



# Immingham Green Energy Terminal

TR030008

Volume 7

7.1 Planning Statement

Appendix G – Design Evolution

Planning Act 2008

Regulation 5(2)(p), 5(2)(q) & 6(3)

Infrastructure Planning (Applications: Prescribed  
Forms and Procedure) Regulations 2009 (as  
amended)

September 2023

# Infrastructure Planning

## Planning Act 2008

The Infrastructure Planning  
(Applications: Prescribed Forms and  
Procedure) Regulations 2009 (as amended)

# Immingham Green Energy Terminal

## Development Consent Order 2023

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### Appendix G – Design Evolution

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<b>Regulation Reference</b>	APFP Regulation 5(2)(p), 5(2)(q) & 6(3)
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# 1 Design Evolution

## 1.1 Introduction

1.1.1 Appendix G to the Planning Statement outlines how the design for the Project has evolved and how good design has been delivered.

1.1.2 In summary, the Project comprises:

- a. The construction of a jetty in the Humber Estuary, up to 1.2km in length, topside infrastructure, a single berth and related landside infrastructure including, but not limited to, a jetty access ramp, a flood defence access ramp and works to raise the seawall locally under the jetty access ramp, which qualifies as an Nationally Significant Infrastructure Project.
- b. Associated landside development including a jetty access road and hydrogen production facility, including ammonia storage tank, hydrogen production units and liquefiers, hydrogen fuelling and filling stations and associated buildings, infrastructure and apparatus including pipelines and utilities.

1.1.3 Collectively, these components are referred to as “the Project”.

1.1.4 The Project has been subject to an iterative design development process which addresses the key opportunities and constraints of the Site and takes the surrounding context into account. The Project has also been informed by the process of environmental assessment, comments made during two rounds of statutory consultation and stakeholder input from statutory environmental bodies and North East Lincolnshire Council (“NELC”).

1.1.5 The **Consultation Report** and its **appendices [TR030008/APP/5.1]** explain how the Applicant has had due regard to the comments made during two rounds of statutory consultation. This includes whether a comment received has led to a design change.

1.1.6 This appendix should also be read alongside the following:

- a. **Chapter 2 The Project [TR030008/APP/6.2]** which provides a detailed description of the Project, including the Terminal and the landside infrastructure.
- b. **Chapter 3: Need and Alternatives [TR030008/APP/6.2]** which describes the alternatives considered in the development of the Project.

## 1.2 Consideration of the Site Context

1.2.1 The Project is located in North East Lincolnshire on the south bank of the Humber Estuary to the east of the Port of Immingham (“the Port”). The local area is dominated by industrial uses located around the deep-water port. This includes several deep-water jetties for bulk cargo and terminals for oil and gas. The site and its immediate surroundings are industrial in nature, as illustrated in the plates below.

**Plate 1: Station Road looking west towards North Killingholme and Lyndsey Oil Refinery**



**Plate 2: Station Road looking east towards Immingham HIT terminal**



**Plate 3: View from Public Right of Way Bridleway 36 looking south east along the flood defences**



**Plate 4: View from Queens Road looking east towards sub-station and Community Recycling Centre**



**Plate 5: View of the East Site looking east**



**Plate 6: View of Knauf, located opposite the West Site, on Kings Road**



**Plate 7: View of the West Site, looking south towards the Immingham Landfill, from Kings Road**



**Plate 8: View across the West Site looking west towards the Kings Road Power Station.**





**Plate 9: View of Laporte Road towards Polynt Composites**



1.3 Consideration of opportunities and constraints

1.3.1 The Site is located within and adjoining the established Port and within an area of growth for industrial development associated with port and logistics, as set out within NELC’s Local Plan (2). The area is characterised by heavy industrial uses with the Project being entirely appropriate for its location and context.

1.3.2 In terms of design, the Project’s location and its context presented a number of opportunities and constraints that were taken into account in the design development of the Project. These are summarised in **Table 1**.

**Table 1: Opportunities and constraints of the Project location and context**

Opportunities	
1	The Site is located within an area of growth for port and logistic developments through the North East Lincolnshire Local Plan with the allocation of the East and West Sites for employment use. The jetty, pipe rack and temporary construction areas between the East and West Site fall within the designated Port of Immingham.
2	There are no designated heritage assets within the Site.

3	There are no nationally designated landscapes within the Site.
4	Good transport access for the Project being located close to the strategic road network and a rail terminal within the Port of Immingham.
5	The majority of residential receptors located more than 460m west of the Site.
6	There are no Air Quality Management Areas (AQMA) within the Site or surrounding area.
7	Landside, the Site is low-lying and flat.
8	The East Site and Pipeline Corridor are designated as Grade Urban land, whilst the West Site is designated as ALC Grade 3b.
9	The Site is protected from tidal flood defences that are in place along the south bank of the Humber Estuary.
10	There are no historical flood records from groundwater flooding within the Site and the Site is at a low risk of flooding from surface water.
<b>Constraints</b>	
1	The Site is located within Flood Zone 3 and without the presence of flood defences the Site would be at high risk of tidal flooding from the Humber Estuary. There is an extensive network of ditches that drain the land.
2	The Site is within the Humber Estuary which is designated as a Special Area of Conservation (SAC), a Special Protection Area (SPA), Ramsar and Site of Scientific Interest (SSSI).
3	Laporte Road Brownfield Site LWS is located approximately 150m south-east of the Site.
4	The Long Strip woodland is protected by a Tree Preservation Order (No.107) and is also identified as a UK Priority deciduous woodland habitat, the importance of which is recognized in the National Policy Statement for Ports where it states that they should be protected from the adverse effects of development.
5	Bridleway 36, a Public Right of Way, runs through the eastern edge of the Long Strip, connecting users from Laporte Road to the coastal path that follows the Humber Estuary east to Grimsby. There is also a Public Footpath (No. 32) running north-west to south-east connecting Europa Way with Queens Road to the north, although this is not in active use.
6	The residential and residential/commercial properties located on the west side of Queens Road lie adjacent to the West Site.
7	Made ground is expected to be present across the majority of the Site.
8	Part of the Site falls within the Humber Estuary National Character Area (NCA), the Marine Character Area (MCA) 6:Humber Water, which is the second largest coastal plain estuary in the UK, the Regional Character Area (RCA) 3: The Northern Marshes, which is defined by the industrial features along the coast clustered

around the deep-water Port of Immingham and the Local Landscape Character Area (LCA) A – Humber Estuary.

- 1.3.3 The opportunities and constraints outlined above were taken into account at an early stage of design. The operational and safety requirements for the design of the Project, explained below, were also fundamental to design development.
- 1.4 Development of the design of the Terminal
- 1.4.1 The following section describes how the design of the Terminal has developed up to the point of the application for development consent.
- 1.4.2 The design of the Terminal must comply with Codes of Practice and British Standards as well as ensuring that the Project would not impact upon the existing operations and navigation of the Humber. In addition, there are functional requirements, design standards, design assumptions, design parameters and design load combinations for the marine and civil engineering works that must be taken into account. Therefore, in design terms the Terminal has to be functional and fit for purposes and there are limited opportunities to influence its visual appearance.
- 1.4.3 The design of the Terminal has been informed through iteration and has evolved over the design stage of the Project. Initial design development was informed by a preliminary Navigation Simulation (“NavSim”) which assessed options in terms of vessel interaction with the jetty head, tidal flow, safety, and the operation of the layout with other maritime traffic. The requirement for capital and maintenance dredging was also considered, considering both the environmental and economic effects of different dredge requirements. No major navigation hinderances to any option development was reported from the NavSim models.
- 1.4.4 The Scoping Report **Appendix 1.A [TR030008/APP/6.4]**, which was prepared to confirm the matters to be addressed within the environmental impact assessment (“EIA”), included a description of the key aspects of the marine infrastructure which formed part of the Project. At this stage the Project outlined in the Scoping Report included a jetty with an overall length of approximately 1.1km and a small capital dredge.
- 1.4.5 Following the receipt of the Inspectorate's Scoping Opinion **Appendix 1.B [TR030008/APP/6.4]**, the design of the Project evolved to take account of the feedback received.
- 1.4.6 The Preliminary Environmental Information Report provided more detail about the Terminal setting out that the jetty would be approximately 1.1km in length, include two berths and require a capital dredge of approximately 100,000m<sup>3</sup> to ensure accessibility and safe mooring for vessels on the western berth at all states of the tide. No capital dredge was expected to be required for the eastern berth (Berth 2).
- 1.4.7 Following the first Statutory Consultation, the design underwent further refinement to define the appropriate position for the Terminal in relation to the existing navigation channel in the Humber and the Terminal position relative to existing infrastructure. As such, the design was refined for the second Statutory Consultation to reflect an overall jetty length of approximately 1.2km and a single

berth, as it was confirmed that a single berth was able to accommodate the full range of vessels expected.

- 1.4.8 Extensive optioneering was undertaken to define the appropriate position for the jetty in relation to the existing navigation channel in the Humber and the jetty position relative to existing infrastructure. With these changes, the dredging requirements have been reduced with a capital dredge of approximately 4,000m<sup>3</sup>. Consequently, the need for future maintenance dredging within the new berth pocket is expected to be very limited (if required at all).
- 1.5 Development of the landside infrastructure and the hydrogen production facility
- 1.5.1 The Project includes landside infrastructure to serve the Terminal, and a hydrogen production facility. The following section describes how the design of these elements of the Project have evolved up to the point of the submission of the application for development consent. Given the design of the hydrogen production facility must comply with strict operational and safety requirements, buildings and structures need to be functional and fit for purpose. Therefore, there are limited opportunities to influence the layout and visual appearance of this part of the Project.
- 1.5.2 The Scoping Report **Appendix 1.A [TR030008/APP/6.4]**, included a description of the landside infrastructure and the hydrogen production facility across two sites – the East Site and the West Site. The Preliminary Environmental Information Report consulted upon at the first Statutory Consultation provided more detail about the landside infrastructure including the need for a jetty access road and confirmation that the number of hydrogen production units required was up to six units.
- 1.5.3 The Applicant made further changes to the design of the Project to minimise tree loss at the Long Strip woodland and consulted upon these in a second Statutory Consultation. The design was informed by a detailed tree assessment, set out in **Appendix 8.F Arboricultural Impact Assessment [TR030008/APP/6.4]** which concluded that the highest value tree in the Long Strip woodland was a veteran ash tree located in the north east corner of the woodland close to the sea wall, with high and moderate quality trees distributed throughout the remainder of the woodland. The design change sought to avoid the loss of the veteran tree through bringing the jetty access road along the western edge of the Long Strip woodland. The western section of the jetty access road and the electrical control building were also located within the East Site, rather than within the woodland, reducing the impact of the Project on the Long Strip woodland.
- 1.5.4 Other changes made and consulted upon in the second Statutory Consultation included an amended drainage design in relation to changes to the layout of the West Site, a permanent speed limit change on Laporte Road and the temporary diversion (rather than closure) of Bridleway 36 during construction of the Project.
- 1.5.5 Following the second Statutory Consultation, further changes have been made to the Site Boundary. The residential or part residential properties at Queens Road have been retained in the Site Boundary and the solely commercial properties have been excluded. Other changes to the Site Boundary included:

- a. Small reductions at locations around the Site to align with Land Registry title boundaries.
- b. The removal of the Immingham Oil Terminal Pipeline to ensure their operations were not affected.
- c. The reduction of the Order limits on a private road north of Laporte Road where no works are proposed.
- d. The removal of the Border Control Post and the Queens Road power station from the Site Boundary to ensure their operations were not affected.
- e. The removal of the pavement along Queens Road and Kings Road as this is not required.
- f. Reducing the southern boundary at the West Site as the land removed was no longer required.

1.5.6 **Figure 2-4** Site Boundary Changes between EIA Scoping Report (August 2022) and the Application (September 2023) of the **ES [TR030008/APP/6.3]** shows these changes.

1.5.7 As demonstrated, the design of the landside infrastructure and the hydrogen production facility has evolved from the scoping stage up to submission of the application for the Development Consent Order (“DCO”) through greater knowledge of site constraints, obtained through a combination of surveys, environmental assessment and feedback obtained from two rounds of statutory consultation and ongoing engagement.

1.5.8 In terms of the detailed design of the hydrogen production facility, this will be designed and regulated in accordance with the Health and Safety Executive’s requirements through the Control of Major Accidents and Hazards Regulations 2015 (Ref 1-2) , the Environmental Permitting (England and Wales) Regulations 2016 (Ref 1-3) and other applicable legislation, industry standards and best practice for the design of process equipment. As set out in **Chapter: 22 Major Accidents and Disasters [TR030008/APP/6.2]**, during the detailed design process, a number of approaches with regard to process safety and safeguarding, isolation, emergency shutdown, and if required, depressurisation will be developed. The Project detailed design process will also involve reviews of the layout and give due consideration both to the on-Site facilities design as well as the off-Site receptors.

## 1.6 Summary

1.6.1 This Appendix has set out the design evolution of the Project which has taken account of the opportunities and constraints of the Site, its location, site selection criteria, operational and safety requirements, environmental impact assessment, and comments received from two rounds of statutory consultation and ongoing engagement. The design evolution process has resulted in the description of the Project as set out in **Chapter 2: The Project [TR030008/APP6/2]** and secured in the **Works Plans [TR030008/APP/4.2]** and parameters which are described in section 4.3 of the Planning Statement.

- 1.6.2 The design of the Project is compatible with its location within and adjoining the Port, which is industrial in nature and supported in planning policy for growth in relation to port and logistics related development. Good design has been delivered by ensuring that marine side and land side infrastructure is functional and fit for purpose, avoiding and minimising adverse effects as far as reasonably possible. This accords with the approach to good design as set out in the National Policy Statement for Ports (Ref 1-4) which recognises that high quality and inclusive design goes far beyond aesthetic considerations.
- 1.6.3 As the Project has evolved the likely adverse environmental impacts have been reduced, for example, the design has been amended to reduce impacts upon the Long Strip woodland and avoid a veteran tree.
- 1.6.4 The Project in terms of its built form and scale would be similar to existing developments located within and adjoining the Port. The type of infrastructure proposed, and its potential appearance would therefore be in keeping with and appropriate for its context.

## 2 References

- Ref 1-1 North East Lincolnshire Council (2018). North East Lincolnshire Local Plan 2013 to 2032 (Adopted 2018)
- Ref 1-2 The Stationery Office Limited (2015) The Control of Major Accident Hazardous Regulations 2015.
- Ref 1-3 The Stationery Office Limited (2016) The Environmental Permitting (England and Wales) Regulations 2016.
- Ref 1-4 Department for Transport (2012). The National Planning Policy Statement for Ports.