

IMMINGHAM EASTERN RO-RO TERMINAL



Environmental Statement:
Non-Technical Summary
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Immingham Eastern Ro-Ro Terminal

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Contents

Non-Technical Summary.....	1
1 Introduction (Chapter 1).....	3
1.1 Project background.....	3
1.2 Environmental Impact Assessment.....	4
1.3 Statutory and public consultation.....	4
1.4 Document availability.....	6
2 Proposed Development (Chapter 2).....	6
2.1 Marine works.....	6
2.2 Landside works.....	7
2.3 Environmental enhancements.....	8
3 Details of Project Construction and Operation (Chapter 3).....	9
3.1 Construction phase.....	9
3.2 Operational phase.....	10
3.3 Environmental management best practice procedures.....	11
4 Needs and Alternatives (Chapter 4).....	12
4.1 Need considerations.....	12
4.2 The statement of need.....	14
4.3 The objectives which a solution should meet.....	14
4.4 Consideration of alternatives.....	14
5 Legislative and Consenting Framework (Chapter 5).....	16
6 Impact Assessment Approach (Chapter 6).....	18
6.1 Scope of assessment.....	18
6.2 Consultation.....	19
6.3 Impact assessment methodology.....	19
6.4 Study area.....	19
7 Physical Processes (Chapter 7).....	20
8 Water and Sediment Quality (Chapter 8).....	21
9 Nature Conservation and Marine Ecology (Chapter 9).....	22

10	Commercial and Recreational Navigation (Chapter 10)	24
11	Coastal Protection, Flood Defence and Drainage (Chapter 11)	25
12	Ground Conditions, Including Land Quality (Chapter 12)	26
13	Air Quality (Chapter 13).....	27
14	Airborne Noise and Vibration (Chapter 14).....	28
15	Cultural Heritage and Marine Archaeology (Chapter 15).....	29
16	Socio-economic Receptors (Chapter 16).....	30
17	Traffic and Transport (Chapter 17)	31
18	Land Use Planning (Chapter 18)	32
19	Climate Change (Chapter 19).....	32
20	Cumulative and In-combination Effects (Chapter 20)	33
	20.1 Introduction	33
	20.2 Inter-project effects	34
	20.3 Intra-project effects	35
21	Summary of Impacts (Chapter 21).....	35
22	Abbreviations/Acronyms	36

Image

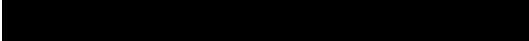
Image NTS1. Location of the proposed development	2
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Non-Technical Summary

This Non-Technical Summary (NTS) is designed to act as a summary of the Environmental Statement (ES) that has been prepared to inform Associated British Ports' (ABP) application for a Development Consent Order (DCO), which if approved, will authorise the construction and consequent operation of a new roll-on/roll-off (Ro-Ro) facility within the Port of Immingham. This proposed development will be known as the Immingham Eastern Ro-Ro Terminal (IERRT).

The site for the proposed IERRT lies within the eastern sector of the Port which is situated on the southern bank of the Humber Estuary between North Killingholme and Grimsby. The boundary of the proposed development is shown in Image NTS1.

This NTS follows the same structure as the ES, providing a summary of each chapter. The full results of the assessments that have been undertaken, together with the analyses and conclusions that have been used to underpin the environmental assessment of this proposed development, can be found in the ES document itself which is available to download from the project consultation website



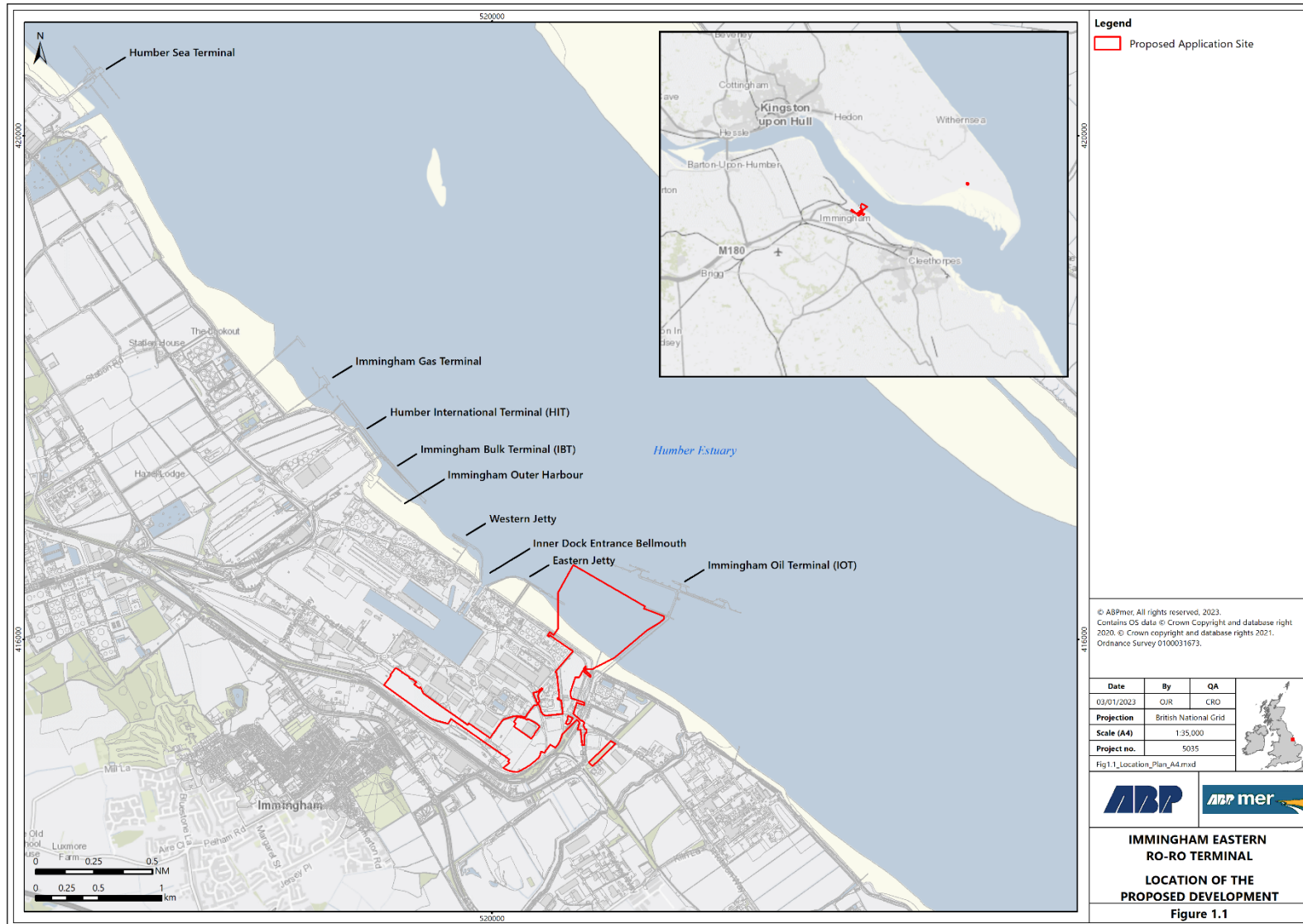


Image NTS1. Location of the proposed development

1 Introduction (Chapter 1)

1.1 Project background

- 1.1.1 ABP, the owner and operator of the Port of Immingham, is proposing to construct a new Ro-Ro facility within the Port. This facility is designed to service the embarkation and disembarkation of principally commercial cargo carried either by accompanied trailer or by lorry or on unaccompanied trailers which will be collected at the port of disembarkation. In addition to this wheeled cargo, the new facility will be designed to accommodate an element of passenger use, albeit only during those periods when the demands of the Ro-Ro cargo operation allow.
- 1.1.2 The proposed development will involve marine works within the Humber Estuary and landside works on the existing port estate.

Marine works

- 1.1.3 The marine works will comprise a number of distinct components, namely:
- An approach jetty from the shore;
 - A linkspan (a type of bridge used to allow vehicles to move on and off vessels) with bankseat (support) to provide a solid foundation;
 - Two secured floating pontoons;
 - Two finger piers to provide three berths (one on either side of the northern-most outer finger pier furthest from the shore, and one on the northern side of the southern-most inner finger pier) thereby enabling the vessels to berth alongside with their stern ramps resting on a floating pontoon which will match the rising and falling of the tide;
 - A capital dredge of the new berth pocket;
 - Disposal of dredged material at sea on the basis that no beneficial alternative use for the material has been identified; and
 - Possible inclusion of vessel impact protection measures to provide protection in the unlikely event of an errant vessel contacting the Immingham Oil Terminal (IOT) trunk way (ABP does not believe that such measures will actually be required, but it has been decided to make provision for them in the DCO application so as to ensure that the infrastructure is consented as part of the IERRT DCO should it be determined at some future date that they are required).

Landside works

- 1.1.4 The landside works will consist of the following:
- The demolition of four existing commercial buildings (and a 'lean-to' on one of the buildings). Two of the buildings, used by Malcolm West Fork Lifts, will be replaced within the existing site boundary but their relocation will facilitate the construction of the internal bridge (see below);

- The improvement of the surface of the development site so to enable it to accommodate the cargo which is either awaiting embarkation on to one of the Ro-Ro vessels or awaiting collection after disembarkation - together with a small vehicular passenger waiting area. These works will include resurfacing and the provision of new pavements and associated infrastructure across the site;
- The construction of a new terminal building and a small welfare building to provide facilities for terminal operational and administration staff, lorry drivers and passengers, together with a small workshop;
- The construction of UK Border Force buildings with check in area;
- The provision of necessary infrastructure such as substations and frequency converters;
- An internal vehicle access bridge linking the North and Central Storage Areas which will cross over Robinson Road (an existing port road) and an ABP controlled railway track;
- Improvements to the internal road layout within the Port together with improvements to East Gate comprising the widening of the existing entrance; and
- Off-site environmental enhancements involving the improvement of an existing area of woodland and the provision of intertidal habitat.

Consenting route

- 1.1.5 In view of the proposed capacity of the IERRT, which has to be sufficient to service the predicted throughput of wheeled cargo that the Terminal will be required to handle, the proposed development will be taken forward as a Nationally Significant Infrastructure Project (NSIP). In light of this, ABP will be submitting to the Secretary of State for Transport an application for a DCO for authority to construct and then operate the IERRT development. Additional consents and approvals that are required for the construction and operation of the IERRT development will, with the agreement of the appropriate consenting bodies, be incorporated within the final DCO.

1.2 Environmental Impact Assessment

- 1.2.1 The IERRT constitutes what is known as Schedule 1 development and as a consequence has to be taken forward as “*EIA development*” as defined by Schedule 1 of the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (as amended) (the EIA Regulations).
- 1.2.2 A formal request asking the Secretary of State for a Scoping Opinion was submitted to the Planning Inspectorate (PINS) in September 2021. PINS provided a Scoping Opinion on 25 October 2021. The information contained within the IERRT Scoping Opinion has been taken into account in the preparation of this ES.

1.3 Statutory and public consultation

- 1.3.1 For NSIPs, the pre-application process is usually undertaken in a number of stages:

- **Statutory Consultation and Preliminary Environmental Information Report:** Consultation on the preliminary environmental information – this is part of the required ‘statutory consultation’, the principal written element of which is the preparation and publication of a Preliminary Environmental Information Report (PEIR) which forms the basis of the public consultation;
- **On-going consultation:** An on-going process of consultation beyond the formal statutory consultation with a variety of bodies, regulators and interested parties to assist the evolution of the scheme; followed by
- **Finalisation of DCO application:** The preparation of the final ES, which accompanies the application for the DCO together with a number of related reports and documents;
- **Supplementary Statutory Consultation:** In the case of the IERRT project, however, following the first statutory consultation and following a detailed review and analysis of the responses received in relation to the published preliminary environmental information contained in the PEIR, ABP decided, as the scheme evolved, that a number of refinements and changes should be made to the development proposals as originally detailed by ABP in the PEIR. As a consequence, so as to ensure that all of the interested parties – from statutory consultees and stakeholders to the local community – fully understood what was being proposed, ABP decided to undertake a Supplementary Statutory Consultation, as noted below.

The first Statutory Consultation

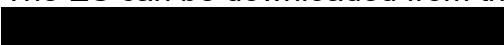
- 1.3.2 As part of the NSIP pre-application process, ABP was required to undertake a statutory consultation with amongst others, local authorities, statutory regulators, stakeholders and the local community. A Statement of Community Consultation (SoCC) was prepared in advance of the commencement of the consultation setting out how ABP intended to consult with the local community for this stage of the pre-application process. Formal statutory consultation commenced on 19 January 2022 and ended on 23 February 2022.
- 1.3.3 The PEIR provided the preliminary environmental information gathered in relation to the various elements of the proposed development which could have a significant environmental effect. Consultation bodies were then able to develop an informed view of the likely significant environmental effects of the proposed IERRT development and provide comments on the findings of the preliminary assessments presented in the PEIR.

The Supplementary Statutory Consultation

- 1.3.4 The information presented in the PEIR was further developed as the IERRT project evolved, both as a result of the continuing scheme design work, investigations and assessments and in light of the comments and representations received as part of the statutory consultation process – all of which have been fully taken into account in this ES.

- 1.3.5 This meant, however, that as result of this process of evolution, certain refinements and changes were made to the IERRT scheme as originally described in the PEIR published in January 2022.
- 1.3.6 As a consequence, ABP decided to undertake a second statutory consultation, known as the Supplementary Statutory Consultation. This second consultation ran from Friday 28 October 2022 to Sunday 27 November 2022. The Supplementary Consultation Report (SCR) produced for the consultation detailed and explained the refinements and changes that had been made to the scheme since the publication of the original PEIR.
- 1.3.7 The information originally presented in the PEIR has, therefore, been further developed and refined as the IERRT project has evolved, both as a result of the continuing scheme design work, investigations and assessments and in light of the comments and representations received as part of the statutory consultation process – which, as noted, included a supplementary statutory consultation process.

1.4 Document availability

- 1.4.1 The ES can be downloaded from the project consultation website –  This NTS of the ES is also available for download.

2 Proposed Development (Chapter 2)

2.1 Marine works

- 2.1.1 The proposed marine works will consist of:
- An open piled approach jetty with abutments which will be a maximum of 290 m in length, 10 m in width (though wider, up to 11 m, at the positions of the piles), and 12 m above chart datum (CD) in height. It will extend from the shore spanning the existing pipelines and the sea wall, and terminate at a newly created bankseat (foundation for linkspan);
 - The new bankseat will be designed to act as a strong fixed point within the entire structure held in place by a nest of piles and will act as a foundation for a hinged linkspan (linkspan bridge);
 - The linkspan will be a single structure which will span the distance between the bankseat and the first pontoon, with its free end resting upon the edge of this pontoon. The linkspan length will be a maximum of 90 m and will be optimised to ensure that vehicular accessibility from and to the berthed Ro-Ro vessels via the pontoons can be maintained at all states of the tide;
 - The floating pontoons (two in number) will be a maximum of 40 m x 90 m x 9.35 m and will each be secured in place by two restraint dolphins (groups of piles arranged together to provide mooring points) which will ensure that they can range up and down freely with the tide;

- The two pontoons will be linked with another linkspan bridge up to 20 m in length which will hinge on one of the pontoons with the free end resting on the other;
- Positioned perpendicular to each floating pontoon and extending away in a north westerly direction will be two open piled finger piers, each up to 270 m in length, 6 m in width (though wider, up to 13 m, at the positions of the piles);
- The northern finger pier will be lined with fender panels on both sides and equipped with mooring infrastructure (fixed bollards and/or quick-release hooks) so that vessels can berth on either side of each pier (i.e., providing up to two berths). The southern finger pier will be constructed with a berthing face to its northern elevation only (it will also be lined with fender panels and equipped with mooring infrastructure) and consequently there are three berths in total;
- A capital dredge will be required to ensure accessibility and safe mooring for vessels at all states of the tide. The berthing area will be dredged to 9 m below Chart Datum (CD), including allowance for the general tolerances of the dredging equipment. The dredge berth pocket will be optimised to include side slopes so as to ensure its stability. The area beneath the floating pontoons will be dredged to 6 m below CD;
- There are considered to be no feasible alternative beneficial uses for the dredged material given the material quality which has a low potential bearing capacity, and the absence of any project in the locality requiring infill material. Therefore, the dredge material is considered suitable for disposal at sea, and it is estimated that a maximum of 190,000 m³ of material in total will require disposal. This is estimated to consist of 40,000 m³ of boulder clay and 150,000 m³ of sand/silt (alluvium) which is proposed to be disposed of at the existing licensed disposal sites HU056 (Holme Channel) and HU060 (Clay Huts) respectively; and
- Vessel impact protection measures may be required to provide protection in the unlikely event of an errant vessel contacting the IOT jetty. The impact protection structure will be installed, if required, adjacent to the IOT approach jetty to south of the IOT finger pier and would be a maximum of 160 m in length.

2.2 Landside works

2.2.1 The proposed landside works include the following:

- The Terminal will be separated into four distinct areas known as the Northern Storage Area, Central Storage Area, Southern Storage Area, and Western Storage Area. Resurfacing and the provision of new pavements and associated infrastructure are required in these areas. This will provide suitable areas to accommodate wheeled cargo and heavy goods vehicles (HGVs) either awaiting embarkation or collection, together with essential storage;
- The Northern Storage Area (just over 4 hectares) will provide some 240 trailer bays and 40 container ground slots. A new substation will be constructed together with the provision of an area for the siting of a frequency converter station for shore power provision to the berths. The

demolition and removal of a number of existing commercial buildings are also required to the south of Northern Storage Area to make way for the internal bridge (see below);

- The Central Storage Area (3.56 hectares) will provide some 160 trailer bays, 75 staff parking spaces, and 15 equipment parking spaces. A small workshop with fuel station will also be provided;
- The Southern Storage Area (just over 11 hectares) will include provision for some 410 trailer bays, 80 pre-gate parking spaces, 80 staff parking spaces, 40 passenger parking spaces, 15 large passenger parking spaces, 20 tugmaster parking spaces, and marshalling/holding lanes for accompanied freight and passenger vehicles;
- A terminal building (maximum of 40 m x 15 m in size, and limited to 10.5 m in height) will be located in the Southern Storage Area. In addition, a number of ancillary buildings will be constructed in the Southern Storage Area including a welfare building for HGV drivers and passengers awaiting embarkation (maximum footprint of 16 m x 8 m, and maximum height of 4.5 m) and various inspection and administrative buildings as required for the UK Border Force. The buildings themselves will not exceed two storeys in height and will generally resemble the style of buildings that already exist within the port estate;
- The Western Storage Area (9.6 hectares) will provide some 630 trailer bays.
- A two-lane bridge will be required to ensure contiguous terminal operations between the currently separate Northern and Central Storage Areas. The bridge will cross over Robinson Road – an existing dock road - and an ABP controlled railway line;
- Improvements to the East Gate entrance to the Port to facilitate the movement of vehicles through the East Gate from the public highway which comprise the widening of the existing entrance road by 4 m to accommodate an extra inbound lane with a newly constructed security gate house;
- Internal road and footway improvements within the Port estate;
- The provision of remotely operated barriers to provide access to and from the proposed development;
- The terminal areas will be fully fenced and will also require adequate lighting and security provision, which in most areas will simply represent a replication of lighting and infrastructure already present within the port estate;
- Electrical power will be provided to the Northern, Central, Southern and Western Storage Areas, associated buildings and infrastructure from existing ABP owned substations within the Port; and
- Appropriate drainage and services infrastructure will also be provided throughout the new terminal area as necessary.

2.3 Environmental enhancements

- 2.3.1 ABP has included an environmental enhancement scheme as part of the IERRT Project. This will involve the improvement of an existing area of woodland named Long Wood, owned by ABP, located to the south of Laporte Road, measuring approximately 1.17 ha.

3 Details of Project Construction and Operation (Chapter 3)

3.1 Construction phase

- 3.1.1 The construction methodology is presented based on the development as described above. As is often the case for major infrastructure projects, the construction methodology described below may be further refined as part of the ongoing detailed design process.
- 3.1.2 A Construction Environmental Management Plan (CEMP) has been prepared and is submitted with this ES as part of the IERRT Development Consent Order (DCO) application. The CEMP is designed to capture site-specific procedures and mitigation measures to reduce environmental impacts during construction.

Marine works

- 3.1.3 The marine works involve the following stages:
- Dredging and disposal of material at licenced marine disposal sites;
 - Construction of the approach jetty spanning the intertidal area consisting of a series of multi piled and two piled transverse rigid frames – both vibratory and percussive piling techniques will be used. The piles will support a concrete deck which will be craned into position and filled with *in situ* concrete;
 - Construction of a landside approach ramp to the jetty using sheet piling techniques or a similar earth retaining structure;
 - Linkspan and pontoons construction, which will be fabricated off-site and craned and floated into place, respectively;
 - Construction of two open piled finger piers which will be constructed adopting the same approach as for the approach jetty; and
 - Vessel impact protection construction, if required, supported by piles.

Landside works

- 3.1.4 The landside works are currently envisaged to involve the following stages:
- Site clearance and land preparation;
 - Soil stabilisation;
 - Drainage and installation;
 - Services installation;
 - Paving/hardstanding installation;
 - Building construction;
 - Bridge construction;
 - Mechanical and electrical works; and
 - Security and systems including fencing and CCTV.

Construction waste

- 3.1.5 As much of the landside construction waste as possible will be re-used as infill within the development to minimise the amount of waste that needs to be removed from site. A site waste management plan, appended to the CEMP, has been prepared and is submitted with the ES as part of the IERRT DCO application. It sets out the proposed waste recovery and disposal system for all land-based waste generated by the proposed development. It also includes an assessment of the impact of the waste arising from the proposed IERRT development on the capacity of waste management facilities to deal with other waste arising in the area for at least five years of operation.

Construction programme

- 3.1.6 It is envisaged that construction works will start in early 2024 and will have been largely completed by mid-2025. Capital dredging works would necessarily be undertaken 24 hours a day, 7 days a week, and would take around 80 days in early to mid-2024. It is estimated that piling works would be undertaken for approximately 24 weeks in total. These would be scheduled to commence in early 2024 on the northern (outer) finger pier.
- 3.1.7 A second and alternative construction programme scenario would involve a sequenced construction period. Under this scenario, construction of the northern finger pier (accommodating two berths) would commence in early 2024 and become operational around mid-2025. Following this, and at the same time as operation of the northern finger pier, the innermost southern finger pier (accommodating the third berth) would be constructed. Under this scenario, the southern finger pier would be completed in late 2026 when the third berth would become operational. Under the second scenario piling works for the northern finger pier, approach jetty, and pontoons would be scheduled to be carried out for an approximate 24-week period starting in early 2024, followed by a second approximate 13-week period in mid-2025 to construct the southern finger pier.

3.2 Operational phase

Terminal operations

- 3.2.1 The Terminal will operate 24 hours a day, seven days a week closing for Christmas Day (though with lower activity at night compared to the day). However, in the future – subject to market demand – the IERRT may operate for 365 days a year. It is envisaged that it will generally be the case that three vessels will be handled at the IERRT per day, one per berth, with the vessels likely to arrive in the morning and depart in the evening. The berthing facilities have been designed to handle vessels with a length overall (LOA) of 240 m, a breadth of 35 m, and a draught of up to 8 m. Tug vessels will help to manoeuvre the arriving vessel onto the berth when required based on operational requirements (e.g., during adverse weather and/or tidal conditions). Ship to shore power will also be made available and used

- where practicable. This will enable berthed vessels to connect to the port electricity grid allowing them to shut down the onboard power generation units while at berth.
- 3.2.2 The annual throughput of the IERRT has been capped at 660,000 Ro-Ro cargo units per year. Outbound accompanied cargo will arrive at the Terminal and, after having relevant paperwork checked and processed, drive onto the Ro-Ro vessels ready for departure. Inbound accompanied HGVs will roll straight off the vessel and leave the Terminal.
- 3.2.3 Outbound unaccompanied trailers will arrive at the terminal over a period of time prior to the sailing (this could extend to a number of bays) before being stored within the Terminal until they are ready to be moved onto the Ro-Ro vessels by the Terminal operators. Inbound unaccompanied cargo will be unloaded from the vessels and then stored within the Terminal until they are ready to be collected.
- 3.2.4 Passengers will be allowed to use services operating from the IERRT during those periods when the demands of the Ro-Ro cargo operations permit – servicing the needs of the commercial sector taking priority. Any passenger use of the IERRT, however, will be limited to 100 departing members of the public on any one day. All passengers will only be allowed to travel by vehicle – there will be no foot passengers.

Operational waste

- 3.2.5 This will comprise general waste from the Terminal building, the welfare building, the operations team on the ground, the workshop and the UK Border Force building. An operational waste management plan will be put in place to manage waste produced within IERRT during operation. Ship waste will be handled outside of the UK given facilities to handle this waste are already in existence for the intended ferry routes.

Maintenance dredging and disposal

- 3.2.6 Maintenance dredging will be required in the same way as currently occurs at the Port of Immingham. The overall volumes of the maintenance dredging associated with the proposed IERRT development will be smaller compared to that of the capital dredging. The total future maintenance dredge volume is estimated to be 120,000 m³ annually. Maintenance dredge campaigns will be undertaken throughout the year as required for safe access to the berths. The maintenance dredge arisings will be transported by barge to the existing Clay Huts (HU060) licensed disposal site.

3.3 Environmental management best practice procedures

- 3.3.1 Best practice environmental management techniques which follow appropriate industry guidelines will be implemented by contractors during construction.

- 3.3.2 Adherence to environmental management best practice will be controlled through a CEMP in accordance with guidance. The CEMP is provided as part of the DCO application and sets out the mitigation measures needed to manage environmental effects during construction of the proposed IERRT development.

4 Needs and Alternatives (Chapter 4)

4.1 Need considerations

- 4.1.1 The need identified arises from a number of different national and local imperatives, objectives and matters of significance, including:
- **The need to ensure that the UK has sufficient Ro-Ro freight capacity** - Trade is of critical importance to the UK economy. The Government's ambition is to strengthen the UK's position as a great trading nation. Ports are an enabler of trade in goods and facilitate the most efficient form of carrying imports and exports to the rest of the world. One of the key means by which trade is handled through UK ports is in the form of Ro-Ro freight cargo. By 2050 there is forecast to be, at a national level, an approximate 130 % increase in both Ro-Ro tonnage and units in comparison to the position in 2016. Strong growth in Ro-Ro freight traffic within the Humber region over the same period is also predicted. It is clearly, therefore, imperative that the UK has sufficient Ro-Ro freight capacity to meet both current and future demand.
 - **The need to ensure that sufficient Ro-Ro freight capacity of the right type is in a location where it is required** - The National Policy Statement for Ports (NPSfP) highlights that port capacity must be in the right place if it is to effectively and efficiently serve the needs of import and export markets. The Humber Estuary is well placed within the UK for the handling of Ro-Ro freight for a number of reasons, including:
 - Its natural deep channels and marine accessibility allows Ro-Ro vessels to be accommodated at all states of the tide meaning that Ro-Ro services can operate to their own defined timetable ensuring that customers have certainty over the length of time it takes to deliver or receive goods;
 - Its location within an overnight sailing time of key European ports, enabling daily timetabled Ro-Ro services to operate which is important in terms of journey time reliability and certainty;
 - Its ability to service a large in land area of the UK, in particular the large distribution centres and centres of populations in the Midlands and North of the UK;
 - Its good inland road transport connections;
 - Its position as part of the 'land bridge' that links Northern Ireland and Ireland with Europe; and
 - The existence of necessary support services and expertise within the locality.

- **The need to ensure that the UK has resilient and competitive Ro-Ro freight capacity** - The NPSfP makes clear that in addition to meeting overall demand and ensuring that capacity is located where it is required, the total need for port infrastructure also depends upon the need to ensure effective competition and resilience in port operations. In terms of resilience matters, the NPSfP highlights that spare capacity helps to assure the resilience of the national infrastructure. Recent supply chain events within the UK – in particular the supply chain vulnerabilities exposed by Brexit and COVID – have highlighted the need for the country to have resilient and competitive trading options.
- **The lack of suitable Ro-Ro facilities on the Humber Estuary to meet the current and future needs of an existing Ro-Ro operator – Stena Line**, one of Europe’s leading Ro-Ro companies, requires a new long-term facility from which to operate services from the Humber to mainland Europe. The existing services are heavily utilised.
- **The implementation of the Government’s levelling up agenda:** The ‘Levelling Up’ agenda is a fundamental policy of the UK Government. This policy aims to reduce the imbalances, primarily economic, between areas and social groups in the UK, without any consequential detriment to existing prosperous parts of the UK. As a result of the levelling up of the UK economy, it is considered that there will be increased demand for the facilities and infrastructure which enable the UK to trade with the rest of the world within the north of the country.
- **A move away from reliance upon the short straits for the handling of Ro-Ro freight:** It is considered that there will be a move away from some Ro-Ro freight being transported across the short straits corridor to such freight transiting the North Sea routes as a result of:
 - Resilience issues associated with the short strait facilities resulting from the UK’s exit from the European Union;
 - The short strait corridor requiring additional HGV miles and driver time for freight to be moved to / from the North and the Midlands in comparison with the North Sea routes, a significant issue having regard to HGV driver shortage issues;
 - The road route to and from the short strait corridor is highly susceptible to disruption and congestion;
 - A move to a supply chain model which incorporates a more robust degree of contingency and accepts longer, but potentially more reliable, transport and distribution times;
 - The need to reduce road travel from a greenhouse gas emissions (GHG) perspective given the UK Government’s drive toward net zero;
 - The continuing development of trade with Eastern Europe, which does not necessarily require the short access connection to North-West mainland Europe provided by the short straits corridor; and
 - The continued development of the ‘land bridge’ system from Europe to Ireland, which is most appropriately served by facilities within the Humber area.

4.1.2 In addition to the overall growth in the amount of Ro-Ro freight that is predicted, the above demonstrates that there is specific and on-going demand for further Ro-Ro freight capacity within the Humber Estuary.

4.2 The statement of need

4.2.1 Against the preceding contextual background, the following statement of need has been defined:

4.2.2 There is an imperative need to provide additional appropriate Ro-Ro freight capacity within the Humber Estuary in order to meet the growing and changing nature of demand, and thereby strengthen the estuary's contribution to an effective, efficient, competitive and resilient UK Ro-Ro freight sector.

4.3 The objectives which a solution should meet

4.3.1 The objectives – which arise out of the statement of need and the background context to it - have been identified as being to provide the Humber Estuary with the ability to:

- (i) Meet the urgent needs of an existing Ro-Ro freight operator, Stena Line, with an established customer base;
- (ii) Provide for, at least, a proportion of the predicted future demand for Ro-Ro freight capacity predicted within the estuary;
- (iii) Continue to effectively contribute to UK Ro-Ro port infrastructure flexibility and resilience;
- (iv) Continue to provide competitive Ro-Ro freight services and routes to and from existing and provide opportunities for routes to new markets; and
- (v) Make efficient and effective use of existing established land and water transport connections and infrastructure.

4.3.2 It is considered that the solution to meeting the need within the Humber Estuary can only be met by the provision of sufficient additional suitable berths and supporting landside storage capacity in a suitable location.

4.4 Consideration of alternatives

4.4.1 From the preceding analysis, it can be concluded that the Humber Estuary is the only realistic broad option available to meet the need which has been identified.

4.4.2 Furthermore, having regard to the size of vessels needing to be accommodated and the type of services to be accommodated, the solution to meeting the need in the form of additional Ro-Ro freight capacity has to be in a location that has, or would be able to be provided with, appropriate and unconstrained deep-water marine accessibility and suitable accompanying landside storage areas and appropriate connectivity.

4.4.3 From this analysis the conclusion reached is that this limits potential locations for the provision of a solution to:

- **A Port of Grimsby river frontage location** - The Port of Grimsby does not currently support Ro-Ro freight cargo. A significant deepening of the marine access channel would be required to provide the necessary marine access involving extensive dredging within the Humber European Marine site (consisting of the Humber Estuary Special Area of Conservation (SAC), Special Protection Area (SPA) and Ramsar site). In addition, there is a lack of sufficient landside space at the Port of Grimsby needed to support any additional marine capacity. The conclusion reached is that this location would not be able to provide a solution to the need which has been identified.
- **A Port of Hull river frontage location** - Whilst it may be possible to provide a new river frontage marine facility at the Port of Hull – albeit with some dredging and construction required within the Humber Estuary European Marine site - there would be insufficient suitable land available in or around the port estate to provide the necessary supporting landside facilities. Furthermore, the traffic generated by any new capacity at the Port of Hull would need to pass through the City of Hull. The location would also require additional sailing time for vessels. The conclusion reached is that this location would also not be able to provide a solution to the need which has been identified.
- **A Killingholme / Immingham river frontage location** - Land located between the existing CLdN Ports facility at Killingholme and the Port of Immingham is either in existing port related use or has consent in place to be developed as a marine energy park. The Killingholme facility, operated by CLdN Ports, is an existing established facility that handles Ro-Ro freight cargo. At present there does not appear to be any opportunity to expand the footprint of the facility in any significant way. However, regardless of whether the Killingholme facility would be able to be expanded, it is not considered able to meet the needs of Stena Line – which is a key part of the overall need and objectives which have been identified. Whilst existing Ro-Ro facilities within the Humber Estuary may well and are likely going to need to develop in order to meet the overall forecast growth in the Ro-Ro freight sector on the Humber – on the basis of current information ABP considers that existing facilities do not have sufficient available capacity to be able to meet the specific need which it has identified.

The area east of the Port of Immingham would require significant jetty approaches to reach deeper water or a large capital dredge programme and would be disproportionately expensive to develop.

In respect of the Port of Immingham, the eastern extent of the port estate is able to provide both the necessary marine infrastructure and landside facilities. It is, therefore, concluded that it would be possible to provide a solution to meeting the need at the Port of Immingham.

- 4.4.4 In summary, the conclusion reached by ABP is that the only solution to the need and objectives which has been identified is the provision of new Ro-Ro freight capacity within the eastern extent of the Port of Immingham.
- 4.4.5 As a result of responses received during the statutory consultation exercise, ongoing consultation with stakeholders and bodies, and the ongoing design and assessment work, the form of the proposed solution has been determined.

5 Legislative and Consenting Framework (Chapter 5)

- 5.1.1 The proposed development exceeds throughput thresholds set down in sections 14 and 24 of the Planning Act 2008 (PA 2008) and, therefore, constitutes an NSIP. As a result, ABP will submit to the Secretary of State for Transport an application for a DCO under section 37 of the PA 2008 which if granted, will authorise the construction and consequent operation of the IERRT.
- 5.1.2 In deciding an application for a DCO, the Secretary of State must have regard to, amongst other things, “*any relevant national policy statement to which the application relates*” (section 104 (2) of the PA 2008). For the purpose of this proposed development, the relevant national policy statement is the NPSfP.
- 5.1.3 Whilst the DCO will be ‘all-encompassing’ in terms of granting the necessary authorisations for the construction and operation of the new facility, the proposed development will require a range of consents and approvals in compliance with different enabling and authorising legislative provisions. ABP’s approach to consents for the IERRT proposal is to fit within this legislative intent and to include as many consents as practicable within the IERRT DCO.
- 5.1.4 A number of assessments have been completed in support of the IERRT DCO application:
- **Environmental Impact Assessment** - the ES which forms part of the IERRT DCO documentation – of which this NTS forms a part – provides all of the relevant EIA information that is required by the EIA Regulations.
 - **Habitats Regulations Assessment (HRA)** – an HRA has been prepared as part of the DCO application which provides the competent authority (the Secretary of State for Transport) with sufficient information to undertake an Appropriate Assessment of the implications of the proposals in light of conservation objectives of European Sites (the Humber Estuary SAC, SPA and Ramsar site). The HRA undertaken demonstrates that, whilst the potential for a likely significant effect cannot

be discounted, the IERRT project does not generate an adverse effect on the integrity of the Humber Estuary EMS.

- **Water Framework Directive (WFD) Assessment** – a WFD Compliance Assessment has been produced which demonstrates how the proposed development complies with the objectives of the WFD. The assessment demonstrates that there is no potential for the IERRT project to prevent the achievement of good status within any water bodies and that the project complies with the objectives of the WFD.
- **Waste Hierarchy Assessment (WHA)** – a WHA has been produced to determine the Best Practical Environmental Option (BPEO) for dealing with the dredge arisings. This has considered options for waste in order of most to least favoured - prevention, re-use, other recovery and disposal.
- **Navigational Risk Assessment (NRA)** – navigational risk requires consideration by the Harbour Authority in its role as the Statutory Harbour Authority (SHA) and a NRA has been prepared to addresses how the phases of the project should be managed to a point where risk is reduced and considered to be ‘as low as reasonably practicable’.
- **Flood Risk Assessment (FRA)** - a site and development specific FRA has been prepared to consider flood risk to the IERRT development as well as the implications of the development on flooding elsewhere.
- **Transport Assessment** - this assessment reviews the impact on both the local and strategic road network (SRN) and reflects discussions with National Highways and the relevant local Highway Authorities (North Lincolnshire and North East Lincolnshire).
- **Policy Conformance Assessment** - a policy conformance assessment has been undertaken in support of the application for the IERRT. This provides a review of the proposed development against the NPSfP the East Inshore Marine Plan and the local development plan for the main part of the site of the IERRT – the North East Lincolnshire Local Plan 2013 to 2032; as well as other key policies.

5.1.5 The key policies and documents that are relevant to the principle of the IERRT development include the following:

- NPSfP;
- United Kingdom (UK) Marine Policy Statement (MPS);
- East Inshore and East Offshore Marine Plans;
- National Planning Policy Framework (NPPF);
- Maritime 2050 – Navigating the future;
- North East Lincolnshire Local Plan 2013 - 2032; and
- Greater Lincolnshire Strategic Economic Plan 2014 - 2030.

6 Impact Assessment Approach (Chapter 6)

6.1 Scope of assessment

- 6.1.1 An application for a Scoping Opinion was made to the PINS in September 2021 to confirm the scope of the EIA for the proposed development (ABPmer, 2021). Following this, statutory consultation on the preliminary environmental information, as presented in the PEIR, was undertaken as required under Sections 42 and 47 of the PA 2008. A further statutory consultation then took place following the publication of the SCR.
- 6.1.2 Based on expert judgement and feedback provided by PINS and consultees, the following EIA topics or receptors were identified as having the potential to be affected by the proposed development and were scoped into this ES:
- Physical processes;
 - Water and sediment quality;
 - Nature conservation and marine ecology;
 - Commercial and recreational navigation;
 - Coastal protection, flood defence and drainage;
 - Ground conditions, including land quality;
 - Air quality;
 - Airborne noise and vibration;
 - Cultural heritage and marine archaeology;
 - Socio-economic;
 - Traffic and transport;
 - Land use planning;
 - Climate change; and
 - Cumulative and in-combination effects.
- 6.1.3 The Transboundary Regulation 32 of the Infrastructure Planning (EIA) Regulations 2017 was considered to apply to Iceland and Denmark given that bird species within the Humber Estuary, which are qualifying features of the Humber Estuary Special Protection Area (SPA), migrate to these countries for the summer months. Therefore, the states of Iceland and Denmark have been notified of the proposed development.
- 6.1.4 However, based on the evidence and assessment (see the Natural Conservation and Marine Ecology chapter (Chapter 9) of this ES), effects on European Economic Area (EEA) States are not anticipated given the predicted localised and insignificant effects of the proposed development on the relevant qualifying features of the SPA.
- 6.1.5 A number of topics/receptors have not been specifically assessed in detail in this ES as they will not be significantly affected by the proposed development, namely:
- Terrestrial ecology;

- Landscape and visual (including seascape); and
- Operational waste.

6.2 Consultation

6.2.1 ABP has held a number of meetings with regulators and key stakeholders, including (but not limited to) the Environment Agency, the Health and Safety Executive (HSE), National Highways, North East Lincolnshire Council, North Lincolnshire Council, PINS, Natural England, MMO, Historic England and Port stakeholders (customers, tenants, land interests, service providers and competitors).

6.2.2 Consultation with a number of bodies has also been carried out to obtain baseline information and further advice on the environmental assessments (e.g., confirming survey methodologies, approach to the assessment for each environmental topic, discussing impact assessment outcomes) in support of the applications for the proposed development where required.

6.3 Impact assessment methodology

6.3.1 All of the technical aspect assessments have been undertaken on the basis of a common understanding of the proposed development. The spatial and temporal extent of each specialist assessment varies depending upon the environmental aspect being considered.

6.3.2 For some disciplines, specific guidance on EIA and the approach to assessment is available, while others rely on best practice. Each individual chapter details whether the assessment methodology is based on published guidance and industry standards, or a specific methodology is followed based on professional judgment.

EIA team

6.3.3 The EIA team consists of ABPmer, Adams Hendry Consulting Ltd, AECOM Ltd, Wessex Archaeology, David Tucker Associates (DTA) and Kent Energies UK Ltd. ABPmer has the Institute of Environmental Management and Assessment (IEMA) Quality Mark, as does AECOM Ltd and Adams Hendry Consulting Ltd, demonstrating their commitment to excellence in leading the co-ordination of statutory EIAs in the UK. All members of the project team are suitably experienced in respect of the topics covered.

6.4 Study area

6.4.1 The scope of the study area to be considered is defined on the basis of the proposed design for the development. It has also taken into account the spatial and temporal extent (zone of influence) of the likely significant effects that could arise from the proposed development, their importance in a geographical context, as well as the sensitivities of the relevant topics/receptors. A study area has been defined for each assessment topic and is specified within each individual EIA topic chapter.

7 Physical Processes (Chapter 7)

- 7.1.1 This chapter of the ES provides an assessment of the potential significant effects of the proposed IERRT on physical processes in the marine environment, specifically hydrodynamics (water flows), sediment transport, plume dispersion (from sediment disturbed by dredging) and waves.
- 7.1.2 Baseline conditions were characterised through a desk-based study and project-specific surveys and assessments including bathymetric (sea bed depth) and topographic (LiDAR) data, geophysical survey of the seabed, hydrodynamic and wave data using wave and current profilers and water quality sensors and collection of site-specific marine sediment samples.
- 7.1.3 The Humber Estuary has a macro (large) tidal range, fast flows and a high background Suspended Sediment Concentration (SSC). This means the bed of the estuary is very dynamic in its form and can vary on both short term and longer time scales. The dominant influences on estuary structure are tides, waves and freshwater flows, tidal surges and biological activity.
- 7.1.4 Flows at Immingham are aligned approximately east-southeast on the ebb to west-northwest on the flood. The proposed development site is generally protected from large waves approaching from the North Sea. Across the 20 sediment samples collected to inform the IERRT study, the average bed composition is 78 % mud, 22 % sand and no gravel material.
- 7.1.5 The assessment undertaken in relation to physical processes, has identified the potential 'exposure to change' resulting from the impact pathways, but not the significance of any effects. The consequent significance of effects resulting from changes to physical processes on other environmental features/receptors have been assessed in other topic-specific chapters of the ES, namely Water and Sediment Quality (Chapter 8), Nature Conservation and Marine Ecology (Chapter 9), Commercial and Recreational Navigation (Chapter 10) and Coastal Protection, Flood Defence and Drainage (Chapter 11).
- 7.1.6 During construction there may be an increase in SSC and sedimentation related to the capital dredge, disposal and piling. The assessment concluded an overall **low** exposure to change as the peak increases will remain within the envelope of natural variability in background SSC and sedimentation in the marine environment is likely to be the same as that which already occurs from existing maintenance dredging.
- 7.1.7 Impacts on local hydrodynamics and sediment transport arising from ship wash and vessel propulsion are unlikely to impact on local flows across the adjacent intertidal area or impact on local accretion or erosion processes. The assessment concluded an overall **low/negligible** exposure to change.

- 7.1.8 In line with best practice, steps will be taken to minimise the initial reduction in water depth and any environmental changes at the disposal sites by targeting of disposal loads in the central/deeper areas of the disposal sites.
- 7.1.9 The pathways of change during the operational phase of the proposed development, include changes to flow regime with a vessel at the berth, changes to the local wave regime, and changes to the sediment transport regime and potential effects on sedimentation rates (and hence the potential for maintenance dredging). The overall exposure to change for all pathways was assessed as **low**.

8 Water and Sediment Quality (Chapter 8)

- 8.1.1 This chapter of the ES provides an assessment of the potential significant effects of the proposed IERRT on water and sediment quality (dissolved oxygen and contaminants) within the marine environment.
- 8.1.2 Baseline conditions were determined through a desk-based review of available information. A project-specific sediment contamination survey has also been undertaken.
- 8.1.3 The IERRT and disposal sites are located within the Humber Lower WFD water body (ID: GB530402609201). The current (2019) overall status of this waterbody is 'moderate', with an ecological potential of 'moderate', and a chemical status of 'fail' due to the presence of priority substances and priority hazardous substances exceeding threshold concentrations (environmental quality standards). Environment Agency water quality monitoring data reflect these failures.
- 8.1.4 The sediments from most of the locations sampled within the proposed dredge area were dominated by silts, with a few samples predominantly comprising sand material and/or a low proportion of gravel. Contaminants analysed from sediment samples were generally at low concentrations, and all results were well below the thresholds that would consider the material unsuitable for disposal at sea. In general, concentrations were typically higher in surface samples compared to those obtained at depth.
- 8.1.5 The assessment of the potential changes in water and sediment quality considered a total of six impact pathways over construction and operational phases, including changes in dissolved oxygen and chemical water quality, and the redistribution of sediment-bound contaminants as a result of sediment disturbance and increases in SSCs.
- 8.1.6 Increases in SSC will be short-term and localised to the dredging and disposal activities and any reduction in dissolved oxygen concentration will be short-lived and replenished over the subsequent tidal cycle. It is considered unlikely that the proposed dredging and disposal activities would cause even a short-term deterioration in water quality with regards to contaminants. In addition, the redistribution of sediment from disposal

activities is not expected to lead to elevated concentrations of contaminants above prevailing background levels. All of the potential impacts on water and sediment quality were assessed as **insignificant to minor adverse** and not significant.

- 8.1.7 The assessment takes into account the measures that have already been built into the design of the proposed development to minimise and/or avoid the potential for effects, including the application of environmental best practice management measures to minimise the potential risk from any accidents and spillages/leaks during construction.

9 Nature Conservation and Marine Ecology (Chapter 9)

- 9.1.1 This chapter provides an assessment of the potential significant effects of the proposed IERRT on nature conservation and marine ecology, specifically nature conservation designations and protected species, benthic habitats and species, fish, marine mammals and coastal waterbirds.
- 9.1.2 Baseline conditions were determined through a desk-based review of available information, which includes data from the Humber Estuary collected and analysed by ABPmer for over 20 years. A project-specific benthic survey was also undertaken to characterise seabed habits and species in the proposed dredge and disposal footprints.
- 9.1.3 The IEERT site falls within the boundaries of the Humber Estuary SAC, SPA and Ramsar site. The Humber Estuary Site of Special Scientific Interest (SSSI) also overlaps part of the project site. The Holderness Inshore Marine Conservation Zone (MCZ) is the nearest MCZ to the proposed development, located approximately 20 km away. There are numerous records of protected species in the Humber Estuary including birds, seals, dolphins, fish, eels and marine invertebrates. The site footprint overlaps protected intertidal mudflat habitat.
- 9.1.4 The assessment considered a total of 20 impact pathways over construction and operational phases, including the direct loss of habitat, direct and indirect changes to habitats and species, changes in water and sediment quality, the potential introduction and spread of non-native species, underwater noise and vibration, airborne noise and visual disturbance. Effects from changes in air quality on nature conservation receptors are considered in Chapter 13.
- 9.1.5 The assessment concluded that there was no potential for impacts on features of conservation importance of MCZ or SSSI. Potential impacts on features of internationally designated sites (SACs, SPAs and Ramsar sites) are assessed within the HRA. This concluded that the IERRT project is not considered to result in an adverse effect on site integrity.

- 9.1.6 The impacts on benthic habitats and species were assessed as **insignificant to minor adverse** and not significant. In line with best practice, steps will be taken to minimise changes to habitats and species as a result of sediment deposition during disposal by targeting of disposal loads in the central/deeper areas of the disposal sites to reduce the reduction in depths. Biosecurity control measures will be included within the CEMP to reduce the risk of introduction and spread of non-native species.
- 9.1.7 The impacts on fish from changes to habitat and water and sediment quality were assessed as **insignificant to minor adverse** and not significant.
- 9.1.8 The assessment identified potential impacts on migratory fish and marine mammals from underwater noise and vibration during percussive (impact) piling. Mitigation measures were developed to reduce the risk of exposure and level of impact. These measures include:
- Applying soft start procedures during piling;
 - Use of vibro piling where possible;
 - Seasonal piling restrictions;
 - Night time working restrictions and the use of Marine Mammal Observers.
- 9.1.9 With the inclusion of these mitigation measures the residual impacts on fish and marine mammals were assessed as **minor adverse** and not significant.
- 9.1.10 The impacts on coastal waterbirds from loss or changes to habitat during construction and changes to foraging and roosting habitat during operation were assessed as **insignificant to minor adverse** and not significant.
- 9.1.11 The assessment identified potential impacts on coastal waterbirds from noise and visual disturbance during construction. To reduce this impact the following mitigation measures will be included:
- Restriction of certain construction activities to avoid construction on the approach jetty and inner finger pier during winter months (October to March);
 - Placement of an acoustic barrier/screening on construction barges and the approach jetty to limit disturbance during construction;
 - The use of a noise suppression system during piling associated with the outer finger pier;
 - Applying soft start procedures during piling; and
 - Restriction of construction activities in cold weather when birds are considered more vulnerable to disturbance.
- 9.1.12 On a precautionary basis screening will be installed for two years during the operational phase to reduce potential visual disturbance stimuli to waterbirds on the foreshore. With the inclusion of mitigation measures the residual impacts on coastal waterbirds during construction and operational phases were assessed as **minor adverse** and not significant.

10 Commercial and Recreational Navigation (Chapter 10)

- 10.1.1 This chapter provides an assessment of the potential effects of the proposed development on commercial and recreational navigation.
- 10.1.2 Baseline conditions were determined through a desk-based review of available information, which includes data from the Automatic Identification System (AIS), marine accident/incident data and information from nautical charts.
- 10.1.3 IERRT is located fully within the Port of Immingham Statutory Harbour Authority (SHA) area where ABP is the SHA. In this capacity, ABP is charged with a set of powers and duties which include the management and regulation of the safety of navigation and marine operations in its SHA area. The AIS data show regular use by port service craft (tugs, pilot boats, survey, line handling vessels etc.) and tankers in the vicinity of the proposed IERRT. There are no recreational facilities based at the Port of Immingham, however there are approximately 1,000 permanent berths in the wider Humber Estuary. Analysis of incident data show an annual frequency of 183.4 incidents with the most frequent incident type being categorised as 'equipment failure (vessel)'.
- 10.1.4 The assessment considered a total of 21 impact pathways over construction and operational phases, including the possibility of contact of works craft with port infrastructure and contact of commercial vessels with marine works, collision of passing vessels with works craft, payload related incidents, collision due to increased commercial vessel movements, collision with passing traffic, contact with the quay, vessel mooring failure. Consideration was also given to seven potential risks to commercial and recreational navigation as a result of the overlapping construction and operation of the IERRT project. Without mitigation the potential impacts on commercial and recreational navigation are assessed as intolerable and therefore potentially **significant** in EIA terms without further mitigation.
- 10.1.5 In order to avoid and/or reduce the impacts, a number of mitigation measures are proposed, including communications with the port, agreeing a contractor Risk Assessment Method Statement (RAMS), ensuring the availability of emergency services equipment, provision and maintenance of aids to navigation, updated local instructions on arrival/sailing parameters, all construction craft to have AIS equipment, project specific adaptive procedures and a safety boat to be ready on standby during construction activities.
- 10.1.6 The assessment concludes that with the risk assessment and applied controls that all potential impacts on commercial and recreational navigation are tolerable and **not significant**.

11 Coastal Protection, Flood Defence and Drainage (Chapter 11)

- 11.1.1 This chapter provides an assessment of the potential significant effects of the proposed IERRT on coastal protection, flood defence and drainage receptors, namely people, property, infrastructure, flood defence assets, drainage and sewer systems and waterbodies.
- 11.1.2 Baseline conditions were established based on the collation and review of a wide range of data and information from published material and through consultation with statutory bodies and other stakeholders. The assessment is supported by a Drainage Strategy which outlines how surface water runoff will be managed on site.
- 11.1.3 The IERRT site lies within Flood Zone 3a (high flooding risk) and the wider port has a history of flooding from tidal surges, notably in 1953 and again in 2013, however the IERRT site did not flood during this event. There are tidal flood defences in place along the entire south bank of the Humber Estuary. The sea walls along the length of the operational Port of Immingham consist of concrete sheet piled walls and concrete revetment walls topped with rock filled gabion baskets. Lock gates are used to control water levels within the enclosed dock part of the Port of Immingham. The flood defences provide flood protection to the IERRT site up to and including the 1 in 200 year return flood event. The main residual risks of flooding are associated with a storm surge event (which would overtop the flood defences) and flooding should the flood defences fail.
- 11.1.4 The assessment considered a total of 16 impact pathways over construction and operational phases, including the exposure to floodwater, changes in tidal regime, floodplain inundation from tidal, river and surface water flood sources, changes to flow regimes and/or water levels, and changes to surface water run-off rates and volumes.
- 11.1.5 The assessment identified potential impacts on human health from exposure to floodwater which could occur during construction and operational phases. Mitigation measures were developed to reduce the risk including having a site induction, inclusion of the site within the Port of Immingham flood response plan and registration with the Environment Agency Flood Warnings Direct Service. No work will take place on site during a flood warning period. With the inclusion of these mitigation measures the residual impacts on human health were assessed as **slight adverse** and not significant.
- 11.1.6 Existing development (on-site and off-site) could potentially be impacted by floodplain inundation during both construction and operational phases. During construction this risk would be managed by maintaining overland flow paths and temporary drainage. During operation the standard of protection provided by the flood defences will be improved in line with

regional and local 'hold the line' management policies and flood resilience and resistant measures will be embedded into the design. With the inclusion of mitigation measures the residual impacts on existing development is **neutral or slight adverse** and not significant.

- 11.1.7 To minimise impacts to surface water bodies and drainage infrastructure temporary drainage facilities (e.g. swales) will be provided during the construction phase resulting in a **neutral** impact. Drainage infrastructure will be designed in line with the Drainage Strategy to reduce surface water run-off rates/ volumes from the site compared to pre-development scenario. Therefore during operation the impact on surface waterbodies and drainage infrastructure is assessed as **slight to moderate beneficial**.

12 Ground Conditions, Including Land Quality (Chapter 12)

- 12.1.1 This chapter provides an assessment of the potential significant effects of the proposed IERRT on geology, soils and contaminated land. The receptors considered in this assessment are human health, an ecological system or organism within such a system, geology, property in the form of buildings and services, and controlled waters (surface water courses and groundwater).
- 12.1.2 Baseline conditions were determined through a desk-based review of available information, supplemented by a walkover. In addition, a Ground Investigation (GI) was carried out in May 2022 following a previous GI undertaken in 2020 which has also been used to inform the assessment. A further confirmatory GI has also been undertaken which includes provision for ongoing monitoring works as is normal for a project such as the IERRT.
- 12.1.3 The majority of the site is artificial made ground. The bedrock geology is predominantly Flamborough Chalk Formation (also a Principal Aquifer) overlain by Devensian (Glacial) Till. Superficial deposits across the site mainly comprise tidal flat deposits (clays and silts) with the estuary banks being characterised by beach and tidal flat deposits (clay, silt and sand). There are historical landfills located on the site which contain inert, industrial, commercial and household waste. There are three unnamed surface watercourses to the east of the site boundary and a further 37 unnamed surface watercourses within 250 m radius of the site.
- 12.1.4 The assessment considered a total of eight impact pathways on different receptors over construction and operational phases, including the direct contact with contamination, the inhalation of dust and/or soil derived vapours, the migration and accumulation of ground gas, the lateral and vertical migration of contamination through groundwater and surface run-off.

- 12.1.5 The assessment identified potential impacts on human health during construction and operational phases from direct contact with contaminated soils and inhalation of dust and/or soil derived vapours. During construction there is also the potential for exposure to ground gas. With the inclusion of mitigation including the adherence to environmental good practice measures and ensuring compliance with confined space legislation, the impacts are assessed as **neutral to slight adverse** and not significant.
- 12.1.6 With the incorporation of mitigation the potential impacts on geology, soils, groundwater and surface water during construction and operation range from **neutral to slight adverse** and are not significant. Mitigation includes adhering to the CEMP, following environmental good practice and pollution prevention guidance, undertaking a foundation works risk assessment for piling operations and implementing measures detailed in piling method statements. In addition, provision has been made for further mitigation measures to be captured within the final remediation strategy for the project should this prove necessary following receipt of the final GI report.
- 12.1.7 During construction and operation there are potential impacts on properties from the migration and accumulation of ground gas and the lateral and vertical migration of contamination through groundwater and surface run-off. These impacts will be mitigated by adopting safe working practices under relevant health and safety legislation and implementing ground gas protection measures into design and build structures. The residual impacts range from **neutral to slight adverse** and are not significant.

13 Air Quality (Chapter 13)

- 13.1.1 This chapter provides an assessment of the potential significant effects of the proposed IERRT on local air quality. The assessment considers potential impacts on human health and nature conservation receptors.
- 13.1.2 Baseline conditions were determined through a desk-based review of available information and a project-specific air quality survey which was undertaken to characterise baseline nitrogen dioxide (NO₂) concentrations.
- 13.1.3 The assessment considered four impact pathways which were categorised as either onsite or offsite emissions sources. During construction onsite emission sources included construction dust, site plant and vessel emissions and during the operational phase onsite emissions comprised vessel, land-tug and road traffic emissions. Offsite emission sources in both construction and operational phases included road traffic emissions on the local and Strategic Road Network.
- 13.1.4 The assessment identified that in the absence of mitigation there is potential for significant impacts (**moderate adverse**) on human health and nature conservation receptors during construction from the effects of unmitigated dust.

- 13.1.5 A range of mitigation measures have been incorporated to avoid and/or reduce significant adverse impacts as far as possible. These include standard practice dust mitigation, implementation of a travel plan during construction and operation, use of designated construction routes, onsite speed limits, prohibiting idling engines, and selective catalytic reduction on vessels main engine emissions. With the incorporation of mitigation, the significance of potential impacts on human health and nature conservation receptors is assessed as **negligible** and not significant.

14 Airborne Noise and Vibration (Chapter 14)

- 14.1.1 This chapter provides an assessment of the potential significant effects of the proposed IERRT on Noise Sensitive Receptors (NSRs), including residential and non-residential receptors during construction and operation.
- 14.1.2 Baseline conditions were determined by sound surveys to characterise the sound climate at the nearest NSRs on Kings Road, Queens Road and along the A160 near South Killingholme. Sound surveys were also undertaken at locations within the Port representative of non-residential NSRs and ecological receptors along the Humber Estuary. These surveys have been supplemented by a desk-based review of available baseline information.
- 14.1.3 The existing baseline sound climate at the Port of Immingham is dominated by port operations, together with noise from the industrial / commercial premises on the north side of the A1173 and Immingham Lorry Park, as well as road traffic noise on the A1173 and surrounding local roads.
- 14.1.4 The assessment considered five impact pathways over construction and operational phases, including potential noise and vibration impacts associated with construction activities on site, potential noise impacts associated with traffic movements during construction and operation, and potential noise impacts associated with vessel movements, other site activities and mechanical plant during operation.
- 14.1.5 During the construction works the crusher and associated screening plant will be located a minimum of 250 m away from the on-site NSRs and temporary acoustic screening will be erected either around construction plant operating near the on-site Health building or around the on-site Health building itself throughout the construction works. In the absence of further mitigation the potential impacts during construction were assessed as **negligible to minor adverse** and not significant, with the exception of landside activities (site clearance and demolition, drainage, piling and building construction, bridge works and the cumulative of all activities) on two on-site office building receptors. Under a worst-case scenario the noise from construction is considered to be a **moderate adverse** significant effect.

- 14.1.6 To avoid and/or reduce these significant impacts to acceptable levels, standard noise mitigation measures are proposed during construction. , All external windows and doors facing the construction works in the office and health buildings on-site will remain closed. With inclusion of these mitigation measures the residual impacts are assessed as **negligible to minor adverse** and not significant.
- 14.1.7 Although the initial vibration assessment indicates that significant effects on nearby buildings or structures due to construction vibration are unlikely, a piling specific community liaison protocol will be developed so that businesses/ occupiers are kept informed of the piling activities, their duration, and their expected impact.
- 14.1.8 During operation impacts on NSR from on-site activities range from **minor adverse to major adverse**. The assessment identified significant impacts to on-site receptors (office buildings) which are located in the vicinity the IERRT landside activities. It also identified potential for **moderate adverse** significant impacts to NSRs along Queens Road due to traffic noise.
- 14.1.9 To avoid and/or reduce these significant impacts to acceptable levels, standard best practice noise mitigation measures will be put in place which include vehicles being prohibited from engine idling on site, and mandatory speed limits will be enforced. In addition the use of electric reefers across the lorry parks to power refrigerated units (to minimise the need for diesel power), the phasing out of diesel-powered land-tugs for electric battery powered land-tugs, and the use of other electric powered site plant, are all likely to become more common in future years which will help reduce the noise associated with diesel engines. The external windows and doors of the on-site NSRs facing the IERRT are to remain closed and alternative means of ventilation used, the internal design criterion for office and health buildings are met and additional noise insulation to sensitive/habitable rooms at the affected facades of residential properties on Queens Road will be offered. With inclusion of these mitigation measures the residual impacts are assessed as **negligible to minor adverse** and not significant.

15 Cultural Heritage and Marine Archaeology (Chapter 15)

- 15.1.1 This chapter provides an assessment of the potential significant effects of the proposed IERRT on cultural heritage and marine archaeology. The assessment considers potential impacts on seabed prehistory (e.g. palaeolithic artefacts), seabed features (e.g. shipwrecks), intertidal heritage receptors and on the historic setting of the Port of Immingham.
- 15.1.2 The historic environment baseline was defined through a desk-based review of available information and project-specific surveys. A geophysical survey was carried out to characterise features of archaeological potential and was

- supported by analysis of sediment logs from vibrocores. An intertidal walkover survey and a setting assessment were also completed.
- 15.1.3 Twenty-five palaeogeographic (historical seabed) features of archaeological potential have been identified within the study area. There are two known wreck sites and 102 seabed features which have possible archaeological potential within the study area. The intertidal walkover identified four sites including remnants of mooring dolphins associated with the 20th century port.
- 15.1.4 The assessment considered three impact pathways from the construction phase in detail. These addressed the potential for direct impacts on known and potential heritage receptors from construction activities and from dredging, and the potential for indirect impacts to heritage receptors due to altered sediment or hydrological processes.
- 15.1.5 In the absence of mitigation the potential impacts during construction on seabed prehistory receptors, on potential maritime and aviation receptors (seabed features) and on unknown archaeological sites and artefacts were assessed as **moderate to major adverse**.
- 15.1.6 In order to avoid and/or reduce the significant impacts to **negligible** or potentially **major positive**, a number of mitigation measures are proposed including offsetting by means of geoarchaeological assessment (interpretation of the physical environment in which archaeological features are preserved) of geotechnical samples, micro-siting to avoid anomalies and the implementation of Archaeological Exclusion Zones (AEZs) where appropriate. A Protocol for Archaeological Discoveries (PAD) will be followed to reduce the potential for impacts on unexpected discoveries. These mitigation measures will be secured through a Written Scheme of Investigation (WSI).
- 15.1.7 Maintenance dredging takes place in areas where impacts have already occurred for the capital dredge during the construction phase and there are unlikely to be further impacts on heritage receptors either directly or indirectly. Operational phase impacts were therefore assessed as **negligible**. Impacts on setting were also considered within a 5 km buffer zone and were assessed as **negligible**.

16 Socio-economic Receptors (Chapter 16)

- 16.1.1 This chapter provides an assessment of the potential significant effects of the proposed IERRT on employment, local businesses, and the local population. The assessment considers receptors that will potentially be affected by employment generation.

- 16.1.2 Baseline conditions were determined through a desk-based review of available information which presents information on the local population and labour market, employment sectors, economic activity and inactivity, and workforce occupations.
- 16.1.3 The assessment considered a total of nine impact pathways including the changes to employment and impacts on the local economy (the Gross Value Added per construction worker), impacts on local services and infrastructure, impacts on existing businesses and activities, and changing influx of works during construction and operation. In addition, the potential impact on temporary accommodation during construction was also assessed.
- 16.1.4 The assessment concluded that the IERRT project will have a **minor to moderate beneficial** impact on the Grimsby local economy, through the provision of employment and through an associated increase in local employment arising from indirect and induced effects (the multiplier effect) of the construction and operational activities.
- 16.1.5 All other impacts during construction and operational phases, including those on local services and existing businesses and activities, were assessed as **negligible** and not significant.

17 Traffic and Transport (Chapter 17)

- 17.1.1 This chapter provides an assessment of the potential significant effects of the proposed IERRT on terrestrial traffic and transportation. The assessment considers users of the public highway in the vicinity of the site (pedestrians, cyclists and public transport users), private car and van drivers, and existing freight traffic users of the port and surrounding areas.
- 17.1.2 Baseline conditions were informed by traffic count surveys carried out on the local road network at various locations. Traffic flow data from the Department for Transport (DfT) and Personal Injury Accident data from North East Lincolnshire Council were also collated.
- 17.1.3 The assessment considered a total of 12 impact pathways including impacts associated with potential severance, driver delay, pedestrian delay and amenity, accidents and safety, hazardous or abnormal loads, and fear and intimidation during construction and operational phases. All of the potential impacts were assessed as **insignificant to minor adverse** and not significant.

18 Land Use Planning (Chapter 18)

- 18.1.1 This chapter provides an assessment of the potential significant risks of the IERRT on land use planning and human health. Specifically, it considers the potential for workers and users of the IERRT to be exposed to unacceptable levels of risk from potential major accidents at the existing major hazard sites, pipelines, and explosives sites in the vicinity.
- 18.1.2 A desk-based review identified a number of current major hazard sites, pipelines and explosives sites where major accidents could impact on the area of the proposed development. The risks from each hazard were assessed based on an approach adopted by the HSE for land use planning, with some additional quantitative risk analysis to provide a better understanding of the risks.
- 18.1.3 The assessment indicates that, for most of the IERRT, the levels of risk are sufficiently low that the HSE would not normally advise against the development on the grounds of safety. A possible exception is related to the small number of workers within the Development Proximity Zone (the zone closest to the boundary of the hazardous installation). This risk has been discussed with the HSE who has advised that what is being proposed would be acceptable, in view of the small number of people (all workers), that will only be present for a short time and will be spread out over a large area. The assessment also emphasised the importance of there not being more than 100 members of the public present at any one time in the waiting area of the Terminal.
- 18.1.4 The design and layout of the proposed development has been deliberately arranged in order to minimise major accident hazard risks as far as possible, by reducing the number of people in high-risk areas and ensuring that any areas with potentially significant numbers of members of the public are located in areas of the lowest risk. There are **no significant impacts** resulting from the proposed IERRT development in terms of land use planning or human health.

19 Climate Change (Chapter 19)

- 19.1.1 This chapter provides an assessment of the potentially significant effects of the proposed development in relation to climate change. Consideration of climate change effects is divided into three aspects: Impact of the IERRT project on climate (GHG emissions); Climate Change Resilience (CCR) review of the proposed development to climate change; and in-combination climate change impacts (ICCI).
- 19.1.2 A desk-based review identified the relevant receptors and considered the relevance to the GHG impact assessment, CCR review and ICCI assessments. The baseline for GHG emissions was defined as a 'business

as usual' scenario where the IERRT project does not go ahead. For CCR the baseline is derived from historical climate data obtained from the Met Office recorded by the closest meteorological station to the IERRT project for the period 1981-2010.

- 19.1.3 In line with guidance all GHG emissions are classified as being significant because all emissions contribute to climate change. To contextualise the significance level, the GHG emissions from construction and operation were compared to the UK Carbon Budgets. Based on this comparison the annualised total construction and operational GHG are less than 1 % of the relevant UK Carbon Budgets. Therefore, the magnitude of impact during construction and operation is considered '**low**'. As such, the construction and operation of the IERRT project is not expected to affect the UK in meeting its Carbon Budgets.
- 19.1.4 The assessment considers a worst-case scenario and opportunities have been identified to implement mitigation measures to further reduce operational energy use emissions. Mitigation measures being considered to reduce GHG emissions include provision of shoreside electrical power to ships at berth, electric vehicle charging points, electric tugs for shunting, and electric reefer gantry chargers.
- 19.1.5 A review of the potential impacts to the CCR receptors assessed nine impact pathways including inaccessibility to the site, health and safety risks; unsuitable site conditions, damage to construction materials, plant equipment, assets, and infrastructure, and increased operational cooling requirements. The assessment concluded there would be **no significant** effects from climate change on the IERRT project during the construction or operational phases.
- 19.1.6 Mitigation measures have been built into the IERRT project to address potential climate events including keeping under review the standard of protection afforded by the existing flood defences, consideration of the flood risk assessment and latest projected peak rainfall intensity allowances within the Drainage Strategy, and measures outlined in the British Design Standards to address increasing average temperatures and increasing frequency of hot days and heatwaves.

20 Cumulative and In-combination Effects (Chapter 20)

20.1 Introduction

- 20.1.1 This chapter presents the approach to, and initial stages of, the assessment of the cumulative and in-combination effects of the proposed development.

20.2 Inter-project effects

- 20.2.1 The assessment of cumulative and/or in-combination effects of the proposed development on other plans, projects and activities, which are referred to as inter-project effects, involve identifying and assessing any potential overlap or interaction of effects arising from other plans, projects and activities with the effects arising from the proposed development on the receptors/topics considered in the ES.
- 20.2.2 In accordance with PINS Advice Note 17, a staged approach has been taken to the inter-project effects assessment. The stages comprise:
- Stage 1 (establishing a long list of other developments);
 - Stage 2 (establishing a short list of developments from the Stage 1 long list);
 - Stage 3 (gathering information on the short listed developments); and
 - Stage 4 (undertaking an assessment of the cumulative effects of the short list developments with the IERRT project).
- 20.2.3 The ES reflects the latest position of relevant other developments proposed within the vicinity of the IERRT project. Comments received during ongoing consultation have also been taken into account as part of the assessment process.
- 20.2.4 The long list of developments and activities (Stage 1) includes 62 projects. There are eight NSIPs within the area of search (10 km).
- 20.2.5 At Stage 2 the short list of developments carried forward comprised the following: three applications being taken forward under the Marine Licence regime; four projects being taken forward under the Town and Country planning regime (two major and two non-major developments as defined by the appropriate planning legislation); and eight NSIPs. At Stage 3, information was gathered for each of these shortlisted developments.
- 20.2.6 At Stage 4, an assessment of potential significant cumulative effects was carried out for developments and activities that were shortlisted at Stage 2. Each environmental topic was reviewed to determine where cumulative and/or in-combination effects could occur. Where appropriate proposed mitigation measures were referenced.
- 20.2.7 All of the potential inter-project cumulative/in-combination effects were assessed as **insignificant to minor adverse**. The assessment therefore concluded there would be **no significant** cumulative or in-combination effects from on the IERRT project with other developments during the construction or operational phases. It is recognised that in some cases further information on some developments would improve confidence in this conclusion.

20.3 Intra-project effects

- 20.3.1 The assessment of cumulative and/or in-combination effects of the proposed development alone, which are referred to as intra-project effects, involves identifying the impact pathways from the individual EIA topic assessments (Chapters 7 to 19) that may have residual adverse impacts and considering whether and to what degree they might have the potential to act on the same receptor.
- 20.3.2 From a review of the topic assessments in the ES, the following receptors have been identified as having the potential to result in intra-project effects:
- Water and sediment quality;
 - Benthic habitats and species;
 - Fish;
 - Marine mammals;
 - Coastal waterbirds;
 - Human population / residents;
 - Flood defences;
 - Soils/groundwater; and
 - Existing development/property (building and services).
- 20.3.3 The impact pathways identified within each topic chapter of this ES as having residual adverse impacts (i.e., minor adverse or greater) that have the potential to act on the same receptor were assessed.
- 20.3.4 All of the potential intra-project cumulative/in-combination effects were assessed as **insignificant to minor adverse**. The assessment therefore concluded there would be **no significant** cumulative or in-combination intra-project effects.

21 Summary of Impacts (Chapter 21)

- 21.1.1 This chapter summarises the key outcomes of the assessment of potential impacts associated with the construction and operation of the proposed development on all relevant (scoped-in) topics/receptors.
- 21.1.2 Standard best practice procedures and impact reduction measures are identified to avoid and/or minimise significant adverse impacts as far as practicable. With the adoption of appropriate mitigation, it is considered that all significant adverse impacts associated with the proposed development can be avoided and/or minimised to acceptable levels.

22 Abbreviations/Acronyms

Acronym	Definition
ABP	Associated British Ports
AEZ	Archaeological Exclusion Zones
AIS	Automated Identification System
AMEP	Able Marine Energy Park
BPEO	Best Practical Environmental Option
CCR	Climate Change Resilience
CD	Chart Datum
CEMP	Construction Environmental Management Plan
COVID	Coronavirus
DCO	Development Consent Order
DfT	Department for Transport
DPZ	Development Proximity Zone
DTA	David Tucker Associates
EIA	Environmental Impact Assessment
EMS	European Marine Site
ES	Environmental Statement
FRA	Flood Risk Assessment
GHG	Greenhouse Gas
HGV	Heavy Goods Vehicle
HRA	Habitats Regulations Assessment
HSE	Health and Safety Executive
ICCI	In-combination Climate Change Impacts
IEMA	Institute of Environmental Management and Assessment
IERRT	Immingham Eastern Ro-Ro Terminal
IOT	Immingham Oil Terminal
LiDAR	Light Detection and Ranging (remote sensing technology)
MCZ	Marine Conservation Zones
MHWS	Mean High Water Springs
MMO	Marine Management Organisation
MPS	Marine Policy Statement
NPPF	National Planning Policy Framework
NPSfP	National Policy Statement for Ports
NRA	Navigational Risk Assessment
NSIP	Nationally Significant Infrastructure Projects
NSR	Noise Sensitive Receptor

NTS	Non-Technical Summary
PA	Planning Act
PAD	Protocol for Archaeological Discoveries
PEIR	Preliminary Environmental Information Report
PINS	Planning Inspectorate
PLC	Public Limited Company
RAMS	Risk Assessment Method Statement
Ramsar	Wetlands of international importance, designated under The Convention on Wetlands (Ramsar, Iran, 1971)
Ro-Ro	Roll-on/Roll-off (Ro-Ro)
RSPB	Royal Society for the Protection of Birds
SAC	Special Area of Conservation
SSC	Suspended Sediment Concentration
SHA	Statutory Harbour Authority
SoCC	Statement of Community Consultation
SSSI	Site of Special Scientific Interest
SPA	Special Protection Area
SRN	Strategic Road Network
SSC	Suspended Sediment Concentrations
UK	United Kingdom
WFD	Water Framework Directive
WHA	Waste Hierarchy Assessment
WSI	Written Scheme of Investigation

Cardinal points/directions are used unless otherwise stated.

SI units are used unless otherwise stated.

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