of the aero-condenser structure.
- A 38 kV ESB Substation and Compound with a floor area of 102m² and up to 5m high.
- 2 no. weigh bridges.
- A package waste water sewage treatment plant.
- Associated site services which include the provision of 2 no. site entrances, internal circulation area, the provision of 57 no. car parking spaces, an unloading area, landscaping and boundary fences.
- Changes to site levels to facilitate the above which include an increase in ground levels in western section of the site consisting of: raising a 10,000m^3 area by a maximum height of up to 2.5m above ground level. The levels of the low-lying parts of the site will be raised to 4.55m above Ordnance Datum in order to create a very high standard of flood protection to the site. The 4.55m flood defence level it is indicated are the same as that adopted by a number of recent developments close to the site in Ringaskiddy.

2.1.2 The upgrade to a section of the L2545 road which provides for the raising of a 185m length of the road by a maximum height of up to 1 metre between Gobby Beach car park and the entrance to the National Maritime College of Ireland (NMCI). The works also provide for the upgrading of surface water

drainage network in relation to the L2545 road from the western end of the Indaver site to the eastern end of Gobby Beach car park.

2.1.3 The provision of coastal protection measures on Gobby Beach consisting of the placement of 1100m^3 of shingle above the foreshore along the eastern boundary of the Indaver site and for this to be repeated every two to five years.

2.1.4 A connection to the national electricity distribution grid consisting of a 38kV underground connection to adjacent ESB Networks Loughbeg substation located to the east of The Hammond Lane Metal Company Ltd premises.

2.1.5 The provision of an amenity walkway along the eastern and part southern boundary of the site. The proposed amenity walkway is located outside the facility's security fence and will be provided along part of the southern and eastern site boundaries to allow public access between the Martello tower and Gobby Beach car park.

2.2 An Environmental Impact Statement (EIS) and Natura Impact Statement (NIS) were submitted in respect of the proposed development.

2.3 The proposed development relates to development which comprises an activity requiring an Industrial Emissions Licence.

2.4 it is stated that the proposed development is not a Seveso site to which the Chemicals Act (Control of Major Accident Hazards Involving Dangerous Substances) Regulations SI 209 of2015 refers. It is indicated that the closest Seveso site to the proposed development is located in Ringaskiddy townland and may be relevant to the risk or consequences of a major accident.

2.5 The applicant is applying for a 10-year planning permission to commence and complete the construction phase. In addition, permission is sought to operate the proposed development for an initial period of 30 years after commissioning, with the option to extend the operating period for a further 30-year period, subject to obtaining a grant of permission for that extended period.

3.0 PLANNING HISTORY

3.1 The current site has a planning history.

3.2 **ABP Ref.04.131196 / P.A. Ref. S/01/6215**.

An Bord Pleanála granted permission on the 15th of January 2004 subject to twenty seven conditions for a development comprising the construction of a waste management facility comprising a waste to energy facility, a waste transfer station and a community recycling park, incorporating a main building, turbine building, office buildings, sampling building, warehouse, storage tanks, security buildings, electricity substation, service yards, carparks, roads,

landscaping and site works including sewage treatment plants to treat sanitary effluent from the facility on the current site.

The decision of the planning authority was to refuse the development and this decision was the subject of first and third party appeals to An Bord Pleanála. Condition no.4 indicated that "the annual tonnage of industrial/trade waste thermally treated shall not exceed the quantity of 100,000 tonnes as identified in the Environmental Impact Statement".

3.3 ABP Ref.04.PA0010.

An Bord Pleanála refused permission on the 09th of June 2011 for a waste to energy facility for hazardous and non-hazardous waste and a transfer station facility on the current site which was submitted under section 37E of the Planning and Development Act, 2000, as amended. Four reasons for refusal were stated.

1. The Board is not satisfied that the provision of incineration capacity to deal with residual municipal waste, in addition to hazardous waste, at this site is appropriate, having regard to both the layout and limited size of the site and to the current strategy of the Cork local authorities in respect of waste management, as set out in the submissions of the planning authority in connection with the application, including to the oral hearing. Accordingly, the Board is not satisfied that the proposed development would be compatible with the Waste Management Strategy for the region or the Waste Management Plan for County Cork, 2004, and, therefore, considers that the proposed development would not be in accordance with the proper planning and sustainable development of the area.

2. The Board considers that the provision of an incinerator to treat hazardous and industrial waste (100,000 tonnes per annum) is in accordance with national policy, as set out in the National Hazardous Waste Management Plan, 2008-2012, and therefore invited revised proposals to provide such incinerator, whilst omitting facilities to treat municipal waste and reducing the scale of the development accordingly. It is considered that the revised proposal received by An Bord Pleanála on the 3rd day of August 2010, which is designed to facilitate future provision of municipal waste treatment, does not comply with this request in terms of reduction of the scale of the development. Therefore, the development as proposed would constitute overdevelopment of the site, which would seriously injure the amenities of the area and of property in the vicinity, and would not be in accordance with the proper planning and sustainable development of the area.

3. The road serving the site is at risk of flooding and the Board invited revised proposals to address this issue. The measures put forward in the submission received by An Bord Pleanála on the 3rd day of August 2010 entail significant works to the road, including substantially altering levels immediately adjoining the property of others and modifying surface water drainage. The Board is not satisfied that the impacts of these measures have been fully described and assessed, that there is certainty in terms of

their implementation and the responsibility for same and, consequently, that access to the proposed development would be available at all times.

4. On the basis of the evidence put forward in connection with the application, that the site might be at risk of coastal erosion in the future, the Board requested details of the nature, extent and impact of appropriate measures to prevent such erosion. The Board is not satisfied that the submission of the 3rd day of August 2010 contains sufficient information in relation to implementation of such coastal protection measures and the impact of these works, including on other nearby property.

4.0 POLICY CONTEXT

4.1 WASTE MANAGEMENT POLICY

4.1.1 EU POLICY

4.1.1.1 The EU Waste Framework Directive (2008/98/EC).

This Directive streamlined EU waste legislation by replacing three existing directives: the previous Waste Framework Directive 75/442/EC, the Hazardous Waste Directive 91/689/EC and the Waste Oils Directive 75/439/EC.

Article 4 formally introduced a five step Waste Management Hierarchy order of priority which underpins member states national waste management policy. The Directive lays down measures to protect the environment and human health by preventing or reducing the adverse impacts due to the generation and management of waste.

The Directive updated the waste hierarchy, outlining the following in order of priority: prevention; preparing for re-use; recycling; other recovery; e.g. energy recovery; and disposal e.g. landfill. In relation to recovery energy-efficient incineration facilities dedicated to the processing of municipal solid waste are now under this Directive classed as “recovery” rather than “disposal” operations, which in effect moves this form of facility up the waste hierarchy.

In Annex II of the Waste Framework Directive (2008/98/EC) there is a non-exhaustive list of “*recovery operations*”, which includes material recovery and energy recovery for example use of waste as a fuel other than its use as a direct incineration or other means to generate energy and biological recovery. The Annexe also sets out an energy efficiency threshold (0.65) for energy recovery facilities dedicated to the processing of municipal waste using an R1 formula.

Effectively the R1 formula calculation is used to determine whether a facility using MSW waste can be classed as *recovery operation* or *disposal operation.*

4.1.1.2 Other Directives.

Other EU Directives include the **Industrial Emissions Directive**, which sets out the licensing procedures and criteria for certain industrial activities and for licensing to make specific provision for the prevention of waste and for its proper management, the **PCB (polychlorinated biphenyls) Directive** requiring the disposal of PCBs and the environmentally sound decontamination or disposal of PCB-containing equipment and, the **RoHS (Restriction of Hazardous Substances) Directive** restricting the use of classified metals and other substances. There are also accompanying regulations in relation to these Directives.

4.1.1.3 Circular Economy.

This is an evolving policy/concept which will inform future policy direction at global/ EU and national levels. It encompasses a wide overview but management of waste is an integral component of the Circular Economy. Essentially it is based on the premise that an economy built on the principles of 'take, make, waste' is no longer viable and where growth remains tied to the use of scarce natural resources. In a circular economy, growth is decoupled from the use of scarce resources through disruptive technology and business models based on longevity, renewability, reuse, repair, upgrade, refurbishment, capacity sharing, and dematerialization.

The circular economy brings about a total re-alignment of customer and business incentives with no more intentionally designing of products to break down, for obsolescence or disregarding externalities. In effect it requires adopting circular principles to close the loop on energy and material through efforts such as renewable energy investments and recycling and adopting waste targets with a forward looking climate change policy. In this regard the future management of economic growth will be based on the principle of fostering sustainable economic growth within a more competitive resource-efficient economy. This will have implications and a revised response to management of waste.

4.1.2 National Waste Policy.

4.1.2.1 The national waste policy has evolved largely reflecting the underlying principles set out in EU Directives with an increased move away from disposal/ landfilling options to the waste hierarchy set out in the Directive with emphasis on recovery at the top of the hierarchy and landfilling as the least favoured option.

Changing our Ways 1998 was the first policy document which addressed the reliance on a network of small landfills for dealing with waste and promoting a policy agenda for modernising our approach to waste management over a 15-year period, with the provision of waste infrastructure alternatives to significantly reduce on reliance on landfill. The policy developed further over the intervening period with the publication of preventing and recycling Waste:

Delivering Change in 2002 and a ***National Biodegradable Waste Management Strategy*** in 2006.

A national waste prevention programme has been in existence since 2004 with targets on prevention and reduction and the progress or otherwise in the attainment of these targets are outlined in annual reports. Ongoing evaluation of performance and enforcement is also part of the management of waste which largely operates as a free market in a regulatory environment.

4.1.2.2 ***Municipal Solid Waste: pre-treatment and residuals' management*** (EPA 2009).

This document sets out management practice for the treatment and recovery of waste with reference to source separation of waste; the removal of recyclable material including metals prior to end state disposal.

4.1.2.3 ***A Resource Opportunity. Waste Management Policy in Ireland*** July, 2012 published by the Department of Environment, Community and Local Government.

This provides a roadmap on how Ireland will move away from an over dependence on landfill, by putting in place the most appropriate technologies and approaches to reduce waste, while at the same time maximising the resources that can be recovered from waste. The policy is based on the EU waste hierarchy. The policy also recognises the importance of waste as an energy resource opportunity in terms of recovery, and the need to develop efficient ways to harness that resource.

The overall emphasis of the policy therefore as stated is to progress the virtual elimination of landfilling of municipal waste with increased reliance on recycling and efficiency in handing of waste. The guiding principles are therefore prevention and minimisation of waste and when waste is generated to extract the maximum value from it by ensuring that it is reused, recycled or recovered with disposal of municipal waste to landfill as a last resort. Enhanced collection measures, procedures and management are seen as integral to landfill diversion.

The policy provides for rationalisation of waste management regions to ensure better planning and to implement policy the preparation of a regional waste management plan for each of the three new waste regions with a key objective of these waste management plans to ensure a sufficiency of waste management infrastructure within the State to manage municipal waste. The policy sets out policies in relation to all aspects of the waste hierarchy with the provision of review and monitoring. The report anticipates that municipal waste arising will increase by 825,000 tonnes to 3.7m tonnes by 2025.

Section 9 of the policy document refers to recovery. It is indicated that waste can be used in a number of ways and through a number of technologies to produce energy, including through anaerobic digestion, thermal treatment and through the use of solid recovered fuel in facilities such as cement kilns.

Specifically, in section 9.2 Policy Measures and Actions in relation to recovery it is indicated that “Ireland requires an adequate network of quality waste treatment facilities. A review of recovery infrastructure will be completed by 31 December 2012 and the Environmental Protection Agency will advise on requirements in this regard. In particular, this will examine capacity for managing municipal waste in conformity with the principles of proximity and self-sufficiency”.

Specifically, in relation to hazardous waste it is indicated that “the National Hazardous Waste Management Plan is a strategic level document designed to provide overall direction to policy and decision makers involved in the prevention and management of hazardous waste. All of the plan’s recommendations are designed to reduce the environmental impact of hazardous waste”.

4.1.2.4 *The National Hazardous Waste Management Plan 2014-2020 (“NHWMP 2014-2020”)* (EPA 2014).

This third Plan is a revision of the second Plan and will cover a period of six years from the date of publication to 2020 and revises the previous plan covering the period 2008 – 2012.

The overall plan sets out a number of objectives which are in line with other national and EU policy which are;

- To prevent and reduce the generation of hazardous waste by industry and society generally;
- To maximise the collection of hazardous waste with a view to reducing the environmental and health impacts of any unregulated waste;
- To strive for increased self-sufficiency in the management of hazardous waste and to minimise hazardous waste export;
- To minimise the environmental, health, social and economic impacts of hazardous waste generation and management.

Recommendations to achieve these objectives are outlined under various headings including,

- Prevention; which seeks to reduce the generation of hazardous waste in certain priority sectors.
- Collection; through a comprehensive and accessible network of local drop-off facilities to tackle the problem of “unreported” hazardous waste.
- Self-sufficiency; with the objective of moving towards increased self-sufficiency and minimising exports continues to be recommended, where it is strategically/environmentally advisable, and technically and economically feasible. If Ireland it is indicated were to become self-sufficient, suitable hazardous waste treatment options would be required.

- Regulatory; through a review of waste licensing/permitting legislation is recommended to facilitate collection, transport and temporary storage of certain hazardous wastes from small sources pending proper treatment.
- Addressing legacy issues.
- Increased North-south cooperation and that the Plan recommends that any proposals for hazardous waste recovery/disposal infrastructure should take all-island considerations into account for capacity planning purposes.
- Increased guidance and awareness.
- Implementation in ensuring that the generation of such materials is minimised, and the materials are collected and treated correctly in accordance with the waste hierarchy.

In relation to self-sufficiency and proximity these are also referred to in Article 16 of the Waste Framework Directive. Section 3.1.4 relates to hazardous waste exported for treatment and states that hazardous waste was mainly exported to a number of EU countries for treatment in 2011. Four EU countries (United Kingdom, Belgium, Germany and France) accepted approximately 92% of these exports and the tonnage of these exports amounted to 149,037 tonnes in 2011, consisting of a wide range of categories.

Chapter 6 relates specifically to treatment of hazardous waste. It indicates that 47% of Irish hazardous waste (not including contaminated soil) was exported for treatment abroad in 2011. Some 22% was treated on-site of generation, for the most part at IPPC-licensed facilities. The remaining 31% was treated at authorised hazardous waste facilities in Ireland.

Hazardous waste projections up to 2025-2030 for hazardous waste generation are presented in Table 21 and it is indicated that with a projection of increased levels of hazardous waste in the future the sustainability associated with shipping these materials abroad for treatment needs to be reassessed. Section 6.2 sets out the position in relation to self-sufficiency versus export of hazardous waste and that export of waste takes place in a stable marketplace.

Article 16 (1) of the Waste Framework Directive (2008/98/EC) provides for such export and states that “Member States shall take appropriate measures, in cooperation with other Member States where this is necessary or advisable, to establish an integrated and adequate network of waste disposal installations…taking into account best available techniques.”

It is, however, considered that Ireland should strive for greater self-sufficiency in hazardous waste management where it is strategically advisable and where it is technically and economically feasible. and that this approach is in line with several objectives including the proximity principle. It also seeks to maximise the re-use and recovery potential of, for example, materials, precious metal

and secondary fuels, through provision of a range of local treatment options where practical.

It is, also recognised that hazardous waste destined for recovery is subject to an open and competitive waste market in the EU, policies of enforced self-sufficiency have been abandoned in other Member States as a result of pressures exerted by the open and competitive waste market in the European Union.

4.1.3 Regional Waste Policy.

As set out in *A Resource Opportunity. Waste Management Policy in Ireland* regional level Waste Management policy in Ireland is divided into three different regions (Eastern & Midlands, Southern and Connacht & Ulster) with each region responsible for the preparation and implementation of regional waste management plans.

4.1.3.1 *The Southern Region Waste Management Plan (SRWMP) 2015-2021.*

The Southern Region is comprised of 10 no. local authorities; Carlow County Council, Clare, County Council, Cork City Council, Cork County Council, Kerry County Council, Kilkenny County Council, Limerick City and County Council, Tipperary County Council, Waterford City and County Council and Wexford County Council.

The Southern Region (SR) serves a population of 1,541,439 and a vast geographical area and includes sections in part or total of major road transportation corridors including the M7, M8, M9, M10, M11/N11, N18/19, N20, N21, N22, N23, N24, N25, N28 and N40. There are also major rail links throughout the region and major ports including Cork/Ringaskiddy, Rosslare, Waterford/Bellview and Foynes.

The plan is a statutory document, which sets out the policy framework for the prevention and management of waste within the Southern Region and replaces the previous regional waste plans and county waste plans including the Waste Management Plan (2004) for County Cork.

The plan adopts adherence to the overall strategy and hierarchy as set out at EU and national level as set out in Policy A.1 of the plan and recommends taking measures to ensure the best overall outcome by applying the waste hierarchy to the management of waste streams which is central to the implementation of the plan.

There is recognition of emerging policy issues including a European Circular Economy (Chapter 4). There is also reference to increased export of residual waste (section 4.3) and also the danger of over reliance on exports with consequences for national policy ambitions to become self-sufficient in treating residual wastes. A continuous move towards waste exports, it is indicated, is not without risks as exports are vulnerable to market shocks,

price increases and potential enhanced regulatory controls. There is also a loss of potential energy resource.

The vision of a circular economy is outlined in chapter 5 as part of a wider strategic approach with targets for reduction in waste and increased reuse and recycling of waste.

Chapter 7 of the plan examines the existing position in relation to waste in the region with a breakdown of waste and quantities of waste outlined in table 7-1 and a review of initiatives to meet the targets of the waste hierarchy. It is indicated that of the final treatment of household residual waste collected and managed in bulking stations, 51% is sent for disposal to landfill directly and indirectly, though the fraction after recycling and recovery with an ongoing reduction of overall waste including BMW diverting to landfill reflects the overall national policy of minimising diversion to landfill as a means of disposal of waste.

Part 3 of the plan relates to implementation and waste projections nationally for all sectors / streams of waste (section 15.4.1) and treatment capacity within the region. In relation to disposal there is recognition of a decline in the disposal of waste to landfill and that there is a need for capacity to address the treatment of hazardous wastes which cannot be recycled or recovered.

Over the lifetime of the plan it is expected that the capacity active in the market will increase substantially. The need for future treatment capacity in this context requires careful consideration and must take into account predicted waste growth, growing recycling rates, future targets, the continued move away from landfill and the conversion of pending capacity into active treatment

Section 16.4.5 of the plan relates to thermal recovery where the principal use of the waste is as a fuel to generate energy is encouraged.

A national thermal recovery capacity need of 300,000 tonnes is proposed over and above the active and pending capacity totals. This need has been estimated by analysing future projections to 2020 and to 2030 and making realistic assumptions.

Policy E15a of the plan supports a national additional thermal recovery need capacity of 300,000 tonnes for the treatment of non-hazardous wastes. Policy E16 supports a national additional thermal recovery need capacity need of up to 50,000 tonnes for the treatment of hazardous wastes. It is not location specific to the region.

4.1.3.2 South West Regional Planning Guidelines 2010-2022.

Chapter 5 of the Guidelines refers to transportation and infrastructure. In relation to waste management there is reference in objective **RTS 08**;

"It is an objective to encourage the delivery of an effective and efficient waste management service in line with the Waste Management Acts and promote local authorities to review their respective Waste Management Plans (WMP's) during the lifetime of the guidelines. The RPG supports the incorporation of the recommendation and policies of the National Hazardous Waste Management Plan 2008-12 and encourages the early provision of a Materials Recovery Facility, or Mechanical Biological Treatment (MBT), in a sustainable location within the Cork Gateway".

4.1.4 Local Waste Policy.

Cork County Development Plan (2014-2020) includes provisions in relation to waste management policy in chapter 11. Section 11.7 relates specifically to waste referring to National policy on waste management as set out in 'A Resource Opportunity', published in July 2012.

Paragraph 11.7.5 refers to the Bottlehill Landfill site which has been subject of considerable strategic investment to date by Cork County Council. This is described as a significant piece of existing infrastructure in the context of a diminishing requirement for landfill in the future. It is stated that the landfill site "could be reconfigured to meet other waste management infrastructural needs such as an 'ecopark'. There is a growing trend in Western Europe for integrated waste management developments, including waste to energy, which combine a number of facilities on a single site". The plan also addresses the provision of infrastructure to manage waste.

Policy Objective WS 7-1 sets out the Waste Management policy for County Cork which is in line with relevant national and regional Waste Management policy. The provisions of the policy are:
a) Support the policy measures and actions outlined in 'A Resource Opportunity' 2012 – National Waste Policy
b) Encourage the delivery of an effective and efficient waste management service in line with the Waste Management Acts and relevant Waste Management Plan for the County/Region.
c) Normally require details and formal development proposals of onsite provisions for the management of waste materials that are likely to be generated from the proposed use. The Council will require Waste Management Assessment for projects which exceed thresholds outlined.
d) Support the incorporation of the recommendation and policies of the National Hazardous Waste Management Plan 2008-12.
e) Support the sustainable development of the Bottlehill facility for specialized and appropriate uses primarily associated with integrated waste management.

4.2 PLANNING POLICY

4.2.1 National Policy

The National Spatial Strategy (2002-2020) sets out a 20-year national planning framework for Ireland to achieve balanced regional development. The strategy provides for the development of gateways and hubs of a critical

mass throughout Ireland to provide a counterbalance to the Dublin area and as a vehicle of supporting regional development. These gateways and hubs of proposed to be of a sufficient scale and critical to attain this counterbalance. Cork is identified as a gateway.

The provision of infrastructure including waste management facilities and other services are considered essential to promote balanced regional development and to foster a wide range of enterprise activity and employment creation.

Planning Policy Statement.

The Planning Policy Statement published in January 2015 is a general guiding document to the operation of the planning system and to outline the key values, principles and priorities with an overriding aim that the planning system ensures that the right development takes place in the right locations and at the right time and in providing the social, economic and physical infrastructure necessary to meet future needs in a way that protects the many qualities of our natural and built environment. It considers that planning must proactively drive and support sustainable development, integrating consideration of its economic, social and environmental aspects at the earliest stage.

It is also considered that planning must support the transition to a low carbon future and adapt to a changing climate taking full account of flood risk and facilitating, as appropriate, the use of renewable resources, particularly the development of alternative indigenous energy resources and do so in a sustainable manner.

The National Planning Framework currently in preparation is to replace the existing National Spatial Strategy in the coming year. The objective of the National Planning Framework shall be to establish a broad national plan for the Government in relation to the strategic planning of urban and rural areas to secure balanced regional development and overall proper planning and sustainable development, and the co-ordination of regional spatial and economic strategies, and city and county development plans.

4.2.2 Regional Planning Policy.

The ***South West Regional Planning Guidelines (2010-2020) (SWRPG)*** is a strategic policy document aimed at steering the future medium to long term growth of the Cork and Kerry Region reflecting the strategic planning framework established by the NSS and other relevant national government policy. The guidelines set out high level strategies geared towards promoting the overall sustainability and growth of the region.

There is reference in section 3.3.12 of the guidelines to Cork Harbour and Cork Docklands which it is indicated “represent significant assets within the Gateway and offer huge potential for sustainable economic development,

population growth, recreation and tourism. Critical to the success of the Cork Gateway and the Cork Docklands in particular is the relocation of the Port of Cork facilities and the industrial uses (Seveso sites) which occupy this area at present. Cork Harbour is of both national and regional significance as it contains the regional significant pharmachem industries at Ringaskiddy and the national significant oil terminal at Whitegate".

Reference is also made to waste management where it is an objective to encourage the delivery of an effective and efficient waste management (**Objective RTS-08**).

4.2.3 County and Local Policy.

Local policy is addressed in current operative statutory development plans, the Cork County Development Plan (2014-2020) and the Carrigaline Electoral Area Local Area Plan (2015, 2nd Edition).

4.2.3.1 Cork County Development Plan (2014-2020).

The plan includes many chapters with policies and objectives covering a wide range of matters relevant to the consideration of this application. I have already made reference to the provisions in relation to waste management in section 11.7 of the plan.

In relation to other provisions;

Chapter 2 relates to Core Strategy and the site is located within the Cork Metropolitan area which has experienced significant growth and is the main engine of population and employment growth for the region.

Relevant objective **CS 4-1**: County Metropolitan Cork Strategic Planning Area
d) In the Cork Harbour area generally, to protect and enhance the area's natural and built heritage and establish an appropriate balance between competing landuses to maximise the areas overall contribution to Metropolitan Cork while protecting the environmental resources of the Harbour.

Chapter 4 relates to Rural Coastal and Island.

Relevant objective **RCI 9-3**: Coastal Protection:
a) Ensure the County's natural coastal defences, such as beaches, sand dunes, salt marshes and estuary lands, are protected and are not compromised by inappropriate works or development.
b) Employ soft engineering techniques as an alternative to hard coastal defence works, wherever possible.
c) Identify, prioritise and implement necessary coastal protection works subject to the availability of resources, whilst ensuring a high level of protection for natural habitats and features, and ensure due regard is paid to visual and other environmental considerations in the design of any such coastal protection works.

Chapter 6 of the plan relates to economy and employment. Section 6.6 refers to the economic role of Cork Harbour. Paragraph 6.6.3 indicates that "Ringaskiddy Port and the Marino Point site will play an important role in the redevelopment of the Cork City docklands by providing for the relocation and development of industrial uses and major port facilities".

In paragraph 6.6.6 there is reference to "Spike Island with its significant military and maritime history is being transformed from a former prison to a major tourist attraction. The harbour also offers an ideal location for the servicing and the researching/development of new technologies to harness the potential of marine based renewable energy technologies off the Cork coast.

Relevant objectives:
EE 6-1: Special Role of Cork Harbour;
"Implement sustainable measures which support and enhance the economic and employment generating potential of Cork Harbour in a manner that is compatible with other Harbour activities, as well as with the nature conservation values of the Cork Harbour Special Protection Area and the Great Island Channel Special Area of Conservation".

EE 6-2: Cork Harbour
a) Protect lands for port related developments at Ringaskiddy.
b) Support the upgrade of the N28 to accommodate the expansion of Ringaskiddy Port.
c) Protect lands for port related development at Marino Point.
d) Protect harbour side land for industrial and marine related developments dependant on access to deep water unless able to demonstrate a strong need or significant economic benefit for other such development of harbour side lands, relative to alternative sites inland.

All development will be carried out in a manner that is compatible with other Harbour activities, taking account of residential amenity, tourism and recreation as well as with the nature conservation values of the Cork Harbour Special Protection Area and the Great Island Channel Special Area of Conservation

Ringaskiddy is designated as a *"Strategic Employment Area",* in the Employment Hierarchy identified in table 6.1. In relation to Strategic Employment Areas objective **EE 4-1** states as an objective to
"Promote the development of Strategic Employment Areas suitable for large scale developments at Carrigtwohill, Kilbarry, Little Island, Ringaskiddy and Whitegate where such development is compatible with relevant environment, nature and landscape protection policies as they apply around Cork Harbour".

"Protect lands in these areas from inappropriate development which may undermine their suitability as Strategic Employment Centres".

Chapter 8 relates to Tourism.

Section 8.4 refers to Marine Leisure and paragraph 8.4.3 indicates "Cork Harbour has a long tradition of recreational boating, is home to the oldest yacht club in the world (Royal Cork Yacht Club) and hosts the biannual Cork Week Sailing Regatta. Recreation in and around the harbour is not restricted to water based activities.

According to the Assessment of Coastal Recreational Activity and Capacity for Increased Boating in Cork Harbour (UCC, 2007), the natural assets of the harbour encourage walking and cycling along the shoreline. It is an aim of this Plan to acknowledge the role of Cork Harbour in developing the marine leisure sector in County Cork and assist in providing a balance between environmental considerations, and competing landuses specifically in relation to the relocation of the Port of Cork and further industrial development in Ringaskiddy".

Paragraph 8.4.6 refers to recent and proposed improvements in water quality around the Cork Harbour area as a positive step in the development and promotion of Marine Leisure.

Relevant Objective **TO 4-1**: Developing the Marine Leisure Sector
a) Develop the marine leisure sector in the County in a coherent and sustainable manner making the best use of existing and planned infrastructure and resources, in a manner that is sensitive to the natural and cultural heritage resources of our coastal zone, and complies with relevant environmental legislation including the Habitats, Birds, Water Framework, Floods, SEA and EIA Directives.
b) Support the development of sustainable recreation and activity related marine tourism developments at appropriate locations along the coastline and in the vicinity of the inland waterways and lakes where these are compatible with the environmental and heritage sensitivities of identified sites.

Section 8.5 refers to Heritage Tourism. Paragraph 8.5.2 recognises this aspect of tourism as one of the most important and fastest growing aspects of the tourist industry and County Cork with its vast array of heritage sites including, battlefields, museums, interpretive centres, archaeology and historic town centres is well positioned to benefit from this activity.

Paragraph 8.5.3 refers to the transfer of Spike Island from the Department of Justice, Equality and Law Reform to Cork County Council, which has enabled the County Council to progress the development of Spike Island as a unique tourism, heritage and recreational resource in Cork Harbour.

Paragraph 8.5.4 refers to the preparation of a 'Masterplan for Spike Island' which was adopted by the Council in 2012 and that It is hoped that the development of Spike island as a visitor attraction will help build on the existing tourism and heritage infrastructure in Cork Harbour.

Chapter 9 of the plan relates to energy and the digital economy and in relation to renewable energy section 9.2.2 indicates "the development of renewable energy sources is central to overall energy policy in Ireland. Renewable energy reduces dependence on fossil fuels, improves security of supply, and reduces greenhouse gas emissions, protecting against climate change while delivering new jobs to the economy". Section 9.2.3 indicates "this Plan aims to support the sustainable development of renewable energy sources". In relation to Combined Heat and Power (CHP) sections 9.4.26, 9.4.27 and 9.4.28. The plan also supports generation of electricity from bio energy sources. The Council supports the development of CHP where viable and having regard to considerations of proper planning and sustainable development.

Chapter 10 relates to Transport and Mobility and section 10.3 focusses on the road network. Paragraph 10.3.4 refers to the N40 the southern ring road which is identified as a critical national road artery serving Cork City and connections to Cork Airport, Port of Cork, Ringaskiddy, Cork Science Park, West Cork and South Kerry. It is indicated that "an N40 Demand Management Study will look at all options for the management of the N40 including both controlling traffic on the route and managing the demand for traffic to use the road as well as possible targeted infrastructure improvement to ensure the capacity is protected over its design life as future planned demand rises".

In relation to future upgrading to infrastructure Objective **TM 3-1**: National Road Network a) seeks the support of the National Roads Authority in the implementation of the following major projects. In relation to projects critical to the delivery of planned development are:

- N 28 (Cork – Ringaskiddy).
- M8 (Dunkettle Interchange Upgrade).
- Cork Northern Ring Road (N22/N20/M8).

Objective **TM 3-3**: Road Safety and Traffic Management provides for
a) Where traffic movements associated with a development proposal will have a material impact on the safety and free flow of traffic on a National, Regional or other Local Routes, to require the submission of a Traffic and Transport Assessment (TTA) and Road Safety Audit as part of the proposal.

Another objective of relevance is Objective **TM 5-2**: Cork and Other Ports which provides for
a) Ensure that the strategic port facilities at Ringaskiddy, Whitegate and Cork Airport have appropriate road transport capacity to facilitate their sustainable development in future years.
b) Support the relocation of port activities and other industry away from the upper harbour on the eastern approaches to the city Harbour.
c) Support Ringaskiddy as the preferred location for the relocation of the majority of port related activities having regard to the need for a significant improvement to the road network. Also recognising the key role that Marino Point can play in providing an alternative relocation option for some of the port related uses that could best be served by rail transport. Both locations should be considered taking account of residential amenity, tourism and recreation.

The Council is committed to engage with the Port of Cork and other relevant stakeholders in achieving this objective.

Chapter 11 relates to Water Services, Surface Water and Waste.

Section 11.6 refers to flood risks and the overall approach to flood risk assessment and in paragraph 11.6.9 there is reference to indicative flood extent maps shown on the zoning maps in the local area plans, the PRFA maps and the proposed CFRAM programme maps which provide information on two main areas of flood risk i.e. Flood Zone A – High Probability of Flooding and Flood Zone B – Moderate Probability of Flooding and assessment of applications in these areas and which is reflected in objective WS 6-1.

Chapter 12 relates to Heritage and relevant objectives include,

- Objective **HE 2-1**: Site Designated for Nature Conservation which provides protection to all natural heritage sites designated or proposed for designation under National and European legislation and International Agreements, and to maintain or develop linkages between these.
- Objective **HE 2-2**: Protected Plant and Animal Species which provides protection to species listed in the Flora Protection Order 1990, on Annexes of the Habitats and Birds Directives, and to animal species protected under the Wildlife Acts in accordance with relevant legal requirements.
- Objective **HE 2-6**: Geological Sites to maintain the conservation value of those features or areas of geological interest that are listed in Volume 2, Chapter 3 Nature Conservation Areas, of the plan, and to protect them from inappropriate development.
- Objective **HE 3-1**: Protection of Archaeological Sites.
- Objective **HE 4-1**: Record of Protected Structures

Chapter 13 relates to Green Infrastructure and Environment.

Section 13.5 refers to landscape and the sensitivity of landscape and coastal areas including the Cork Harbour area is considered a high value landscape in figure 13.2. Paragraph 13.6.9 indicates that “within these High Value Landscapes considerable care will be needed to successfully locate large scale developments without them becoming unduly obtrusive”.

Section 13.7 refers to Landscape Views and Prospects and paragraph 13.7.4 refers to “all proposals should be assessed on their merits taking into account the overall character of the scenic route including the elements listed in Volume 2 Heritage and Amenity Chapter 5 Scenic Routes of the plan and the Landscape Character Type through which the route passes”.

Relevant objectives include:
GI 7-1: General Views and Prospects,
GI 7-2 Scenic Routes and

GI 7-3: Development on Scenic Routes.
Relevant scenic routes include S 51, S 53, S54 and S 58.

Chapter 14 relates to Zoning and Land Use.

Objective **ZU 3-7** indicates appropriate uses in industrial areas and indicates
a) Promote the development of industrial areas as the primary location for uses that include manufacturing, repairs, medium to large scale warehousing and distribution, bioenergy plants, open storage, waste materials treatment, and recovery and transport operating centres. The development of inappropriate uses, such as office based industry and retailing will not normally be encouraged. Subject to local considerations, civic amenity sites and waste transfer stations may be suitable on industrial sites with warehousing and/or distribution uses.
b) The provision of strategic large scale waste treatment facilities including waste to energy recovery facilities will be considered in 'Industrial Areas' designated as Strategic Employment Areas in the local area plans subject to the requirements of National Policy, future Regional Waste Management Plans and the objectives set out in local area plan.

Chapter 15 relates to Putting the Plan into Practice

table 15.1 refers to infrastructural delivery priorities. Specifically, in relation to Ringaskiddy N28/ public transport upgrade and the Lower Harbour Towns Waste Water upgrade is referred to.

Observations on the Ringaskiddy area refer to; a primary location for future port development and port uses displaced from Cork City Centre development areas; large scale technology based manufacturing e.g. pharmaceutical; research and employment linkages with National Maritime College of Ireland and the N28/ Public Transport Upgrade.

4.2.3.2 Local Areas Plans.

At a sub county level LAPs have been prepared based on Electoral Areas and the site is within the area of the site is within the area of the Carrigaline Local Area Plan. There is no specific plan for the Cork Harbour area and other electoral area LAPs cover the areas on the northern and eastern of the harbour including Cobh, Great Island and Spike Island (Midelton LAP). I would note that the Harbour area was the subject of the Draft Cork Harbour Study 2011 in which different areas of the harbour were examined in detail including Ringaskiddy as part of an overview of the harbour area.

4.2.3.3 Carrigaline Local Area Plan 2015.

The Carrigaline Local Area Plan 2015 adopts the core strategy and overriding strategies and objectives of the Cork County Development Plan. The LAP includes plan for settlements within its area including Ringaskiddy (section 4 of the LAP) and in this regard the site is located with the designated settlement boundary for Ringaskiddy.

In a strategic context paragraph 4.1.1 indicates “Ringaskiddy is designated as a Strategic Employment Centre, within the County Metropolitan Strategic Planning Area and has developed into one of the most significant employment areas in the Country. The objective for Ringaskiddy is set out in **SET 4-2** of the County Development Plan 2009 where the stated aim is to encourage the development of Ringaskiddy as a major location for port development and large-scale stand-alone industry, taking account of the need to enhance public transport including the provision of a high quality green route and protect the environment of the existing residential community, to continue the sustainable development of Ringaskiddy”.

Paragraph 4.1.2 indicates “Ringaskiddy is the location of modern deep-water port facilities, a naval and marine training institution and has successfully attracted major, large scale, high technology manufacturing plants. There are advanced proposals to upgrade the N28 to motorway standards”.

The significance of Ringaskiddy as an employment and economic activity is outlined in paragraph 4.2.3 indicating that “outside of the Greater Dublin Area, Ringaskiddy has the largest direct investment employment centre in Ireland. Many of the top world leading pharmaceutical companies are located there. In 2009 over 7,800 people were employed in the area. There are 400 acres of IDA industrial zoned land available”.

Paragraph 4.2.7 refers to a €52 million state of the art National Maritime College of Ireland (NMCI) and in paragraph 4.2.9 that there are “plans to expand the existing facility eastwards to provide a Maritime and Energy Cluster Ireland (MERC). It is intended this will include facilities for UCC’s Coastal and Marine Resources Centre (CMRC) and Hydraulics and Maritime Research Centre (HMRC), as well as maritime IT, incubator and marine business accommodation. Renewable ocean energy is seen as one of the niche areas the campus will focus on initially”.

There is reference in paragraph 4.2.18 to the N-28 National Primary route which links Ringaskiddy to Cork City and onwards to the wider regional area and proposals to improve the existing N28 between the Bloomfield interchange with the N25 South Ring Road and Ringaskiddy village.

The Martello Tower to the south of the site is referred to in paragraph 4.2.36 in relation to protected structures. Nature conservation areas impacting on Ringaskiddy, namely, Cork Harbour Special Protection Area (SPA-004030) and the Monkstown Creek proposed Natural Heritage Area (pNHA 001979) in paragraph 4.2.36 and in paragraph 4.2.38 the Cork Harbour Special Protection Area (SPA-004030).

In section 4.3 problems and opportunities it is envisaged that Ringaskiddy will continue to act as a Strategic Employment Centre and should see industrial employment growth, which will serve the Carrigaline; that Ringaskiddy remains the primary location for the relocation of port activities from the upper harbour and Cork County Council will facilitate the relocation of port related

facilities which are deemed appropriate for Ringaskiddy subject to the principles of proper planning and sustainable development, and having regard to the adjacent Special Protection Area and overlapping proposed Natural Heritage Area; that the N28 is a critical piece of infrastructure which needs to be upgraded. The current road is a sub-standard single-carriageway and while it is the Councils intention to develop Ringaskiddy as a Strategic Employment Centre within Metropolitan Cork, there is a need to protect the amenity afforded to the existing communities of Ringaskiddy village and Shanbally. It is recognised that balancing these two requirements is a challenge which will require much consideration and that there is great potential to expand existing marine related educational facilities in the area.

In relation to objectives the following are relevant to this proposal;

- Objective **DB-01** It is an objective to reaffirm Ringaskiddy's focus on industrial and port related roles which reflects its status as a Strategic Employment Centre;
- Objective **DB-03** It is an objective to facilitate the proposed realignment and upgrade of the N-28;
- Objective **DB-04** It is an objective to protect, maintain and enhance the residential amenities of the existing communities at Ringaskiddy and Shanbally villages;
- The site is zoned I-15 (Industrial) as part of an area of 35 hectares with the objective suitable for large stand alone industry with suitable provision for appropriate landscaping and access points and provision for open space buffer to the Martello Tower and its associated pedestrian access. This area may be used as a feeding ground by bird species for which Cork Harbour SPA is designated. Any development proposals on this land are likely to require the provision of an ecological impact assessment report to determine the importance of the area for such species and the potential for impacts on these**;**
- The lands to the north of the proposed development are zoned with the objective **C-01**, Third level educational campus for marine related education, research and training. This site is considered inappropriate for any short or full time residential accommodation. These lands are to the east of the Maritime College.

The above zonings are outlined in the zoning map which is part of the LAP.

4.2.3.4 Midelton LAP

Spike Island which lies directly one kilometre east of the subject site is located within the boundary of the Midelton LAP Spike Island is designated as an 'other location', in the Midelton Electoral Area Local Area Plan and in relation to policy context is stated in the context redevelopment as a major tourist destination in the Lower Harbour as set out in a published Masterplan for Spike Island (2012). It is intended to to complement the existing groups of heritage and tourism attractions in Cork Harbour, to include the provision of multiple activities and services on the island.

Haulbowline Island approximately one kilometre to the north of the subject site is the location of the state's only naval base and therefore is strategic importance. It is also part of an overall defence fortifications heritage for the harbour area which includes forts at Haulbowline Island, Spike Island (Fort Mitchel/Westmoreland), Great Island (Cobh), Fort Meagher/Camden (Cross haven), Fort Davis/ Carlisle (Roches Point) and the Martello Tower at Ringaskiddy. Haulbowline Island is also identified as an 'other location' in the Midleton Electoral Area Local Area Plan.

4.2.3.2 Other plans and studies.

Haulbowline Master Plan 2015.

This plan published in July 2015 relates to entire island includes the site of the former Irish Steel plant which is the subject of a major public investment in relation to its remediation of the eastern tip. The Island is to be redeveloped in the context of the Master Plan as published in July 2015.

Masterplan for Spike Island (2012).

With the acquiring of the island Cork County Council prepared a plan to restore the built heritage on the island. It is intended to to complement the existing groups of heritage and tourism attractions in Cork Harbour, to include the provision of multiple activities and services on the island. Works are substantially complete in this regard.

Cork Harbour Study (Draft) 2011.

The harbour study is an overview of the overall harbor including the upper and lower harbor from Cork City to the outer mouth of the harbour. Chapter 5 examines in detail lower area which includes Ringaskiddy.

4.3 POLICY RELATING TO HUMAN HEALTH

4.3.1 **EC Regulation 850/2004** is a regulation on persistent organic pollutants and amends Directive 79/117/EEC. This regulation primarily concerns environmental protection and the protection of human health and relates to the continuous release of persistent organic pollutants into the environment and arises from the **Protocol to the 1979 Convention on Long-Range Transboundary Air Pollution on Persistent Organic Pollutants** and the **2001 Stockholm Convention on Persistent Organic Pollutants**. The regulation is intended to set out a common legal framework, within which to take measures designed in particular to eliminate the production, placing on the market and use of intentionally produced persistent organic pollutant.

The regulation refers to Dioxins, Furans and Polychlorinated Biphenyls (PCBs), and that in line with the Protocol and the Convention, releases of persistent organic pollutants which are unintentional by-products of industrial processes should be identified and reduced as soon as possible with the ultimate aim of elimination, where feasible and that appropriate programmes

and mechanisms should be established to provide adequate monitoring data on the presence of dioxins, furans and PCBs in the environment. However, it is also indicated that it is necessary to ensure that appropriate tools are available and can be used under economically and technically viable conditions

In this regard I would refer to Article 1 of the said Regulation which states;
"*Taking into account, in particular, the precautionary principle, the objective of this Regulation is to protect human health and the environment from persistent organic pollutants by prohibiting, phasing out as soon as possible, or restricting the production, placing on the market and use of substances subject to the Stockholm Convention on Persistent Organic Pollutants, hereinafter "the Convention", or the 1998 Protocol to the 1979 Convention on Long-Range Transboundary Air Pollution on Persistent Organic Pollutants, hereinafter "the Protocol", and by minimising, with a view to eliminating where feasible as soon as possible, releases of such substances, and by establishing provisions regarding waste consisting of, containing or contaminated by any of these substances*".

Article 6 refers to release reduction, minimisation and elimination. In this regard I would refer to Article 6 (3) of the Regulation in relation to construction of new facilities which states:
"Member states shall, when considering proposals to construct new facilities… using processes that release chemicals listed in Annex III, without prejudice to Council Directive 1996/61 EC give priority consideration to alternative processes, techniques or practices that have similar usefulness but which avoid formation and release of substances listed in Annex III".

Article 9 refers to monitoring which states:
"*The Commission and the Member States shall establish, in close cooperation, appropriate programmes and mechanisms, consistent with the state of the art, for the regular provision of comparable monitoring data on the presence of dioxins, furans and PCBs as identified in Annex III in the environment. When establishing such programmes and mechanisms, due account shall be taken of developments under the Protocol and the Convention*".

The regulation also includes a number of annexes which list substances subject to prohibitions, restrictions, release reduction provisions and waste management provisions. Subsequent amendments to the regulation largely refer to amendments of substances listed in the annexes and the use of substances or their preparations.

4.3.2 S.I. No. 235 of 2010 Persistent Organic Pollutants Regulations 2010 was enacted for the purpose of giving effect to Regulation (EC) No. 850/2004.

Article 6 refers to *Competent authority* in subsection (2) the Environmental Protection Agency is the competent authority for the purposes of Regulation 850/2004. Article 7 refers to *Public Authorities Concerned* and in subsection (3) that other public authorities concerned shall have regard to the

requirements of these Regulations and Regulation 850/2004 in the exercise of their powers, functions and duties.

4.3.3 **EU Directive 2014/92/EU** amends a previous EIA Directive (Directive 2011/92/EU). The direction will be transposed into national law by May 2017. Changes include the introduction of a requirement for co-ordination of EIA with procedures that are needed under other EU directives such as the Habitats, Waste and Industrial Emissions Directives.

Article 3 (1) refers to" the environmental impact assessment shall describe and assess in an appropriate manner, in the light of each individual case, the direct and indirect effects of a project on the following factors;

(a) Population and human health,
(b) Biodiversity.
(c) Land, soil, water, air and climate.
(d) Material assets, cultural heritage and the landscape.
(e) The interaction between the factors referred to in points (a) to (d)".

The directive is of note in referring to population and human health rather than human beings.

5.0 SUBMISSION FROM CORK COUNTY COUNCIL

Cork County Council in a submission dated the 5th of April 2016,

- The report includes a report and two appendices.
- The main report indicates the nature of the development, the planning history and refers to the justification of the development and alternative sites and technologies considered.
- Internal reports are referred to in section 7 of the report in relation to a range of matters including roads and transportation, fire, coastal management and flood issues, conservation, archaeology, architectural matters, environment, heritage, water services and planning policy
- The overall policy context is also referred to in relation to waste management and planning at European, National and local levels.
- In an assessment of the proposed development there is an initial assessment of policy in relation to waste with reference to the National Hazardous Waste Management Plan (2014-2020) and the Southern Region Waste Management Plan (2015-2021).
- Planning policy is also outlined in the context of a wide range of objectives at county and local level and the context of the development in the policy framework.
- Visual Impact is assessed in the context of designations and other current development concluding the proposal is acceptable and will not be overly visually dominant but recommends a review of external finishes.
- In relation to roads and transportation it is indicated that, subject to the implementation of the proposed Demand Management/Mobility Management Plan measures, the proposed development will not

adversely impact on the road network in the area. A number of suggested conditions are outlined for consideration largely relating to the traffic management plan and the control of HGV traffic during peak periods.

- In relation to heritage and ecology, issues identified include, measures to protect the rare species of Bee Orchid; confirmation that appropriate material can readily be sourced for beach nourishment; details for programme for ongoing coastal zone erosion monitoring and a winter bird survey / flightline records for bird species know to occur within the area and identified to be vulnerable to collision risk.
- On the basis of the internal consulting reports received there is no objection to the proposed water supply arrangements.
- In relation to flood risk reference is made to 'The Planning System and Flood Risk Management' – Guidelines for Planning Authorities (Nov. 2009) and clarification is required relating to the selected maximum road design level (3.35 OD) relative to the minimum flood defence level (3.8 OD) as calculated in the FRA section of the EIS. Conditions are also referred to.
- In relation to coastal erosion a number of further details are required relating to retreat rate, distances from the gas main etc. and the monitoring of the mitigation measures proposed.
- Other matters for consideration referred to include community gain; Coastal Protection Measures Maintenance Plan; fire prevention and control in particular provision of adequate water storage and access details which are included as suggested conditions in Appendix B.
- A development contribution of €218,182.08 is outlined.
- In conclusion the principle of development of the lands for "large scale waste treatment facilities including energy recovery facilities" is acceptable in from a policy perspective subject to consideration of normal proper planning and sustainable development considerations.
- In relation to waste the applicant is requested to prove by way of further information that the proposed facility can be classified as '*recovery*' as distinct from 'disposal'.
- The visual impact of the proposed development is acceptable.
- Conditions and clarifications are referred to.
- Appendix A relates to suggested further information/clarification
- Appendix B relates to suggested Conditions.
- Appendix C relates to copies of internal technical reports.
- Appendix D relates to a copy of previous An Bord Pleanála refusal reasons re: 04.PA0010

6.0 SUBMISSIONS FROM PROSCRIBED AND PUBLIC BODIES

6.1 The Department of Arts Heritage and the Gaeltacht in a submission dated the 8th of March 2016 indicates,

- Reference is made to the RMP CO087-053 Martello Tower and that mitigation measures referred to in the EIS be included as a condition.
- Reference is made to monitoring of the coastal and foreshore zone.

- In relation to nature conservation reference is made to the proximity to SPA 4030 Cork Harbour SPA and indirect effects from stack emissions and flue ash and possible collision with the stack.
- Emissions arising are, therefore, of concern.
- Reference is made to coastal works to the need for monitoring.
- Reference is made to visual impact and in particular to the Martello Tower and also from the top of the tower in the context of the wider area.
- The impact of the development from Spike Island and wider area is referred to.
- Issues are referred to as critical in relation to AA including, emissions of PCDDs and PCDs, cadmium, thallium and mercury and their potential bioaccumulation from sediments to piscivorous birds listed for the SPA; the potential of release of the above contaminants from flue gas residue in the case of a shipping accident in the harbour; collision risk with the incinerator stack and pollutant emissions due to catastrophic events.
- The issues are it is indicated are addressed in the NIS and the Department has no further comment on the issues.
- The issue appears to be the correct and careful management and operation of the incineration process and integral to this management is adaptive feedback from monitoring.
- The monitoring of the receiving ecosystem is also considered essential.
- A condition for monitoring of PCDDs and PCDs in the harbour is recommended.

6.2 **The Health and Safety Authority** (HSA) in a submission dated the 26th of February 2016 indicate,

- Reference is made to the COMAH Regulations 2015 (S.I. 209 of 2015) and the approach of the HSA is set out in the document "*Policy & Approach of the HSA to COMAH Risk based Land Use Planning*".
- The development is covered by Regulation 24(2) of S.I. 209 of 2015.
- The development has been determined to be located within the notified consultation zone of the Hovione Limited establishment.
- The category level of this development is determined to be industrial in nature corresponding to level 1.
- On the basis of the information available there would be no significant consequences from the Hovione Limited establishment and no activities would increase the risk of a major accident at a Hovione Limited establishment.
- The HSA does not advise against the granting of planning permission in the context of major accident hazards.

6.3 **An Taisce** in a submission dated the 8th of March 2016 indicates,

- Reference is made to the public right of way to the Martello Tower and the status of this right of way.
- The development is contrary to a written agreement in relation no further waste disposal sites in the area.

- The development fails to address properly the previous refusal on the site.
- Reference is made waste and resource policy considerations.
- The process of energy recovery is for electricity production. The site is not suitable for district heating and electricity production is less
- There is reference to section 6.2 of the National Hazardous Waste Plan 2014 and the issue of an integrated approach.
- Reference is made to the Southern Region Waste Management Plan 2015-2021 and to policies E15a, E15b and E15c and that none of the considerations in these policies establish locational suitability or justification for the current proposal at Ringaskiddy.
- There are other site suitability issues.
- The issue of site restriction has not been addressed.
- The issues of the road and flooding are not addressed.
- Has the applicant the right to place shingle on the beach in relation to coastal protection.
- Reference is made to ingress of sea water onto the site and issue of coastal flooding.
- The site has an inadequate access and all traffic enters and leaves on one road.
- Reference is made to an adverse visual and landscape impact given the site's location and to the adverse impact on the Martello Tower.
- The development is in conflict with the recent development of the National Maritime College of Ireland.
- Reference is made to impact on residential amenity.
- The issue of emergency evacuation and the adequacy of the infrastructure is raised.

6.4 **HSE South** in a submission dated the 8th of March 2016 refers to matters of concern relating to public health including,

- Groundwater sources in the area and to section 13.3.3 of the EIS.
- To the Health Impact Assessment (appendix 6.2 of EIS),
- The issue of emission routes where there is potential for human exposure and also emission values.
- The issue of dioxins and the level of exposure.
- In relation to emergency response the site's location in a cul de sac.
- Reference is made to the provision of warning and evacuation procedures for the site.
- The issue of flooding on the road is raised.
- Reference is made to the risk of explosion and fire and the consequent plume.
- Given the calorific content of the material it is indicated that a vapour cloud explosion is among the credible risks and this requires a system be in place to know what materials are on the site.
- Reference is made to the explosion in Antwerp.

6.5 **Irish Water** in a submission dated the 9th of March 2016 indicates,

- There are no objections in principle.

- There is a proposal for a temporary WWTP plant but it ultimately wastewater be discharged to the new Cork Lower Harbour WWTP currently under construction and there is sufficient capacity to receive and treat foul wastewater from the development.
- There is capacity in the water supply for the development.

6.6 **Southern Regional Assembly** in a submission dated the 3rd of March 2016 indicates,

- Reference is made to the South West Regional Planning Guidelines 2010-2022 and other national and regional policy.
- Reference is made to the planning history.
- There is reference to Southern Region Waste Management Plan 2015-2021 and the identified role for thermal recovery and the identification of additional national capacity.
- In relation to the South West Regional Planning Guidelines 2010-2022 it is indicated that the disposal of waste through a thermal recovery process provides both waste and energy infrastructure within the region.
- Reference is made to sections, 2.1.2, 3.3.13, objectives RTS 08 and 09, RES 01, 06 and RSS 02 and that the development will provide infrastructure within a designated Gateway and consistent with the above objectives.
- Reference is made to the upgrading of the N28 and the benefits to the region of this upgrade.
- Reference is made to the NIS and the conclusions made.
- Reference is also made to the Flood Risk Assessment.
- It is concluded that the development is as far as practicable consistent with the objectives and policies of the SWRPG 2010-2022.

6.7 **South Regional Waste Management Office** in a submission dated the 8th of March 2016 indicates,

- Reference is made to policy E15a of the Southern Region Waste Management Plan 2015-2021, which supports the development of up to 300,000 tonnes of additional thermal recovery capacity for the treatment of non-hazardous wastes nationally and that this is a national treatment and not specific to the region.
- This limit of 300,000 tonnes was established by taking into account 2030 municipal waste projections, recycling targets for the southern region and existing capacity of thermal treatment plants.
- The current proposal provides for 240,000t and 24,000t would be classified as hazardous.
- The level of municipal waste to be processed at the plant cannot be calculated.
- There is no information in relation to how the energy coefficient is being met and more detail is required on how it is calculated.
- Reference is made in relation to environmental protection criteria to be met.

6.8 **Transport Infrastructure Ireland** in a submission dated the 8th of March 2016 indicates,

- The Authority recommends that actions with regard to road improvements, mobility management and transport mitigation measures included in the EIS need to be implemented to ameliorate potential impacts on the road network.
- Reference is made to improvement works in relation to the N28 which are being finalised. The proposed facility is not affected by this scheme.
- Full details of drainage works proposed will be required prior to commencement of development.
- The costs of upgrading roads or appropriate contribution should be met by the developer and of permission is granted a contribution of 387,383 euro be applied by condition.

6.9 **EPA** in a submission dated the 3rd of February 2016 indicates,

- Reference is made to a Waste Licence issued under reference no. W0186-01 issued on the 24th of November 2005.
- The licence has ceased to have effect and Indaver are required to make a new licence application.
- The EIS appears to address the key points in relation to the environmental aspects of the proposed activity.
- The licence application that may be received will be subject to EIA.

6.10 I wish to indicate that during the oral hearing the **Department of Defence** made a submission in relation to the proposed development focussing on the potential impact arising from emissions from the flue on the operations and safety of defence forces aircraft in particular in the context of importance and use of Haulbowline Naval Base by the defence forces.

7.0 OBSERVER SUBMISSION

7.1 **Public Representative**.

Council Members Cobh Municipal District in a submission dated the 8th of March 2016 indicates,

- The members object to the development.
- The development will be a health hazard.
- Reference is made to the unsuitability of the site, to the rejuvenation of the area, public investment in the area and the Maritime College.
- Reference is made to flooding, coastal erosion, the location of a gas pipeline and the peninsular location.

Simon Coveney T.D. in a submission dated the 8th of March 2016 indicates,

- The submission is an objection to the development.
- The proposed site is the wrong location for a large waste management facility.
- The development will negatively impact on the adjacent public beach.

- The development is contrary and inconsistent to government supported projects located in the area.
- Reference is made to the development of Haulbowline Island and to other projects such as Spike Island and also to public funded initiatives to transform the area and address legacy issues.
- Reference is also made to Beaufort development and that they form a cluster of projects in the harbour area.
- The overall development of the harbour area cannot be ignored in considering the nature of the development in a strategic location in the harbour.
- The proposed development would it was strongly contended be at variance with the recent developments and public expenditure projects which have occurred in the area and which have transformed the area.

Claire Cullinane MCC in a submission received the 9th of March 2016 indicates,

- The submission is an objection to the development.
- Reference is made to risks to health for the people of Great Island and the harbour area.
- Issues in relation to the access and access for fire and emergency vehicles are raised.
- Reference is made to the importance of tourism in the harbour area and the inappropriateness of the site.
- Reference is made to recent initiatives in the harbour area to enhance the area.

Marcella D'Alton MCC in a submission dated the 6th of March 2016 indicates,

- There is reference to this being the third application on the current site.
- Reference is made to the waste to energy policy and the amendment of the county plan in relation to this against the will of the people.
- Waste to energy is identified in the county plan.
- There is reference to Bottle Hill in the county plan.
- The proposal appears to correspond with national and local policy in relation to waste.
- The site is, however, utterly inappropriate for the nature of development proposed.
- Reference is made to other pharma development in the area and that this was a factor in the location.
- The facility as proposed, however, is not dependent on local pharmaceutical concerns and could be located in alternative locations.
- Issues of access and emergency response are raised.
- A large volume of material 188,000t would be brought into the area and this does reflect proximity principle.
- Reference is made to the explosion at Antwerp.
- There are issues in relation to geology, hydrology and hydrogeology, to the geological importance of Gobby Beach and issues of groundwater vulnerability and flooding.
- There is no scope for natural mitigation against pollution to the harbour.

- The issue of suitability in relation to areas of population and sensitive locations such as the Maritime College, Beaufort, Spike Island and the Naval Base are raised.
- Issues are raised in relation to visual impact, impact on amenity areas in the harbour and also on heritage areas.
- Reference is made to the preparation of masterplans which have been prepared to support development on Haulbowline Island and the IMERC Campus.
- Siting is not addressed in the National and Regional Waste plans but there is guidance in relation to location including impacts on amenity areas and for looking at brownfield sites.
- The configuration and restrictions in relation to size and area of the site are raised.
- In the context of the overall development of the harbour, the site is considered unsuitable.

Micheal Martin TD in a submission dated the 7th of March 2016 indicates,

- The submission is an objection to the development.
- The site is unsuitable because of its location and because of flooding.
- Reference is made to the previous refusal.
- Reference is made to the change in the development plan against the democratic will of the members.
- The need for this facility is not determined.
- Reference is made to the transformation of the harbour area over the last 15 years and in relation to the new education and amenity related development located in the immediate area.
- The proposed development will reverse the efforts and changes made in the last 15 years to improve and transform the area.

Michael Mc Grath TD and Seamus Mc Grath MCC in a submission dated the 8th of March 2016 indicates,

- The submission is an objection to the development.
- It is unfair that residents have to fight this proposal for a third time.
- The reasons for refusal of the previous application remain valid.
- There has been much investment in the lower harbour area and there is further potential for similar related development. Locating an incinerator in the area would undermine this investment.
- The issue of the N28 is raised and its upgrading.
- Issues of flooding and coastal erosion are not addressed.

Donnchadh O'Laoire TD in a submission dated the 9th of March 2016 indicates,

- The submission is an objection to the development.
- Reference is made to Cork Harbour and its value as an asset in terms of tourism and location of an incinerator at the proposed location would be damaging to this potential.
- Reference is made to flooding and coastal erosion and the previous refusal of permission still remains valid in this regard.

- There are safety concerns for the local community and reference is made to the fire in Antwerp.
- There are impacts from emissions for the local population.
- The size of the site is referred to.
- Reference is made to impact on the infrastructure and from traffic.
- Sinn Fein is opposed to incineration as a solution as it gives rise to air pollution and there are residues which require further treatment.
- The process of SID and costs to the community is referred to.

Sean Sherlock TD in a submission dated the 9th of March 2016 indicates,

- The submission is an objection to the development.
- Reference is made to investments in renewable energies and recent investments in the lower harbour.
- The application is completely incongruous in this context and will impact on recent and future investment in the area.

David Stanton TD in a submission dated the 8th of March 2016 indicates,

- The submission is an objection to the development.
- Reference is made to road infrastructure serving the development.
- Reference is made to the major public and private investment in the harbour area.
- Concerns are raised in relation to flooding and coastal erosion.
- There are health risks associated with the development and the Antwerp incident is referred to.
- The issue on impacting on agricultural lands is referred to and impact on the image of the area.

The public representations also made submissions in the course of the oral hearing restating and expanding on many of the issues raised in their written submissions.

7.2 Organisations and Community Groups.

Aghamarta Montessori School in a submission dated the 13th of February 2016 indicates,

- The development is incompatible with the harbour area.
- Reference is made to flagship projects.
- The site is unsuitable and unsafe.
- Reference is made to the access and emissions.
- The site is unsuitable in the context of the overall region.
- The development is premature.

Ballymore Community Association Limited (Great Island) in a submission dated the 8th of March 2016 indicates,

- The development is approximately 3.4 miles away and the prevailing winds are from the proposed site to their area.
- There are concerns in relation to emissions from the development.
- The issue of residue ash is referred to.

- Traffic is raised as a concern
- Flooding on the road is an issue.
- The size and scale of the development is raised and the height of the stack proposed.
- Concerns in relation to evacuation are raised on Great Island in the event of an accident.
- There are alternatives to incineration which are safer.

Carrigaline Macra Na Feirme Branch in a submission dated the 6th of March 2016 indicates,

- The development would impact on agricultural and food production.
- Issues of flooding and erosion are raised.
- The issue of traffic and congestion is outlined.
- Reference is made to the beauty of the area and implications for tourism.
- Reference is made to the Maritime College and the impact on this educational facility.

Cork Harbour Alliance for a Safe Environment (CHASE) c/o Mary O'Leary in a submission dated the 8th of March 2016 refer to,

- Reference is made to the pre application process.
- There is widespread community opposition to the proposal.
- The development has nothing to offer to the community and Cork Harbour.
- Reference is made to recent developments in the harbour area.
- Reference is made to the planning history.
- The site is not zoned for a waste to energy development.
- The site is unsuitable in the context of the region and application of proximity principle.
- Issues are raised in relation to access and site selection in the context of health.
- Issues of erosion and flooding are raised.
- The size of the site is raised.
- There is a need for a transfer station.
- Issues of visual impact are raised including height of stack are raised.
- Issues of impacts arising from odour are raised.
- The efficiency of the project is questioned and also the need for the development.

Cork Harbour Alliance for a Safe Environment (CHASE) c/o Noonan Linehan Carroll Coffey Solicitors in a submission dated the 8th of March 2016 refer to,

- The proposal is a major development and must be examined in the context of the EIA Directive and Habitats Directive.
- Who is the applicant.
- Issue of consent to make the application from other parties and ownership of the site.
- Reference is made to the planning history.

- The observer does not have the track record of compliance claimed.
- The need for the facility is questioned.
- The consultant Colm Mc Dowell considers that the development must be accompanied by a hazardous waste transfer station and this should be assessed as part of the proposal development.
- The site selection is questioned and therefore the question arises as to whether the proposal is plan led.
- Reference is made to the level of investment in other projects in recent years in the harbour area.
- The issue of the zoning of the site is raised and the context of the current zoning.
- The long period of applications in relation to this development is raised dating back to 2001 and the impact on the community from successive applications.
- Reference is made to the ongoing erosion of Gobby beach and the rate of erosion. It is indicated that the rate of erosion is 0.5 metres per annum.
- The development must be assessed against the flood risk management guidelines and the appropriateness of the site in that context.
- Reference is made to the report of SM Bennet & Co Ltd which is part of the submission and its conclusions in relation to impact of coastal erosion and the nature of the site which is underlain by limestone and very constrained and the risks identified are not addressed.
- **Report of 4th March 2016**.
- Reference is made to implications in relation to human health.
- Communities in the area have engaged constructively to promote the harbour area for their benefit and for the benefit of the wider region.
- The communities have devoted immense time to indicating the development should not be granted and another application is an abuse of the planning system.
- The **issue of re-imbursement of costs** is raised.
- Reasons to refuse the development are indicated.
- The submission is accompanied by a large number of submissions.

Cobh Action for Clean Air (Mary Hurley) in a submission dated the 5th of March 2016 refer to

- Reference is made to the extent of the area from which waste will be taken to the site and the nature of the road network to carry it.
- The site is inappropriate in relation to location.
- The issue of coastal erosion is raised.
- Gobby beach is the only local amenity in Ringaskiddy.
- The risk to health is referred to and evacuation from Cobh would be a concern in the event of an accident.
- Reference is made to this being the third application and to the recent incident in Antwerp.

Cobh Action for Clean Air (William Rankin) in a submission received the 9th of March 2016 includes signed objections from a number of people referring to,

- The development as incompatible with the area.
- Reference is made to the recent developments in the harbour area.
- The nature of the road network and location in a cul de sac.
- The risk to health is referred to.
- Reference is made to the extent of the area from which waste will be taken to the site.
- Incineration should be the last resort.
- Reference is made to the site history.

Cobh Camogie Club in a submission received the 5th of March 2016 refers to,

- The submission is an objection to the development and refers to health concerns and the incident in Antwerp.

Cobh Community 4 Change in a submission received the 9th of March 2016 refers to,

- The submission restates the submission of Cobh Action for Clean Air**.**

Cobh Tidy Towns Cobh in a submission dated the 2nd of March 2016 indicates,

- Reference is made to the beauty of the harbour and tourism of the area,
- The need to develop the facility in the context of reducing emissions is raised and that there has to be betters ways of disposal of waste.

Cobh Tourism in a submission received the 4th of March 2016 refers to,

- The submission refers to the development being detrimental to the Cork Harbour area and to tourism in the area.
- The significance of the harbour is referred to and recent initiatives and investment in the area.

Cobh Triathlon Club in a submission dated the 9th of March 2016 refers to,

- The risk to health is referred to.
- Air and sea pollution is referred to.
- The development as incompatible with the area and unsuitable.
- There are better technologies available.

Colaiste Mhuire BOM (Cobh) in a submission received the 8th of March 2016 refers to,

- The site is unsuitable.
- Reference is made to health concerns arising.

Collaborative Community Submission Group in a submission dated the 8th of March 2016 indicates,

- The submission is from 642 parties.

- The submissions raise issues raised by other submissions and reiterate points in relation to air emissions, coastal erosion, flooding impact on recent development in the harbour, the submission of another application and the site history, traffic and infrastructure.

Cork Chamber in a submission dated the 7th of March 2016 indicates,

- Reference is made to the need for infrastructure.
- There is a need to address waste in the area.
- There are issues in relation to the cost of transporting and shipping waste to other parts of the country and overseas.

Cork Colleges (Staff members) in a submission dated the 3rd of March 2016 indicates,

- They object to the development.
- Reference is made to health and safety in particular staff and students of the Maritime College.
- Reference is made to the incident at Antwerp'
- The technology is outdated and also standards are outdated.
- The beauty of the harbour and tourism of the area is referred to and the adverse impact the proposed development will have on the area.
- The need to develop the facility in the context of reducing emissions is raised and that there has to be betters methods for the disposal of waste.

Cork Environmental Alliance in a submission received the 3rd of March 2016 refers to,

- The submission refers to the absence of public involvement in the planning process.
- Issues of public health are raised.
- The issue of whether the development will operate within emission limits are raised.
- The harmful effects of dioxin are referred to.
- The inappropriateness of the site in relation to location and road access is referred to and issues in relation accident and emergencies.
- The development will have negative effects on the harbour area.

Cork Green Party in a submission dated the 8th of March 2016 indicates,

- Reference is made to air emissions and pollutants
- Reference is made to recent development in the harbour and the beauty of the harbour and tourism of the area.
- The effects and impact on the Maritime College are raised.
- Coastal erosion is referred to.
- The road infrastructure and the cul de sac nature of the road serving the site.
- There is zero public acceptance of the development or demand for the development.

Cork Harbour Alliance for Responsible Development in a submission dated the 13th of February 2016 refers to,

- The development is incompatible with the harbour area.
- Reference is made to flagship projects development in proximity to the site in the recent period.
- The site is unsuitable and unsafe.
- Reference is made to the unsatisfactory access to the site and also to the emissions arising from the proposed development.
- The site is unsuitable in the context of the overall region.
- The development is premature.

County Nature Trust in a submission dated the 8th of March 2016 indicates,

- Reference is made to not meeting WHO standards for hazardous waste facilities and to the Antwerp incident and the issue of fire hazard.
- The scale of the development vis a vis the site.
- Reference is made to the importance of Cork Harbour for birds.
- Reference is made to proximity of the site to centres of population

Crosshaven Tennis Club in a submission dated the 13th of February 2016 refers to,

- The development is incompatible with the harbour area.
- Reference is made to the recent flagship projects in the area.
- The site is unsuitable and unsafe.
- Reference is made to the site access and to proposed emissions.
- The site is unsuitable in the context of the overall region.
- The development is premature.

East Cork for a Safe Environment in a submission dated the 2nd of March 2016 indicates,

- Reference is made to health issues and the incident in Antwerp.

East Cork Harbour Environmental Association in a submission dated the 4th of March 2016 indicates,

- Reference is made to a duty of care in relation to the environment.
- The personal rights of individuals are referred to.
- The timescale for considering the proposal is referred to.
- There are shortcomings in the EIS.
- The issue of sustainability is raised.
- There are requirements in relation to clear air and emission levels.
- The nature of the feedstock is raised.
- Issues in relation to the site and deficiencies specific to the site are raised including traffic and proximity to population centres.
- The development of alternatives to incineration is raised.
- The issue of traffic overload and toxic spill carried through residential areas is raised.
- Reference is made to air emissions and pollutants and consequent risk to human health and effects on food.

- The impact on the harbour area and in particular damage to amenity and the environment is referred to and that this area had been the subject of major public investment.
- Reference is made to noise and also to flooding.

Environmental and Planning Carrigaline Community Association in a submission dated the 7th of March 2016 indicates,

- Reference is made to traffic overload and toxic spill carried through residential areas.
- Reference is made to air emissions and pollutants and consequent risk to human health and effects on food.
- The impact on the harbour area and in particular damage to amenity and the environment is referred to and that this area had been the subject of major public investment.
- Reference is made to noise and also flooding.

Green Schools Committee Colaiste Mhuire Cobh in a submission dated the 13th of February 2016 refers to,

- The development is incompatible with the harbour area.
- Reference is made to recent flagship projects in the area including the harbour.
- The site is unsuitable and unsafe.
- Reference is made to the access and emissions.
- The site is unsuitable in the context of the overall region.
- The development is considered premature.

Kinsale Environmental Watch in a submission dated the 24th of February 2016 refers to,

- The development disregards local democracy.
- Issues are raised in relation to site selection.
- Issues of erosion and flooding are raised.
- Reference is made to flagship projects.
- Reference is made to the access and the site is unsuitable in the context of the overall region.
- Incineration should not be euphemistically dubbed resource recovery.
- Impact on health and food production is referred to.
- There are less expensive alternatives to incineration.

IBEC in a submission dated the 4th of March 2016 indicates,

- Reference is made to the SWRMP and that it supports up to 300,000t of waste recovery for the treatment of municipal wastes.
- The area has a number of significant industrial sites in the area.
- Reference is made to future obligations in relation to landfill arising from the Landfill Directive and export of waste.
- Ireland must meet its obligations.
- Reference is made to the submitted documentation and the findings of the documentation in relation to impacts on health, emissions and the infrastructure and the mitigation measures proposed.

- Reference is made to the current LAP.
- The observer hopes for a favourable decision.

Monkstown Golf Club c/o Kevin Mc Carthy and others in a submission dated the 13th of February 2016 indicates,

- The development is utterly incompatible with the residential, educational, heritage and recreational development of Cork Harbour and there is reference to the university campus.
- The site is totally unsuitable and in a cul de sac.
- Reference is made to impact on public health and also to emissions.
- The site is least central in relation to the Southern Waste Region entailing unnecessary travel movements and journeys
- Waste to energy is the last resort.
- There is an erosion of democracy with reference to the planning history.

Monkstown Bay Sailing Club c/o Andrew Moynihan in a submission dated the 24th of February 2016 indicates,

- The submission is similar/same as **Monkstown Golf Club**

National Space Centre Midelton in a submission dated the 8th of February 2016 refers to,

- The development presents an unreasonable risk to health.
- Reference is made to Antwerp.
- The development will compromise other development and investment in the area.

Oakhurst Residents Cobh c/o Greg Murphy in a submission dated the 24th of February 2016 indicates,

- The flood defences proposed is not designed for storm damage.
- Reference is made to issue of air flow since the installation of wind turbines.
- The issue of transporting toxic ash is raised.
- The level is CO^2 is referred to.
- There are health concerns and the USA has banned this type of incinerator.
- Reduce, reuse, recycle and compost will remove this form of technology.
- The development is incompatible with the area near a campus.
- The site is unsuitable and located at the end of a cul de sac.
- There is insufficient information in relation to the toxicity of the waste.

PDFORRA in a submission received on the 8th of February 2016 refers to,

- The development is unacceptable and unnecessary.
- Reference is made to access to the naval base and the issues which would arise in the event of an emergency explosion at the site.
- There are issues in relation to the site location.

- Issues arise in relation to the nature of the waste and the classification of waste.
- The site is too small.
- The impact on the amenities of the area is referred to.
- The development is incompatible with the harbour area.
- Reference is made to flooding and coastal erosion.
- Reference is made to unsafe air emissions.
- The site is unsuitable in the context of the overall region.
- The development is premature.

Pharma Chemical Ireland in a submission dated the 25th of February 2016 indicates,

- The submission supports the proposed development and there is a need for necessary infrastructure to support the pharma section.
- The development will bring balance to the spatial distribution of thermal recovery facilities.
- The development will help Ireland comply with the EU Circular Economy Strategy statement of December 2015.
- The proposal has potential for district heating.

Ringaskiddy and District Residents' Association in a submission dated the 5th of March 2016 indicates,

- Reference is made to poor planning decisions in the past in the area.
- The recent developments in the harbour area are referred to.
- The development is incompatible with the area.
- Reference is made to the level of traffic and the site's location at the end of a cul de sac.
- Reference is made fires at waste plants.
- Reference is made to unsuitability due to flooding, coastal erosion, the gas pipeline and health matters.

Ringaskiddy Active Retired in a submission received on the 24th of February 2016 refers to,

- Reference is made to flagship projects.
- The site is unsuitable and unsafe.
- Reference is made to the access and to air emissions.

Ringaskiddy Lower Harbour National School in a submission dated the 4th of March 2016 indicates,

- The submission wishes to record an objection.
- Reference is impact on health and impact on the population.

Rushbrook Tennis Club in a submission dated the 13th of February 2016 indicates,

- Reference is made to the level of ash produces and to the impact on public health.
- Reference is made to the level of traffic and the site's location at the end of a cul de sac.

- The unsuitability of the site in a regional context and proximity of population centres.
- Reference is made to alternative technologies.

Saleen and District Residents Association c/o Fiona Meaney in a submission dated the 1st of March 2016 indicates,

- The association has worked hard to enhance and enjoy their area.
- The area is 6 kilometres from Ringaskiddy and downwind of the facility.
- The submission raises concern in relation to health arising from emissions.
- Reference is made to major investments in improving maritime research facilities and tourism in the area.
- The site is unsuitable due to health concerns, flooding and the logistics of traffic.
- Reference is made to no fundamental changes since previous refusal.

Scoil Barra Naofa Baile an Managh Monkstown in a submission dated the 23rd of February 2016 indicates,

- The school is 1.8 miles from the proposal.
- Concerns are raised in relation to health arising from emissions.
- The site is unsuitable in a regional context with reference to the level of traffic generated and passing through the area to the end of a cul de sac.
- Reference is made to existing uses and facilities and proximity of residents.
- Reference is made to investments in the area and the wider harbour area in particular the maritime centre
- There are concerns in relation to coastal erosion and flooding.
- Reference is made to the history of the site.

Parents pupils and members of the Monkstown Community c/o Scoil Barra Naofa Baile an Managh Monkstown in a submission dated the 23rd of February 2016 indicates,

- The school is 1.8 miles from the proposal.
- Concerns are raised in relation to health arising from emissions.
- The site is unsuitable in a regional context with reference to the level of traffic generated and passing through the area to the end of a cul de sac.
- Reference is made to existing uses and facilities and proximity of residents.
- Reference is made to investments in the area and the wider harbour area in particular the maritime centre
- There are concerns in relation to coastal erosion and flooding.
- Reference is made to the history of the site.

BOM Scoil Barra Naofa Baile an Managh Monkstown in a submission dated the 23rd of February 2016 indicates,

- The school is 1.8 miles from the proposal.

- Concerns are raised in relation to health arising from emissions.
- The site is unsuitable in a regional context with reference to the level of traffic generated and passing through the area to the end of a cul de sac.
- Reference is made to existing uses and facilities and proximity of residents.
- Reference is made to investments in the area and the wider harbour area in particular the maritime centre
- There are concerns in relation to coastal erosion and flooding.
- Reference is made to the history of the site.

Shamrocks Hurling and Football in a submission dated the 4th of March 2016 indicates,

- The development is unsuitable.
- Reference is made to the location in the context of a cul de sac and potential implications in the event of an emergency.
- There is reference to the technology as out dated.
- Reference is made to investments in improving maritime research facilities and tourism in the area.
- The site is unsuitable due to health concerns, flooding and the logistics of traffic.
- Reference is made to the previous refusal and that no fundamental changes since previous refusal.

Shanbally National School in a submission dated the 8th of March 2016 indicates,

- There is concern in relation to health and other risks and in this regard reference is made to Antwerp.
- There is concern in relation to traffic arising from the development.

St Marys National School Cobh in a submission dated the 7th of March 2016 indicates,

- There is concern in relation to health in particular in relation to emissions from the proposed development.
- Concerns are raised in the event of an emergency and evacuation from Great Island.
- The development of an incinerator is incompatible with the area and harbour.

Tplan Planning Consultants in a submission dated the 8th of March 2016 indicates,

- Reference is made to the planning history and to changes recently to the site environs and the harbour area.
- Reference is made to climate change, recent storms and flooding and the long term effects of climate change are not fully agreed.
- The issue of the appropriateness of the technology and the risks arising both in relation to social and health impacts are raised including the Antwerp incident.
- The need for the incinerator is raised.

- There are issues in relation to the road infrastructure.
- The development is not consistent with recent initiatives and development in the harbour area.

Zero Waste Alliance Ireland in a submission dated the 8th of March 2016 indicates,

- Reference is made to air emissions and pollutants which is contrary to the Stockholm Convention and the reduction of chemical emissions.
- The development is contrary to European Policy to develop a Circular Economy and fostering sustainable growth.
- Cumulative impacts are not taken into consideration in particular pm_{10} and $pm_{2.5}$ particulates.
- The need for the incinerator has not been justified and the issue of alternative means of disposal are raised.
- Alternative sites have not been examined in a logical manner.
- The site is considered unsuitable in the context of adjacent development and amenities.
- The proximity to the village is raised and the restricted area of the site.
- The proposal is not a recovery facility it is a disposal facility and is a retrograde step.
- Reference is made bottom ash and other residues which have to be disposed of and the efficiency of the heat recovery aspect of the proposal is questioned.
- The development would be visually obtrusive.
- Flooding, the nature of the road infrastructure and risks arising in an emergency are raised.
- The EIS is deficient in analysis of impacts individually and cumulatively.

7.3 Other observer submissions.

There were approximately 192 submissions received from other parties composed of individuals of groups of individuals. Many of the submissions raised issues referred to in the submissions of groups including the following,

- Unacceptable health and safety risks.
- Reference is made to an explosion at an Indaver site in Antwerp in February 2016 and the dangers from the proposed facility.
- The Indaver waste incinerator technology is obsolete.
- There is medical evidence of the health dangers of these forms of incinerators.
- The site and proposal is incompatible with the current and future nature of the development of the harbour area in the context of recent development and investment.
- Reference is made to the nearby SPA and impacts on this site.
- The effects of the recent wind turbines are not accounted for in the air modelling.
- Reference is made to the height of the stack.
- The recent positive initiatives in the harbour area and the public investment in the harbour.

- The unsuitability of the site in relation to emissions and impacts on the heritage both built and natural of the harbour area.
- The site is prone to flooding and erosion and reference is made climate change.
- Reference is made to proximity to a place of learning, the naval base the substantial population and location at the end of a cul de sac.
- Reference is made to traffic impacts on the road network and also on the area.
- Reference is made to national policy on waste and emphasis on recycling.
- Reference is made to the site selection process and the inadequacy of the process as presented.
- Issues of noise and visual impact are raised.
- Issues are raised on the impact on sailing and recreation and in particular to the increasing important function of the use of the harbour for sailing schools and training and also for international events.
- The development will devalue property in the area.
- Reference is made to the issue of coastal erosion and loss of amenity of Gobby Beach.
- Health issues are raised.
- Reference is made to toxic emissions.
- There is a duty of care of An Bord Pleanala to the community of Ringaskiddy, a coastal community, which dates back to the 18th century, and which has had a major burden placed on it in recent years by new industries, the port expansion and the consequent loss of amenities previously enjoyed.
- Reference is made to the proximity to residents, to increased traffic movement in particular HGVs and also to potential health hazard.
- Reference is made to inadequacy of controls and also to issues of enforcement.
- Emissions from incinerator are not measured sufficiently.
- The area has suffered from contamination in the past and suffered from a lack of enforcement and regulation.
- The proposal is inconsistent with recent developments in the lower harbour and investments made in the area and investment to improve and clean the area.
- Is the development in the correct location with reference to transportation, its location in the harbour and other investments made in relation to the harbour?

8.0 OVERVIEW OF ORAL HEARING

8.1 An oral hearing in relation to the development was held in the Carrigaline Court Hotel, Carrigaline, County Cork and the proceedings were held over seventeen days between the 19th of April, 2016 and the 17th of May, 2016. In the course of the oral hearing two evening sessions were held to accommodate parties who had indicated that they wished to present a submission but were due to other commitments unable to attend the hearing during the day.

Parties were also accommodated where possible at specific time periods if this was made known in advance to the Board and information on timelines for the hearing were available on the Board website and updated during the hearing. This required some amendments to the order of proceedings but this was generally agreed by all parties at the oral hearing.

8.2 A recording of the proceedings of the oral hearing was made and constitutes the official record of the proceedings.

8.3 A full list of written submissions made to the hearing is given in Appendix A to this report.

8.4 The oral hearing followed an agenda and order of proceedings, which was circulated in advance of the oral hearing and which is attached as Appendix B.

8.5 The following is a brief summary of the proceedings of the hearing. The oral hearing commenced with establishing attendance at the hearing and parties who wished to make a submission and a direction from the inspector's direction in relation to the nature and conduct of the oral hearing.

8.6 The applicant provided a brief overview of the proposed development.

8.7 The applicant then provided a response to the submissions received from the planning authority, prescribed bodies and the observers. The response was structured as a response document and a restatement of the original application submissions. In accordance with the advance order of proceedings the submissions were made under a series of headings:

a) Policy matters addressing matters raised relating to national and sub-national waste policy, in addition to local waste and land use policy.
b) Suitability of the site and site alternatives.
c) Infrastructure including traffic, access, and flooding of the road.
d) Issue of soils, hydrogeology, hydrology and coastal erosion/recession.
e) Potential impacts in relation to air quality, health, and impacts on human beings generally.
f) Landscape and visual matters.
g) Natural and cultural heritage - based on an examination of submissions received this issue may overlap with air quality.
h) Other issues.

8.8 The Planning Authority then made a submission in response to the applicant's submissions focussing the submission largely under the headings outlined above.

8.9. Responses were then taken from prescribed bodies.

8.10 Provision was made for pubic representatives to make response submissions but given the matter of availability these submissions were not taken consecutively but when parties could be available and this change in the proceedings was agreed by all parties at the hearing.

8.11 Response submissions were then received from observers who stated their intention to make a submission. In general, the groups and organisations were taken initially and then submissions were made by individual parties. Accommodation was made for parties where possible when issues of time availability arose. Evening sessions were also provided to accommodate parties unable to attend during the normal working day.

8.12 Having heard the response submissions the hearing then provided for cross-questioning arising from submissions made and on the documentation generally.

8.13 The questioning largely revolved around a structured framework under the headings outlined above in section 8.7. Some flexibility was provided for to facilitate time availability for attendance and where the response submissions raised matters which required further examination. In this regard I would specifically refer to the Department of Defence submission relating to air navigation issues and clarity in relation to aspects of air emissions and impacts relating to fauna in the harbour area.

8.14 Following cross-questioning closing statements were taken from parties who wished to make a statement and the heating was closed after the conclusion of these statements.

9.0 ASSESSMENT

9.1 INTRODUCTION.

9.1.1 The proposed development as submitted provides for the construction of a Resource Recovery Centre development, comprising a Waste to Energy Facility (WTE) for the treatment of up to 240,000 tonnes per annum of residual household, commercial, industrial, non-hazardous and suitable hazardous waste. Of the 240,000 tonnes of waste, up to 24,000 tonnes per annum of suitable hazardous waste will be treated at the facility.

The development, it is proposed, will maximise the extraction and recovery of valuable material (in the form of ferrous and non ferrous metals) and also generate an energy resource in the form of 21 megawatts of electricity from the residual waste. There is also the potential to provide for district heating if such a proposal is considered at some period to be feasible.

9.1.2 The previous facility applied for, ABP Ref. No. PA0010, and which was refused by the Board was a similar type of facility with the proposal to receive hazardous and non-hazardous waste in the form of municipal, commercial and industrial waste and included a waste transfer station with an overall

capacity of 240,000 tonnes. In terms of recovery the proposal would it was indicated have produced 25 megawatts of electricity.

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9.1.3 Prior to ABP Ref. No. PA0010, on the 15/01/2004, the Board granted planning permission ABP ref. No PL 04.131196 on the current site for a waste-to-energy facility, waste transfer station and ancillary facilities at the same site with a capacity of 100,000 tonnes hazardous and non-hazardous industrial /trade waste. The facility subsequently received waste licence from the EPA to treat up to 50,000 tonnes of hazardous waste per annum (W0186-01).

9.1.4 Essentially the current proposal as submitted is, I consider, to address the four stated reasons of ABP Ref. No. PA0010 which are outlined in section 3.3 of this report, which related to the layout and limited size of the site and as a consequence the lack of capacity of the site to deal with the waste tonnage proposed, policy matters relating to waste management and also issues of flooding on the road, and coastal erosion and recession.

9.1.5 The main changes in relation to the building form and layout to address the previous refusal are reductions in the site floor area and the footprint area of buildings, including of the main process building and other buildings such as the turbine hall and aerocondensor structure. There are also changes in overall height including an increase in height of the main process building.

It is to be noted that no waste transfer station is proposed in relation to the current proposal.

There are also proposals the upgrade to L2545 road consisting of raising a 185m length of the road by a maximum height of up to 1 metre between Gobby Beach car park and the entrance to the National Maritime College of Ireland (NMCI) with associated upgrading of the surface water drainage network in the L2545 road to address issues of flooding, and there is a study and proposals arising in relation to coastal recession to address a stated reason for refusal in the previous Board decision.

9.2 Having inspected the site and examined the associated documentation, the following are the relevant issues. I would note that there is interaction among these issues and they cannot necessarily be addressed in some cases exclusively.

- Principle of development in a policy context.
- Site selection and consideration of alternatives
- Traffic.
- Air quality and climate, emissions and modelling.
- Major accident and risk.
- Human beings in the context of impacts arising from the development.
- Air Navigation with specific reference to the Irish Defence Base at Haulbowline.
- Visual impact.
- Coastal recession/erosion.
- Issues specific to the site.

- Archaeological, Architectural and Cultural Heritage
- Natural Heritage / Ecology

9.3 PRINCIPLE OF DEVELOPMENT/POLICY

In section 4 of this report I have outlined the policy context at global, national and county level relating to waste management and planning.

I wish to consider policy under the following;

- Need for the development.
- Site selection.
- Policy specific to the site and area.

9.3.1 Need for development.

In relation to the need for the development the question of waste management has to be considered initially.

Waste management requires to be considered in the overall context of a changing policy framework arising from the articles outlined in the EU Waste Framework Directive (2008/98/EC), which introduced a five step Waste Management Hierarchy order of priority; which now underpins member states national waste management policy and which has been adopted as national policy. This directive addresses all aspects of waste including hazardous waste.

There were many submissions questioning the need for the development in particular from the third parties referencing changing attitudes to waste management and practice and for the need for incineration in waste management. I would in this regard make specific reference to the submissions made by Brendan Richardson submissions 85 and 85A, which questioned the effects of the introduction of incineration on consumer practice on the disposal of waste.

EU and national policy in the management of waste has adopted a five stage waste hierarchy in order of priority: prevention; preparing for re-use; recycling; other recovery, e.g. energy recovery; and disposal to landfill. In relation to recovery energy-efficient incineration facilities dedicated to the processing of municipal solid waste are now under this Directive classed as “recovery” rather than “disposal” operations, which in effect moves the form of facility under consideration up the waste hierarchy.

The waste management hierarchy in effect therefore identifies an order of priority for actions to reduce and manage waste with prevention as the most favoured option, with a hierarchy of a lowering prioritisation and precedence of minimisation, reuse, recycling, energy recovery and disposal with the disposal to landfill option as the least favoured option.

The Directive lays down measures to protect the environment and human health by preventing or reducing the adverse impacts arising due to the generation and management of waste.

At national level in addition to the adoption of the hierarchy as state policy there are defined ongoing actions aimed to promote the higher elements of the hierarchy and a continuing policy to minimise diversion to landfill.

In relation to future projections on waste, there is recognition that overall waste volumes are anticipated to increase. For example, current waste management policy at national level anticipates that municipal waste arising will increase by 825,000 tonnes to 3.7 million tonnes by 2025.

Policy recognises that there will be a need to provide the necessary infrastructure to manage an increasingly complex waste product and increased volume of overall waste. In this context therefore although prevention is the stated highest priority, it is recognised and necessary that waste will continue to be required to be managed. Notwithstanding increased initiatives aimed at reuse and recycling at the higher tiers of the hierarchy, recovery and disposal will therefore continue to form part of the management of a residual fraction of the overall waste produced.

It is also important to consider that waste is also viewed as a resource as reflected in the terminology of current policy “A Resource Opportunity. Waste Management Policy in Ireland”. In that context as a resource, it is a traded commodity in what is an open and free market. Waste is currently exported from Ireland and this trend it is envisaged is likely to continue. As an open market, the market also provides for waste to be imported.

Waste management plans have evolved to reflect this free movement of waste both in a European and national context with movement of waste transnationally and internally within Ireland.

National policy, however, while recognising the free market also recognises the importance of waste as an energy resource opportunity in terms of recovery, and for the need to develop efficient ways to harness that resource. The policy provides for rationalisation of waste management regions to ensure better planning and to implement policy with a key objective of these waste management plans to ensure a sufficiency of waste management infrastructure within the State to manage municipal waste.

Section 9 of the policy document refers to recovery. It is indicated that waste can be used in a number of ways and through a number of technologies to produce energy, including through anaerobic digestion, thermal treatment and through the use of solid recovered fuel in facilities such as cement kilns.

Specifically, in section 9.2 in relation to recovery considers that Ireland requires an adequate network of quality waste treatment facilities and recovery infrastructure and for provision of capacity for managing municipal waste in conformity with the principles of proximity and self-sufficiency.

Regional policy reflects national policy currently as stated in the *Southern Region Waste Management Plan (SRWMP) 2015-2021.*There is reference to increased export of residual waste (section 4.3) and the danger of over reliance in relation to this increased export of waste, and in this regard to knock on consequences arising for national policy ambitions to become self-sufficient in treating residual wastes. A continuous move towards waste exports it is indicated is not without risks as exports are vulnerable to market shocks, price increases and potential enhanced regulatory controls and a loss of potential energy resource.

Part 3 of the plan relates to implementation and waste projections nationally for all sectors / streams of waste (section 15.4.1) and treatment capacity within the region. In relation to disposal there is recognition of a decline in the disposal of waste to landfill and that there is a need for capacity to address the treatment of hazardous wastes which cannot be recycled or recovered. This infers that there is a need to provide the necessary infrastructure to address identified deficiencies and avoidance of reliance on the export of waste.

Section 16.4.5 of the plan relates to recovery/thermal recovery where the principal use of the waste is as a fuel to generate energy and therefore considered to be part of the recovery tier of the waste hierarchy.

In the regional plan the existing capacity is viewed by the local authorities as addressing national needs with respect to the recovery of residual municipal wastes and other waste streams. The plan, however, refers to Ireland's policy to become self-sufficient in relation to the recovery of municipal waste; that progress is being made in this area and refers to the exporting of a significant quantity of residual waste, which is considered a poor use of a valuable resource from a self-sufficiency perspective. This position reflects national policy.

Based on the lifetime of the regional plan, it is indicated and expected that the capacity active in the market will increase substantially reflecting projected increased overall tonnages of waste generation. This increase reflects the national projected increase of waste generation.

At regional level it is considered that a need for future treatment capacity and infrastructure must as a consequence take into account clearly identified trends in relation to the management of waste defined as a predicted waste growth tonnage, growing recycling rates, future targets and the continued move away from landfill.

In this context in the absence of and/or the conversion of increasing waste capacity through the provision of infrastructure into a form of active treatment the export of waste will continue within the region. Similar to national policy it is also considered that a reliance on export as a policy option is not necessarily in the national interest.

In this regard policy E15a of the regional plan supports a national additional thermal recovery need capacity of 300,000 tonnes for the treatment of non-hazardous wastes in the period 2020-2030. Policy E16 supports a national additional thermal recovery need capacity need of up to 50,000 tonnes for the treatment of hazardous wastes.

It is noted that in stating these policies they are not location specific to the southern region nor do they identify a specific location in or within the region. The proposed development would, however, provide capacity for the management of 240,000 tonnes of which, 24,000 tonnes would be hazardous waste.

The issue of need for the development based for future management of waste arose in the course of the oral hearing with many parties considering incineration to be an obsolete technology and that overall waste policy has increased emphasis on the treatment of waste within the higher tiers of the hierarchy rather than thermal recovery and disposal.

There is no dispute necessarily in relation to this position and that this is the generally accepted position to be aspired to. I do, however, consider notwithstanding increased diversion to the higher ties of the hierarchy that a residual fraction of the overall waste will continue to be produced notwithstanding increased reuse and recycling at the upper levels of the hierarchy and this residual fraction will require management by recovery including thermal recovery and as a last resort disposal to landfill.

Thermal recovery does not necessarily infer waste will be treated in the manner proposed as there are alternative thermal processes available including use in cement kilns. However, in the absence of a wider availability of a range of recovery policy initiatives and the provision of the necessary accompanying infrastructure, future ongoing disposal to landfill will remain for certain streams and volume of waste as the only preferred option if conversion of waste to energy capacity and infrastructure is not provided.

The alternative is increased export of waste which, as already indicated is not considered desirable in the national interest and in relation to security of disposal.

I would note the concern expressed by many parties that the development/provision of incinerators/thermal treatment may retard diversion of waste to higher tiers of the hierarchy but this is likely to reflect and be an effect of the market and pricing factors in what is currently an open market for a product, which is considered as a resource.

There was also reference that given the level of incinerator capacity in Europe there will be continued export of waste to meet the capacity requirements of existing plants and that current export of waste will continue.

There is nothing necessarily at the current time to contradict this position but the ongoing export of waste has to be considered in the context of anticipated growth in waste for the foreseeable future and what, I consider, a reasonable policy for the reduction on reliance on exports of waste. There is also no guarantee that other nations will in the future wish to continue importation of waste from other states considering that individual states should provide the necessary infrastructure to manage its own waste. In this regard I would note that self-sufficiency and proximity principles are referred to in Article 16 of the Waste Framework Directive.

It is, therefore, difficult to assess what level of future increased waste tonnage will be exported as market conditions will be a consideration. It is reasonable to conclude that although exports will continue and may account for an unknown portion of the increased waste tonnage but it also possible to assume that not all of the additional material being exported and that a proportion of the increased tonnage will remain in Ireland.

It will therefore, I consider, be necessary to manage any projected increase and as a consequence to provide the additional infrastructural capacity to manage this increased tonnage of waste. It is reasonable to consider that recovery infrastructure including thermal recovery to be part of the infrastructure required.

The provision of the addition infrastructure would, therefore, address national and regional policy in relation to the principle of self-sufficiency and proximity and for a reduced reliance on other states to manage waste currently and into the future generated in Ireland.

Conclusion

In relation to future projections on waste, there is recognition that overall waste volumes are anticipated to increase and that there will a national additional thermal recovery need capacity of 300,000 tonnes for the treatment of non-hazardous wastes in the period 2020-2030.

National and regional policy recognises that there will be a need to provide the necessary infrastructure to manage an increasingly complex waste product and increased volume of overall waste.

Notwithstanding increased initiatives aimed at reuse and recycling at the higher tiers of the hierarchy, recovery and disposal will therefore continue to form part of the management of a residual fraction of the overall waste produced.

Waste management plans have evolved to reflect this free movement of waste both in a European and national context with movement of waste transnationally and internally within Ireland.

National policy, however, while recognising the free market also recognises the importance of waste as an energy resource opportunity in terms of

recovery, and for the need to develop efficient ways to harness that resource.

National and regional policy is to ensure a sufficiency of waste management infrastructure within the State to manage waste as the ongoing and increased export of waste is not considered desirable in the national interest and in relation to security of disposal.

It will therefore be necessary to manage any projected increase and as a consequence to provide the additional infrastructural capacity to manage this increased tonnage of waste. It is therefore reasonable to consider that recovery infrastructure including thermal recovery to be part of the infrastructure required.

The provision of the addition infrastructure would, therefore, address national and regional policy in relation to self-sufficiency and proximity principles referred to in Article 16 of the Waste Framework Directive.

In this context the need for this development is, I consider, established.

9.3.2 Site selection.

9.3.2.1 The issue of site selection was a major issue raised in many of the submissions in particular the methodology as applied which verified the current site and also whether it was robust in the overall appraisal of alternatives.

9.3.2.2 Chapter 3 off the EIS relates to alternatives. I would also refer to Appendix 3.1 of the EIS Site Evaluation Criteria. I would also refer to submission no 8 by Ms Fiona Patterson responding to matters raised in submissions prior to the oral hearing and many third party responses which largely question the site selection process and the suitability of the site in part of their submissions.

9.3.2.3 The issue of site selection and alternatives in relation to site and processes was raised in many of the observer written submissions and was also raised by many of the observers at the oral hearing in particular in the context that the WHO Regional Publications European Series No 46 Guidelines for siting of hazardous waste incinerators (Sloan) were not applied in the selection process.

It was also indicated that the process outlined in these guidelines was not adhered to by the applicant and that if the exclusionary factors in site selection for hazardous waste management facilities are taken into consideration the current site would not meet criteria specified in the WHO guidelines.

Under the WHO guidelines a four stage process is applied where in the initial stage an exclusionary process of eliminating unsatisfactory areas is applied. Unsatisfactory areas include coastal areas prone to flooding; coastal

wetlands; limestone areas; areas with unstable or weak soils; areas with issues of subsidence and saturated soils and areas with high groundwater recharge. Table 2 of the guidelines lists other exclusionary factors including atmospheric conditions; natural resources such as the habitats of endangered species and historic locations or structures and locations of archaeological significance.

Having applied exclusionary factors, the next stage is identification of promising areas such as industrial areas and areas with major transportation access. Stage three is an assessment of the promising areas in detail in relation to matters such risks to health. The fourth stage is an evaluation and ranking of sites applying a range of criteria.

9.2.3.4 In relation to site selection as applied to the current proposal, the methodology approach set out in the EIS largely consists of a re-evaluation of the initial site selection process carried out in 2000 in the context of changes since 2000 and the consideration of three additional sites, Bottlehill, Gortadroma and Kilbarry which were not part of the 2000 evaluation and the third is consideration of alternative technologies.

9.2.3.5 The 2000 site selection process essentially also involved a 3 phase process focussed on County Cork based on the view that industries located in Cork generated approximately 60% of the hazardous waste produced in Ireland and that most of this waste was produced by the pharmaceutical industry located in the Cork Harbour Region. Phase 1 examined the harbour area with the main criteria of land use/zoning, land ownership/availability and availability of utility services with Ringaskiddy identified as the preferred location.

Phase 2 widened the examination of site to other locations within the county using the same criteria and also included road access and these locations were subsequently discounted as less suitable than the Ringaskiddy area. Exclusion of other areas largely also related to specific non suitability issues for the individual sites considered due to the absence/non availability of a suitable parcel of land and the distance from main generators of waste which was concentrated in the harbour area.

Phase 3 examined 4 sites in Ringaskiddy applying criteria based on criteria outlined in table 3.1 of the EIS including land ownership/availability; land zoning; site accessibility and road upgrade requirements; electrical supply and substation availability; natural gas supply; piped services; emergency response; site characteristics distances to Ringaskiddy village and to closest sensitive location from site boundary including houses within 500ft (150m); primary wind direction; potential of impact visually on amenity areas and habitat areas.

The main considerations in choosing the current site were zoning, proximity to the pharmaceutical industry located in the Cork Harbour Region, specific site criteria and availability of land were overriding factors. The decision to

choose the site was it would appear ultimately determined by the availability of the site after the assessment and evaluation process.

9.2.3.6 This review of site selection in preparation of the current application primarily addresses changes to waste and land use policy in the interim period. The preference for a location within Cork City and County, the most populous area of the region and the location of a site distant from existing and envisaged waste infrastructure located and proposed in the northern area of the country added in significance to the selection of a site in the Cork area and in this regard current concentration of pharmaceutical industries in and around Ringaskiddy was also a consideration.

The site as selected in addition to producing energy was identified as a potential CHP facility although whether this process is achievable or viable was not determined to any significant degree. The absence of any objection on site selection criteria in previous planning applications was also a consideration in affirming the present site.

Concentrating on the Cork area, the areas around Cork Harbour, Little Island, Carrigtwohill, Whitegate, and Carrigaline, and the towns of Ballincollig, Macroom, Mallow, Mitchelstown and Charleville were deemed to remain unsuitable as they were in 2000 when compared to Ringaskiddy. The subject site in Ringaskiddy retained its preference as the three sites examined in 2000 are no longer available. The changes identified in the Ringaskiddy and neighbouring harbour area in the interim period were also considered not to inhibit the current site.

In terms of suitability policy both in relation to planning and waste is referred to. The adoption of the Cork County Development Plan 2014, which has been subject to a Strategic Environmental Assessment is referred to. There is reference to the presence of the subject site as within zoning objective ZU 3-7; the consideration that the most appropriate locations for strategic large scale waste treatment facilities, including waste-to-energy recovery facilities, are in ‘Industrial Areas’ designated as Strategic Employment Areas and that the site of the proposed development at Ringaskiddy is within an Industrial Area designated as a Strategic Employment Area.

Ringaskiddy is, however, not the sole Strategic Employment Area and there are other similar Strategic Employment Areas identified in the CCDP at Carrigtwohill, Kilbarry, Little Island and Whitegate.

These Strategic Employment Areas locations were evaluated and the proposed development site within the Ringaskiddy Strategic Employment Area was advanced as the preferred location for the proposed development.

In addition to the Strategic Employment Area sites other alternative sites are referred to in section 3.2.10 of the EIS.

Bottlehill a licenced landfill facility, north of Cork City in close proximity to the N20 was considered but it was discounted as it is not identified as an

industrial area, nor is it designated as a Strategic Employment Area. Reference is also made to objective ZU 3-7 of the CCDP and that the provision of strategic large scale waste treatment facilities including waste-to-energy recovery facilities will only be considered in 'Industrial Areas' designated as Strategic Employment Areas in the local area plans. The proposed development site in Ringaskiddy also offered the advantage of a location closer to the main producers of hazardous waste, which are in the Harbour area and no potential CHP synergy would apply in relation to Bottlehill.

Gortadroma, Co. Limerick is also referred to in consideration of alternatives but is a considerable distance from the main producers of hazardous waste in Cork Harbour and from the Cork City population centre and for these reasons the Gortadroma site is not considered an appropriate site for the proposed facility.

Kilbarry was not included in the 1999/2000 site selection process but is now a Strategic Employment Area. Lands it is indicated are, however, not available for purchase for infrastructure and the road network serving Kilbarry is very poor. Due to the poor road network and lack of other large industries in the area, Kilbarry was not considered a suitable site for a resource recovery centre.

The 2015 evaluation identified no adverse impacts in relation to visual, landscape and heritage, flooding soils and geology and traffic.

9.2.3.7 Comment.

In relation to the site selection and consideration of alternatives my initial observation is that the current proposal was not, I consider, assessed from a *de novo* situation. The initial site selection process as carried out in 1999/2000 remains the empirical assessment in relation to the current assessment of alternatives. The site selection as identified in 2000 has in the current proposal in effect been proofed against an updated re-evaluation carried out in 2015, in which the original sites were re-evaluated, current policy was considered and three new sites not identified or considered relevant in 2000 were added to be considered.

There is no definitive national guidance in relation to site selection/alternatives. In relation to content of EIS and Article 94 Planning and Development Regulations, 2001 (as amended) requires that an EIS shall contain— (a) the information specified in paragraph 1 of Schedule 6.

Paragraph 1 (d) Schedule 6 of the Planning and Development Regulations, 2001 (as amended) requires that EIS should contain:

(d) An outline of the main alternatives studied by the developer and an indication of the main reasons for his or her choice, taking into account the effects on the environment.

In relation to the above requirements there is minimal guidance in relation to content and based on the information submitted which outlines alternatives and indications in relation to choices made in relation to alternatives the EIS as submitted meets the requirements stated.

In relation to the WHO guidance referred to in submissions it is a guidance document for the selection of new hazardous waste management facilities. The current proposal is a waste management where hazardous waste accounts for 10% of the overall waste. It is essentially a guidance document and whether it can be fully and universally applied to facilities can be questioned as it appears to have been applied initially as a model for the evaluation of landfills and for the selection of a landfill site. It is, therefore useful, in setting out a methodology for the section of sites offering a 4 stage process where exclusion/constraint of areas based on a range of criteria is the initial stage.

Aspects of the WHO guidance are incorporated in particular in relation to criteria examined as potentially as factors for exclusion but the broad exclusionary factors were not fully applied in the initial stage. In 1999 selection process adopted the view that County Cork and in particular the harbour area was the main focus for optimum area selection based on the volume and nature of waste being generated in this area as a significant critical mass. This approach is not I consider an unreasonable initial approach.

It also applied the basic requirement of examining industrial zoned areas which, I consider, is a reasonable approach given the nature of development proposed. Areas outside of the harbour area in the county were therefore largely excluded as they were not favourable against these criteria. In examining the harbour area the presence of the pharmaceutical industry was given a major positive weighting in considering the Ringaskiddy area. Having identified the Ringaskiddy area, land availability and land ownership were it appears a major consideration in choosing the current site over three others examined in the Ringaskiddy area.

In the 2015 assessment in relation to evaluation of alternatives the sites identified in 1999 in the harbour area were referred to and no new sites/areas identified and examined. For many reasons many of these sites which may have been viable alternatives in 1999 are no longer available and alternatively developed so this aspect of the assessment served no purpose and there is no clear indication that other alternative locations were sought or could have been pursued or were fully examined. I would however acknowledge that zoning and other stated provisions of the CCDP do limit the range and number of site possibly available.

In relation to other alternative sites (i.e. non-Strategic Employment Areas), Gortadroma County Limerick was disregarded by the applicant given its distance from Cork. The choice in itself appears difficult to comprehend as a location in Cork county and in particular the greater Cork city was a predetermined major factor in the initial site selection evaluation and in this

regard it is questionable if it warranted consideration as an alternative site in site selection a view expressed in the course of the oral hearing.

The other sites in Bottlehill and Kilbarry were disregarded on the basis of zoning in relation to Bottlehill and access and absence of a suitable site area in Kilbarry. In effect the subject site was restated as the preferred and optimum site. In relation to the Bottlehill and Kilbarry sites, based on the initial requirements determining the site selection process, it is equally questionable if they warranted consideration as an alternative site in site selection.

The evaluation also considered changes in the Ringaskiddy area since 2000 including permissions for wind turbines and the Hammond Lane site. The presence of the Maritime College, Beaufort Laboratory the port of Cork extension and IMERC among other are referred to and in an evaluation in paragraph 3.2.8.20 of the EIS on the implications of recent proposed developments for the suitability of Indaver's site. In this regard it is indicated that
"*it is considered that the ongoing development of IMERC has changed the setting of L2545 road, at the Indaver site, from an undeveloped rural road to a more built-up, campus setting. The future tourism and amenity roles for Spike and Haulbowline Islands and the increased cruise liner business in Cobh have been taken into account in the external treatment of the buildings on site and in the visual and landscape impact assessment. However, these developments do not negatively impact the suitability of the Indaver site for the proposed development*".

There is, I would note, no detail analysis outlined or offered as to how this position was arrived at.

The viewpoint that the nature and character of the area has changed was raised in many of the submissions objecting to the development and restated at the oral hearing, in particular by all of the public representatives nationally and locally, who not only considered that the area had changed but that major public investment and funding citing in particular investments in Haulbowline, IMERC and Spike Island was instrumental in this change and that this investment would be significantly dissipated by the proposed development.

It would not, I contend, be unreasonable to consider that the eastern end of the Ringaskiddy peninsula has altered significantly in the period since 1999. The investment in the Maritime College, the ongoing investment of IMERC and the Beaufort Research Laboratories in close proximity to the subject site and the change in the nature of development in the immediate area to high tech research and educational uses with scope for additional investment and employment opportunities has, I consider, altered the character of the area from that viewed in 2000. I would accept that these new initiatives were acknowledged in the initial study but these and other activities have grown in significance in the interim period and the nature of the area in the vicinity of

the site has changed and the significance of the potential emerging changes were not initially understood in 1999 but the changes are more evident now.

There is also the major public investment on Haulbowline Island on the former Ispat/Irish Steel site and other structures on the Naval Base (Haulbowline Master Plan 2015) and the recent investment on Spike Island as a tourism destination. There is also a growth of an understanding of the significance of the historical defence structures in the outer harbour and their linkages, which would not have formed part of the initial selection process in evaluating the eastern end of the Ringaskiddy peninsula as a preferred location.

It would therefore I consider be reasonable that a more detailed evaluation of these changes should have formed part of a study of alternative sites.

Other aspects of the site's suitability are assessed under different headings and although the site does meet certain criteria it has issues in meeting all of these criteria. The site is at the end of a cul de sac road and all the waste to be treated for a large region is proposed in effect to be channelled to a single road. In effect a large geographical region and the greater Cork area which will be the major single source of the waste will funnel its waste to the end of a cul de sac road.

Conclusion.

In relation to the site selection and consideration of alternatives my initial observation is that the current proposal was not, I consider, assessed from a *de novo* situation.

The initial site selection process as carried out in 1999/2000 remains the empirical assessment in relation to the current assessment of alternatives. The site selection as identified in 2000 has in the current proposal, in effect, been proofed against an updated re-evaluation carried out in 2015.

It is questionable the sites selected in the most recent assessment in particular Bottlehill and Gortadroma warranted consideration as alternative sites in site selection given an initial standpoint that location in the Metropolitan Cork and the harbour area was considered to be the optimum location.

The site selection assessment does not provide a robust evaluation or assessment of changes in the immediate area of the Ringaskiddy peninsula in the period since 2000, which are of importance and which were referred to in many submissions.

I conclude that there is significant information deficit in relation to site selection and consideration of alternative sites and there is therefore an absence of a more up to date robust evaluation in this regard.

9.3.3 Policy specific to the site and area.

Chapter 2 of the EIS relates to policy and planning framework.

9.3.3.1 The issue of planning policy in the context of the provisions of the current Cork County Development Plan (CCDP) and the Carrigaline Local Area Plan was raised in many observers' submissions and also was the subject of significant and major discussion at the oral hearing.

In relation to planning policy, I would specifically refer to submission no 6 made by Mr Dave Coakley for the applicant. In relation to observers' submissions I would refer to aspects of Mr Noonan's submissions no.28 and 28A, Mr. Simon Coveney T.D. in particular a letter of clarification by Mr Paudie Coffey submission 37, the submission of Ms Tricia O'Sullivan submission no. 48 and Cllr Marcia D'Alton submission 65, though many other third party submissions also refer to the subject. Cork County Council were also engaged in the questions on the subject.

9.3.3.2 At the regional level the South West Regional Planning Guidelines (2010-2020) (SWRPG) is a strategic policy document aimed at reflecting the strategic planning framework established by the NSS and other relevant national government policy and which provides a regional strategic context for a local policy framework. The importance of the Cork Harbour area is reflected in the guidelines as significant assets within the Cork Gateway for sustainable economic development, population growth, recreation and tourism and is critical to the success of the Cork Gateway and is also of both national and regional significance as it contains the regional significant pharmachemical industries at Ringaskiddy.

In the context of the current Cork County Development Plan the site and harbour area is located within the Cork Metropolitan area identified in the CCDP's Core Strategy as an area which has experienced significant growth and is considered to be the main engine of population and employment growth for the region.

The site and area is within a region incorporating the city and suburbs and satellite towns with a diverse range of land uses. The challenge of accommodating these uses and retaining balance and this is recognised in particular in relation to the harbour area in objective CS 4-1(d): County Metropolitan Cork Strategic Planning Area, which states the objective, "to protect and enhance the area's natural and built heritage and establish an appropriate balance between competing landuses to maximise the areas overall contribution to Metropolitan Cork while protecting the environmental resources of the Harbour".

9.3.3.3 The plan, therefore. recognises that the harbour area is subject to potentially competing demands, and that providing a balance in accommodating economic growth and protecting heritage is an ongoing significant challenge.

In relation to accommodating the various uses to economically sustain the area, chapter 6.2.2 of the CCPD refers to a number of employment locations that have underpinned Cork's economic success including the port related, pharmaceutical and associated industries at Ringaskiddy.

In this context the CCDP has also identified 'Industrial Areas' designated as Strategic Employment Areas which are considered of importance to the future development of the county and Ringaskiddy is designated as a Strategic Employment Area with a specific objective EE 4-1 to "promote the development of Strategic Employment Areas suitable for large scale developments at Carrigtwohill, Kilbarry, Little Island, Ringaskiddy and Whitegate where such development is compatible with relevant environment, nature and landscape protection policies as they apply around Cork Harbour. Protect lands in these areas from inappropriate development which may undermine their suitability as Strategic Employment Centers".

The objective therefore while promoting the strategical importance of designating these industrial areas also recognises that their development should and must be compatible with other policy criteria in the plan including the environment, heritage and landscape.

9.3.3.4 In relation to permitted uses within Strategic Employment Areas objective ZU 3-7 of the CCDP is of importance and indicates what are considered as appropriate uses in such areas and in (a) provides for the promotion and the development of industrial areas as the primary location for uses that include waste materials treatment, and recovery. Specifically, in ZU 3.7 (b) it provides for the "provision of strategic large scale waste treatment facilities including waste to energy recovery facilities will be considered in 'Industrial Areas' designated as Strategic Employment Areas in the local area plans subject to the requirements of, National Policy, future Regional Waste Management Plans and the objectives set out in local area plan".

The provisions as stated in objective ZU 3.7 (b) was the subject of discussion at the oral hearing and in written submissions, including the planning authority submission, with varying views of its interpretation in relation to assessing the current proposal.

It is also noted that in the preparation of the CCDP following the adoption of the CCDP on the 8th of December 2014 the Minister for the Environment, Heritage and Local Government outlined his intent to issue a Section 31 Ministerial Direction in relation to objective ZU 3-7 as the plan as adopted was not considered to adhere with national waste policy. In accordance with statutory provisions a proposed amendment to the CCDP was published and advertised and the Minister formally issued a Section 31 Direction on the 04/03/15 amending the CCDP to include the amended wording of policy objective ZU 3-7(b) as currently adopted.

The plan as adopted does, therefore, provide for the consideration of strategic large scale waste treatment facilities including waste to energy

recovery facilities in 'Industrial Areas' designated as Strategic Employment Areas. At the oral hearing a written submission was received from Mr Simon Coveney T.D. from the minister who issued the Direction clarifying the nature of the direction (see submission 37).

Essentially the clarification submission supports the Direction as stated but refers to applying to the zoning and not necessarily to a specific site including the site under consideration. This view was supported by many of the third party submissions.

9.3.3.5 In relation to Local Area Plans, which are referred to in objective ZU 3.7, there are two LAPs which are of relevance to the considerations of the site, the Carrigaline LAP within which the appeal site and Ringaskiddy is situated and the Midelton LAP which adjoins the site and its immediate area in particular in the context of the harbour area. The site is located with the designated settlement boundary for Ringaskiddy.

It is important to initially state that the Carrigaline Local Area Plan 2015 adopts the core strategy and overriding strategies and objectives of the Cork County Development Plan. In relation to Ringaskiddy the role and function of Ringaskiddy in a strategic context is identified in paragraph 4.1.1 as a strategic employment centre and the objective to encourage the development of Ringaskiddy. There is recognition of the increasing diverse role of Ringaskiddy not just in the context of the port facilities and established industrial base, but also its location as a naval and marine training institution and the attraction of major, large scale, high technology manufacturing plants (paragraph 4.1.2).

The ongoing vision of Ringaskiddy as a key industrial location and source of future employment is, therefore, an integral objective for Ringaskiddy and this reflected in large areas of land zoned for industry within the development boundary of Ringaskiddy as identified in the zoning map for Ringaskiddy. The employment focus is for a diverse range of employment provision with diversification from the traditional base to other sectors including educational the National Maritime College of Ireland (NMCI) and provision of a Maritime and Energy Cluster Ireland (IMERC) (paragraph 4.2.9).

The need for improved infrastructure in particular road infrastructure to service the area is also identified with the provision of improved road links to the metropolitan Cork area and the national road network through the provision/upgrading of the M/N28 route as infrastructure of the highest priority.

In looking to the future in section 4.3 of the LAP it is specifically indicated that Ringaskiddy will continue to act as a strategic employment centre; that Ringaskiddy remains the primary location for the relocation of port activities from the upper harbour, and that in this context Cork County Council will facilitate the relocation of port related facilities which are deemed appropriate for Ringaskiddy subject to the principles of proper planning and sustainable

development, and having regard to the adjacent Special Protection Area and overlapping proposed Natural Heritage Area.

There is, however, also recognition of a need to protect the amenity afforded to the existing communities of Ringaskiddy village and Shanbally and that balancing these requirements may pose a challenge.

In relation to objectives of the LAP there are a number which are relevant to this proposal;

- Objective DB-01 It is an objective to reaffirm Ringaskiddy's focus on industrial and port related roles which reflects its status as a Strategic Employment Centre;
- Objective DB-03 It is an objective to facilitate the proposed realignment and upgrade of the N-28;
- Objective DB-04 It is an objective to protect, maintain and enhance the residential amenities of the existing communities at Ringaskiddy and Shanbally villages;
- Objective I-15 which determines the specific zoning of the appeal site.
- The lands to the north of the proposed development are zoned with the objective C-01, Third level educational campus for marine related education, research and training. This site is considered inappropriate for any short or full time residential accommodation. These lands are to the east of the Maritime College.

The appeal site in the zoning map for Ringaskiddy is located within the zoned I-15 (Industrial) and is part of an overall area of 35 hectares with the objective "suitable for large stand alone industry with suitable provision for appropriate landscaping and access points and provision for open space buffer to the Martello Tower and its associated pedestrian access. This area may be used as a feeding ground by bird species for which Cork Harbour SPA is designated. Any development proposals on this land are likely to require the provision of an ecological impact assessment report to determine the importance of the area for such species and the potential for impacts on these"**.**

The Martello Tower to the south of the site as referred to in I-15 is referred to in paragraph 4.2.36 in relation to protected structures. The Nature conservation areas referred to is the Cork Harbour Special Protection Area (SPA-004030).

The use of the appeal site for industrial use and what is termed suitable for large stand alone industry is, therefore, acceptable within the zoning provisions of objective I-15 and there is no dispute, I consider, in this regard. I would however note that the lands to the north of the proposed development are zoned with the objective C-01, Third level educational campus for marine related education, research and training and it is I consider important that any development of the appeal would not be of a nature to inhibit or be incompatible with this objective.

9.3.3.6 Aside from the provisions of the Carrigaline LAP adjoining LAPs also require consideration. The Midelton LAP is a contiguous LAP and includes Spike and Haulbowline Islands.

Spike Island has been the subject of major public investment for redevelopment as a major tourist destination in the Lower Harbour in accordance with a published Masterplan for Spike Island (2012) and is envisaged as part of a group of heritage and tourism attractions in Cork Harbour.

Haulbowline Island is approximately one kilometre to the north of the subject site and is the location of the state's only naval base and therefore is strategic importance. It is also the subject of major public investment enhancing the site and island and the cleaning up the Irish Steel/Ispat site as part an overall masterplan for the island.

9.3.3.7 This public investment on both islands is, I consider, of significance in relation to an increased tourism product and environmental enhancement. The islands, however, have another context as they are also part of an overall defence fortifications heritage for the harbour area which includes forts at Haulbowline Island, Spike Island (Fort Mitchel/Westmoreland), Great Island (Cobh), Fort Meagher/Camden (Crosshaven), Fort Davis/ Carlisle (Roches Point) and the Martello Tower at Ringaskiddy which adjoins the appeal site. It would therefore be a relevant consideration that any development on the appeal site would not be at variance with recent public investment and be compatible with overall objectives for the harbour area.

9.3.3.8 Comment.

In relation to the issue of policy I would make the following observations.

The site forms part of a wider harbour area with competing and in what may be considered conflicting objectives in a policy context. This variance in policy objectives is not itself unusual and is recognised by the statutory plans. Given the wide geographical expanse of the harbour area, variation in the range of uses is likely to occur. This is reflected in the harbour area which currently has a large range of uses availing of the asset which the harbour area provides. Many of these uses are competing uses but there is recognition of a long history of considering the harbour area to be a working harbour as well as source of recreation.

It does, however, require that any development which may be compatible with the specific zoning cannot be considered in isolation from other objectives in the plan which may render the proposal as incompatible in the overall context of the statutory plans.

The site has an industrial zoning and the provisions of objectives ZU 3.7 and I-15, I consider, permit in principle consideration of the proposed use. The site is not specifically designated for the use proposed but the use of the site

for waste to energy forms one of a wide range of uses that can, I believe, be considered for the site which permits a stand alone industry.

There is, therefore, no specific identification of a site for the proposed use in the CCDP and any LAP for the proposed use or any definitive locational guidance related to where such a facility should be sited. The site can, however, be considered in the context of objectives ZU 3.7 and I-15 which favours such locations over other areas but this can equally apply to other lands zoned with a similar zoning and designation and it is not exclusive to the appeal site.

This, therefore, reflects the importance of robust identification of site suitability in the context not only of matters specific to the site but the wider context of the metropolitan area and region.

In principle the current site, therefore, in terms of the use proposed is not, I consider, precluded by the provisions as stated in the CCDP and LAPs or indeed also in the context of policy and guidance as set out at national and regional level.

That the site in terms of the proposed use is not necessarily precluded by virtue of use does not, however, necessarily infer that that the site is suitable in all respects and other provisions of the statutory plans but it does permit consideration of the site for the use proposed.

The assessment of the site must also be addressed in the context of other objectives stated in the CCDP and LAPs and any assessment is required to address the competing and potentially conflicting objectives outlined in both documents.

The issue of port related use arose in many submissions. It is also important to consider that the I-15 objective appears to permit latitude in the range of industrial development which can be permitted within the zoned area. The objective refers to “suitable for large stand alone industry”. It is not therefore, I consider, limited to port related uses as was referred to many submissions though transfer of uses and enterprises from the existing port in the city to proximity the expanded port facility is positively viewed.

The development, as proposed, is not a port related or perhaps it would be more appropriate to apply the term port dependent enterprise. It may or may not avail of the port for importation and exporting of raw material or residues but this is not a material consideration and market forces will determine the scale and tonnage of any material using the port. The submissions made by the applicant initially to the Board and at the oral hearing, I note, refer to the movement of material to and from the site by road and that the raw material input of the facility will, it is envisaged, be met from within the state rather than importation of waste.

I would note however although the facility is not necessarily port dependent its proximity to the port does permit ready access to markets outside of the

state if the facility cannot source the volume of material within the state. It is also important in this regard to state that if material is imported or exported via the port this will have implications in relation to traffic generation but given the proximity to the port it would not be a significant consideration. Increased importation may result in less pressures on the overall current road network and in particular on the existing N28.

An assessment of policy related matters must also take into consideration the changing nature of this area of the Ringaskiddy peninsula; the growth and expansion of significant educational and research facilities in relative close proximity to the appeal site in the period since the site was identified for a waste to energy facility and whether the use as proposed is deemed to be compatible with these uses which have been developed and expanded in recent years.

The development of these lands is in accordance with another stated objective C-01 for the development of a third level educational campus for marine related education, research and training. It also requires to be considered in the context of whether it is compatible with significant public investment tourist and amenity projects on Spike and Haulbowline Islands.

Issues of emissions to air and water and potential impacts perceived and real are therefore important in considering its compatibility in this regard. I would certainly question if the development is compatible with recent major investment public and private in the area. This is not stating that the site cannot be used for stand alone industry but such an industry cannot and should not be potentially or adversely impact on existing enterprises.

Conclusion.

To summarise, waste policy at national and regional level has identified capacity for additional waste to energy facilities in the state. In spatial terms based on existing and permitted facilities a facility of the scale proposed would be ideally located in the southern area of the state. Given the mass and population and also the concentration of industry and commercial activity the greater Metropolitan Cork area is the optimal location for such a facility and this identification of the Cork area is reasonable and logical in a strategic sense.

The statutory plans for the Cork area adopt a plan led approach in relation to waste management and the location of various forms of development.

The statutory plans for the Cork area have identified defined industrial areas as best suited as a location for such facilities. In this context Ringaskiddy is one of a number of such locations where the facility would be a preferred location.

The Carrigaline LAP though its current zoning objective as part of a larger site for "*stand alone industry*" site (I-15) and the CCDP zoning objective ZU 3-7 Appropriate Uses in Industrial Areas of the Cork County Development

Plan (2014-2020) establish the principle of consideration of the development of the subject site and lands for "large scale waste treatment facilities including energy recovery facilities" which, therefore, is not precluded by such a perspective.

In principle the current site, therefore, in terms of the use proposed is not precluded by the provisions as stated in the CCDP and LAPs or indeed also in the context of policy and guidance as set out at national and regional level.

I would however indicate that a zoning objective in itself is not the sole criterium to assess the development and its compatibility with other policy provisions and the suitability of the site must be further considered in the context of EIA and other provisions of policy stated in the CCDP and LAPs including most importantly facilitating other forms of permitted development and therefore should not be incompatible with other nearby development.

In such a context I would have major reservations in relation to the location of the development at the proposed site. I consider that the proposal is and would not be compatible with recent development and public investment located in the immediate area and would be at variance with recent investment and development in this area of Cork harbour and in particular the eastern end of the Ringaskiddy peninsula and potentially militate against future similar related investment.

9.4 Traffic and transport.

9.4.1 Chapter 7 of the EIS relates to roads and transportation. In the course of the oral hearing, a number of submissions were received by the applicant submission including nos 9 and 10, Cork County Council no 26 specifically relating to flooding of the access road and also from representatives of the road and transportation department and area office responding to questions. There were also many third party observer submissions which raised issues relating to the traffic impact, suitability of the road network and impact on residential communities.

9.4.2 I will initially outline the characteristics of the existing road network that serves the development and which pending proposals for upgrading sections of the network will serve the development for the foreseeable future.

Given the nature of the road network and the site's location at the eastern end of the peninsula traffic to the site is largely restricted to a single road corridor, the N28, which links Ringaskiddy to the wider catchment of Metropolitan Cork and the region.

Traffic entering and leaving the site will largely use the N28 which links Ringaskiddy and the Cork Metropolitan Area with a junction with the N40 Southern Distributor Road the main traffic artery of Cork. The N40 connects to the N25 Waterford/Rosslare National Primary Route, with a junction for the M8 motorway Portlaoise/Dublin at Dunkettle; the Jack Lynch Tunnel; the

N28 as referred to; the N71 National Secondary Route serving Bandon and West Cork and the N22 Tralee National route.

In addition, the N40 provides for connection to the city centre at the Kinsale Road Junction and access to large areas of the southern suburbs, commercial areas and major retail areas. The N20 Limerick National Primary Route connection to the N40 is served via a northern link road the R635 a heavily traffic route with many signalised junctions and the N8 to an intersection with the Dunkettle junction. With the exception of the N71 and N22, traffic to and from the site travelling northwards will rely on the N40 and the Jack Lynch Tunnel, which and there is little dispute from all parties in this regard is subject to congestion and queueing at peak periods given the problems of capacity and free flow at the Dunkettle interchange.

The N28 from the N40 to the site has many sections which are deficient and substandard in relation to width and alignment and subject to congestion and queueing at peak periods and this is also not disputed by parties. The congestion largely arises at roundabouts in particular the Shannonvale Roundabout where traffic from Carrigaline merges with the N28 but northwards of the Shannonvale Roundabout there are in particular sections of the N28 which are deficient in width and alignment.

There are proposals to address the recognised deficiencies in the road network. Proposals to upgrade the N28 are at an advanced stage. There are also proposals to address congestion at the Jack Lynch Tunnel with the upgrading of the Dunkettle interchange the design of which is approved. There are in addition proposals for a northern cross route which will facilitate links between the N40 and N20 though this is not at an advanced stage.

9.4.3 Any examination of traffic impact, therefore, must be assessed in the context of the current road network and also future road network improvements. In the context of the current proposal the impact of additional traffic on the existing villages of Shanbally and Ringaskiddy pending the upgrading of the N28 is of significance given the addition traffic generated and the nature of the traffic with a higher use of HGVs and this traffic will drive through these villages.

9.4.4 Traffic and transportation issues were raised by many parties in written submissions and at the oral hearing in particular by residents of the villages of Ringaskiddy and Shanbally concerned at the increased traffic arising from the development in particular HGV traffic but many submissions also raised concerns in relation to the wider network given current problems on the overall network from the site to the Dunkettle junction.

Specific to the immediate area, the residents referred to current congestion problems from Shannonvale Roundabout to the site in particular at peak periods. Additional HGV traffic would present an increased traffic hazards to local residents and to children attending local schools. They referred to the absence of satisfactory traffic management and traffic calming measures in these villages and a further deterioration of amenity in what they considered

a currently unsatisfactory position and that this position would continue in the absence of any upgrade of the N28.

In this respect many of the submissions both local and from the wider area questioned whether the development was premature pending an upgrade of the existing road network including the N28 and the Jack Lynch Tunnel/Dunkettle area. An additional matter of concern was the nature of the material being brought to and from the site on congested routes.

In the local area reference was made to additional traffic issues arising from the upgrade of Cork port. Concerns were also raised that in the immediate vicinity of the site where the road is classified as the L2545 is of a narrow width. This road serves Haulbowline and lands to the east of the port and has had increased traffic flows which would include the Beaufort Campus, the maritime college and that the recent opening of a crematorium on the section of the L2545 to Haulbowline has resulted in additional concentrated periods of traffic resulting in cars parked on the road in the vicinity of the appeal site. extension. The issue of additional HGV parking in the area also was a concern and the proposed development would increase this concern.

9.4.5 In relation to submissions from statutory bodies the submission from Transport Infrastructure Ireland dated the 8th of March 2016 does not raise any specific objection to the development. The submission recommends that actions with regard to road improvements, mobility management and transport mitigation measures included in the EIS be implemented to ameliorate potential impacts on the road network. There is reference to improvement works in relation to the N28 which are being finalised and that the proposed facility is not affected by this scheme.

9.4.6 Cork County Council also refer to traffic and transportation in their report and the senior traffic and transportation engineer Mr Peter O'Donoghue and the area engineer were also present at the oral hearing. The submission made in advance of the hearing and submissions at the hearing acknowledge that the N28 has considerable capacity issues at peak times and refers to long term plans to upgrade the N28, which the local authority views as a priority but is unlikely to occur before 2022.

The proposed development was, therefore, assessed by Cork County Council in the context of the existing road network and the local authority focussed on the identified two hour peak periods of traffic congestion 07:00-09:00 and 16:00-18:00 in both the construction and operational stages of the development.

The local authority, in particular, focussed on mitigation measures as outlined in section 7.11 of the EIS at both construction and operational stage and also on traffic management plans to ameliorate traffic congestion, which are included in mitigation. Essentially the overall conclusion of the local authority considered that if the development is operated in accordance with the mobility management plans, including demand management measures

and advance booking of vehicles, the development will not adversely impact on the road network in the area.

The report also refers to making provision for tie in to the new N28 and measures in relation to the upgrade works to the L2545 with no objection in principle raised.

The traffic report also required the preclusion of HGV traffic using the R613 and other routes other than the N28 as the means of access and egress from the development. These matters were the subject of further discussion at the oral hearing.

9.4.7 Applicant submission.

Essentially the methodology of assessing the impact of the development is outlined in section 7.2 of the EIS in a six step process. The methodology used to carry out the transport assessment can be summarised as assessing the existing traffic situation; defining the traffic flows underpinning the assessment; defining the traffic generation effects of the proposed development; assessment of the impact of the traffic generated on the local road network; the identification of mitigation measures to form part of the development proposals and the identification of residual impacts which remain present after mitigation is considered and evaluated.

The assessment examined the current position included examination of junctions in particular from the Shannonvale Roundabout to the site, an examination of the characteristics of the road network generally and the gathering and assessment of data at peak flow periods. The data indicates that the network AM and PM peaks (07:30-08:30 and 16:30-17:30) are the busiest time periods for traffic accessing the Ringaskiddy area with major capacity in the road network intra the peak periods and that from the outset the EIS presents the position that traffic movements relating to the site operations should operate within the off peak period.

In relation to traffic generation the estimated traffic generation details which are presented in Section 7.7 of the EIS in relation to the construction period and the operational phase of the proposed development. In deriving this data, the applicant has drawn from experience during the construction of Carranstown resource recovery centre in County Meath and subsequent operational use.

The impact of the development was therefore assessed on current flow data, future traffic flows based on NRA forecasting guidelines and the anticipated traffic arising from the development in the construction and operational phases. Other development in the area existing and permitted was also considered.

In relation to the construction phase, the flows of traffic are outlined in tables 7.6 and 7.7 (in the case of the latter converted to pcus) and that the flows are scheduled to arrive and depart outside of the peak congestion periods

identified during the morning and evening peak periods (07:00-09:00 and 16:00-18:00) during the construction process. Traffic associated with the construction phase is 290 HGV and 904 car daily movements.

In relation to operational phase of the facility, the flows of traffic are outlined in tables 7.9 and 7.10 in the case of the latter converted to pcus. The hourly flows reflect a reduction of flows in the peak traffic flow periods. The overall daily flows are indicated as 160 HGV and 306 car movements.

Based on these figures and projected assignment of traffic the impact on the road network is outlined for the construction and operational phases. The projections reflect obvious impacts with the greatest impacts in proximity to the site reducing as traffic diffuses to different locations further from the site.

9.4.8 Comment.

9.4.8.1 The volume of traffic generated by the development, I would initially note based on the data presented in section 7.10 of the EIS, is not excessive in the context of overall traffic on the road network in particular in relation to flows further distant from the site. It also presents the position that irrespective of the proposed development, congestion in sections of the current road network will continue as occurs at present.

In section 7.11 outlining mitigation measures in particular for the operational phase it is indicated that a mobility management plan controlling staff movements and a booking system for delivery of material can ensure traffic is minimised during the peak congestion phases and that the booking system currently in place in Carranstown permits such a control of movement of HGVs within the hours of acceptance of waste which are outlined in the EIS.

In relation to traffic generation the EIS presents an overall traffic generation during the construction and operational phase of 142 HGVs per day as the likely level of increased traffic generation arising from the development. The applicant has based on other studies applied for the assessment a figure equated to 160 movements per day based on identified peak usage and demand at similar type facilities.

In relation to the operation of the facility the applicant proposes a 14-hour opening period for waste acceptance between 06:00 – 20:00 in order to mitigate traffic impact and also to regulate the traffic movements during this period. Having identified issues in relation to the N28 and congestion at peak periods there are proposals in relation to limiting traffic during the construction and operational periods to off peak periods to avoid adding to peak flows. The premise for this is that vehicles arriving at the site have to book in advance and this permits traffic to be controlled.

In relation to the construction period the current development proposes to ban all construction-related traffic and staff arrivals and departures between the two-hour local traffic peak periods of 07:00 – 09:00 and 16:00 – 18:00.

In relation to the operational period it is proposed to permit 6 operational vehicles between 07:00 – 08:00, 8 operational vehicles between 08:00 – 09:00, 8 operational vehicles between 16:00 – 17:00 and 8 operational vehicles between 17:00 – 18:00. This proposal is largely to be implemented as part of a mobility management plan and will require vehicles to enter and leave the site on the remaining non peak periods.

9.4.8.2 In the course of the oral hearing the issue of the carrying capacity of the road network and implementation of the traffic management plan was the subject of major discussion with the senior engineer of the traffic and transportation department and area engineer's office.

In relation to the capacity of the road network it was acknowledged that there are difficulties currently on the road network and in particular on sections of the N28 at peak periods but outside of the peak periods, the road network the local authority contended has the capacity to accommodate the anticipated additional traffic flows arising from the development.

It was also contended by the local authority traffic engineers at the oral hearing in response to questions from the inspector and observers that the use of a mobility management plan offered the appropriate response to potential traffic problems on the N28 pending its upgrading.

It was indicated that such an approach enabled ongoing review and also provided for monitoring and amendment of the mobility management plan where operational problems were identified. Mobility management plans it was contended are the appropriate response and a flexible mechanism to address any issues arising as it enables adjustments to be carried out if problems arise.

It also transpired that a mobility management plan for the appeal site would not apply in isolation as there were other projects to be accommodated on the N28 route including the Port expansion construction and operational; an upgrade of the public sewerage system in Ringaskiddy and a future N28 upgrade which would also provide for and require mobility management plans. This would therefore require co-ordination of the various mobility management plans. The local authority, while acknowledging this presented a challenge, did not envisage that problems would arise which would not be insurmountable.

9.4.8.3 The traffic impact on the N40 was not identified as significant in the context of the additional traffic movement generated or impacting in an adverse manner on the Jack Lynch tunnel. I would note in this regard, based on the data submitted in relation to dispersal and destination that, based on traffic volumes of 60,000 vehicles daily on the N40, the level of increase arising from the proposed development on the N40 route would be very low. The applicant at the oral hearing indicated an approximate increase of 0.5%.

9.4.8.4 The proposed development also provides for the upgrade of the L2545 road consisting of raising a 185m length of the road by a maximum height of up to 1 metre between the Gobby Beach car park and the entrance to the National Maritime College of Ireland (NMCI). As part of the upgrade there is also proposals for alterations of the surface water drainage network in the L2545 road from the western end of the Indaver site to the eastern end of Gobby Beach car park.

These proposals are to address current issues of flooding on the local road which were stated as a grounds of refusal in the previous application. The roads section of Cork County Council raised no objections to this proposal. Having considered the proposals as submitted, I consider, address matters relating to the issue of flooding of the local road, which was not resolved by the previous proposal. I would also note that the local road upgrade has also made provision for the tie in to a future M28 upgrade

Conclusion.

The overall appraisal of the impact of traffic is that the development will give rise to additional traffic movements on the road network. This is not in dispute. The level of increase will be at its highest in relation to HGVs and cars on the section of the N28 route from the site westwards to the Shannonvale roundabout.

There are issues of congestion on the road network at peak periods. The road network however, I consider, has the capacity to carry the additional traffic in particular outside of peak flows.

I would acknowledge that the additional traffic will impact on the villages of Shanbally and Ringaskiddy and that further adjustment to the mobility management plan would be prudent in particular during the periods when school opening and in particular the pupil collection periods in term time but also to facilitate safe movement of pedestrians in the villages at these periods.

The provision of safe passage for pedestrians is also important outside of school related peak periods when HGV traffic to and from the proposed site will increase to offset reduction during the peak periods at the Shannonvale roundabout.

I would also accept that improvements in traffic calming measures in these villages is desirable given the nature and volumes of traffic on the N28 in particular HGV traffic which occur at the present time and would increase if the development proceeds.

This, however, is a matter which requires to be addressed outside of the scope of this proposal and is a matter to be addressed by the county council in an overall management of traffic and improvement of amenities for the villages in question.

The upgrading of the N28 will, in large part, address the reasonable concerns outlined by residents of the village but I do not consider that prematurity pending this upgrade can be put forward as a reason to refuse the development.

The road network based on the information submitted has I believe, the capacity to accommodate the development during the construction phase and the operational phase if flows to and from the site are controlled and managed in a co-ordinated manner.

The application of a mobility management plan although it may be challenging when also making provision for other proposed infrastructural in the area does provides flexibility to adapt the nature and timing of traffic flows to avoid congestion periods both in the construction and operational phases pending the upgrade of the N40.

The proposed development also provides for the upgrade of the L2545 road and there are also proposals for alterations of the surface water drainage network. I would have no objections to this proposal.

9.5 Air quality.

9.5.1 In relation to air quality I would refer to DIRECTIVE 2008/50/EC on ambient air quality and cleaner air for Europe, which established the need to reduce pollution to levels which minimise harmful effects on human health in order to protect human health and the environment as a whole; that it is particularly important to combat emissions of pollutants at source and to identify and implement the most effective emission reduction measures at local, national and Community level.

The Directive indicates in paragraph 2 that “emissions of harmful air pollutants should be avoided, prevented or reduced and appropriate objectives set for ambient air quality taking into account relevant World Health Organisation standards, guidelines and programmes”.

9.5.2 The issue of Air Quality is addressed in chapter 8 of the EIS. I would also refer to chapter 6 of the EIS where matters relating to air quality in the context of public health are also referred to. Many of the third party submissions received refer to a high level of interaction between the issue of air quality and the impact of air emissions on public health.

I would note that impacts on public health arising from air emissions were raised by many parties in the course of the oral hearing including concerns by medical doctors in the harbour area and other professional parties. It was their strong contention that impacts from air emissions were of significance in the assessment of the proposed development and that effects on health, both human and animal, were interrelated and intertwined with effects arising from emissions.

Submissions at the oral hearing by the applicant include nos. 19 and 20 on matters relating to air quality and also submissions on public health no 18. Many third party submissions raised the issue of air quality and related dangers to health and among these I would refer to submission 27 highlighting effects of pollutants on health, matters relating to particulate matter no.45 Professor Charles Howard, no 56 relating to health impact statement by Dr Anthony Staines, Cllr Marcia D'Alton submission 65, the submission of Colaiste Mhuire Secondary School submission 73, Mr Rodney Daunt submission 76, Dr Gordon Reid on issues of particulate matter and impact on public health Submissions 81, 113A, 113B, 113C, 113D, 113E,113F 113G and 114, Jennifer Hayes submission 92.

Issues in relating to impacts on animal health and the perception of adverse impacts on farming and other commercial enterprises were also raised in submissions. The predictive modelling was also questioned in the context of the De Puy wind generator located 400 metres to the south of the site and the effect of this on emission dispersal patterns.

9.5.3 Impacts identified general.

The operation of a thermal treatment plant will give rise to emissions to air from the development and this is provided for in the process design of the development with emission to air via a flue/stack. The process as designed provides for initial screening of material, temperature control, the capture of metals and controls on the material to be combusted and for mitigation measures to capture particulate matter prior discharge to atmosphere. The design and height of the flue was determined after modelling.

In relation to these emissions there is a requirement to identify the nature, form and quantity of the emissions, the projected dispersal of emissions, an identification and assessment of impacts arising from the emissions and indicating mitigation measures to reduce/ eliminate impacts identified.

I would note that limits on emissions including many identified and associated with the proposed development are defined and regulated by the EU Directive on Industrial Emissions (IED) (2010/75/EU) and will require an IE licence from the EPA.

As part of the assessment modelling was carried out in relation to assessment of impact. The methodology applied was the AERMOD model (Version 15181). The CALPUFF modelling was also applied to address site specific issues that could arise in relation to topographical meteorological conditions. Modelling assumptions were based on the plant operating at levels of above the normal operating requirements.

By applying such criteria, the overall impacts identified would, it was considered by the applicant, be levels above the anticipated normal levels the plant would operate under. In relation to the design parameters incorporated in the plant they would address the abnormal elevated levels

identified by maximum and abnormal operations. Any mitigation measures considered necessary and proposed would do likewise.

9.5.4 Applicant's submissions.

Based on identification of the nature of the emissions identified the applicant has concluded that the emission guidelines outlined in Council Directive 2010/75/EC will not be exceeded.

In this regard as the assessment is based on the facility operating under maximum or abnormal operating conditions. It is therefore contended that the proposed development would also not exceed levels during the normal and general operation of the development.

In terms of dispersion, the highest concentrations are identified as occurring in proximity to the site with levels falling rapidly further from the site to considerably below the defined short-term ambient air quality limit values. In this regard the short-term limit values at the nearest residential receptor will, it is projected, be less than 17% of the short-term ambient air quality limit values.

In relation to annual average concentration it is indicated that there is a more dramatic decrease in maximum concentration away from the facility with concentrations from emissions at the proposed facility accounting for less than 1% of the limit value at worst case sensitive receptors near the facility.

In areas further distant from the site with high concentrations of population such as Cobh, Carrigaline and Monkstown, levels are significantly lower with the concentrations from emissions at the proposed facility accounting for less than 1% of the annual limit values for the protection of human health for all pollutants under maximum operations of the facility.

The assessment has also examined the site in the context of cumulative impacts (section 8.4 of the EIS).

9.5.5 Observers submissions.

The observer submissions in a general sense raise concerns in relation to the emissions arising from the development and as a consequence its effects on air quality and on human health both in relation to residents of the areas and also the health of people who are employed in the area. The general findings of the EIS are questioned in particular the methodology employed including the modelling.

Reference is made in particular to the dispersal of emissions; the data used i.e. meteorological data from Cork Airport. It is contended that local topographical effects and the presence of wind turbines which would alter or skew the dispersal pattern as identified by the applicant's dispersion modelling. In this regard local observations of climate patterns created by the

harbour and coastline were outlined at the oral hearing in support of this position and outlined by Mr Daunt.

The submissions also question the detail of assessment of particulate matter on the lower scale of $PM_{2.5}$ and also of nanoparticles measured at < 100 nm and also that standards with lower levels should be applied as history indicated that the trend is for more stringent standards over time and this will apply in relation to air emissions. Reference is made to an absence of assessment of cumulative data.

I would also note in this regard that the Department of Defence raised concerns in relation to the matter of air emissions focusing on the plume rising from the flue, the nature of the dispersal of the flume and its effects on the safety of defence aircraft and personnel and the management of aircraft operations arising from the dispersal from the flue. These were outlined and discussed at the oral hearing at length and addressed in this report under a separate heading of air navigation but air emission and dispersal is at the core of the issues raised.

9.5.6 Comment.

9.5.6.1 Air quality assessment methodology /Modelling

The modelling applied for the current application is the AERMOD model (Version 15181), which the applicant indicates is applicable in both simple and complex terrains; urban or rural locations and for all averaging periods. The terrain data for the region was imported into the model using the AERMOD terrain pre-processor AERMAP. To provide for unusual meteorological conditions that may occur infrequently and may not be modelled adequately using AERMOD the air dispersion model CALPUFF was also applied.

There was discussion at the oral hearing in relation to the modelling selected and subsequently as applied in particular in relation to source data and interpretation. I would initially indicate that the base models selected are approved by USEPA as a predictive tool for the purpose of assessment of dispersal of emissions and are acceptable.

Data from Cork Airport was applied, although as already indicated, observers questioned whether application of this data was appropriate to the site. I would in this regard note that the difference in terrain was acknowledged by the applicant in the application of modelling. I would in particular refer to section 8.2.2 of the EIS where although Cork Airport was identified as the core data, there was a recognition of differences in surface characteristics between the meteorological station at Cork Airport and the site location.

To ascertain and consider the likely significance of the difference in surface characteristics, a sensitivity study was conducted (Appendix 8.5 of the EIS) and in addition a weather station was installed on-site which measured wind

speed, wind direction, temperature and relative humidity over the period starting in October 2006 and finished at the end of December 2007. The on-site data station allowed the similarities and differences to be identified and the on-site meteorological data was used in both the AERMOD and CALPUFF modelling studies which are outlined in appendix 8.1 of the EIS.

I would also note that raw data is largely determined by the availability of meteorological data in Ireland from a relatively low number of stations for an extended period of time. I would also accept that the site would differ in setting, character and elevation from Cork Airport but data produced on the site was also available and applied.

In this regard the application of CALPUFF is intended to account for this variation, but I would also note as also stated in the previous inspector's report, there was, having regard to the applicant's ownership and interest in the site, an opportunity to gather continuous site specific meteorological data on the site over a long period of time to supplement and verify the meteorological data obtained from Cork Airport.

In applying the modelling to establish predictive levels current background levels were taken into account given the presence in the other potential sources in the Ringaskiddy area providing for a cumulative appraisal of impact. The methodology and results in relation to ambient levels are outlined in section 8.3 of the EIS and associated results and finding are indicated in greater detail in appendix 8 indicating levels below defined permitted levels on a range of substances monitored over a survey period.

The substances surveyed included NO^2, NOX, PM_{10}, $PM_{2.5}$, benzene, SO^2, heavy metals (antimony (Sb), arsenic (As), cadmium (Cd), cobalt (Co), chromium (Cr), copper (Cu), mercury (Hg), manganese (Mn), nickel (Ni), lead (Pb), thallium (Tl) and vanadium (V), and PCDDs/PCDFs (Dioxins/Furans).

The perceived characteristics of emissions in both the construction and operational phases are outlined. The assessment applied an assumption of maximum emission level, 24 hours/day over the course of a full year. In evaluating the impacts applying AERMOD modelling in relation to NO^2, NOX, SO^2, CO, PM_{10}, $PM_{2.5}$, and metals, the EIS indicates that the ambient ground level concentrations will be below the relevant air quality standards for the protection of human health under both maximum and abnormal operation of the facility.

In relation to PCDD / PCDFs in the absence of internationally recognised ambient air quality concentration or deposition standards for PCDD/PCDFs, the recommended approach applied by the USEPA and the WHO to assessing the risk to human health from Dioxins/Furans is applying risk assessment analysis. The determination of the impact of Dioxins/Furans in terms of the TDI (Tolerable Daily Intake) approach is followed where the WHO currently proposing a maximum TDI of between 1-4 pgTEQ/kg of body weight per day.

Applying this approach, it is indicated in the EIS, the additional contribution from the proposed development to levels of dioxins/furans, with levels at the maximum and abnormal operation of the plant, to the south of the facility will be minor in relation to identified ambient levels, accounting for only a small fraction of existing levels. Levels at the nearest residential receptor to the plant will also be minor, with the annual contribution from the proposed facility accounting for less than 1% of the existing background concentration under maximum operating conditions.

In effect the applicant's contention arising from the modelling results concludes that emission levels and ground level concentrations will be below the relevant air quality standards or guidelines for the protection of human health for all parameters under both the maximum and abnormal operation scenarios. In relation to dispersal it concludes a 70 metre stack to be appropriate based on the application of abnormal operation criteria.

The CALPUFF modelling system was also applied to assess in the context of more complex meteorological conditions a matter raised in observer submissions. The result obtained and examined in relation to the CALPUFF modelling concurred with the AERMOD modelling concluding that emission levels and ground level will concentrations will be below the relevant air quality standards or guidelines for the protection of human health for all parameters under both the maximum and abnormal operation scenarios.

Mitigation measures are outlined in relation to both the construction and operational phases, which largely address operational issues and monitoring to ensure minimising emissions.

In relation to the construction phase which would be short term in duration measures are outlined in relation to suppression of dust and the handling of materials on-site and in relation to construction traffic to and from the site.

In relation to the operational phase measures are outlined in section 8.6.2 of the EIS with the intention to that emissions from the plant do not exceed regulatory emission limit values as outlined in Industrial Emissions Directive 2010/75/EU. The measures are incorporated into the design of the facility and the applicant as a consequence considers no specific additional mitigation measures are, therefore, required during the operational phase of the facility.

9.5.6.2 Conclusion.

In relation to the data as presented;

- the applicant has applied modelling that is an accepted form of modelling for the purpose of carrying out a robust assessment;
- the modelling has applied consideration of abnormal operational conditions as distinct from normal operational conditions;

- the modelling as applied has taken into account variations between Cork Airport and the site in relation to meteorological and topographical variation;
- the assessment has considered effects arising from the nearby wind generator to the south on the De Puy site;
- there are defined levels in relations to emissions set out in the directives and regulatory requirements;
- the emissions from the facility would be in compliance with regulatory requirements in the context of the level of emissions individually in relation to the proposal;
- cumulative impact was addressed and in relation to cumulative levels would be in compliance with regulatory requirements;
- the proposal individually and when considered cumulatively would therefore be in compliance with regulatory requirements in the context of the level of emissions applying abnormal output occurrence as distinct from the likely normal output occurrence and
- these emissions would be subject to licensing and ongoing monitoring from the EPA.

In relation to the above the conclusions stated apply to compliance with identified limits for substances as defined by statutory regulation. I would note that there are emissions from other substances the regulation of which are not defined or as clearly defined. I would also observe that in many of the observer submissions the issue of air quality and modelling of the dispersal of emissions in particular to the atmosphere are raised in the context of impact on health and that air quality and human health impact are closely linked. Issues relating to impact on health I will refer to in section 9.7 of this report.

9.6 Major accident and risk.

9.6.1 The issues arising from a major accident occurring on the site and the resulting impacts were raised in many submissions from observers. There was reference to the incident in Antwerp at an Indaver plant where an explosion and fire occurred, and that such an occurrence was also possible in Ringaskiddy.

Concerns from observers centred on;

- Impacts on residents residing in Ringaskiddy and environs and in this regard what would be the immediate effects on their health and safety in the event of an explosion and the abnormal dispersal of emissions into the air.
- These concerns were raised in the context of an explosion at the Hickson plant in the past, how that fire was responded to by the emergency services, the effects that arose for residents in the aftermath of the fire and what emergency procedures and responses were in place for the residents.

- The absence of alternative escape travel corridors was a major concern as there was only one major road access on the Ringaskiddy peninsula was raised.
- Similar issues were raised by PDFOORA in relation to naval personnel on Haulbowline Island, by staff and students in the Maritime College and by staff employed in the Beaufort campus in the context that the unique geographical location of the appeal site hindered their escape route in the event of a major accident as evacuation by the only road available would involve passing the appeal site.
- Given the prevailing wind conditions from the south and southwest and dispersal patterns arsing concerns were raised that residents of Great Island/Cobh were similarly hindered by a single road access to leave an island with a major population.

9.6.2 Section 6.5.3.1 of the EIS refers to the issue of Hazard Identification and Risk Assessment study (HAZID) which is included as Appendix 6.1 of the EIS. The study was undertaken in the context of the Directive 2012/18/EU on the control of major-accident hazards involving dangerous substances, amending and subsequently repealing Council Directive, referred to as the Seveso III Directive, and the Chemicals Act (Control of Major Accident Hazards Involving Dangerous Substances) Regulations, SI 205 of 2015.

The study concluded that in the context of the Directive the proposed Ringaskiddy Resource Recovery Centre will not be a major accident establishment and that the Seveso III Directive and Regulations will not apply to the centre. Risk to human health was assessed under various scenarios in section 2 of the report relating to hazard identification and risk assessment through the subdivision of the facility into sub areas each of which were examined and assessed.

The measures proposed for the facility to address potential risk are outlined in the HAZID report. The measures are largely mitigation measures against known and potentially identified risk. An example of the approach adopted is if there are tanks on the site to store materials and substances would could present risk are there measures proposed to address an identified risk and in particular a catastrophic failure of the storage container. This approach is applied to all potential risks and is I consider a reasonable approach to risk identification.

Having evaluated potentially 95 risks, one substantial risk was identified which was a fire in the bunker. Having identified this risk, reference is made to the risk control measures, which are proposed as part of the design of the proposed development. It is considered that with the implementation of the measures proposed and outlined in section 2.9 risks posed to human health and the environment by the proposed facility will be as low as reasonably practical.

Many of the conclusions of the HAZID report were questioned by observers in particular risks by emissions questioning what are in effect safe levels of emissions in particular of dioxins during and after a fire and that fire can

occur in incinerators as occurred in Antwerp. The issue of fire and emission were of significance in the context of the site location and the context of surrounding areas both in terms of evacuation of the area and the ease or lack of an ability for response by emergency services.

In relation to the Antwerp incident I would note that the applicants view as presented to the oral hearing was that the process and plant in Antwerp was significantly different to the proposal for Ringaskiddy. In Antwerp loading and transference of material occurred outside of the building which was significantly to that proposed at Ringaskiddy where it would be internally within the building. In that context the Antwerp scenario could not and therefore would not arise and a fire and the incident which occurred in Antwerp would not occur at the proposed facility.

9.6.3 Comment.

In relation to the issue of major accident and risk I would not have any issue in relation to the methodology and format of the report, which follows a reasoned structure of identifying risk in the context of the operation proposed, breaking down the individual components of the process, and outlining the measures proposed to address risks identified. The application of prevention of risk in the design phase and then to apply the mitigation of identified risk into the initial design is reasonable and proactive in prevention.

I would also note the submission received from the **Health and Safety Authority** (HSA) dated the 26th of February 2016 which refers to the COMAH Regulations 2015 (S.I. 209 of 2015) and the approach of the HSA is set out in the document "*Policy & Approach of the HSA to COMAH Risk based Land Use Planning*"; that the development is covered by Regulation 24(2) of S.I. 209 of 2015; the development has been determined to be located within the notified consultation zone of the Hovione Limited establishment and on the basis of the information available there would be no significant consequences from the Hovione Limited establishment and no activities would increase the risk of a major accident at a Hovione Limited establishment. The HSA does not advise against the granting of planning permission in the context of major accident hazards.

In assessing the issue of risk the primary identified risk was combustion/fire. The applicant has outlined measures built into the design to contain and minimise risk. The primary concern is emissions to air arising from a fire but also an explosion occurring as highlighted by observers and the problems arising as was highlighted by the fire in the area at the Hickson plant a number of years ago.

In the best case scenario avoidance of an accident would be the desired constant outcome to aspire to, but irrespective of what measures are in place, accidents can occur. The focus, therefore, is to consider no matter whether it is at a low level of probability what are the measures to contain and mitigate impacts and are these are integral to the operation and design of the facility.

On the basis of information submitted an incident similar to what occurred in Antwerp is highly unlikely to occur as different handling and intake of waste procedures are proposed for the facility at Ringaskiddy.

Fire, the greatest level of risk, is most likely, should it occur be internally within the facility. There are measures to contain and control the spread of the fire but a fire will result in the escape of emissions in an uncontrolled manner until prevention measures activate.

This raises the issue of the nature of emissions which would arise and whether these would largely exceed the range of emissions which would have been assessed in the abnormal concentration considered in the air modelling.

It is likely that this uncontrolled scale of emissions will be short term in duration and the nature of dispersal cannot be fully determined as atmospheric conditions and wind strength and direction vary constantly. This will have potential implications for nearby residents in the most adverse scenario and possibly further distant but an emergency plan would be implemented to control any impacts arising

It can be indicated, however, that risk has been assessed with prevention rather than mitigation as the key consideration to prevent such an incident arising.

Conclusion.

- The application of prevention of risk in the design phase and then to apply the mitigation of identified risk into the initial design is reasonable and proactive in prevention.
- In assessing the issue of risk the primary identified risk was combustion/fire.
- The applicant has outlined measures built into the design to contain and minimise risk.
- The primary concern is emissions to air arising from a fire and/or explosion.
- Fire, the greatest level of risk, is most likely should it to occur be internally within the facility and there are measures to contain and control the spread of a fire.
- A fire will result in the escape of emissions in an uncontrolled manner until prevention measures activate. It is likely that this uncontrolled scale of emissions will be short term in duration.
- There are potential implications for nearby residents in the most adverse scenario and possibly further distant but an emergency plan would be implemented to control any impacts arising.
- It can be considered however that risk has been assessed with prevention rather than mitigation as the key consideration to prevent

such an incident arising. In this context the risk response is a proactive measure rather than a reactive measure.

9.7 Human beings.

9.7.1 Introduction.

In accordance with Directive 85/337/EEC (as amended by the Directive 97/11/EC and 2003/35/EC) the EIS is required to identify and assess the main effects which the project is likely to have on the environment and also that the effects of a project on the environment must be assessed in order to take account of concerns to protect human health. Article 3 of the Directive requires environmental impact assessment identify, describe and assess in an appropriate manner, in the light of each individual case the direct and indirect effects of a project on a number of factors and indents including human beings. Given the nature of the development the process arising from the development has the potential to impact on human beings and on human health.

In the context of impacts on human beings in the immediate area and the wider area many of the observer submissions concerns were raised in the context of impacts arising from traffic; deterioration in the air quality arising from emissions; impact on the economy in the context of adverse effects on employment and investment based largely on the incompatibility of the proposed development on existing enterprise and future investment impacts on the naval base and its operations; the perceived risk of major accidents and the interaction of many of these impacts with consequent effects on human health.

Many of these issues are assessed individually in the EIS but there was an overriding concern raised in submissions on the matter of health and impact on the local and wider population.

9.7.2 Impact on Human Health General

9.7.2.1 Applicant's submissions.

The applicant has specifically addressed the potential impacts on human health and in this regard I would refer to Section 6.5.3.3 and Appendix 6.2 of the EIS which presents a Health Impact Statement and submissions by Dr Hogan and Dr Porter at the oral hearing where the applicant further stated their position.

Health and the risks to health are addressed in chapter 6 of the EIS. I would also in this regard refer to a number of appendices which are studies which inform the assessment in the Hazard Identification and Risk Assessment Study HAZID (Appendix 6.1); Health Impact Assessment (Appendix 6.2); Soil dioxin and dibenzofuran (PCDD/F) monitoring programme Appendix 6.3 and Modelling of PCDD/F Intake for the proposed development Appendix 6.4.

In addition to the oral hearing further information was submitted for the applicants by Dr Fergal Callaghan, Dr Martin Hogan and other consultants where matters relating to air quality and plant operations arose Mr Jones and Mr Aherne presented evidence.

In relation to the specific potential impacts on human health the evidence as presented by the applicant and in particular Dr Hogan is largely a literature review of peer-reviewed research papers on the potential health effects of incinerators on human health. The focus is on air emissions. The submission largely distinguishes between older plants and more recent modern plants and also on the historical evolution of plants and control of emissions.

The applicant's assessment essentially concluded that well-run, modern incinerators have no adverse effect on the human health of the communities around them; that this is demonstrated in the EIS and the assessment of potential impacts as set out; and as a consequence no adverse human health effects are predicated from the proposed facility.

9.7.2.2 Observer submissions

The risk to health arising from the development was raised in a large number of submissions and was a dominant theme in many submissions both pre and during the oral hearing. Observer submissions raised major concerns in relation to the impact of the proposed development on public health by way of emissions entering into the atmosphere and also when particulate matter descends to the earth's surface on both land and sea, and as a consequence resulting in impacts on the food chain though an incremental build up on accumulations of harmful substances and particulate in both flora and fauna. The concerns related to areas of population but also to places of employment not just locally but the wider harbour area.

Reference was made also to the issue of persistent organic pollutants in relation to environmental protection; the protection of human health and to new and continuous release of persistent organic pollutants into the environment and consequent impact on public health. In this regard reference was made to the 2001 Stockholm Convention on Persistent Organic Pollutants and its provisions which are to eliminate the production, their placement on the market and use of intentionally produced persistent organic pollutant.

Many submissions were made by health practitioners in the geographical area in general medicine and specialist areas. In addition to referring to the issue of physical health they raised impacts relating to psychological impacts arising from the presence of the proposed facility and the perceived dangers of having such a facility in the wider area. The submissions also highlight deficiencies in baseline data and the absence of this data presents issues in relation to qualitative assessment of substances which are toxic and harmful to health.

In presenting their objections while noting that the EIS referred to limits on a number of defined substances, it was argued that there are other substances, which are by-products and an emission generated by the process, and which have no defined limit values. On the issue of limits and values for these substances the third party submissions refer to the trend over time of more stringent values and the lowering downwards of permitted values and for the inclusion of additional substances as technology and science evolved to identify and quantify additional substances.

In effect the observers contended that the absence of limit values for substances did not in itself infer that they are not harmful to human health. Equally it was contended some substances over time may accumulate to harmful levels even if annual levels meet values as currently defined. They are also values which currently may not have a recognised harmful level but by their very nature these substances are considered to be harmful and with current and further research limits are likely to change to lower levels.

In such circumstance the third parties contend that a precautionary approach should apply given the potential long term effects on human health, and this approach is outlined in the Stockholm Convention. The issue of accumulation of toxic substances was stressed as a concern and the overall findings and conclusion of the applicant that there would be no impact on human health was inherently an incorrect supposition.

The third parties therefore contended that the general view was that the air modelling in the EIS as carried out was limited in scope in relation to the substances evaluated and that cumulative impacts and in combination effects were not evaluated and assessed to enable a robust evaluation of the impact human health.

Additionally, there was evidence presented by medical doctors and other health practitioners from the Cobh and harbour area on the extremely high incidence of cancer in the harbour area including Cobh and also from local residents of Ringaskiddy to high levels of respiratory disease and premature death on the area. The evidence, therefore, indicated there were already a high base line problem and a legacy of health related impacts and that further emissions from the facility would increase cumulative levels in a receiving environment with adverse health related issues.

The literature review, as presented by the applicant, was also questioned by the observers at the oral hearing and referenced that other studies had been produced which did not support the applicant's finding on matters of public health; and that considered literature and research was evolving which challenged Dr Hogan's and the applicant's conclusions. Submissions made by Dr Gordon Reid in particular presented additional literature review at the oral hearing which questioned the information and veracity of the information submitted by the applicant.

Reference was also made to the in combination impacts and to the absence of baseline data in the Cork Harbour area to enable a considered

assessment of cumulative impacts. The nature of the development required specific health impact assessment in its own right. Reference was also made to the risk arising from an accident at the proposed plant given the location of the development.

9.7.2.3 Comment

In relation to health generally both the applicant and observers referred to studies and to literature review in presenting their views. There is a wide body of documentation and in particular literature review published in relation to incineration and public health but the veracity of the documentation is extremely difficult to establish and the level of definitive evidence based conclusions is also hard to establish.

The documentation submitted by the applicant has focussed primarily on air emissions which is not unreasonable given emissions to water and ground are largely controlled and managed and I would note many of the observer submissions were similarly focussed on air emissions but referred to the absence of a broader assessment of the impact of these emissions.

Many of the observer submissions reflect a genuine concern in relation to impact on human health based on experience of health concerns in the Cork Harbour area. The issue of the incident at Antwerp in February 2016 has heightened those concerns.

There is also not a significant level and scale of baseline data in relation to health on a spatial basis or particular to a particular area. For example, it is difficult to get clear overview base data for the Greater Cork Harbour area as highlighted in many submissions and acknowledged by parries at the oral hearing and this presents difficulties in assessing significance and cumulative impact on the area from the proposed development given the potential of legacy issues arising from development in the harbour area.

The report will now address the following,

- Health Impact air emissions.
- Dioxin.
- Particulates and Ultra Fine Particulates (UFPs).

9.7.3. Health Impact -Air emissions

I would refer to appendix 6.2 of the EIS; a Health Impact Assessment (HIA) prepared by EHA Occupational Health Hygiene Consultants in relation to the proposed development. The difficulties of preparing a HIA are outlined in the context of the difficulty of obtaining data for a defined geographical study area and the absence presents difficulties for assessment. The HIA therefore has concentrated on an assessment of air borne emissions as these are potentially likely to be identified and measured as having the greatest potential impact on health. Data and modelling obtained in the course of preparation of the application is used to assist where deficiencies in baseline data exist to assess environmental impact.

The Literature review in the submitted HIA is based largely on old incinerators which, it is reasonable to assume, would have emissions of dioxins, particulates and heavy metals at greater levels than would be emitted by a modern incinerator such as that proposed for Ringaskiddy and this distinction is made in the literature review. The HIA literature review it is noted does not indicate that it is not possible to rule out adverse health effects from modern well regulated incinerators with complete certainty but that any potential effects to the health of the receiving population living in close proximity is very small, if and where, detectable.

The HIA addressed potential pollutants including dioxins, particulate matter, other air quality issues including heavy metals and having identified the pollutants refers to specific health issues including respiratory symptoms and illness, reproductive effects and cancer.

The HIA indicates that modern incinerators operate well within with modern emission standards and guidelines. In relation to particulate matter, the conclusion is that modelling for emissions in the form of PM_{10} and $PM_{2.5}$ does not support any likelihood of a detrimental health effect and that there has been nothing published in recent literature which would significantly change this position.

It is contended that there is little evidence to suggest that waste incinerators are associated with the increased respiratory symptoms, or other medical conditions, in the surrounding population. The proposed facility it is contended will be operated in accordance with the strict terms of the EU Industrial Emissions Directive, give rise to emissions which will be lower than from practically all facilities assessed in publications cited in the literature review, reducing therefore further any possible risk to health. It is indicated that dioxins are considerably less than 1% of the legal limit indicating that in practice as well as in theory modern, well run incinerators, do not pose an environmental or health risk.

It is also indicated that all information available on the Ringaskiddy facility therefore, both from modelling and from a review of actual evaluation of a similar facility in Ireland, indicates that all emissions will be well within statutory air quality standards and that there will be no deleterious effect on human health either in the immediate vicinity or in the wider context.

Comment

In relation to HIA there is no clear and definite guidance of how to prepare and HIA and the methodologies outlined in EPA guidance are the clearest parameter to apply. There are also difficulties in relation to ascertaining appropriate and complete data to assess health impacts.

To this end the applicant has relied on in terms of data, on the air modelling data as presented and included in the section of the EIS for assessment of health impact. I would have no issue with this as it examines listed

substances and particles arising related to the process proposed and then offers a dispersal pattern and estimated concentrations projections under an accepted model.

In general terms, however, it does appear that in the period since an incinerator was initially proposed for the site the absence of a body of data to serve as a baseline has been an issue in determining assessment of impact on health. I would accept that there would be problems in determining the scale and spatial limits of assembly of data; should such data be immediate to the site or extend to the outer harbour area and even a wider area and also the appropriate party to prepare and present such data. It would be desirable to have a wider baseline data and while it would be beneficial to have this this available the question to consider is whether its absence precludes a qualitative assessment of the impact on health.

There is evidence available to indicate incidents of cancer in the harbour area in particular Cobh without the proposed development. There is air modelling to indicate dispersal of air emissions and the generation of emissions arising from the proposed development. There is a question of what constitutes a reasonable level of information to make a robust assessment but clearly it is not unreasonable to conclude that if data such as a wide ranging study of the harbour area is not available or likely to be produced within an identified period, that in itself is not a reason to prevent the advancement of projects and development unless it is considered that such a study is an absolute prerequisite. On the basis of the information presented I do not consider that it is an absolute prerequisite.

9.7.4 Dioxin

The issue of dioxin and other substances of potential risk to human health and also ecology was raised by a large body of observer parties in the initial submissions and during the oral hearing essentially questioning the findings and conclusions contained in the applicant's submissions and the concerns largely related to impacts arising from emissions and in particular air emissions focusing on dioxins and other substances.

Applicant's submissions.

In relation to the submission of information the potential sensitive receptors were identified. The EIS addresses the issue of impacts initially referring to the matter of health and safety and the production of a HAZID study to identity and assess hazardous risks (section 6.5.3.1 of EIS) which concluded in the first instance that that the proposed development will not be a major accident establishment and that the Seveso III Directive and Regulations will not apply to the centre.

Risks to human health and the environment were examined and no priority risks were identified and one substantial risk was identified which was a fire in the bunker. It was indicated that a part of the design process control measures will be in place as part of the design, which address risk identified

and consequently the risks posed to human health and the environment by the facility is identified as low as reasonably practical.

Specifically, in relation to dioxin uptake and the quantitative assessment of risk and exposure, AWN on behalf of the applicant has conducted a soil dioxin and dibenzofuran (PCDD/F) monitoring programme in the Cork Harbour area at 12 locations including the Martello Tower initially in 2001 and repeated in 2008 and in 2015. The full report of the baseline soil monitoring is presented in Appendix 6.3 of the EIS and indicates concentration levels below identified recognised limit value concentrations. This should I consider provide base line data in relation to ambient levels if applied appropriately.

Dr Hogan's contention in relation to dioxin was that dioxin emissions are extremely low and are considerably less than 1% of the legal limit and this was demonstrated in the EIS.

Predictions in the EIS it was contended would indicate that even in relation to a "Most At Risk Individual" (MARI), with exposure higher than would and based on the process proposed will occur in practice at the proposed facility has predicted low levels of exposure and emissions. Therefore, applying and identifying low levels of exposure in relation to MARI criteria, in relation to the remaining sectors of the population "TARI (Typical At Risk Individual)", there will as a consequence be negligible impact on the environmental levels and similar low levels of risk.

Using baseline data, predictive modelling of a theoretical MARI was undertaken (appendix 6.4). the modelling applied in the EIS was considered a theoretic worst case scenario of exposure to the plant operating under maximum operating conditions and worst case emissions over the operating life of the facility. In effect the facility operating on the very conservative assumption of the facility operating 24 hours per day, 365 days per year at the maximum emission concentration and flue gas flow rate. This level of exposure was also similar to the levels applied in the air modelling examining air dispersal in general.

The predicted increase applying these assumptions was in the order of 1.7% of the limit value and considerably below WHO and EC limit values. The case presented was that the facility will have no impact on human health with respect to dioxin and furan intake.

Essentially it is my understanding of the applicant's contention that in the worst case scenario and it was strongly indicated that these would not apply or be likely to arise as part of the proposed operation of the facility, the uptake of dioxin in a cumulative sense will not be significant based on current baseline levels in the immediate and wider area, and that human health issues consequently do not arise from the operations of the proposed facility even in abnormal operation. The impact would as a consequence be less under the intended operation of the facility. In the event of an

operational failure the effects can be minimised and contained by the adoption of identified procedures in such an eventuality.

The main issue arising in relation to modelling is that it is dependent on an application of data including sampling correctly which will result in a predicted uptake which can be evaluated by any party. A figure stated requires to be robust when examined and assessed. This question of the veracity of the data presented in the EIS arose in submissions at the oral hearing.

Observer submissions.

The observers in particular Dr Reid questioned the conclusions presented in relation to the validity of the MARI modelling and assumptions in relation to limit values in the context of human health given the nature of the substances being considered.

The issue was also made that in the assessment of dioxin and similar substances the primary issues are toxicity and significantly the accumulation of toxicity within the body and that over time the levels build up. It was therefore contended, any accumulation irrespective of quantity, presents problems to health. Other parties in particular referred to existing documented problems of mortality rates in the area in particular Cobh was referred to in this regard. In such a context an increase in dioxin levels is significant in adding to impacts already identified. It was also contended that with increased knowledge and research reduction of limits rather an increase would be how future standards would apply.

This the third parties contend raises questions of what are harmful levels in relation to what is a harmful substance; how are they quantified; are current levels safe and in some cases levels of substances and particles are not quantified and measurable. The application of annual rates of intake is therefore questionable in the context that these substances are inherently recognised as harmful, so the inference that human health issues consequently do not arise is an incorrect supposition.

In addition, there needs to be a clear understanding that these substances accumulate and adverse effects therefore occur over time. There is also the issue of age cohorts as cumulative intake from an early age carried a higher level of risk to health over a normal life span and that identified toxins accumulate over a life time. It is contended that there is also the risk of passing to future generations.

Another major concern related to what substances are currently regulated and what substances are not and whether it can be considered that there was a robust assessment when largely confined to examination of air modelling when other form of emissions or sources of emissions occur.

Issues arose during the oral hearing in relation to the veracity of the modelling. It emerged, and was admitted by the applicant, that the baseline

data on which was used in the EIS did not relate to the Ringaskiddy site, but was base line data from another site. This was acknowledged to be an error by the applicant. On this basis the observer contended that the assessment was flawed and could not be relied upon to reach a conclusion of no effect.

Comment

Dioxin generally are not present in the environment by way of natural processes and are mostly by-products of various industrial processes and are associated with combustion and are formed during the combustion process. Any production arising from the proposed development will therefore be additional to what is presently in the area. In considering the issue, I will refer to a number of matters raised by all parties prior to and during the oral hearing.

The Stockholm convention agrees to control and curtail inadvertent production of dioxins and furans and there was provision for additional substances to be added as required at a later date and additional substances were added in 2009. The Stockholm Convention was adopted to EU legislation in REGULATION (EC) No 850/2004 and subsequent amendments and nationally by S.I. No. 235 of 2010.

The observers have raised this convention as a strong case for refusal of this development given that it will not control and curtail the inadvertent production of dioxins and that the clear implication of the convention is to control production in particular new production.

The applicant, in a section of the HIA in relation to the Stockholm Convention, has not necessarily disputed the production of dioxin as part of the combustion process but has referred to other processes which produce dioxin and in greater concentrations than an incinerator referring to landfills, accidental fires, agricultural waste burning, industrial combustion and small scale waste burning all of which give rise to emissions levels greater than incineration.

As an alternative the applicant contends it is considered that a better way to comply with the convention and the regulation is via the use of a controlled incineration facility rather than continuance of sources of unintentional persistent organic pollutants, which produce considerably higher dioxin levels. It is contended that the use of incineration will make no detectable or significant difference to the unintentional production of dioxins and furans and will provide for an identifiable and controlled source.

The premise being that an appropriately operated modern incinerator facility is a better means of meeting the obligations of the convention through low level and measurable dioxin levels which are quantifiable than alternative other sources which intentionally or otherwise will give rise to higher levels as currently occurs and will continue to occur.

In relation to the convention it is important also to refer to and consider EC Regulation 850/2004 and its subsequent amendments.

EC Regulation 850/2004 is a regulation on persistent organic pollutants (POPs) and amending Directive 79/117/EEC to take measures designed in particular to eliminate the production, placing on the market and use of intentionally produced persistent organic pollutant.

The regulation also refers to Dioxins, Furans and Polychlorinated Biphenyls (PCBs), and that releases of persistent organic pollutants, which are unintentional by-products of industrial processes should be identified and reduced as soon as possible with the ultimate aim of elimination, where feasible and that appropriate programmes and mechanisms should be established to provide adequate monitoring data on the presence of dioxins, furans and PCBs in the environment.

The emphasis is, therefore, on reduction and ultimate elimination but does not in itself set out an absolute prohibition. It does require a monitoring programme on the presence of these substances and their release into the environment.

I would note that S.I. No. 235 of 2010 Persistent Organic Pollutants Regulations 2010 was enacted for the purpose of giving effect to Regulation (EC) No. 850/2004 at a national level and the Environmental Protection Agency are identified as the competent authority for the purposes of Regulation 850/2004.

It is however fundamental to an assessment of impacts that the EIS presented should provide the relevant data on which to make an assessment of impact in relation to dioxins, furans and other substances. In relation to the matter of the incorrect data it is my view that the correct data should be submitted and subject to robust evaluation to enable a considered view to emerge that the impact was identified correctly and be open to evaluation to a satisfactory level. This has not occurred in relation to the current proposal.

9.7.5 Particulates and Ultra Fine Particulates (UFPs).

The issue of particulates and UFPs arose in written submissions and in submissions and discussion at the oral hearing. The primary case, raised by Professor Howard for the third parties though also articulated by many others, was the absence of standards and limit values necessary for assessment of impact and also in relation to aspects of the process in particular for capture of matter and avoidance of escape to the atmosphere.

It should initially be indicated that paragraph 11 of 2008/50/EC on ambient air quality and cleaner air for Europe makes reference to “fine particulate matter ($PM_{2.5}$) is responsible for significant negative impacts on human health. Further, there is as yet no identifiable threshold below which $PM_{2.5}$ would not pose a risk. As such, this pollutant should not be regulated in the same way as other air pollutants. The approach should aim at a general

reduction of concentrations in the urban background to ensure that large sections of the population benefit from improved air quality. However, to ensure a minimum degree of health protection everywhere, that approach should be combined with a limit value, which is to be preceded in a first stage by a target value".

In the course of the hearing Dr Porter on behalf of the applicant appeared to support the position that there are no ambient air quality standards on a worldwide basis that are expressed in terms of particle numbers or in terms of size distributions and that current research and evidence to set a separate standard focused on UFPs.

Dr Porter did indicate also that there was research on emissions from incinerators in terms of particle size and numbers on which he concluded that: *"The removal efficiency for PM_{10} of the flue gas treatment systems in all plants is very good. The number concentration of most plants is in the same order of magnitude as ambient air. According to our measurements we can state that waste incineration plants with up-to-date flue gas cleaning systems are not a relevant source for the emission of ultrafine particles into the environment. Particles above 1 micron are almost completely eliminated".* This view was supported by Dr Hogan.

Comment.

The main issue I consider is that in order to robustly assess the impacts of the project on human health particularly in relation to particulate matter and other identified emissions there is in the first instance a need that potential impacts be identified and having identified potential impacts an assessment should subsequently occur. To assess any potential impacts they must as far as reasonably practical be identified, quantified and measured whether there are universally defined limit values or not. Values are only possible to apply if there is a measurement available to be considered.

I would accept that there are difficulties in relation to measurement in particular of UFPs in relation to weight and quantifiable measurement. The question to address I consider is the underlying requirement as set out in the EIA Directive which is a requirement to identify, describe and assess the direct and indirect effects of a project. The onus therefore is on the applicant in the first instance to present this.

Although incineration is an established process and has been refined and developed of time to reduce harmful effects including the use of filters and collection of metals there remains questions in relation to the level of emissions arising. There is also an absence of clarity in relation to the level and measurement of minute particle emissions and ultra fine particles. There are also issues in relation to cumulative effects locally and in a wider area.

There is an issue as to whether the development although a modern facility and considered less likely to produce harmful effects than older thermal plants can therefore be more beneficial in overall terms. Although the

proposal may produce potentially producing identifiable harmful emissions can such production be offset as contended by the applicant's that the facility will assist in reducing other sources of harmful emissions elsewhere.

I do consider that this position as set out has merit but the issue arises as to whether such benefit if perceived as a benefit is measureable and quantifiable so that the benefit can clearly identified as benefit rather than perceived as benefit.

This however raises the issue of whether it is reasonable that potential adverse imp**a**cts for one locality with its siting in that locality should be offset against reduction of emissions in other localities. I would accept that it may not be possible to quantify and gather all the data to address this in terms of benefit with any reasonable level of confidence.

It should be indicated, however, that this approach may be acceptable in the context that 2008/50/EC does appear to consider as a future step the aim at a general reduction of concentrations in the urban background to ensure that large sections of the population benefit from improved air quality.

9.8 Air Navigation with specific reference to the Irish Defence Base at Haulbowline.

9.8.1 In the course of the of the oral hearing the Department of Defence made a submission in relation to the potential impact of the development on air navigation operations on Haulbowline Island. This was a submission which had not been made in a written submission prior to the oral hearing. Given that this was an issue and was circulated to parties at the hearing. The applicant made a response at the hearing, which was also circulated and after further submissions were made, the inspector gave advance notice of a time when all parties could cross question on the matter parties at the hearing.

The submissions presented from the Department of Defence principally by Comdt, David Browne are submissions 29 and 104 and the applicant responses are submissions 84, 84A and 84B. I would also note that Mr Michael Griew also raised the issue of the impact of air pollution on the operation of helicopters (submission 46).

9.8.2 To put in context, the State's only naval base is located at Haulbowline and therefore is of strategic importance to the state. It serves a wide range of functions and assistance with air sea and rescue and also with the deployment of Air Corps helicopters in joint military exercises is an important aspect of the base operations and this was articulated by Air Corp personnel at the hearing.

Essentially it was contended by Comdt. Browne that the requirements of the military operations are different to those involved in civil aviation and although civil aviation standards are adhered to, military operations required

the application of more stringent demands given the nature of the operations in which military aircraft engage.

The Irish Aviation Authority (IAA) it is noted in a submission to the Board had indicated no objections to the proposed development and this was alluded to by the applicant. The applicant also indicated that the IAA standards were based on international governance in relation to air navigation and should be applied by the Board.

The main concern raised by the Air Corps centred on the distance required to circumnavigate the plume arising from the stack and the nature of the particulate matter arising and the potential for impact on the military aircraft which would be a helicopter. The Air Corp worked in conjunction with the Naval Service and the approach to the base would largely arise from the prevailing wind patterns and mean that aircraft approach the base would be in close proximity to the plume both vertically and horizontally.

This could/would compromise important operations as it would require aircraft to adopt different approaches to avoid the plume which could interfere with the operations of the aircraft using the base or carrying out exercises with the naval service which usually occur to the south of the island. Any effect on the operation of military aircraft and the operation of the naval base was a significant matter given the strategic importance to the state of the Haulbowline Naval base.

9.8.3 Comment.

This issue mainly arose from the submission initially made at the oral hearing but both the applicant and Department of Defence articulated their views on the matter in further detail and discussion during the hearing.

The essential matter arising is whether the proposed development can be considered to impact on the operational safety of military aircraft and interfere with the operations of the Haulbowline Naval Base. I do not consider that the significance and the national strategic importance of the naval base is in dispute.

Having considered the issues and matters raised by parties, the main issue raised by the Department of Defence is that there needs to be a distinction between the operational requirements of civil and military aviation and that the special circumstances of the naval base must be considered in a different manner to that which applies to civil aviation requirements and a strong and robust view was expressed in relation to this at the oral hearing.

Conclusion.

On the basis of the information presented and having considered the case presented by both the applicant and the Department of Defence, the primary concern is in relation to the operation of helicopter having possibly to fly through and over a plume.

The matter then to consider is what, if any, risks may arise, to the aircraft and the personnel on board or alternatively if the pilot determines for the aircraft to take a diversionary flightpath to avoid the potential risk arising from the plume when it is on the direct flightpath to the base. Also what are the operational implications of taking such a course of action particularly in an emergency mission as distinct from a routine training of operational exercise.

The occurrence of the risk is extremely difficult to quantify given the variation of weather patterns and wind directions. The frequency of such a risk is likely to be very low but I am satisfied having heard the information presented that there is an identified risk and impact. Given the strategic importance of the naval base in a national context it is, therefore, a significant matter in any consideration and assessment.

The safety of air crew and maintenance of operational capacity of the defence forces is also of critical and strategic importance and should not be compromised. The information submitted does not I consider address that such a risk is not of a significance and is a concern.

9.9 Visual impact.

9.9.1 The issue of landscape and visual impact is addressed in Chapter 11 of the EIS Volume 2 and the maps figure/photomontages are in Volume 3. I would also refer to the response submission of Mr John Kelly on behalf of the applicants at the oral hearing. There were also many submissions made by other parties pre and during the oral hearing raising concerns in relation to visual impact but also referring to the visual impact on the harbour area.

In a general sense given the topography of the area with a ridgeline to the south of the site the zone of visual influence is largely to the north and east of the site towards the harbour as indicated in figure 11.0a Zone of Theoretical Visual Influence (ZTVI) of the EIS. The zone of impact therefore includes Haulbowline and Spike Islands with diminishing impact further north and east. In relation to impact arising from various locations I would refer to figure 11.0 which indicates the location from which the 37 photomontages or viewshed reference points (VRP) in addition to four scenic routes S51, S53, S54, and S.58 as defined in the CCDP.

The applicant has also indicated that visual impact was a major consideration in the overall design with the breaking down of the building into irregular blocks and massing to assist with assimilation into the receiving landscape. I would note in this regard that that the overall scale and mass of the building is, I consider, significantly reduced when compared to the previous application.

It is also noted as indicated by the applicant in submissions and responses that the site has to be taken into context of the wider harbour area which has a diverse range of uses competing for space and the edge of the water. The

harbour area has areas of industrial with buildings of varying scale and including stacks of varying heights. There are also residential areas, amenity area and marine related uses both commercial and recreational. Any consideration of visual impact the applicant contends must take this diversity into consideration and also consider the historical context of the harbour which has a long history as working harbour in addition to having a conservation history.

9.9.2 Many of the observer submissions make reference to visual impact in the historical context of the harbour; and also the cultural heritage of the harbour focussing on the historical naval defence fortifications and the importance of the eastern end of the Ringaskiddy Harbour in the chain of fortifications including the Martello Tower immediately to the south of the site. Many submissions expressed the view strongly that the building on the site would impact on that overall visual defence fortification landscape.

The submissions focus on the visual connectivity of the harbour defences in particular referencing the link between the Martello Tower immediately to the south of the site, and the other forts in the harbour including Haulbowline and Spike Island, and the outer harbour defence fortifications.

Reference was made to the major public investment on Haulbowline and Spike Islands in addition to Fort Camden at Crosshaven and that the building on the site, if constructed, will adversely impact on this visual interconnectivity of the fortifications which are of significance not only in a historical sense but as part of an increasing important tourism product as indicated by the opening to the public of the fortifications at Camden and Spike Island.

Reference was also made to the major investment in tourism initiatives on Great Island in particular at Cobh and that the harbour must be in tourism terms be seen as the overall harbour and the proposal would adversely impact on the wider tourism product of Cork Harbour. Reference was also made to the recreational value of the harbour and although it may not be purely a visual consideration the use of the water and the visual backdrop presented by the water and the users of the water/harbour is a significant factor to be considered.

9.9.3 Comment.

By way of initial comment, any development of the site and the placing of a structure on the site will alter the visual appearance of the site and the alteration will therefore be permanent and irreversible. This, however, does not necessarily infer that the alteration would be in an overall context be visually negative if demonstrated that the design as proposed has addressed issues of adverse impact.

I would also observe that the site is zoned for development and as a consequence the site in its current state is permissible for alteration by the placement of some form of development and structures on the site.

There is a wide range of development of a relative recent construction period in the area and vicinity extending to the shoreline and therefore as a consequence of this construction the overall visual character of the area has therefore significantly changed in recent years and this change was alluded to by many parties at the oral hearing.

It, therefore, is reasonable to establish the proposition that the site and area has altered significantly over the past 200 years and that the historical context of the harbour and its fortifications have also visually altered by significant levels of development.

In relation to the proposed development it has been designed to minimise the visual impact by breaking down the overall built form into a number of different block of varying heights and blocks to give a sense of assimilation into the receiving landscape rather than imposition on the receiving landscape. The building will be visible in the immediate area and there will be an impact and this is acknowledged by the applicant in stating that the visual effects of the proposed development will generally be within a 0.5km radius of the site from the north, east and south and I would agree with is assessment.

In terms of the wider area the higher lands and ridgeline to the south restrict the visual impact from the south. The approach from the west is also restricted in relation to visual impact and the Zone of Theoretical Visual Influence as identified in figure 11.0a of the EIS is, I consider, a reasonable appraisal of the impact.

The main impact is largely to the north and to the harbour area and in this context when viewed from Haulbowline Island and shore areas of the northern harbour. My initial opinion is that the visual impact will not be significant and that the receiving landscape can assimilate the proposed development. It is also important to consider that the eastern area of the peninsula in relative proximity has a reasonably high level of buildings including the maritime college and Beaufort buildings to the south and port facilities further to the west, many of which are of recent construction. The site and environs is therefore within a landscape largely dominated by the built environment although I would note that the ridgeline to the south of the site is also a significant topographical feature.

It was also indicated by the applicant's consultant Mr John Kelly at the oral hearing that in the overall context Cork Harbour and in particular the outer harbour has competing uses and there are numerous industrial buildings sharing the harbour space with other uses and that there is a long history of this mix of uses in the harbour.

From various vantage points in the harbour the mix of uses and building forms are, I would note, quite visible including historical sites. The vast scale of the harbour and the long range and distance however, I consider, does permit a high level of absorption and assimilation. There are many examples

of modern large buildings in the harbour area and in particular in the Ringaskiddy/Curabinny with flues/stacks and the addition of this proposal will not alter or change the overall character of the landscape. The ridgeline to the south does present limits in a wider sense in the extent of visual obtrusion.

The principle of a building on the site does not therefore, I consider, give to significant objection in relation to visual impact and as already indicated the site is a permitted site for development.

The primary issue in relation to visual impact is not necessarily an additional building in the area but the relationship of a building on the site to the historical context and in particular the historical fortifications of the outer harbour and the Martello Tower.

The applicant has strongly contended in submissions pre and during the oral hearing that the site development strategy has been informed by sensitivity to the Martello Tower so as to minimise visual impacts on views from the Martello tower. In effect design and placement on the site has taken into account issues of inter-visibility between the Martello site and other fortifications in particular Fort Mitchel.

I am satisfied that the issue of inter-visibility has been largely addressed in relation to design and placement. That is not to say that a building on the site will not be visible, but the proposed building footprint is located to the east of the Martello Tower thereby facilitating direct inter-visibility between the tower and Fort Mitchel.

In relation to designated views and prospects S51, S53, S54, and S58 these views are located at a significant distance from the site and the development will not adversely impact on the designated views and prospects.

Conclusion.

To conclude any construction of a building on the site will visually change the site but the topographical nature of the site places the site north of a ridge line reducing the zone of visual impact. The site in effect faces northward towards a large body of water which assists in diffusing impact. The locality and immediate area have a recent established assemblage of buildings to the north and northwest. The design, height, scale and placement of the building footpath has I consider addressed concerns in relation to visual impact.

9.10 Coastal recession/erosion.

The issue of coastal erosion/recession was a stated reason for refusal by the Board in the previous application. It is important to state that the wording used in the order stated the Board was of the view that it was not satisfied on the basis of the information submitted, in relation to the implementation of

such coastal protection measures and the impact of these works, including on other nearby property.

In the current application the EIS in chapter 13 and Appendix 13.3 outlined details in relation the issue of coastal recession/erosion and the measure proposed in relation to addressing erosion. The works proposed were based on an evaluation of the coastline a model projecting future impacts and measures to address future erosion. The measures centre largely on a soft defence with the importation of material to be laid at the base of the cliff to arrest wave impact.

The proposal will require monitoring of recession and ongoing substitution of material as required. In this way it is considered that the issue of erosion will not arise during the operational life of the proposed development. The development will, therefore, not be compromised by any recession of the coast.

It should be noted that the boundary of the site adjoins Gobby Beach and is largely a soft cliff of varying height. There is visible evidence of recession along the shoreline. The Board engaged consultants to assist in the evaluation and assessment of this subject and in this regard I would refer to appendix 3 of this report.

Review of material.

The issues raised revolved around the calculation of material deemed necessary 1,100m^3; its potential effectiveness, and notwithstanding the influence of wave action the influence of other factors including groundwater and seepage on the cliff face as contributing to erosion.

Third party submissions were also received in relation to the matter which largely questioned assumptions made in the modelling in relation to the rate of erosion and also the nature of erosion in particular referring to a pattern of major losses following storm events rather than a gradual recession. In this regard I would refer to submissions by CHASE and Ms Bettie Higgis. The material to be used was also questioned both in relation to effectiveness and changing the geological and geomorphological composition of the beach and coastal zone.

The applicant in the course of the oral hearing responded to the initial submissions with the response presented and submitted by Ms Julie Ascoop (submissions 16 and 16 A) and the initial submission and response was the subject of discussion at the hearing.

Impacts and issues.

Given the nature of the soft base material forming the cliff, it is the subject of erosion and this is a natural process. In the course of the hearing the modelling and the nature of the rate of erosion was the subject of discussion. The main contention being that it is not a uniform rate of erosion/recession

and that storm events coupled with wave action arising from tidal conditions result in uneven cliff loss and breakdown of the cliff face through slumping of material at an uneven rate. The modelling also takes into account erosion occurring through groundwater action with a 50/50 split attributable to both actions.

This uneven loss is not in dispute and the actions of post storm recession were visible when I inspected the site and this is part of the natural process. The cliff exhibits the effects of both storm and ground water action with sections of vertical interface largely arising from storm damage and more gradual slopes attributable to groundwater.

The applicants have, however, through modelling and recording of ongoing changes to the location of the cliff face given an overview of the changes that have occurred over time and then extrapolated these results to look to the future employing worse case scenario of increased storm events arising from climate change. Applying worst case scenario, the modelling they contend will not result in a loss of coastline to prejudice or endanger the plant as proposed in the location indicated.

Notwithstanding the worst case scenario findings outlined, the applicant has by way of mitigation outlined measures to reduce the rate of recession. The suggested mitigation is the placement of approximately 1100 m^3 of sacrificial material (rounded shingle) with the top level of the nourishment designed to be at 3.28m above datum, which corresponds to the 1/200 years' storm surge level.

In applying this level of 3.28m, projected sea level rises and land subsidence were taken into account. Details of the location and placement of this sacrificial material are submitted, and further details and clarification were submitted at the oral hearing. It was also indicated that the material would be sourced to replicate existing material located on the beach as closely as possible. The application of 3.28m above datum is important in the context of breaking the wave and in the prevention of full force assault at the base of the cliff.

The mitigation is a soft based option rather than the use of rock armour or gabions which are often applied to arrest prevent erosion. It is envisaged that natural processes will over time, in particular after a major storm event, wash some of this material away but the main purpose is to break the intensity of the wave action. It is also indicated that monitoring will be ongoing and that the sacrificial material can if necessary be replenished.

By applying this mitigation, the intention is to replicate existing natural processes rather than introduce intervention in the natural process. The net outcome of the placement of the sacrificial material is, therefore, to arrest the rate of decline of the coastline and in this way give additional assurance that erosion/recession will not impact on the proposed development in the envisaged life time of the proposed development.

I would also note that the introduction and implementation of a surface water and stormwater system will also alter the groundwater flow in the context of the cliff face with water being collected and diverted away from the cliff face with reductions in flows and a reduction in effects on the cliff face in terms of erosion and recession.

In the course of the hearing the question of intrusion from the sea was raised by parties and discussed at the hearing. I note in this regard that the results of bore tests carried out on the site, the results of which did not indicate the presence of saline and this would have been evident if intrusion from the sea was occuring.

Conclusion.

The site is the subject of coastal erosion and recession and this is not in dispute. The applicants have, however, carried out a robust examination of the process and carried out modelling to assess future impact. Based on the modelling it is indicated that allowing for no introduction of mitigation measures the rate of decline will not result in an impact to affect the proposed development.

The introduction of the sacrificial material above the stated datum will not stop recession but will arrest the rate of erosion. The introduction of a drainage system on the site will also assist in this regard.

It is not possible to predict exactly what the level of recession will be given the increased likelihood of storm events arising from climate change and increased sea levels but the modelling has taken these factors into account in a robust manner in their assessment. The mitigation measures coupled with ongoing monitoring and the ability to supplement the sacrificial material does I consider address the issue of erosion/recession

9.11 Issues specific to the site.

9.11.1 Site size and configuration.

The site has a stated area of approximately 13.55 hectares. It is irregular in configuration and surrounds and wraps around an existing commercial development the Hammond Lane Metal Recycling Co. Ltd. Facility which has independent access onto the L2545. There is also a part defined rise in level on the site after an initial level area immediately adjoining the public road.

The actual footprint of the development is, however, largely concentrated in one area of the site owing to the irregularity of the configuration of the site including the main process building; the administration building and security gate house and weighbridges; the turbine hall; the aero-condenser structure; various tank structures including the firewater storage tank, the surface water attenuation tank and firewater retention tank for the storage of surface water and potentially contaminated water, light fuel oil storage tank, aqueous ammonia storage tank and unloading area and the aqueous waste storage

tank. There are also other ancillary structures and vehicular circulation areas.

I would note that the current footprint and area has been reduced from the previous proposal. The Development has buildings with a total floor area of 13,369m². The main process building has a stated area of up to 11,255m² in total floor area a reduction in floor area of the main process building in the previous application ABP Ref. No PA0010 which had a stated area of 19,103m^2. There is an increase in maximum height to 47.5 metres from 42.5 metres in the previous proposal. There are also reductions in floor area in ancillary buildings including the turbine hall and aerocondensor structure. The waste transfer structure and ancillary building are also not part of the current proposal

I would also note that the issue of overdevelopment of the site was stated as part of a reason to refuse the previous application and the reduction in floor area is an integral part of the current proposal to address this.

The actual overall site area is not of major significance given the constraints resulting from the site configuration of the site. The main issue is whether the parcel of land in which the development is sited is of an adequate area for the satisfactory placement and operation of the development.

This is of importance in the context of retaining all operational aspects of the development within the site and doing so in manner that avoids congestion and unnecessary restriction. In the course of the hearing I and others raised the issue of circulation space within the site. In this regard given that HGVs are travelling to and from the site issues arise as to whether these vehicles be accommodated on the site without parking and queueing off the site, and if there is satisfactory internal circulation.

In this regard at my request at the hearing tracking analysis in relation to internal circulation was submitted, which indicated it was feasible but at minimal margin. In relation to the overall circulation it raises the necessity for very prudent control of vehicles in particular HGVs entering and leaving the site to ensure that internal circulation routes are unhindered and operable in the event of an emergency.

Conclusion

The development has been reduced in overall size and the waste transfer station is eliminated but the site of the proposed development although it is considerable in overall site area is, owing to the configuration of the site is and remains quite restricted in terms of usable area in relation to the scale of development proposed and the ancillary spaces provided for circulation on the site. In this context I consider the development proposed constitutes overdevelopment.

9.11.2 Ownership.

9.11.2.1 In a submission prior to the oral hearing and in a number of submissions at the oral hearing the issue of owner and as a consequence the validity of the application was raised by CHASE in submissions from Mr Joe Noonan and Mr Frank Kelleher and in this regard I would specifically refer to submissions 36 and 103.

The points raised largely revolved around matters relating to the ownership of the site; issues relating to registered business name as distinct from the applicant's name; clarifications in relation to who is the applicant Indaver Ireland/Indaver Ireland Ltd as Indaver Ireland Ltd was referred to in the initial documentation to the Board in addition to Indaver Ireland (in this regard I refer to submission 12 received on the 19th of April 2016 at the oral hearing).

The applicant's ownership of the lands the subject matter of this application is questioned. The submissions contend that there may be difficulties with the registration of ownership because the land is registered in the name of the registered business name and section 45 of the Lands Act 1945 may not as a consequence have been complied with. There is, therefore, in a wider sense an absence of clarity on the matter.

This relationship and absence of clarity was also considered to be of importance not only in the context of submitting a valid application and matters generally in relation to the validity of the current application. It is also relevant in the event of the development being permitted and subsequently constructed if the applicant issue was not clarified and resolved in a satisfactory and compliant manner, Mr Kelleher in particular was strongly of the view, that issues of enforcement and regulation of development would arise.

9.11.2.2 The applicant at the oral hearing refuted the matters raised and in this regard I refer submission 91 of Mr Mulcahy submitted at the oral hearing. Mr Mulcahy considered that matter of the name/applicant was clarified in advance of the hearing and indicated that the lands have been registered by the Land Registry in the name of Indaver Ireland and that the Board can rely on the fact that Land Registry must have satisfied itself that any necessary statutory requirements, including compliance with section 45 of the Lands Act 1965 have been complied with. As a consequence, a complaint regarding compliance with section 45 simply does not arise for consideration by the Board.

9.11.2.3 Comment.

In relation to the matter of ownership for the purposes of considering an application the statutory requirements permit a party to submit an application who is the owner of the land which is the subject of the application or in the absence of ownership have sufficient legal interest to do so. The consent of the owner of the lands was largely defined in *Frescati Estates v Walker* in the context to avoid the submission of vexatious applications by parties which did not have sufficient legal interest in the lands and that the owner should consent to the application thereby defining sufficient legal interest.

There is therefore no requirement that the applicant must be the owner of the site but has a consent to so.

There is nothing I consider to suggest that the applicant in this case does not have sufficient legal interest to make this application or an absence of consent from the owner of the land to make the current application based on the submissions made.

In relation to matters of enforcement I note Mr Kelleher's concerns but I would accept the view expressed that parties or companies who carry on and operate a business or a facility under registered business names do not render themselves thereby immune from legal process and also that the provisions of section 39(1) of the Planning and Development Act 2000 indicates that any grant of planning permission enures for the benefit of the land and any person with an interest therein.

Conclusion.

In relation to this matter, the question relates to sufficient interest in land to submit a planning application. The applicant does not necessarily have to be the owner but requires the consent of the owner of the lands as defined in *Frescati Estates v Walker.*

The applicant or other party who acquires an interest in the development having carried out the development can at any period dispose of an interest in the development to another party and enforcement proceedings or regulation of the development would be in relation to the party or interest at

Compliance and enforcement in relation to the carrying of the development is not therefore restricted to the party in whose name planning permission is initially granted. I would also note that conditions included in permissions generally require ongoing monitoring and as part of the monitoring parties and contact details are required to be publicly identified as part of this process.

I would also note that conditions included in permissions generally require ongoing monitoring and as part of the monitoring parties and contact details are required to be publicly identified as part of this process

9.12 Archaeological, Architectural and Cultural Heritage.

Chapter 14 of the EIS relates to Archaeological, Architectural and Cultural Heritage.

9.12.1 In relation to archaeology there are no recorded monuments listed in the Record of Monuments and Places or Protected Structures listed in the Record of Protected Structures in the County Development Plan within the proposed development site.

The nearest Recorded Monument is Ringaskiddy Martello tower (CO087-053) located 70m to the south of the development site. This is also the nearest Protected Structure (RPS 00575). The Martello Tower is also included in the National Inventory of Architectural Heritage as a site of regional importance (Reg. No. 20987047). The tower in question is part of the historical naval fortifications and defences of Cork Harbour. It is of importance in its own right given the unique nature of its construction and as part of a wider historical heritage.

The mitigation measures outlined in Section 14.6.1 of the EIS include a provision for engaging the services of a suitably qualified archaeologist to inspect the proposed development site, the carrying out of surveys and monitoring or works. A monitoring condition is also recommended by the DAHG.

9.12.2 In relation to works associated with the beach nourishment survey works, mitigation measures are outlined in section 14.6.1 of Chapter 14 of the EIS. It is indicated that no material will be removed, and monitoring of works will be carried out by a suitably qualified, licence-eligible, underwater archaeologist. The Department of Arts Heritage and the Gaeltacht has outlined conditions in relation to monitoring and engaging the services of a suitably qualified underwater archaeologist to monitor these works and in the event that any material is removed from the foreshore to facilitate the coastal protection works, this material is to be inspected, metal detected, and its removal archaeologically monitored.

9.12.3 The issue of a pathway linking the beach and the Martello Tower is raised in a number of submissions including the submission of the planning authority. It would appear that such a link existed in the past, but there is no physical evidence that it remains in situ. It is, however, proposed by the applicant to carry out licensed geophysical surveys and licensed archaeological testing prior to the commencement of construction which may give clarity as to the presence or absence of this pathway.

9.12.4 The major issue in relation to cultural heritage relates to the historic importance of the Martello Tower and its wider context. The tower is of importance as it is the largest tower in the harbour area and is the only one of the Cork harbour towers to be enclosed by a ditch. Although the tower is outside of the appeal site the original walled circular enclosure approximately 100 metres in diameter extends 30 metres south of the southern boundary of the proposed development site.

In relation to the preservation and protection of the tower itself the potential impact of site construction works are outlined in section 14.5.1.2 of the EIS and mitigation measures are outlined in relation to maintaining the setting of the tower.

9.12.5 Another issue raised in the EIS and in many submissions from other parties expresses concerns in relation to the proposed development impacting on the visual links between the tower and other harbour defence fortifications in

particular those on Spike Island Westmoreland Fort Mitchell, but also Camden Fort Meagher and Carlisle Fort Davis.

The EIS has recognised that potential impacts arise both in relation to visual aspects in chapter 11 and heritage in chapter 14 and in particular sections 14.5.1.4 and 14.7. It is contended that the design, height and layout of the buildings on the site address and minimise the level and scale of impact, and that the visual connection and its protection was a major design consideration.

In a general sense the EIS in section 14.5.1.4 acknowledges that the siting of buildings on the site will impact on views to and from the tower and also views from the tower but it is the applicant's contention that the intervisibility between the tower and other harbour fortifications is more important having regard to the historical context of the landscape.

In this regard, the applicant has contended that the overall harbour area and landscape has changed in the 200 years since the tower was built due to extensive reclamation, industrialisation and urbanisation of the town of Cobh. The overall effect of these changes have combined to permanently and irreversibly alter the rural setting of the landscape in which the tower was originally built.

Comment.

In relation to the archaeological, architectural and cultural heritage, the primary issue is the Martello Tower, its immediate setting and its wider relationship to the other coastal defence structures.

Subject to monitoring in accordance with established practice the tower structure itself should not be adversely impacted.

In relation to the setting of the tower, its construction was in large part dictated by providing a vantage point over the harbour, as a consequence the height and scale of the proposed development will diminish the tower's position of prominence on the peninsula and obscure the view to and from the tower over the surrounding area including parts of Spike Island and Great Island and this loss will be permanent.

The primary issue in the broader aspect of heritage is whether this affects the interrelationship with other fortifications and the harbour area. I would agree with the applicant that the harbour area has visually changed in the period since the fortifications were constructed.

At the time of their construction the coastal fortifications are likely to have been the dominant visual architectural construction evident in the harbour. The harbour area although it retains many original natural features has over time seen significant additional construction of varying scales and heights which has altered the natural setting including many industrial areas, power

installations and infrastructure and urban areas of varying scales. These features also intrude into the historic harbour fortifications setting.

For example, from Camden Fort Meagher at the western approach to the outer harbour many of these more recent additions are prominent and visible but do not necessarily intrude on the visual connectivity to other coastal defence sites and the Martello Tower adjoining the site is not in any sense a major or dominant feature.

The only major visual relationship of the tower is with the defence fortifications on Spike Island, Westmoreland Fort Mitchell. Having considered the issue, I am satisfied that the design as presented has had regard to intervisibility and has retained this intervisibility, though in a diminished sense. I would also consider that this impact would apply in relation any built form on the site, and the site is zoned for development. I would also note intervisibility from the tower towards Haulbowline and its historical fortifications has already been impaired by the recent development on the IMERC campus.

Conclusion

The primary issue is the Martello Tower, its immediate setting and its wider relationship and intervisibility with the other coastal defence structures in particular the defences on Spike Island.

The buildings as proposed on the site in relation to placement, height and design has had regard to the issue of intervisibility and has retained this intervisibility though in a diminished sense.

I would also consider that this diminution would apply in relation any built form on the site as the site is zoned for development and diminution has occurred already from the site towards Haulbowline and its historical fortifications

I would not have an issue in relation to impact arising from the proposal as presented in built heritage.

9.13 Natural Heritage / Ecology/ Flora and fauna.

9.13.1 Chapter 12 of the EIS relates to Biodiversity and there are also accompanying appendices relating to the subject. In the course of the oral hearing an initial response submission was made Mr Carl Dixon for the applicant (submission no. 22). Subsequently Dr Jarvis Goode made a submission on behalf of the NPWS in relation to evaluation of toxicology in water and impact on aquatic species with specific reference to nanoparticles. Further submissions were made specifically by the applicant submission 99, Dr Good 109 and Cllr Marcia D'Alton submission 110 and also in general submissions by other parties.

The impact of the proposed development on European sites is considered in section 11 of this report.

9.13.2 Current position.

The site is largely dominated by scrub and grassland but is also a coastal site adjoining the foreshore. The site is in close proximity to the Cork Harbour Special Protection Area (Site code 004030). The site is also in proximity to the Great Island Channel cSAC, which is located approximately 6km to the north. There are also two pNHAs in close proximity the Lough Beg, 0.3km to the south, and Monkstown Creek pNHA, approximately 1.5km to the northwest. It is indicated in the EIS that these sites are part of a network of sites which support important bird numbers within Cork Harbour and are considered relevant to the proposed development.

Specific to the actual site itself, all of the habitats are of a low ecological value and in relation flora species no rare species were noted, and as indicated in the EIS nor are they expected to occur. It was noted that Japanese Knotweed, was recorded within and adjacent to the study area.

In relation to mammals and in particular protected species badger and common pipistrelle bat species were previously recorded on or in proximity to the site. None were however recorded in the most recent surveys although the EIS does consider ongoing survey should continue. In general terms the site is considered to be not the optimum habitat for these species.

The primary issue as identified in the EIS is in relation to birds and in particular the interaction of the site and the nearby SPA, and also as the nature of the site, grassland and scrub, can support bird species of a diverse range. Based on studies which date back to 2003, neither the site or study area identified in the EIS support a community of birds or individual species that would be considered significant conservation priorities or to provide critical resources for such communities and/or species.

The site is within 500 metres of the Cork Harbour SPA with a large number of species that are considered of high conservation value (Annex I of the Birds Directive, qualifying species for the Cork Harbour SPA and Red List) and although sightings were noted in this general area many of recorded sighting of these birds were recorded overflying the channel. The EIS concludes specifically that the site itself and the shoreline adjoining the site, did not support high numbers of these species.

As the development includes for the provision of the nourishment of an area of the foreshore this area was also surveyed. In relation to fauna no rare or uncommon species were recorded.

The EIS also concluded that the site would not in its current state support designated species in terms of roosting but owing to its location in proximity to open water and current unused nature of the site, some potential feeding in the grassland and scrub can occur.

9.13.3 Impacts.

In terms of impact

1. During the construction and operational phases, the nature of the proposed development will result in the removal of existing vegetation and habitats and its replacement with buildings and other forms of construction activity. In that sense the removal is permanent and irreversible.

2. In relation to works on the foreshore, the nature of the beach nourishment will alter the current situation by altering the physical structure of but it is a soft form of intervention and will over time wash away although it is proposed to renew the nourishment as required.

3. During the operational phase the issue of emissions and in particular particulate matter discharged by the stack was raised. Essentially the matter to be considered is whether by indirect effects emissions to air would deposit on land and water and would give rise to potentially and theoretically eco-toxicological impacts, in particular on piscivorous birds, otters and seals and also in relation to marine ecology arising from bioaccumulation arising from ongoing emissions to air from the stack. This matter was the subject of discussion at the oral hearing and additional material was also presented at the hearing.

4. The potential of bird collision with the stack was also raised in submissions including the NPWS.

9.13.4 Comment.

1. The nature of the development will by changing the physical nature of the site, give rise to changes, which are permanent and irreversible. The site, however, contains habitats which are of a low ecological value and in relation flora species no rare species were noted on the site. The site would also appear to have been modified over the years and no issues in this context, I consider, arise.

2. In relation to the foreshore and beach nourishment, the nature of the beach nourishment will alter the current situation by altering the physical structure and changing the composition of the material.

   The placement of soft material on the beach area based on the information submitted does not, I consider, give rise to issues. Potentially, impacts could arise due to the deposition of the shingle above the foreshore on Gobby Beach on existing marine habitats. No rare or uncommon species or habitats have been recorded within the area of the proposed deposition and coastal protection works. This area is subject to ongoing and constant change arising from erosion

and storm surges and recurring and ongoing re-colonisation of this area occurs.

At the hearing it was indicated that material similar to what occurs presently on the foreshore will be used and while I would accept that precise replication is unlikely to occur, it is in an area which is not a static environment and by the nature of coastal areas subject to continuous change.

In relation to marine ecology it is likely that ongoing recolonisation will occur as it reoccurs as part of the ongoing process of coastal change. Therefore, although it is possible that some alteration may occur due to variation in chemical composition of the imported beach material given the volatile nature of intertidal zones the changes arising will not I consider have a significant impact on marine ecology. Any direct impacts on marine ecology arising from the beach nourishment scheme will I consider be negligible.

3. The primary concern relates to bio-accumulation of particulate matter of a potential toxic nature on birds, otters and seals through ingestion after the matter settles and resides in sediment. The NPWS raised the matter in the initial submission to the Board and attended the oral hearing.

   The evidence presented at the oral hearing be all parties largely concerned literature reviews of material on the issue of bio-accumulation and potential impact on the receiving species population. The applicant contended that based on the level of emissions and the extent of receiving waters any impact if identified was negligible and this view was not disputed by the NPWS though observers at the hearing retained concerns in relation to the significance of bio-accumulation.

   In relation to bio-accumulation the provision of an ongoing monitoring programme as identified and requested by way of condition by the NPWS. The applicant contended that identifying an appropriate monitoring programme presented a difficulty. The difficulty the applicant contended lies in the range of potential sources of emissions in the harbour area and in constructing a monitoring programme which would link the receiving ecosystem specifically to the proposed development.

   Despite this difficulty it would, I consider, be desirable that monitoring should be put in place to initiate a monitoring regime to assess and evaluate bio accumulation in species.

4. In relation to collisions arising from the presence of the stack, the proposed development will include buildings of a large mass and height on the site. There will also be ancillary lighting of the site and increased general activity and movement on the site. I do not consider that collision will therefore be a significant issue. In this regard I would also

note that the harbour area has many stacks and flues and no issues has been identified to date.

Conclusion.
Conclusion

The nature of the development will by changing the physical nature of the site give rise to changes which are permanent and irreversible. The site however contains habitats which are of a low ecological value and in relation flora species no rare species were noted on the site. The site would also appear to have been modified over the years and no issues in this context, I consider, arise.

In overall terms I would conclude that in relation to impacts on flora and fauna the potential impacts were identified both in relation to the site itself and the wider receiving environment including alterations to the beach area. I am satisfied that no significant impacts were identified or will arise, subject to the mitigation measures identified and the introduction of a monitoring programme to assess the development.

10.0 ENVIRONMENTAL IMPACT ASSESSMENT.

10.1 Environmental Impact Statement.

The application is accompanied by an Environmental Impact Statement. The documentation as submitted also included a Natura Impact Statement and accompanying appendices. The application also included supporting reports in relation to engineering, planning landscape design and a road safety audit which apply information stated in the main body of the EIS and appendices.

10.2 Structure and Content of EIS

The EIS is laid out as follows:
Volume 1 - Non Technical Summary.
Volume 2 -Main Text. Planning Report/Associated Appendices (Volume 2A).
Volume 3 – Figures.
Volume 4 – Appendices.

As per the requirements of the EIA Directive, the EIS:

- Describes the project and provides information on the site, the design of the proposed development and size of the project.
- Describes the measures envisaged to avoid, reduce, and if possible, remedy significant adverse effects.
- Provides sufficient data to identify and assess the main effects which the project is likely to have on the environment.
- Provides a description of the main alternatives studied by the developer an indication of the main reasons for the choice of alternative put forward, taking into account environmental effects, and

- Includes a non-technical summary of the above information.

The content and scope of the EIS is considered to be acceptable and in compliance with the requirement of Articles 94 (content of EIS) and 111 (adequacy of EIS content) of the Planning and Development Regulations, 2001 (as amended).

In relation to the adequacy of the EIS, I consider that it contains the information specified in Schedule 6 of the Planning and Development Regulations 2001, as amended. Having reviewed the EIS, and other documentation including the NIS and all the supporting documentation to the application, the observers' submissions, applicant's response and having considered the matters raised at the oral hearing including additional submissions presented at the oral hearing,

- I am satisfied that the information is sufficiently detailed and comprehensive, and
- can be considered as a contribution towards the process of assisting the relevant decision maker and the competent authority, in this case the Board, to carry out a robust and accurate assessment of the development for the purposes of environmental impact assessment.

10.3 Environmental Impact Assessment.

In accordance with the requirements of Article 3 of the EIA Directive and Section 171A of the Planning and Development Act, 2000 (as amended), the environmental assessment is carried out under the following headings:

- Human beings, flora and fauna;
- Soil, water, air, climate and the landscape;
- Material assets and cultural heritage;
- Interactions between the foregoing.

10.4 LIKELY SIGNIFICANT DIRECT AND INDIRECT EFFECTS.

10.4.1. Human Beings, Flora and Fauna.

10.4.1.1 Human Beings.

Impacts on human beings are considered in the EIS in a number of chapters including:
Impacts on human beings arising directly and indirectly as a result of the proposed development was considered in detail in many chapters of the EIS including:
Chapter 5 Construction Activities.
Chapter 6 Population and Human Health.
Chapter 7 Roads and Traffic.
Chapter 8 Air Quality.
Chapter 9 Climate.
Chapter 10 Noise and Vibration.

Chapter 11 Landscape and Visual.
Chapter 12 Biodiversity.
Chapter 13 Soils, Geology, Hydrogeology, Hydrology & Coastal Recession.
Chapter 14 Cultural Heritage.
Chapter 15 Material Assets.

Human Beings – Population and Economic Activity.

Direct and indirect impacts will arise as a consequence of the construction and operational phases of the development. A direct impact in relation to employment will be that additional jobs and economic activity will be generated in both phases. During the operation, the development will also provide additional waste management infrastructure and assist in meeting identified future National policy requirements to meet these needs.

There is potential for negative impacts arising in relation to impacts on existing employment in the area arising from perception issues and a view that the proposed development would be incompatible with recent employment generated development in the area and for potential expansion of similar economic activity in the future.

Issues also arise in relation to tourism and recreation activity and the impact of the proposed development on these activities and that the high level of public investment will be dissipated by the proposed development. Issues also arise in relation to potential adverse impacts in relation to human beings on health and general disturbance arising from emissions and additional traffic.

It is difficult to quantify impacts in particular where perception contributes to this. It is, therefore, extremely difficult to quantify in this context but it is reasonable to consider that the proposed development may indirectly negatively impact on residential property values in the immediate area and perhaps also in the wider area. There is also potential to impact on the provision of additional employment opportunities. There is a potential risk in relation to accidents on the site but they are quantified and assessed and although there is always a risk it is in quantifiable terms very low. The EIS also in the various chapters assesses impacts on a wide range of issues and outlines mitigation measures in the design of the development and during its operation to address impacts.

In relation to assessment of the overall impacts direct impacts on human beings has been identified. In relation to direct impacts these are assessed and mitigation measures outlined and subject to the appropriate implementation of these measures impacts on population and economic activity, from the proposed development, are not likely to arise.

Indirect impacts arising from the nature of the development, questions in relation to compatibility with other development, future investment decisions and perceptions arising may arise. It is difficult to quantify these impacts it is considered but the development could significantly impact on the population and on future investment on economic and community investment.

Cumulative impacts on population and economic, from the proposed development in conjunction with existing, planned or proposed developments would also arise in this context.

Human Beings – Land Use

The site is located on a site zoned for industrial use and in an area dominated by non-residential use. The use of the land as an industrial related enterprise should not give rise to direct, indirect, short and long term impacts. The issue does, however, arise in relation to the specific nature of the industrial enterprise proposed. Whether the impacts arising are compatible with nearby adjoining educational and industrial related development as a consequence of the operational phases of the development and whether they may/give rise to indirect impacts on the area and existing developments. I consider this to be the case.

Cumulative impacts, from the proposed development in conjunction with existing, planned or proposed developments would also arise in this context.

Human Beings – Tourism and Amenity

Impacts that are considered to arise are primarily indirect impacts in the wider area as the site itself has no current tourism and amenity status. The site adjoins the only major significant public access to the foreshore on the Ringaskiddy peninsula and users of the beach will pass the foreshore to access the beach. Issues arise in relation to intervisibility of historic defence fortifications in Cork Harbour and the proximity of the site to one of the defence fortifications, the Martello Tower, to the south of the proposed site.

The harbour area addition to having an important commercial value is also an important recreational resource and used for marine related pursuits with a number of sailing clubs and schools operating in the harbour.

The proposed development, it is considered, will result in localised impacts on the setting of, or view from, other tourist attractions and coastal fence sites, in particular Spike Island, but it will not be a major impact. The development may also impact on recreational activities in particular sailing activities in the section of the harbour near the proposed site. Other tourist attractions are more distant from the site and the impact of the development in a visual sense diminishes with distance. In an overall context impacts direct, indirect and cumulative will impact but will not be significant and in an overall context a significant impact is not likely to arise.

Human Beings – Health.

Impacts in relation to impacts on human health in the absence of mitigation, in particular, during the operational phase of the development are likely to arise given the nature of the development and emissions arising. Any effects to

health in the construction phase are short term in duration and are not likely to give rise a significant impact.

The development will be subject to ongoing monitoring and will be licenced in relation to emissions. The development is not located, however, immediately adjoining any residential properties and the impact from emissions will reduce and dissipate with distance. It cannot be stated with certainty that impacts direct and/or indirect will not arise in particular in relation increases of bioaccumulation over time of certain substances but based on anticipated levels and distance and the monitoring which will be in situ from the licencing process, I do not consider that there any significant risk is posed to human health as a consequence of the proposed development or that significant impacts in conjunction with existing, planned or proposed development are not likely to arise.

10.4.1.2 Flora & Fauna.

Designated sites/undesignated sites of conservation interest.

The site is not located within a designated site. No development will take place within the boundary of any Natura 2000 site during the construction or operational stage of the development. There will as a consequence be no direct physical impact on any Natura 2000 site through loss of habitat or effect on the conservation objectives of any site.

Due to proximity to the proximity to the Cork Harbour SPA indirect effects potentially arise. The EIS mitigation measures in both the construction and operational phase to address potential effects in relation to surface water and other emissions from the site. Subject to the mitigation measures proposed to protect water quality, there will be no significant impacts on any of any Natura 2000 site.

There will be no direct discharges to surface water during the operational stage and accordingly no impacts are predicted. Cumulative impacts on Natura 2000 sites, from the proposed development in conjunction with existing, planned or proposed development, are not likely to arise.

Habitats and Species.

No habitats or species of conservation interest are identified on the site. The construction works and subsequent placement of structures and associated infrastructure on the site will result in displacement and removal of habitats and species on the site, which will be permanent and irreversible.

In relation to birds both the construction and operation phases will give rise to displacement and loss of potential foraging areas for some species but the species of conservation interest in particular wintering species are more likely to use more optimum sites. There is a risk in relation to collision but the predicted collision risk is unlikely to give rise to significant impacts. Direct and indirect impacts will therefore arise but the impacts are not significant.

Cumulative impacts on habitats and species both terrestrial and aquatic, from the proposed development in conjunction with existing, planned or proposed development, are also not likely to arise.

10.4.2 Soil, Water, Air, Climate and the Landscape

Soils, hydrogeology and hydrology are referred to in chapter 13 of the EIS.

10.4.2.1 Soil.

Direct impacts are likely to arise during construction of the proposed development with the excavation of earth and the importation of material to the site. Potential impacts are outlined in relation to the construction and operational phases. Having regard to the footprint of the development and the proposed means to mitigate impacts on soil, geology and the hydrological environment, it is considered that no significant impacts on soil are likely to arise. Cumulative impacts on soil, from the proposed development in conjunction with existing, planned or proposed developments, are also not likely to arise.

The proposal will involve the use of beach nourishment to arrest coastal recession. The approach adopted is a soft form of intervention arresting the rate of recession rather than the placement of permanent structures on the foreshore. The application of the measures proposed are not likely to give rise to a significant impact.

10.4.2.2 Water.

Impacts which are potentially likely to arise, during construction and operational phases of the proposed development. are outlined in addition to mitigation measures to address process water and storm water. The development provides for control measures in relation to discharge of water off the site. Having regard to the information submitted and the proposed means to mitigate potential impacts on the hydrological environment, it is considered that no significant impacts on water are unlikely to arise. Cumulative impacts on water, from the proposed development in conjunction with existing, planned or proposed developments, are also not likely to arise.

10.4.2.3 Air.

The issue of Air Quality arises in chapter 8 of the EIS but it also addressed in chapters 6 Population and Human Health, and chapter 10 Noise and Vibration.

Given the nature of the proposed development direct impacts are likely to arise, during the construction and operational phases of the development.

In relation to noise, during the construction phase impacts will arise from general construction related activities and construction traffic. Mitigation

measures are proposed in relation to hours of operation, controls on machinery and application to minimise noise levels. Impacts will not be significant and limited to the duration of the construction period. In the operation phase activities are generally internal to the building but traffic will generate noise. Mitigation measures are outlined to ameliorate noise impacts.

Having regard to the relative distance of the site from residential properties and the measures outlined, it is considered that the development will not give rise to significant noise nuisance on sensitive receptors during the construction and operational phases of the development. Impacts, direct and indirect, of a significant nature are not, therefore, likely to arise.

Cumulative impacts, on noise from the proposed development, in conjunction with existing, planned or proposed infrastructure arising from noise generated on the site, from the proposed developments are also not likely to arise.

10.4.2.4 Air quality/Climate.

Direct and indirect impacts will arise as a consequence of the proposed development during the construction and operation phases. impacts on air quality may arise during construction of the proposed development from construction traffic and related equipment, in particular in relation to dust during excavation, the construction of the buildings and associated services. These impacts will be temporary and short term in duration and are not considered to be significant.

In relation to the operational phase, the main process in the proposed development is the thermal treatment of waste, which notwithstanding design considerations and mitigation measures will give rise to air emissions through a stack of a wide range of compounds and gases. Measures are proposed to minimise these emissions. The operation will also be subject to monitoring and licencing in relation to the nature and levels of emissions permitted.

Direct impacts will, therefore, arise. Dispersal modelling indicates that impacts to air quality are likely to be greatest in proximity to the site and dissipate further from the site. Data submitted indicates that even in worst case operational conditions which are not going to arise levels of dispersion and limit values are below levels to give rise to a significant impact.

In terms of the wider area it could be contended that concentration of incineration activities in one location in a controlled facility may result in an overall reduction of emissions including dioxins and similar compounds as uncontrolled incineration occurring in other locations may be reduced.

In broad terms, emissions from the proposed development are likely to arise, but it is not demonstrated that significant impacts are likely to arise if the facility operations in accordance with the details outlined, that the internal design measures and mitigation measures are followed, and a robust monitoring regime is implemented to identify issues which arise.

Impacts, in conjunction with existing, planned or proposed infrastructure arising from noise generated on the site, from the proposed development are also not likely to arise.

10.4.2.5 Landscape

Chapter 11 of the EIS addresses landscape and visual matters.

Any development of the site, which involves the construction of buildings and associated infrastructure on an undeveloped site, is a direct impact and an irreversible impact as it changes the nature and visual appearance of the site and the receiving landscape in which it is located. It also impacts on the overall context of the site and relationship to the adjoining lands and area. The relationship of the site and the nearby Martello Tower on an adjoining site is an important consideration in this matter of relationship. Direct, indirect and cumulative impacts will arise as a consequence of the proposed development.

The placement of the buildings, their specific location, massing and height attempts to respond to the context of the and to but mitigate the scale of impact.

I am satisfied that the overall design height and scale are unlikely to give rise to a significant level and scale of impact in the context of the immediate area of the site, the Martello Tower, the wider context of the overall Cork Harbour and the historic naval defence architecture associated with the harbour area.

Impacts on the landscape, in conjunction with existing, planned or proposed infrastructure are not, therefore, likely to arise.

10.4.4 Material Assets and Cultural Heritage

10.4.4.1 Material Assets – General

Chapter 15 of the EIS refers to Material Assets.

Direct and indirect impacts are likely to arise as a consequence of the construction and operational phases of the development as a result of the project's interaction with existing utilities, aviation in the context of the Naval Base on Haulbowline Island, and from the generation of waste.

Having regard to the proposed development and the mitigation measures as outlined, impacts on existing utilities and piped services are unlikely to be significant.

The question of aviation arises in the context of the proximity of the site to the Naval Base on Haulbowline Island and the strategic importance of the naval base in a national context. The maintenance of air navigation safety procedures for air crews operating to the base is, therefore, of importance and any impact to safe navigation is of significance. The presence of a plume and

the particulate matter arising from emissions from the proposed facility's stack was raised as a potential source of significant impact to air navigation.

I am satisfied that there is a significant level and scale of impact in the context of the air navigation safety arising from the emissions and the plume associated with the operations carried out on the site, and as a consequence significant impact is likely to arise.

In relation to waste the proposed development is focussed on the management of waste and its primary function is of the acceptance, recovery and disposal of waste. It also provides for the disposal of the residue fraction of waste. The management and treatment of waste can give rise to impacts direct and indirect. The EIS in the various chapters addresses the overall waste management process including mitigation measures and addressed in this report.

10.4.4.2 Material Assets – Traffic

Direct and indirect impacts are likely to arise, during the construction and operational phases of the development. In both phases there will be increased levels of HGV traffic on a road network which is currently subject to congestion in particular at peak flows. There are mitigation measures to address the impacts identified in particular controlling traffic flows and concentrating traffic to off peak periods. The additional traffic also impacts on the local residents in particular the nearby villages which will have additional traffic passing through them.

In relation to mitigation the primary intention is to manage traffic flow in both the construction and operational phases of the development in particular as the facility in the operational phase can determine when waste is accepted at the site.

In the context of traffic, it is considered that the proposed development can be accommodated within the public road network, without significant impact subject to adherence to a traffic management scheme. Traffic associated with construction is limited to that phase and duration of the development. The operational phase of the development will require adherence to the traffic management scheme pending the construction of the N28 road upgrade.

There will, therefore, be a traffic impact which, in the absence of mitigation would be significant. Cumulative impacts also potentially arise from other plans and projects including the Cork Port redevelopment and improvement to piped services in the Ringaskiddy area and the N28 upgrade. There have been considered and will be considered in the context of an overall evolving traffic management.

Having regard to the proposals to manage traffic movements by both the applicant and also the local authority it is considered that by the application of the proposed use of mitigation measures significant impact is not likely to arise.

Cumulative impacts on material assets (traffic), from the proposed development in conjunction with existing, planned or proposed developments, are also not likely to arise.

10.4.4.3 Cultural Heritage

Archaeology.

In relation to archaeology, there are no recorded monuments within the proposed development site. The nearest Recorded Monument is the Ringaskiddy Martello tower located 70 metres to the south of the development site. Mitigation measures include archaeological monitoring of works in relation to site development works on the site and also on the foreshore where beach nourishment are proposed as there is potential for subsurface archaeology to be uncovered during construction resulting in direct physical impacts.

it is considered that by the application of the proposed use of mitigation measures significant impact is not likely to arise.

Architecture.

In relation to direct impacts, there is no impact in relation to any building/structure included in the Record of Protected Structures or the National Inventory of Architectural Heritage. The potential for indirect impacts arises in the context of the historic naval defences of Cork Harbour and the question of intervisibility between these structures which include the Martello Tower to the south of the site. There is potential for impact on the setting of the naval fortification infrastructure but the placement, design and height of the structures on the site have largely addressed this.

There will be an impact but it is not considered that a significant impact is likely to arise.

10.4.5 Interactions between the foregoing.

Impact Interactions.

Although impact interactions, subject to mitigation, are unlikely to be significant, given the nature of the development it is considered that it is likely that the proposed development will give rise to significant interactive impacts on the communities residential and those in employment living in proximity to the development as a consequence of the perceived impacts on health, land and property values and the risk of a potential incident occurring on the site.

10.5 Transboundary Impacts.

The only identified transboundary impact arises in relation to the export of flue residues which cannot be currently treated and disposed of within the state.

The process of the treatment and transport of this material as proposed is unlikely to give rise to a significant impact.

10.6 Public Consultation.

There have been divergent views expressed in relation to the issue of public consultation, not necessarily the absence of consultation, but in the nature and content of the consultation.

The proposed development, however, has a planning history. The proposed and current development has been the subject of a public consultation exercise undertaken by the applicant and for prolonged period the project has been in the public domain. The proposal has resulted in extensive public interest and the submission of observations in relation to the project.

Having regard to the above and

- The wide range of matters and issues raised in the initial submissions.
- The submissions during the course of the oral hearing.
- The presentation of these now before the Board, and
- The capacity of the Board to consider all of the information in respect of the application.

It is considered that the applicant's approach to consultation meets with the statutory requirements of Article 6(4) of the EIA Directive.

10.7 Summary and Conclusion.

Having regard to the above, it is my view that the significant environmental effects arising as a consequence of the development have been adequately identified and assessed.

11.0 APPROPRIATE ASSESSMENT.

11.1 The applicant submitted an Appropriate Assessment Screening Report and a Natura Impact Statement with the application. The study area for the preparation of this Screening Report extended to a radius of 20km.

11.2 Stage 1 Screening for Appropriate Assessment.

11.2.1 In relation to the Stage I screening, the issue to be addressed is whether the project is likely to have a significant effect, either individually or in combination with other plans and projects, on European sites in view of those sites' conservation objectives.

11.2.2 The screening report is outlined in section 4 and comprises six stages, description of the project (section 4.1); main features of the project (section 4.2); appraisal of ecological baseline conditions (section 4.3); Natura 2000 sites (section 4.4); identification of potential impacts (section 4.5) and Screening Conclusion (section 4.6).

The description of the project and the main features of the project largely outline what is stated in the EIS.

In relation to ecological baseline conditions, in addition to the baseline surveys carried out for previous applications on the site, additional up to date studies were carried out in 2014/2015 relating to habitat mapping, surveys of wintering and breeding birds' surveys and an intertidal survey.

The surveys are outlined in detail in appendices 17 and 18. The site including the area of the proposed beach nourishment works, is not within a Natura 2000 site and therefore there is no direct habitat loss or habitat degradation.

11.2.3 Table 2 in section 4.4.1 of the report outlines four Natura 2000 sites within 20 kilometres of the site as follows:

- Cork Harbour SPA (Site Code 004030).
- Great Island Channel candidate Special Area of Conservation (Site code 001058).
- Ballycotton Bay Special Protection Area (Site code 004022).
- Sovereign Islands SPA (Site code 004124).

Cork Harbour SPA (Site Code 004030) is within approximately 500 metres of the appeal site. This SPA covers a large area and comprises most of the main intertidal areas of Cork Harbour, including all of the North Channel, the Douglas River Estuary, inner Lough Mahon, Monkstown Creek, Lough Beg, the Owenboy River Estuary, Whitegate Bay and the Rostellan and Poulnabibe inlets. The site is also of special conservation interest for holding an assemblage of over 20,000 wintering water birds and lists 24 qualifying species, with the exception of the common Tern, all are winter bird species. The main conservation interest is maintaining species population.

The site adjoins the shoreline and there is therefore a direct link between the site and the SPA.

Great Island Channel candidate Special Area of Conservation (Site code 001058) is approximately 5 kilometres to the north within Cork Harbour. Mudflats, sandflats and slat meadows are listed as qualifying interests and the site is also extremely important for wintering waterfowl.

Ballycotton Bay Special Protection Area (Site code 004022) which is located 18 kilometres to the east lists 11 species as qualifying interests.

Sovereign Islands SPA (Site code 004124) located 19 kilometres to the southwest lists the cormorant species alone as a qualifying interest.

11.2.4 Section 4.5 of the report refers to the identification of potential impacts and addresses this under a series of topics considering the construction and operations phases of the proposed development.

The potential impacts identified are:

- Construction impacts.
- Displacement.
- Collision.
- Emissions to water and air.
- Accidents on the site.
- Predator species.
- Flooding and erosion.
- Cumulative effects

11.2.4.1 Construction

The report initially considers the construction phase of the proposed development and in relation to potential impacts in the construction phase it is indicated in section 4.5.1 in relation to the Cork Harbour SPA that "*although impacts during construction on estuarine mudflats of high value for wintering birds listed as qualifying interests for the Cork Harbour SPA are extremely unlikely, such impacts cannot be entirely discounted in the absence of mitigation*". No potential for impacts on the remaining Natura 2000 sites are identified in the construction phase.

It is indicated that the beach nourishment works will not impact on the nearby SPA given its location relative to the nourishment area and the nature and pattern of coastal drift.

11.2.4.2 Displacement.

Section 4.5.2 of the report considers the disturbance or displacement of birds The screening stage considered that whilst direct disturbance of qualifying species within the Cork Harbour SPA boundary are extremely unlikely, the disturbance of such birds where they occur outside the SPA boundary cannot be entirely discounted without more detailed consideration. No potential impact was identified in relation to the other Natura 2000 sites.

11.2.4.3 Collision.

In relation to collision risk impacts are outlined in section 4.5.3 and recognises that given the height and scale of the structures on the site there is potential risk of collision to birds traversing the site which may significantly affect the SPA.

11.2.4.4 Emissions to water and air.

Emissions to receiving water arising from the proposed development is not identified as an impact given the nature of the process and the procedures to control and treat water, the level of discharge likely to occur and the dilution factor of the receiving waters.

In relation to emissions to air these are addressed in section 4.5.5. of the NIS. I would also refer to appendix 11 of the NIS.

Referring to the Cork Harbour SPA, it is concluded that, based on the results of air dispersion modelling of process emissions, the air quality impact of the proposed facility will be insignificant. It is, however, noted that there is a theoretical pathway, which could impact on ecology, arising from the aerial deposition of chemicals with ecotoxicological properties such as dioxin or mercury onto marine sediments and as a consequence bioaccumulation of such deleterious chemicals could then potentially occur.

The potential impacts, if any, would affect fauna higher up the food chain such as piscivorous birds, some of which are listed as qualifying interests for the Cork Harbour SPA and the species outlined include Common Tern, Cormorant, Red Breasted Merganser, Little Grebe, Great Crested Grebe and Grey Heron. The screening concludes that the impacts on the Cork Harbour SPA as a result of air emissions and bioaccumulation, although highly unlikely, could potentially occur.

In relation to the other Natura 2000 sites, based on the air dispersion modelling and distances from the site which identifies that the spatial impact of the facility is limited, with concentrations falling off rapidly away from the maximum peak, potential impact from direct emissions on these designated sites including bioaccumulation is ruled out.

11.2.4.5 Accidents on site.

In relation to impacts arising from accidents on the site, the EIS identified fire in particular in the bunker as a potential source of fire. Considering this in the context of Natura 2000 sites, a fire in the bunker will result in the emissions to air of the products of the combustion and thermal radiation. It is considered that contamination by fire water will not occur as the bunker and the recovery tanks will be designed as water retaining structures. Specifically, in relation to the Natura sites, although impacts on the Cork Harbour SPA are considered unlikely arising from such a fire, they cannot be entirely discounted due to the relative proximity of the proposed development site. Impacts in relation to the other sites are by virtue of distance ruled out.

In relation to bottom ash and boiler ash and flue gas cleaning residues, the procedures for the handling and disposal are outlined and it is concluded that no potential impacts arise in relation to Natura 2000 sites, or in relation to potential Trans-boundary effects where residues are exported given the established procedures for the collection and transporting of this material (section 4.5.9).

11.2.4.6 Predator species.

In relation potential impact from increased predator density such as rats and gull or activity or changes in predator behaviour with consequent impacts on species in the Natura sites, the procedures for addressing predator species in addition to handling procedures are outlined and it is concluded that under circumstances, any impact on birds listed as special conservation interests

for the Cork Harbour SPA from increased predator density or increased predator activity is predicted to be negligible and there will be no appreciable impacts on the Natura 2000 sites due to the absence of a risk to bird species listed as special conservation interests for the Cork Harbour SPA.

11.2.4.7 Flooding and erosion.

Impact from flooding and erosion and possible impacts from climate change on Natura 2000 sites is considered in section 4.5.11 in relation to site level changes; coastal protection measures; the upgrading of the local road and surface water runoff with no significant impacts arising due in part to distance and also measures to address coastal erosion and flooding on the site.

11.2.4.8 Cumulative effects.

Section 4.5.12 refers to potential cumulative impacts. Projects considered and outlined included the Hammond Lane Metal Company adjoining the site; wind turbines within the Lower Cork Harbour existing and planned, the existing power station stack, at Whitegate; the redevelopment of the Port of Cork in Ringaskiddy; remediation works and the subsequent redevelopment of Haulbowline Island, which is north of the proposed development, which could potentially increase traffic levels along local roads; development on Spike Island Masterplan; the M28 Cork to Ringaskiddy Upgrade Scheme, and ongoing development on the IMERC Campus which is likely to expand in future years.

11.2.5 The Screening Report considered that although unlikely to occur, in-combination impacts could potentially impact on the Cork Harbour SPA due to its relative proximity to these proposed and existing developments that there would be no likely significant cumulative or in-combination impacts on the other Natura 2000 sites.

Having outlined the identification of potential impacts, section 4.6 addresses evaluation and screening by way of conclusion.

In relation to potential impacts on the Ballycotton Bay SPA and Sovereign Islands SPA, it is concluded that given the low levels of emissions from the proposed development and the distance of these Natura 2000 sites from the proposed development site, no significant potential impacts, whether direct, indirect or cumulative, will occur.

In relation to potential impacts on the Great Island Channel cSAC and its two qualifying Annex 1 habitats namely Mudflats and sandflats not covered by seawater at low tide and Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) it is concluded that no significant potential impacts, whether direct, indirect or cumulative, will occur.

11.2.6 The overall conclusion of the screening is outlined in section 4.6.3 of the NIS largely summarises information outlined in previous sections of the report.

Although, it is concluded and considered improbable that significant impacts will occur, the likelihood of significant potential impacts on the Cork Harbour SPA in relation to five matters identified in the screening process could not be entirely discounted without further analysis. The matters outlined were,

- Disturbance/displacement of birds listed as qualifying interests for the Cork Harbour SPA where they occur outside the SPA boundary including potential cumulative impacts;
- Potential for collision risk for birds listed as qualifying interests for the Cork Harbour SPA where they occur outside the SPA boundary including potential cumulative impacts;
- Potential accidental releases from the site during the construction phase including cumulative impacts;
- Potential accidental releases from fire during operation including cumulative impacts and
- Potential for bioaccumulation and impacts on piscivorous birds from air emissions of mercury and dioxins

The screening therefore concluded that in line with a precautionary approach, a Stage 2 Appropriate Assessment of the proposed development is considered necessary in respect of the Cork Harbour SPA.

11.2.7 Conclusion Stage 1 Screening.

In relation to the stage 1 screening report, the process and methodology followed, I consider, was reasonable and robust in identifying the Natura 2000 sites and also in the identification of what are referred to as potential impacts and effects. It then addresses these under a series of topics in both the construction and operations phases of the proposed development. It identified the presence and/or absence of pathway from the site to the Natura sites and in doing so screening eliminated three of the Natura 2000 sites.

It is reasonable to conclude that on the basis of the information on the file, which I consider adequate in order to issue a screening determination, that the proposed development, individually or in combination with other plans or projects would not be likely to have a significant effect on European Site Nos. 001058, 004022 and 004124) in view of the site's Conservation Objectives, and a Stage 2 Appropriate Assessment is not therefore required.

The exclusion of the following three sites I consider, reasonable,

- Great Island Channel candidate Special Area of Conservation (Site code 001058).
- Ballycotton Bay Special Protection Area (Site code 004022).
- Sovereign Islands SPA (Site code 004124).

By applying the precautionary principle, the requirement to proceed to stage 2 in relation to the Cork Harbour SPA site code 0004030 where the

evaluation determined the likelihood of significant effect could not be discounted in relation to the SPA without further examination is, I consider, reasonable and correct.

11.3 Stage 2 – Natura Impact Statement

11.3.1 Arising from the stage 1 screening the stage 2 NIS therefore focusses on the Cork Harbour SPA site code 0004030. The site is of significance in relation to winter species with 23 species listed under this category and one non wintering species, the common tern listed as a breeding species. There is also reference to wetland and other areas which support these avian populations. The main conservation objective relating to the site is the maintenance of numbers and population.

11.3.2 Identified potential effects.

The five matters identified in the screening process which could not be entirely discounted without further analysis are evaluated.

11.3.3 Displacement/ disturbance.

The construction phase is estimated at 31 months and therefore works will occur during the main wintering season for birds in Cork Harbour (October to March inclusive) which is of significance in the context of the SPA which supports major populations of wintering species. Night-time works are likely it is indicated to take place over a period of 6 to 8 weeks and works will occur in relation to the placement of sacrificial beach material which will take approximately three weeks to complete and will take place outside the main wintering season for birds. Noise and vibration will also occur at variable levels and frequency. Mitigation measures are outlined in relation control and reduction of noise.

In relation to the species themselves none were recorded in nationally significant numbers in proximity to the appeal site, with relatively small numbers recorded feeding along the rocky shoreline or overflying the site and channel. The shoreline in proximity to the proposed development site consists primarily of rocky shore/shingle habitat and lacks the large estuarine mudflats which are of high value for wintering birds.

It was also noted that these shore areas in the area are used for recreational use including Gobby Beach, the shoreline adjacent to the site eastern boundary. It is indicated that Gobby Beach is subject to high levels of disturbance from recreational users with or without dogs during daylight hours. Reference is made to other industrial sites which are closer to the SPA and that these are sources of noise.

Noise activities at night is considered the most likely construction impact and could lead to some level of displacement and disturbance but it will be short term in duration and localised in the immediate area which, surveys have indicated as low value shoreline habitats adjoining the site for the SPA

species. In relation to construction activities, no significant adverse impact on birds listed as qualifying interests for the Cork Harbour SPA will, the NIS concludes, occur.

In relation to the operational phase, mitigation measures are outlined to reduce noise which largely relate to the application of suppression on machinery and controls on the hours of construction. In relation to residual impacts the noise modelling outlines predicted levels will fall off away from the site to a level imperceptible at a distance of 500 metres distant where the boundary of the SPA commences. It is noted that the breeding species the common Tern is recorded in locations some 750 metres from the site. The level of impact on species identified with the SPA is considered by the NIS as insignificant in the long term, taking account of the existing noise environment and the predicted impact of the proposal during the operational phase of the proposed development. Similar conclusions were stated in relation to cumulative impacts.

Comment.

In relation to disturbance and displacement of birds and to the site and immediate area having a long history of human intervention with significant development occurring north of the site in IMERC, the port, Haulbowline Island and ongoing activity generally on the Ringaskiddy peninsula and harbour area. I would accept the overall conclusion in that no significant effects will arise.

11.3.4 Collision risk.

In relation to the risk of collision, factors affecting this risk are outlined including building height; lighting; the actual position and the location of a structure and also the nature of the individual species in relation susceptibility, seasonal factors and flight patterns.

Table 8 considers bird species of qualifying interest and conservation concern within Cork Harbour SPA in the context of quantifying a risk of collision based on studies associated with wind turbines although it is acknowledged a building rather than a wind turbine is proposed on the site. The common Tern was identified as the highest risk and it is also a breeding species as distinct from a wintering species. Risk is also associated with common identified flight paths.

The conclusion as outlined in section 5.3.3 considered that no adverse individual or cumulative effects to the integrity, special conservation interests and conservation objectives for the Cork Harbour SPA will occur.

Comment.

In relation to collision, the potential for a collision occurring will arise as there will be a structure on the site where none existed previously. Flight of birds from the nearby SPA can and are likely to cross the site. Unlike a wind

generator the proposed building form is a static presence of greater magnitude and bulk. There will also be an increased general activity in particular from traffic and pedestrians moving on the site. In the wider area there are a number of other equally large building forms, in closer proximity to the SPA to the appeal site. The site in the wider context is within a significantly modified landscape from its original natural landscape and environment.

I am satisfied that collision may occur but with the mitigation measures as outlined which includes the use of lighting and also by virtue of the general activity associated with the site's operations including the presence of people, and the movement of traffic, no effect is likely to give rise to a significant effect on the integrity of the conservation objectives for the Cork Harbour SPA.

11.3.5 Potential accidental releases from the site during the construction phase.

Mitigation measures during construction are outlined in section 5.4.1 of the NIS covering control of water discharge including in the event of a fire during the construction phase, dust suppression and control and also the management of waste, materials and machinery. Risk of spillage to receiving waters is considered low and the receiving water have major dilution capacity. The NIS therefore considers that there will not be an adverse effect on the integrity of the Cork Harbour SPA, even in the event of a highly unlikely accidental release from the site during the construction period.

Comment.

I am satisfied that the matter as raised has been evaluated and there is, subject to the implementation of mitigation measures, no issue I consider in relation to significant effects arising in relation to potential accidental releases from the site during the construction phase.

11.3.6 Potential accidental releases from fire during the operation of the proposed development.

In the EIS Hazard Identification and risk assessment was undertaken in which identified the only risk identified as substantial was a fire in the bunker. Mitigation measures are outlined which largely relate to prevention of fire in the first instant and controls in relation to discharges in particular water discharging off the site. The risk and relative distance of exposure of risk diminishes with distance from the appeal site. The SPA is located as in excess of 0.5 kilometres from the site at its closest proximity. In effect the risk was assessed in the context of identification, prevention, mitigation and containment of a fire, distance of the site from the SPA and the dilution factor should emissions occur and enter the SPA area.

In light of this evaluation of risk, including the effective implementation of measures to initially prevent a fire and contain matters subsequently, the NIS considers that even if a fire occurs at the facility, such a fire would not have

an adverse impact on the integrity of the Cork Harbour SPA site and its conservation objectives given the mitigation measures in place to contain and manage emissions and fire water. No potential in-combination impacts, in relation to a fire on site, have been identified, which could have an adverse impact on the integrity of the Cork Harbour SPA or the conservation objectives for qualifying bird species.

Comment.

The initial prerequisite of prevention of a fire and measures to provide for this as the first step is the desired approach but the issue to consider is potential effects arising in the event of a fire actually occurring on the site. There are measures in place in relation to containment and control of fire water to the receiving environment. Emissions to air would be less controlled even in a fire occurring within a building.

The issue initially to consider is that probability of a major fire incident are based on the HAZID report is low and largely confined to the bunker area within the building. Should a fire occur there will be emissions. Any emissions should they arise would have a finite timescale in duration as the fire will be contained and extinguished. In this context the issue of significant effect in the context of the integrity of the Cork Harbour SPA site and its conservation objective are also therefore, I consider, extremely low. The effect would vary and may also depend on when it occurs. For example, should a fire occur outside of the wintering period the effect on species would be likely to negligible. In any event I do not consider a significant effect arises.

11.3.7 Potential impacts on piscivorous birds from air emissions and possible bioaccumulation.

I initially wish to indicate that this matter and potential bioaccumulation was the subject submissions and discussion in the course of the oral hearing as outlined in previous sections of this report relating to air quality and human health. Regard has also been also had to these submissions in my consideration of the potential impact on the European site. Much of the material relating to air emissions draws on material outlined in the EIS and listed in appendices in the NIS. Reference is made to the modelling under maximum and abnormal operating conditions, identification of baseline conditions and cumulative effects and impacts.

In relation to air emissions modelling under maximum and abnormal operation of the facility, in relation to Nitrogen Dioxide (NO_2); the Nitrous Oxides (NO_X) concentration (including background concentration); sulphur dioxide (SO2); carbon monoxide (CO); total dust including PM10 and PM2.5; Total Organic Carbon (TOC); Hydrogen Fluoride (HF) and Hydrogen Chloride (HCl), concluded that emissions arising will be below limit values. It is contended that no adverse impact on the environment including the conservation objectives of the Cork Harbour SPA, will occur. Similar conclusions arise in relation to concentration levels for metals.

In relation to Dioxins/Furans (PCDD/PCDFs), in the absence of an internationally recognised ambient air quality concentration or deposition standards for PCDD/PCDFs (Dioxins/Furans), the USEPA and WHO recommended approach to assessing the risk from Dioxins/Furans was applied. This involves the determination of the impact of Dioxins/Furans in terms of the TDI (Tolerable Daily Intake) approach. Applying this approach, the NIS considers that will be no adverse effects on the conservation objectives of the Cork Harbour SPA from Dioxins or Furans.

In effect the conclusions based on theoretic modelling indicate that levels of emissions are below defined limit levels, and where such levels are not available the application of best practice guidance. In contending this the emission levels evaluated are worst case and above the likely levels of emissions to arise.

In addition to the modelling, the applicant refers to further analysis of soil samples taken and compared to previous sampling results to establish trends in relation to accumulation. The sediment sampling sites chosen in the wider harbour area were in areas of muddy sediment which can provide bird feeding habitats and which are known, or which have an apparent potential, to accumulate contaminants. Although levels varied and there was I note an absence of uniformity in relation to trends over a period of time, the levels identified were well under recommended guidance used in the absence of standards.

Comment.

The issue of bioaccumulation impact on piscivorous birds in particular was raised in submissions from the NPWS and also third parties. By way of initial comment in relation to certain emission and substances there was no dispute that bio-accumulation occurs. There were divergent views in relation to what are perceived as safe levels of bio-accumulation with the contention that a zero tolerance should ideally apply, or at least the lowest tolerance in relation to emissions should apply. The matter is further considered in section 10.3.8 of this report.

11.3.8 Section 5.6.4 of the report is referred to as an Ecological Risk Assessment. This report specifically considers the risk to piscivorous birds and otters within Cork Harbour and this report is attached as Appendix 15 of the NIS. The report addresses the issue of tolerance and exposure. There is a calculation of exposure by applying the highest concentrations identified in all of the soil sampling which was at Whitegate and the highest level of activity in the plant. The levels calculated were the worst case scenario and would be higher than the anticipated likely levels as the plant would not operate at these levels. The results were well below safe levels.

There was the applicant contended an absence of direct historical information and studies internationally to assist the assessment (note in this regard appendix 3 of NIS).

Increased sediment PCDD/F concentrations due to emissions from the Ringaskiddy Resource Recovery Centre and consequent increase in PCDD/F exposure for fish eating birds and otters (based on exposure from forage fish) was modelled by the applicant and found to be insignificant in the context of exposure over life time of the plant.

In relation to possible impacts on the environment from emissions of dioxin and mercury with a particular emphasis on bio-accumulation in piscivorous birds was also examined. The evidence presented in the NIS appears to indicate potential for bio-accumulation based on based on laboratory studies. Given the nature of these substances there would not be, I consider, any dissent opinion that these substances accumulate within living species.

The report, however, then considered studies in natural environments and that such studies were difficult to develop and evaluate satisfactorily. The difficulty arises from the complex nature of these environments, the constant changes and variables in these environments and also advancement in technology to reduce emissions. Consequently, results and finding were less conclusive than those arising in the laboratory setting in relation to bioaccumulation.

The NIS report indicates, in effect, there is a legacy issue in relation to older incineration which does not apply in relation to modern incineration citing international practice and data in this regard. There are, therefore, significant levels of reduction in dioxin levels compared to the past levels so as a consequence historical higher recorded levels will not continue into the future.

In that context, emission levels from the proposed plant will be low reducing potential future levels of accumulation. There is evidence in this regard relating to the emissions of the Carranstown plant as an example of modern incineration which can be presented and taken into account in verifying a reduction in levels. It is also indicated that the levels in the receiving environment are low based on sampling results which were taken by the applicant. There is also the factor that the appeal site is also not within the SPA, and the SPA itself covers a large body of water so dispersal over a wide area will arise.

Based on the above in relation to overall ecological risk and risk to species, the overall conclusion there will be no adverse effects on the conservation objectives of the Cork Harbour SPA arising from any emission from the proposed waste-to-energy facility in relation to bio-accumulation. Similarly, given the low background levels and the low concentrations of toxic substances in emissions, the risk that significant bioaccumulation will occur is considered negligible. Mitigation measures will also address potential impacts arising.

Comment.

Initially in the light of questions arising at the oral hearing in relation to the modelling any finding based on the results of the modelling is not, I consider,

entirely possible as the basis of the findings cannot be clearly evaluated as the base line data submitted was determined at the oral hearing as incorrect. In this context the model which supplied the potential intake figures cannot be satisfactorily assessed. This does not necessarily preclude consideration of the matter in a more general sense.

As already indicated in relation to certain emissions and substances, there was no dispute that bio-accumulation occurs and is raised in submissions from the NPWS and also third parties. The NPWS although raising the issue in submissions in advance of the oral hearing did not necessarily raise specific objections to the point that it was considered a significant effect in relation to conservation objectives of a Natura site.

Dr Jarvis Good attended the oral hearing representing the NPWS and made further submissions in relation to evaluation of toxicology in water and impact on aquatic species with specific reference to nanoparticles and also made reference in relation to monitoring. There was an accepted difficulty in assessing the matter of bio-accumulation and possible effects. There was difficulty in assessing scientific literature on the subject of bioaccumulation. The NPWS also considered that careful management and operation of the incineration process should occur to minimise the levels of emissions.

In this context the monitoring of the receiving ecosystem was considered essential with a condition for monitoring of PCDDs and PCDs in the harbour recommended.

Many of the third parties also made submissions with the main focus of the submissions directing concerns in relation to the bio-accumulation of toxic substances in fish life; on marine and littoral surfaces and that the bird population would be both directly and indirectly impacted by feeding on fish life and in the mud and salt flats.

The case essentially presented was there is an absence of clarity on the impact and effect of bio-accumulation in living species; there is an absence of data in which to make an evaluation; no level of bio-accumulation which could be considered safe in the absence of definitive and conclusive evidence in this field of research and was it desirable permit bio-accumulation to continue to occur and therefore to increase in plants and species with consequential impacts. The effects of bio-accumulation would therefore effect the conservation objectives of the SPA which is maintaining the population of an internationally important area.

Conclusion.

The matter however to be addressed in appropriate assessment is whether the project either individually or in combination with other plans and projects, adversely affects the integrity of the European site which is the Cork Harbour SPA in view of the site’s conservation objectives.

In relation to examination and evaluation of the potential effects of the project on the conservation objectives of the site, the matter to be considered is whether the project would adversely affect the integrity of the European site. Effects which potentially arise are indirect effects where airborne emissions and possible water emissions arising from the development are transported to land and water surfaces and are ingested by bird species directly and indirectly. The receiving area covers a vast area and there are other potential sources of emissions also to be considered. In this context the matter would be also in-combination and cumulative effects as there are other sources which could give rise to accumulation.

There is no issue that emissions will arise. There is dispute in relation to the level of emissions and whether they are verifiable. There are issues as to what are perceived as safe levels of emissions and there is dispute as to whether it is possible to carry out and robust level of evaluation of the effects. The parties did I consider present data in relation to best scientific knowledge in this regard.

I would conclude that in relation to potential impacts on piscivorous birds from air emissions and possible bioaccumulation,

- given the levels of potential emissions even in worst case operational conditions identified in relation to the development which are not likely to occur;
- the application of mitigation measures clearly identified and submitted as part of the proposal to minimise emissions;
- the absence of a defined continuous direct pathway due to variations in wind patterns and distance from source to receptor in relation to optimum feeding areas and sites;
- the nature of the receiving environment which in the case of the Harbour area is a large body of water of varying depth and which is not a static environment and subject to tides and coastal drifting.
- Although issues were raised by the NPWS and clarification sought there is no objection in this regard to significant effect or in relation to significant effect on the integrity of the European Site raised in the written submissions and presentations at the oral hearing. There is a request in this regard for a monitoring regime to be implemented.

Therefore, I do not consider that the project would give rise to significant effects or adversely affect the integrity of the European site. I also consider that also applies in the context of the indirect effects of the project, either individually or in combination with other plans or projects.

11.4 Conclusions relating to Appropriate Assessment.

In relation to the Natura Impact statement I am satisfied that matters relating to whether the project is likely to have a significant effect, either individually or in combination with other plans and project, on the European sites in view of the site's conservation objectives have been assessed.

I consider that the documentation as submitted has provided sufficient information to determine whether or not likely significant effects, either individually or in combination with other plans or projects, on the European sites can be reasonably ruled in or ruled out on the basis of objective scientific information.

I have considered the mitigation measures as proposed and examined and evaluated the potential effects of the project on the conservation objectives of the sites taking account of the mitigation measures as outlined.

Having considered the documentation as submitted, including submissions from all parties, I do not consider that the project would adversely affect the integrity of a European site, either individually or in combination with other plans or projects, in view of the site's conservation objectives.

Although issues were raised by the NPWS and clarification was sought in the initial submission to the Board and these matters were the subject of discussion at the oral hearing, there was no objection in relation to the NIS in relation to significant effect on the integrity of the European Site raised in the original written submission to the Board or in the presentations at the oral hearing.

I consider it reasonable to conclude on the basis of the information on the file, which I consider adequate to carry out Stage 2 AA, that the proposed development, individually or in combination with other plans or projects would not adversely affect the integrity of the European Site No 004030, or any other European site, in view of the site's Conservation Objectives.

12.0 CONCLUSION.

12.1 I have reviewed the initial documentation submitted to the Board including the EIS and NIS, the written submissions from statutory bodies and observers, I conducted an oral hearing, hear and reviewed the submissions made at the hearing by all parties, reviewed the documentation submitted by parties at the hearing, considered relevant policy and guidance documents relating to the proposed development and inspected the site and its environs.

12.2 The following are a summary of my main findings based on the above.

12.2.1 The EIS is legally adequate in relation to the composition and matters required to be contained in the EIS. It is however deficient in content and deficiencies are not addressed in the initial submission and documentation submitted at the oral hearing in particular in relation to consideration of alternatives and in the proper submission of documentation supporting the contention in the assessment of dioxins and furans was based on baseline data which referred to another site other than the site at Ringaskiddy and therefore the supporting documentation was not relevant to the findings outlined in the EIS.

12.2.2 The principle of the need of additional waste to energy infrastructure reflected by the facility proposed is supported by EU, National, Regional and Local policy in the context of anticipated increased volumes of waste, changes in the methods of managing waste and the hierarchy of waste management, the identification of waste as a resource and a national policy of managing waste within the state and a policy to avoid reliance on exporting of waste in the national interest. Thermal treatment with energy recovery as a key element of Irish Waste Management Policy is therefore accepted and supported by various policy in meeting future waste management requirements.

12.2.3 The proposal to cater for 240,000 tonnes per annum of waste including 24.000 tonnes of hazardous waste is consistent with the requirement to manage an additional 300,000 tonnes of waste identified in national and regional policy and the provision of the necessary infrastructure to manage the additional waste.

12.2.4 The development has been reduced in scale and size but the site of the proposed development although it is considerable in overall site area, is owing to the configuration of the site and the options available arising from this configuration, quite restricted in terms of usable area. This will lead to a development operating in a tight and constrained site and given the nature of the development a concern as to whether the useable parcel of land in which the development is sited is of an adequate area for the satisfactory placement and operation of the development in a manner that avoids congestion. I am not satisfied that the confined nature of the useable area permits such to occur. In this context I consider the development proposed constitutes overdevelopment.

12.3.5 Central to any consideration of a site for the nature of the development proposed is a site selection process and a robust assessment and an evaluation of alternatives/locations. The site selection process presented is not a *de novo* assessment or evaluation and majorly reliant on the initial process of 1999/2000. It considers sites, which given the identification of the Cork Harbour area as the desired location, are outside of this area and therefore do not meet this requirement and other sites which are questionable to be considered alternatives. It also did not give sufficient consideration and weighting to recent development in the Ringaskiddy peninsula area which include major public and private investment initiatives, and which have transformed the character of the area.

12.3.6 Notwithstanding the zoning of the site for standalone industry and that this allows consideration of the proposed development, the zoning does not in itself infer that permission should be granted. Other matters also have to be addressed in the context of the development where other objectives and policy must also be taken into account and any industrial development must be considered compatible with nearby development. I do not consider that the current proposal is compatible with recent development in the area.

12.3.7 The proposed development will not have an impact on the structural integrity of the Martello Tower, a protected structure located to the south of the appeal site.

12.3.8 The Cork Harbour area has a strong architectural history evolving from the presence of a series of defensive fortifications in and around the harbour. Inter-visibility of these fortifications forms part of the history legacy of the harbour. Having considered this issue, I do not consider that the design, scale and height and placement of the structures will adversely impact on this important historical and visual legacy or have an adverse impact on the built heritage of Cork Harbour.

12.3.9 The proposed development would generate additional traffic on a road network which operates at or above capacity at peak periods, with congestion issues on the N28. I am, however, satisfied that subject to the implementation of a robust traffic management plan to divert flows to off peak periods the development can be accommodated on the road network in the interim period pending the upgrading of the N28.

12.3.10 Other matters relating to the upgrade of the local road fronting the site and current flooding issues are addressed.

12.3.11 In relation to the issue of coastal erosion and recession and the impact of the development on coastal recession, I am satisfied that these matters are addressed.

12.3.12 Issues arose in relation to air navigation safety arising from the plume emerging from the stack and the implications of this for the nearby strategically important naval base at Haulbowline Island. The department of Defence submissions presented a strong position in relation to this matter and the safety of air crews which use the base which I do not consider were addressed by the applicant.

12.3.13 Notwithstanding the relative proximity of the site to the Cork Harbour SPA, I consider with reasonable certainty, subject to mitigation measures, that the proposed development would not adversely affect the favourable conservation status of the species identified in the conservation objectives of the European Site.

13.0 RECOMMENDATION.

Having regard to the assessment and conclusions set out above I recommend that the application be refused.

REASONS AND CONSIDERATIONS

1 Notwithstanding the zoning of the area for industry as stated in objective ZU 3.7 of the County Development Plan and objective I-15 of the Local Area Plan all of which permit consideration of an industrial use on the site, such consideration is also subject to an appraisal in the overall context and provisions of the statutory plans and development in the immediate area.

It is considered that the proposed development would not be compatible with recent development in the area, including the Maritime College, IMERC and Beaufort campuses, which are supported by objective C-01 of the Local Area Plan and major public investment on Haulbowline and Spike Islands. It is, therefore, considered that that proposed development would be contrary to the proper planning and sustainable development of the area.

2 Central to any consideration of a site, for the nature of the development proposed, is the necessity in the Environmental Impact Statement for a robust assessment in the context of a site selection process and a robust assessment and evaluation of alternatives. In relation to the site selection process consideration of alternatives, a *de novo* assessment or evaluation was not carried out and the assessment is majorly reliant on the initial process of 1999/2000. The overall appraisal and identification of alternative sites was seriously deficient and did not give sufficient consideration and weighting to recent development in the Ringaskiddy peninsula area which include major public and private investment initiatives and which have transformed the character of the area in the intervening period since 2000.

3 While the Environmental Impact Statement is legally adequate, there is, however, a requirement that the process of Environmental Impact Assessment be robust. Therefore the information contained in the Environment Impact Statement should provide for, identification and examination of likely impacts, mitigation measures and the impacts arising from mitigation measures. The Environmental Impact Statement should include relevant information and data to permit such assessment.

The EIS relating to the proposed development is, however, deficient in content, in particular in relation to the baseline information in appendices 6.3 and 6.4. The baseline information presented in appendices 6.3 and 6.4 is to assist in the modelling and subsequent evaluation of potential dioxin intake. The baseline data as presented, however, does not and cannot support the results, outcomes and stated likely impacts as presented in the Environment Impact Statement. The information as submitted to the Board is, therefore, insufficient to enable the Board to carry out an environmental impact

assessment in an appropriate manner, and to form a basis for an informed decision on the application.

4 Notwithstanding that the site of the proposed development is considerable in overall site area, owing to the configuration of the site, which wraps around another site and the options for development footprints arising from this configuration, the site is therefore restricted in terms of usable area for the placement of a development of any major scale. It is considered that the actual usable area of the site is inadequate in relation to the scale of development proposed.

The development as proposed would therefore constitute overdevelopment of the site, which would seriously injure the amenities of the area and of property in the vicinity, and would not be in accordance with the proper planning and sustainable development of the area.

5 The site is in close proximity to the Haulbowline Naval Base, a facility of national strategic importance and from which military helicopter aircraft carry out a wide range of operations. In the course of the oral hearing, evidence was presented indicating that 'military aviation procedures' and requirements are and operate differently to, the 'operational requirements of civil aviation'.

Evidence was also presented at the oral hearing, of potential risks on the safety of military aircraft operating at the naval base arising from a plume from the operations of the proposed development. Specifically, potential risks on safety included the potential danger arising to the aircraft and the personnel on board from this plume and/or if the pilot determined that the aircraft was required to take a diversionary flightpath to avoid potential risk arising from the plume.

In the context of the information presented the proposed development would, therefore, present an unacceptable risk to aircraft navigation, impair the operation of the naval base and be contrary to the proper planning and sustainable development of the area.

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Derek Daly

Senior Planning Inspector.

27th January 2017.