Immingham Green Energy Terminal

9.3 Applicant's Responses to the Examining Authority's First Written Questions

(Responses to "Q1.5. Biodiversity")

Infrastructure Planning (Examination Procedure) Rules 2010

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Table of contents

Chapter **Pages**

1 Introduction

Overview

1.1 This document has been prepared to accompany an application made to the Secretary of State for Transport (the "Application") under section 37 of the Planning Act 2008 ("PA 2008") for a development consent order ("DCO") to authorise the construction and operation of the proposed Immingham Green Energy Terminal ("the Project").

1.2 The Application is submitted by Associated British Ports ("the Applicant"). The Applicant was established in 1981 following the privatisation of the British Transport Docks Board. **The Funding Statement [APP-010]** provides further information.

1.3 The Project as proposed by the Applicant falls within the definition of a Nationally Significant Infrastructure Project ("NSIP") as set out in Sections 14(1)(j), 24(2) and 24(3)(c) of the PA 2008.

The Project

1.4 The Applicant is seeking to construct, operate and maintain the Immingham Green Energy Terminal, comprising a new multi-user liquid bulk green energy terminal located on the eastern side of the Port of Immingham (the "Port").

1.5 The Project includes the construction and operation of a green hydrogen production facility, which would be delivered and operated by Air Products (BR) Limited ("Air Products"). Air Products will be the first customer of the new terminal, whereby green ammonia will be imported via the jetty and converted on-site into green hydrogen, making a positive contribution to the UK's net zero agenda by helping to decarbonise the United Kingdom's (UK) industrial activities and in particular the heavy transport sector.

1.6 A detailed description of the Project is included in **Chapter 2: The Project** of the Environmental Statement ("ES") **[APP-044]**.

Purpose and Structure of this Document

1.7 This document contains the Applicant's responses to those of the Examining Authority's Written Questions 1 **[PD-008]** grouped under the theme "Q1.5. Biodiversity". It represents one of a collection of eighteen such documents, each of which addresses a different theme.

1.8 Responses are ordered ascendingly by reference number, replicating the structure of the Examining Authority's Written Questions 1.

1.9 Responses are provided in a table. The text of the question appears on the lefthand side, with the Applicant's answer to its right.

1.10 Further materials pertinent to the Applicant's response are included at the end of the document as appendices where necessary.

2 Applicant's Responses to the Examining Authority's First Round of Written Questions

Q1.5. Biodiversity	
Q1.5.1 General	
Q1.5.1.1	
Question	**Response**
Confidence ES chapters [APP-050], [APP-051] and [APP-052] provide tables indicating the levels of confidence that the mitigation stated would result in the residual effects shown for each pathway. Provide explanation on how the levels of the confidence in ES [APP-050] have been reached, compatible to that shown in [APP-051] and [APP-052].	The approach to the levels of confidence between all three Environmental Statement ("ES") ecology chapters (**ES Chapter 8: Nature Conservation (Terrestrial Ecology) [APP-050]**, **ES Chapter 9: Nature Conservation (Marine Ecology) [APP-051]** and **ES Chapter 10: Ornithology [APP-052]**) is the same, i.e. the approach described at paragraphs 9.4.21 and 10.4.21 also was undertaken in relation to the confidence assessment undertaken in relation to assessment of the effects in Chapter 8. However, in **ES Chapter 8**, the justification for the level of confidence was not provided in **Table 8-6**. This is added in an updated right-hand column below and should be read alongside the full table in the Chapter which includes the mitigation. Given that this is additional information, it is not presented as an erratum. In summary, and for all receptors, the confidence is high as the baseline conditions are well defined and both the impacts and approaches to mitigation are well known. **Table 8-6: Summary of Assessment – Likely Significant Effects** (updated part table, additional detail to explain level of confidence added in right hand column)

Receptor	**Impact pathway**	**Residual effect**	**Confidence**
Construction Phase			

		Mature deciduous woodland	Pipe-rack and jetty access road construction resulting in loss of/damage to woodland habitat	Moderate adverse (Significant)	High: Baseline conditions and potential impacts on mixed deciduous woodland receptors are clearly defined	
		Bat roosts	Loss of minor tree roosts during Pipe-rack and jetty access road construction	Minor adverse (Not significant)	High: Baseline conditions and potential impacts on bat roosts receptors are clearly defined	
		Otter (foraging)	Noise and visual disturbance	Minor adverse (Not significant)	High: Good understanding of the potential effects of disturbance on foraging otter and effectiveness of proposed mitigation	
			Habitat damage/loss to habitats that may support foraging/ transient otter	Negligible (Not significant)	High: Baseline conditions and potential impacts on foraging otter as a receptor are clearly defined	
		Water Vole	Habitat damage/loss to ditch supporting water voles that will be culverted for the jetty access road	Minor adverse (Not significant)	High: Baseline conditions and potential impacts on water vole as a receptor are clearly defined	
			Noise and visual disturbance	Minor adverse (Not significant)	High: Good understanding of the potential effects of disturbance on water vole	

				and effectiveness of proposed mitigation
Operational Phase				
Bats (foraging)	Lighting disturbance	Minor adverse (Not significant)	High: Good understanding of the potential effects of disturbance on foraging bats and effectiveness of proposed mitigation
Otter (foraging)	Noise and visual disturbance	Negligible (Not significant)	High: Good understanding of the potential effects of disturbance on foraging otter and effectiveness of proposed mitigation
Water Vole	Noise and visual disturbance	Minor adverse (Not significant)	High: Good understanding of the potential effects of disturbance on water vole and effectiveness of proposed mitigation
Decommissioning Phase			
Otter (foraging)	Noise and visual disturbance	Minor adverse (Not significant)	High: Good understanding of the potential effects of disturbance on foraging otter and effectiveness of proposed mitigation

			Habitat damage/loss to habitats that may support foraging/ transient otter	Negligible (Not significant)	High: Baseline conditions and potential impacts on foraging otter as a receptor are clearly defined	
		Water Vole	Habitat damage/loss	Minor adverse (Not significant)	High: Baseline conditions and potential impacts on water vole as a receptor are clearly defined	
			Noise and visual disturbance	Minor adverse (Not significant)	High: Good understanding of the potential effects of disturbance on water vole and effectiveness of proposed mitigation	

Q1.5.1.3	
Question	**Response**
Clarification of distance The ES [APP-051, Paragraph 9.8.148] refers to a distance of 1-2 m from the source of impact marine piling 1.5m diameter piles. Is this supposed to read 1-2km?	This is an error in drafting and the distance of 1–2m should state 1–2km. This has been addressed in the **Table of Errata** submitted at Procedural Deadline A **[PDA-010]**.
Q1.5.2 Marine Ecology	
Q1.5.2.1	
Question	**Response**

Responding to NE and MMO Representation NE and the MMO has raised a series of concerns relating to the impact on Marine Ecology, including, but not limited to: loss of intertidal habitat, loss of sub-tidal habitat, underwater noise, air quality, effects of dredging and piling and cumulative effects. [RR-019] [RR-016]. Please respond to these concerns or justify in each instance why this is not necessary.	The Applicant can confirm that it has responded to all concerns relating to potential impacts on marine ecology in its response to the relevant representations made by both Natural England **[RR-019]** and Marine Management Organisation **[RR-016]**. These responses have been submitted at Deadline 1 **[TR030008/EXAM/9.2]**.
Q1.5.2.2	
Question	**Response**
Clarification of proposed piling times Clarification of proposed piling times MMO provides [RR-016, Paragraph 4.4.11] a proposed condition that "No marine piling of any kind is to be carried out between the hours of 07.00 and 19.00 during winter months and from sunrise to sunset during summer months"	The Applicant responds to parts (b) to (e) of the question as follows: b) A schedule of proposed seasonal restrictions for construction activity with respect to migratory fish and over wintering birds is provided in Table 1 below. The months for which a night-time piling restriction has been agreed with the Marine Management Organisation ("MMO") are set out in **Table 1**. Winter months are defined as March, September and October and summer months are defined as June and August. c)

a) MMO, correct these times in line with the body of your representation b) Applicant - Provide an update of the Table shared at ISH3 [EV5-006] [EV5-007] showing the proposed temporal and seasonal restrictions. c) Applicant – From this Table, signpost where the ">200m" information is provided within the ES. d) Applicant – With this Table, include a pictorial description of the limits of the "Jetty Head" and "Approach Jetty". e) Applicant and MMO – confirm whether the limits shown on this table have been agreed.	The "> *200m*" restriction is documented in **Section 10.9** of **Environmental Statement Chapter 10: Ornithology [APP-052]** and relates to ornithology and is secured by a condition in the Deemed Marine Licence in the **draft Development Consent Order [PDA-004]**. d) **Figure 1** illustrates the location of the jetty head and approach jetty. e) The underwater noise restrictions shown in **Table 1** are in the process of being agreed with the MMO.

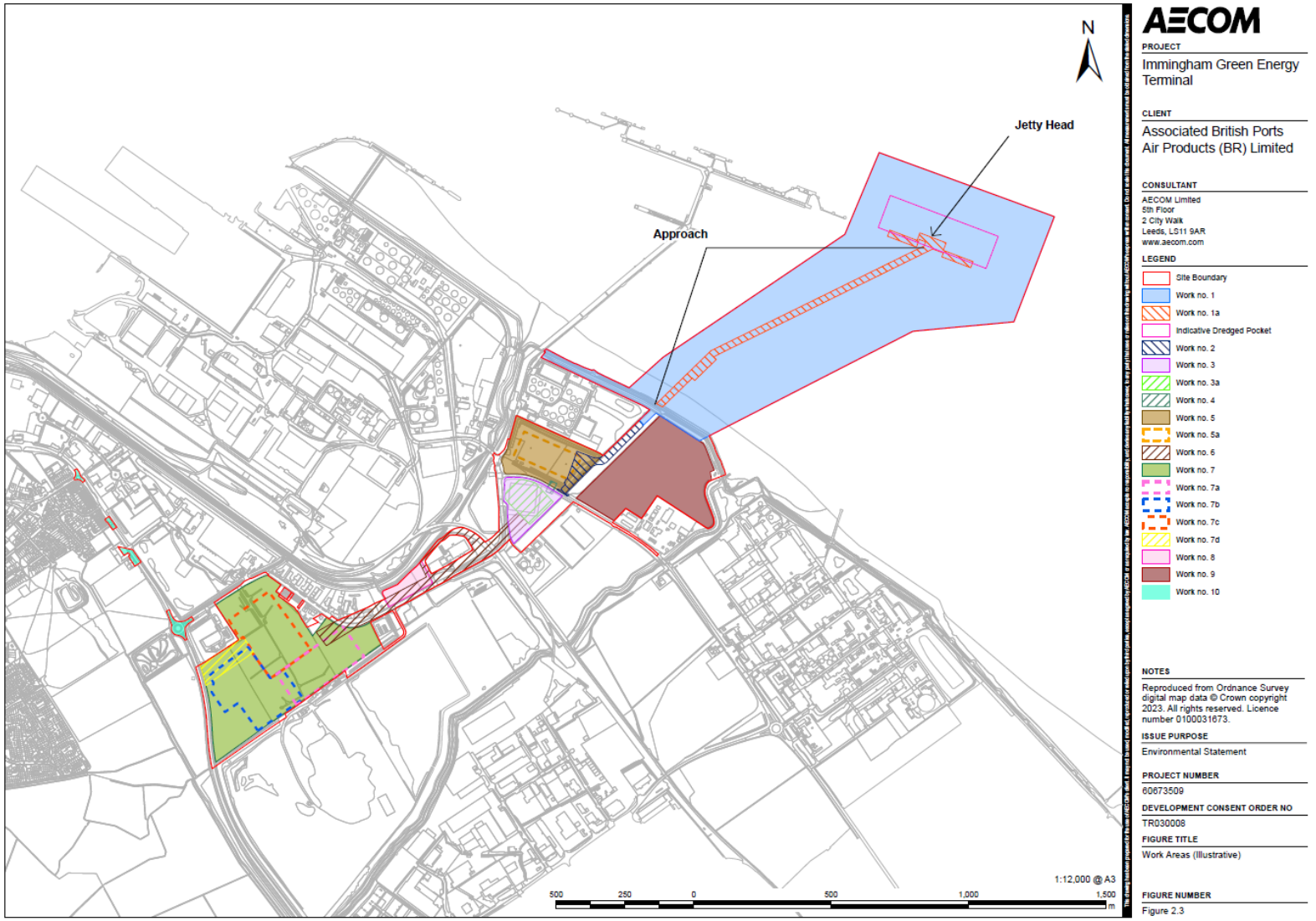
Table 1. Schedule of proposed seasonal restrictions on construction activity

Construction activity	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Jetty head			☼ sunrise to sunset		☼ sunrise to sunset	☼ 07:00 to 19:00	☼ 07:00 to 19:00					☼ 07:00 to 19:00
Approach jetty	Dry only	Dry only	☼ sunrise to sunset		☼ sunrise to sunset	☼ 07:00 to 19:00	☼ 07:00 to 19:00 >200 m	>200 m	>200 m	>200 m	>200 m	☼ 07:00 to 19:00 >200 m

Please note:
- This table does not include other proposed mitigation measures that apply year-round (e.g., soft starts, noise suppression system etc.)

Key	Restriction detail	Receptor (relevant qualifying interest features in brackets)
	No restrictions – all construction activity allowed	N/A
☼	Night-time piling restriction – piling not allowed between sunset and sunrise or 19:00 and 07:00	Migratory fish (including river lamprey and sea lamprey which are qualifying features of the Humber Estuary SAC and Ramsar site)
	Piling reporting protocol: • Reports detailing the total duration of piling each day are to be submitted to the MMO on a weekly basis and the Applicant will hold fortnightly meetings with the MMO (unless otherwise agreed with the MMO) • A 60-minute contingency period is allowed as well as the 270 minutes per day maximum percussive pile driving scenario • In the event of an abnormal situation arising which triggers the contingency period, an environmental representative for the works will be notified who will agree a plan with the contractor to limit the duration of percussive piling to 330 minutes for that day, as well as measures to prevent a future recurrence • Circumstances that trigger the contingency period will be recorded and explained in the weekly reporting to the MMO – the Applicant proposes to use the fortnightly meeting to discuss and agree further corrective action with the MMO should it be required	Migratory fish (including river lamprey and sea lamprey which are qualifying features of the Humber Estuary SAC and Ramsar site)
	Percussive piling not allowed	Migratory fish (including river lamprey and sea lamprey which are qualifying features of the Humber Estuary SAC and Ramsar site)
Dry only	Percussive piling not allowed unless on dry intertidal areas outside of the waterbody at periods of low water	Migratory fish (including river lamprey and sea lamprey which are qualifying features of the Humber Estuary SAC and Ramsar site)
>200 m	Construction activity (including piling) not allowed within 200 m of exposed mudflat. Note: • Construction can take place on seaward sections of approach jetty when works are >200 m from exposed mudflat • Restriction applies until an acoustic barrier/visual screen has been installed on both sides of the semi-completed structure • With the addition of acoustic barriers, noise levels on the intertidal mudflat will be less than 70 dB(A)	Overwintering birds (including qualifying features of the Humber Estuary SPA and Ramsar site)

Figure 1. Location of the Approach Jetty and Jetty Head.



Q1.5.2.3	
Question	**Response**
Use of bubble curtain MMO recommends [RR-016, paragraph 4.4.19] that the Applicant investigates the implementation of noise abatement measures such as a bubble curtain. a) MMO, provide the coverage referred to (relating to the South Shields Regeneration Project) to the Applicant and ExA. b) Applicant, If it is decided not to implement this mitigation, please provide your reasoning. c) Applicant, Confirm whether any other sound/vibration dampening mitigation is proposed.	The Applicant responds to parts (b) and (c) of the question as follows: b) A bubble curtain is not considered appropriate to implement for the Project. The bubble curtain that was used at the South Shields Regeneration Project was reportedly able to reduce the sound of impact piling from 163dB to 140dB (i.e. a 23dB reduction) (Frog Environmental, 2024). However, the effectiveness of bubble curtains is dependent on water depth and other physical parameters (Defingou *et al.*, 2019; Koschinski and Lüdemann, 2020). For example, high tidal flows, such as those experienced offshore or in estuaries can distort the bubble curtain and limit their effectiveness (National Physical Laboratory, 2023). Measured depth averaged current speed values at the site of the Project peaked at *circa* 1.5m/s on the ebb tide and *circa* 1.3m/s on the flood tide on the spring tide phase. A cautious approach is, therefore, considered more appropriate as is adopted in underwater noise assessments in the United States where a standard assumption of 5dB attenuation is generally made for a bubble curtain (Caltrans, 2020). Furthermore, attenuation is most pronounced at frequencies above around 1kHz (Dähne *et al*., 2017) and therefore bubble curtains may not be effective in reducing disturbance to fish that are predominantly sensitive at lower frequency ranges. Overall, given the high level of uncertainty in their effectiveness in attenuating noise in the high tidal flow environment of the Humber Estuary, and also in specifically reducing disturbance to fish, a bubble curtain is not considered appropriate to implement for the Project and has therefore been discounted. c) Other noise abatement measures have been considered. These include casing-based or shell-in-shell systems which are challenging to deploy effectively and have an uncertain attenuation capability (Caltrans, 2020). These types of systems, as well as bubble curtain systems, are only

	able to attenuate the transmission of energy directly from the pile into the water column and not the transmission of sound energy through the ground. The use of cushion blocks or pile pads have also been considered but discounted because they can be obliterated by the percussive hammer, making it unsafe and not feasible for the contractor to repeatedly stop the driving activity to replace the block/pad and remove debris from the water (Caltrans, 2020). Furthermore, the use of blocks/pads reduces the energy of each pile strike, which would then increase the number of strikes required in order to drive the pile to refusal, and could potentially result in an increase in the cumulative sound exposure level. In summary, given the challenges in installing these systems, and the high level of uncertainty in their effectiveness in attenuating noise and minimising disturbance to marine fauna, these noise abatement systems are not considered reasonable or appropriate to implement for the Project and have therefore been discounted. Following ongoing discussions with the Marine Management Organisation and the lead underwater technical advisor at the Centre for Environment, Fisheries and Aquaculture Science, a range of mitigation measures are currently being developed and agreed for the Project, which do not include the use of noise abatement measures (e.g. soft start, seasonal piling restrictions and night time piling restriction). **References:** Caltrans (2020). Technical Guidance for the Assessment of Hydroacoustic Effects of Pile Driving on Fish. Report No. CTHWANP-RT-20-365.01.04. October 2020. California Department of Transportation. Dähne, M., Tougaar, J., Carstensen J., Rose, A., Nabe-Nielsen J. (2017). Bubble curtains attenuate noise from offshore wind farm construction and reduce temporary habitat loss for harbour porpoises. Marine Ecology Progress Series 580: 221-237

	Defingou, M., Bils, F., Horchler, B., Liesenjohann, T., & Nehls, G. (2019). PHAROS4MPAs - A Review of Solutions to avoid and mitigate environmental impacts of offshore windfarms. Husum: BioConsult SH report commissioned by WWF-France. Frog Environmental (2024). South Shields Regeneration: Bubble Curtains proven to reduce noise by 99% during marine construction. Available at: https://www.frogenvironmental.co.uk/case-study/rivertyne/ (accessed January 2024). Koschinski, S., & Lüdemann, K. (2020). Noise mitigation for the construction of increasingly large offshore wind turbines - Technical options for complying with noise limits. Germany: German Federal Agency for Nature Conservation (Bundesamt für Naturschutz (BfN)). National Physical Laboratory (NPL) (2023). Characterisation of acoustic fields generated by UXO removal Phase 5B quarry trials of bubble curtain mitigation (BEIS Offshore Energy SEA Sub-Contract OESEA-22-142).
Q1.5.2.4	
Question	**Response**
Cumulative effects The ES [APP-221] does not provide a comprehensive investigation into the potential cumulative effects of piling in relation to ID22 (IERRT) and does not outline how the potential impacts, with or without similar mitigations, might be measured. Further to the Action Point noted at ISH3 [EV5-006] [EV5-007],	The cumulative effects assessment carried out as part of the Immingham Eastern Roll on-Roll off ("Ro-Ro") Terminal ("IERRT") Project has been provided in the responses to Natural England's Relevant Representation **[RR-019]** and the Marine Management Organisation's ("MMO's") Relevant Representation **[RR-016]** which have been provided at Deadline 1 **[TR030008/EXAM/9.2]**. It is accepted that without mitigation there would be the potential for significant adverse effects as a result of underwater noise on marine mammals and migratory fish species. This would be either alone or in-combination with other projects. A comprehensive mitigation plan has therefore been developed. A summary of the mitigation measures that have been agreed with the MMO is provided below.

submit the documents relating to the cumulative effects assessments carried out as part of the IERRT project. Provide a more detailed account of the potential cumulative impacts of piling, with and without the proposed mitigation, for the construction phase.	Following ongoing discussions with the MMO and the lead underwater technical advisor at the Centre for Environment, Fisheries and Aquaculture Science, a range of mitigation measures have been developed and agreed for the Immingham Green Energy Terminal ("IGET") Project. These include soft start procedures, timing restrictions to avoid sensitive periods for migratory fish, a piling reporting protocol and the use of marine mammal observers. In order to take account of any potential in-combination effects should the piling programmes for both the IERRT and IGET Projects overlap, it has been agreed with the MMO that the maximum duration of percussive piling permitted within any four-week period must not exceed a total of 196 hours where any percussive pile drivers for either one or both projects are in operation. Where percussive piling is occurring simultaneously across the two projects these respective time periods will not be double counted as the temporal exposure to this effect is not increased. This restriction applies from 1 June to 30 June and 1 August to 31 October inclusive in any year to minimise the impacts on fish (including lamprey) migrating through the Humber Estuary during this period. The measurement of time during each 196-hour work-block must begin at the start of each timeframe, roll throughout it, then cease at the end, where measurement will begin again at the start of the next timeframe; this process is to be repeated until the end of piling works. This restriction does not apply to percussive piling that can be undertaken outside the waterbody at periods of low water. In addition, a piling reporting protocol is being agreed with the MMO with associated actions to be taken in the event of an abnormal occurrence (e.g. equipment breakdown or if a marine mammal enters the mitigation zone). The piling reporting protocol condition that is being agreed for the Deemed Marine Licence ("DML") is as follows: (1) The undertaker must submit weekly reports to the MMO of the duration of percussive piling that is undertaken on any given day on which piling takes place during the construction of the authorised development, unless otherwise agreed in writing with the MMO.

	(2) The reports submitted to the MMO pursuant to sub–paragraph 1 must include a log of the number and approximate location of piling rigs which are in operation on any given day, along with the number of piles driven. (3) The undertaker will hold fortnightly meetings with the MMO to discuss the weekly reports submitted under sub-paragraph (1) and agree any corrective action if required, unless otherwise agreed in writing with the MMO. (4) Subject to sub–paragraph (5), where percussive piling is paused, the recommencement of the percussive piling shall be subject to the provisions of sub–paragraph (1)(a) of paragraph 12 ('the contingency period'). (5) The contingency period must not exceed a total of 60 minutes in any given day on which percussive piling takes place. The in-combination mitigation measures were agreed as acceptable as part of the IERRT Examination and the Applicant is currently awaiting confirmation from the MMO that these measures are acceptable as mitigation for the IGET application. The DML has been updated to include the above piling protocol condition.
Q1.5.2.5	
Question	**Response**
Inshore Fisheries Conservation Authority MMO States [RR-016, paragraph 4.6.3] that it defers to the IFCA on matters relating to commercial fishing operations. Confirm whether you have undertaken	The Applicant notes that commercial fishing activity within the confines of the estuary is extremely limited and in fact non-existent in the immediate environs of the Port of Immingham. In so far as commercial fishing activity does take place further afield, it is not anticipated that the maximum increase of one vessel per day to the port would have any discernible impact. On this basis, the Applicant did not consider it necessary to consult with the IFCA prior to submitting the DCO Application, who in any event, the Applicant notes, is not a prescribed consultee (under s42(1)(a) of the Planning Act 2008 and Regulation 3 and Schedule 1 of the

separate consultation with this body and the results of any such consultation.	Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009) and do not fall under any category in s44 of the Planning Act 2008. Further, the Applicant notes that the IFCA was not identified to the Applicant by the Planning Inspectorate in its Scoping Opinion adopted 10 October 2022 as a party it considered as having or likely to have an interest in the Project or unlikely to become aware of the DCO Application through Part 5 Planning Act 2008 consultation and publicity measures (in accordance with Regulation 11(1)(c) of the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017).
Q1.5.2.7	
Question	**Response**
Temporal Scope The Assessment in ES [APP-051, Paragraph 9.8.1] has been carried out for construction and operation and decommissioning of the Proposed Development, although no specific timescales have been set out. Clarify what assessment years have been used to represent the construction, operation and decommissioning phases for the terrestrial ecology assessment and explain why these years are representative of a worst-case scenario.	The Applicant has assumed that there is a typographical error in this question and that it specifically relates to the assessment years applied in the **Environmental Statement ("ES") Chapter 9: Nature Conservation (Marine Ecology) [APP-051]**. A similar question is asked in respect of marine ecology (Q1.5.2.7, this question), terrestrial ecology (Q.1.5.3.4) and ornithology (Q.1.5.5.1) and a combined response to these questions is provided below and signposted from those locations. The Applicant has also prepared a note reviewing how operational life has been addressed in the ES and this is provided as Appendix 1 of the **Applicant's Responses to the Examining Authority's First Round of Written Questions (Q.15) [TR03008/EXAM/9.3]** at Deadline 1. Construction In relation to construction, there is no uniform 'Assessment Year' because the 'peak of construction activity' is likely to vary from topic to topic, and between marine and terrestrial environments across the three years of construction defined for Phase 1. In relation to terrestrial ecology, the main construction impacts are expected to occur early in Year 1 (2025), shortly after Development Consent Order commencement, and relate primarily to landtake/habitat loss across all of the terrestrial work areas, when areas such as the part of the Long Strip woodland would be cleared. Given the habitat clearance across the work areas, Year 1 would represent the worst case.

	In relation to marine ecology and ornithology (the relevant birds are primarily marine species), the peak of construction is expected to occur in Years 1–2 (2025–2026), and the key impact relates primarily to the disturbance associated with construction. Whilst there is habitat loss associated with landtake (pile footprints, etc.), this is likely to occur over a 13- month period with the 'landtake peak' occurring in Year 2 once piling is complete and the main components of the jetty are fully built. <u>Operation</u> As noted above, the Applicant has prepared a note reviewing how operational life has been addressed in the ES, which is provided as Appendix 1 of the **Applicant's Responses to the Examining Authority's First Round of Written Questions (Q.15) [TR03008/EXAM/9.3]** As with the construction phase, there is no defined uniform 'Assessment Year' for the operational phase which is applicable to all of the ecological topics. However, all technical topics have assumed that the first year of operation of the jetty and the first year of operation of the hydrogen production facility (Phase 1) will occur in Years 3–4 (2027–2028) with further build-out of the latter in subsequent phases, up to Year 11 (which is assumed to be approximately 2036). For the jetty, the 'peak operational use' of the facilities occurs when the full capacity of the jetty is utilised. The theoretical capacity assessed in the ES as part of the application is up to 292 vessel calls which represents the operational worst case for most impacts for the jetty. Peak operational use is likely to be later than first operational use of the jetty as it will require further consents for additional landside works to be approved before the full capacity of the jetty can be utilised. For the hydrogen production facility, the operational peak is expected to commence in Year 11 once the facility is fully built out (although could be sooner as explained at **Paragraph 2.4.81** of **ES Chapter 2: The Project** [APP-044]) and operations then continue for the duration of the life of the facility.

	In relation to terrestrial ecology, the peak operational impacts, although limited, are expected to occur from Year 11 and last for the duration of the fully built out hydrogen production facility. Any year within this whole period could be taken as representative of the worst case operational impacts. In relation to marine ecology and ornithology (the relevant birds are primarily marine species), the operational use of the jetty and related ecological impacts, such as disturbance, are assumed to occur once operation commences. The respective assessments have therefore not been based on a specific assessment year. <u>Decommissioning</u> While the hydrogen production facility has a nominal design life of 25 years, as explained at **Paragraph 2.7.2** of **ES Chapter 2: The Project [APP-044]**, this does not mean it will automatically be decommissioned at that point. As set out in the response to Q1.15.1.5 the operational life may be extended through ongoing plant refurbishment and replacement. However, for terrestrial ecology, an assessment of decommissioning is provided, and the assessment year is assumed to be 25 years after the starting year of full operation of the fully built out hydrogen production facility, or, since the effects would not vary, any point after that. The DCO application does not make any provision for the decommissioning of the approach jetty, jetty head, jetty access ramp and the jetty access road. This is because these elements would, once constructed, become part of the fabric of the Immingham port estate and would, in simple terms, continue to be maintained so that they can be used for port-related activities to meet a long-term need (see response to Q1.15.1.3 for further detail). There is no ~~"~~"maximum point in time"~~"~~ by which the hydrogen production facility (and the associated jetty topside infrastructure and pipe-racks) need~~s~~ to be, or will be decommissioned. Elements of the facility would be maintained, replaced and~~-~~/or refurbished as necessary but, for the purposes of the Environmental Statement assessment, at some point in the future, when appropriate, it has been assumed that the infrastructure associated with the hydrogen production facility may be decommissioned. Mitigation which would be relevant at any point in time, secured

	within the Deemed Marine Licence, has therefore been proposed to address any uncertainty with respect to the timescales in which these works may occur.
Q1.5.3 Terrestrial Ecology	
Q1.5.3.3	
Question	**Response**
North Beck Drain The ES notes that North Beck Drain may provide a suitable foraging and resting habitat for otter [APP-050, Paragraph 8.6.24] and the same for water vole [APP-050, Paragraph 8.6.31]. Both paragraphs then state that survey was not undertaken because the drain is outside the boundary and will not be directly impacted by the Proposed Development. However, findings include several adverse impacts construction impacts and effects, ranging from negligible, minor adverse and moderate adverse [APP-060, Section 18.8.]. Explain why these impacts have not been considered in relation to the potential for protected species habitat.	The section of North Beck Drain along the south-eastern boundary of the Temporary Compound Area (Work No. 9) is referred to in Paragraph 8.6.24 and Paragraph 8.6.31 [APP-050] and flows from Laporte Road down to its outlet through the sea wall. Given its critical drainage function, it is maintained to a high hydrological standard by the Environment Agency with regularly short mown banks as can be seen from Laporte Road (see **Figure 3**). A re-examination of North Beck Drain on 2 February 2024 determined that the references to otter and water vole in **Paragraph 8.6.24** and **Paragraph 8.6.31** respectively of **Environmental Statement ("ES") Chapter 8: Nature Conservation (Terrestrial Ecology) [APP-050]**, in fact relate to the ditch running parallel to and south east of North Beck Drain which borders the Laporte Road Brownfield Site Local Wildlife Site and is known to support water vole. This ditch is located along the northern edge of the pink polygon in the image below (**Figure 2**), which is taken from the Preliminary Ecological Appraisal Report [APP-181] and which shows the location of Laporte Road Brownfield Site Local Wildlife Site. The ditch is offset from the North Beck Drain, which is the much more prominent watercourse to the north of the pink polygon **(Figure 2).**

Figure 2: Location of Laporte Road Brownfield Site Local Wildlife Site

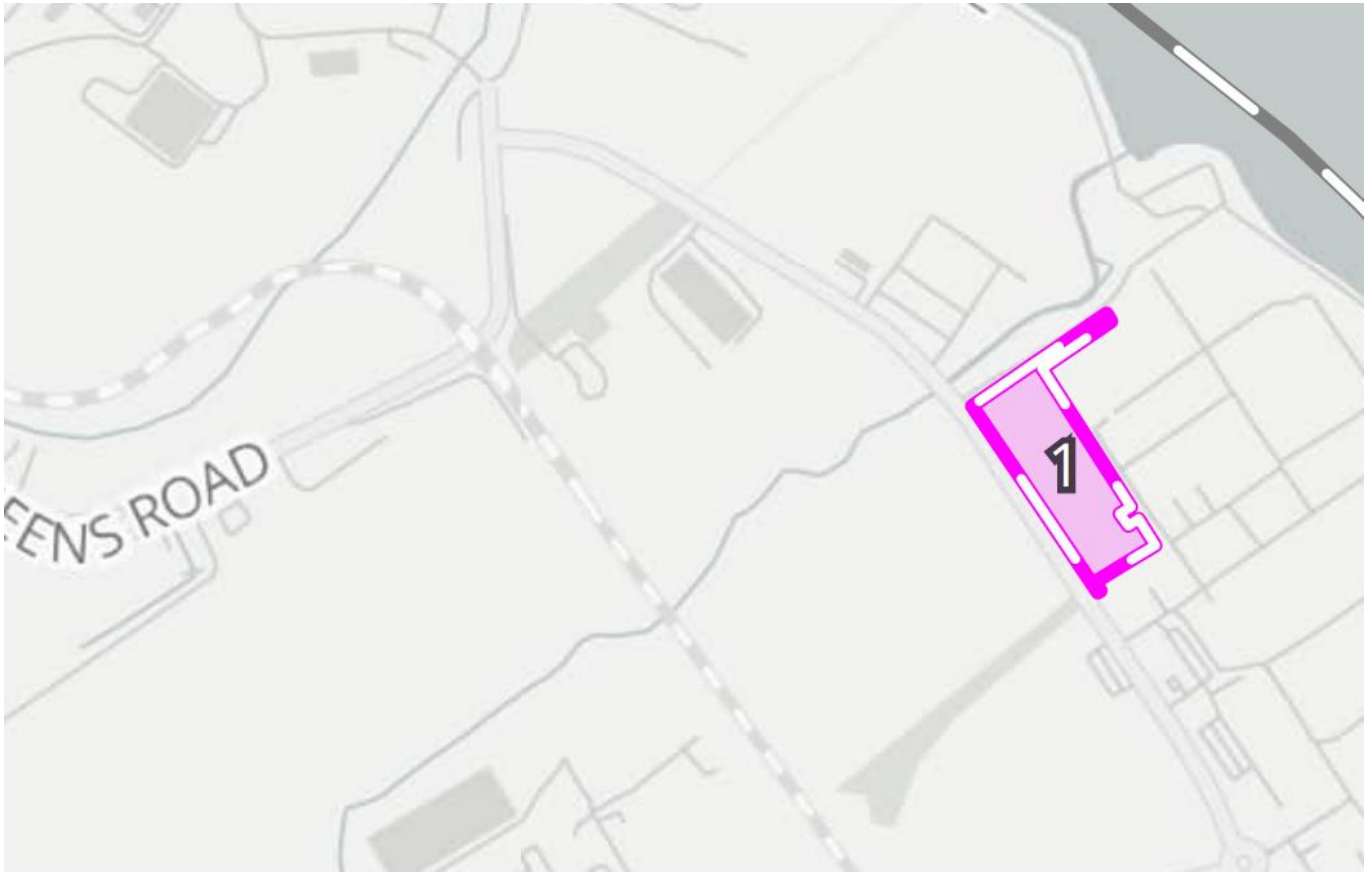


Figure 3: North Beck Drain looking downstream from Laporte Road towards the sea wall

	The Applicant confirms that the section of North Beck Drain adjacent to Work No. 9 (Laporte Road Temporary Construction Area) is entirely outside the boundary of the Project and will not be *directly* impacted by the Project, including any loss of connectivity with other watercourses. **Section 18. 8** in **ES Chapter 18: Water Use, Water Quality, Coastal Protection, Flood Risk and Drainage [APP-060]** initially describes the *potential* water environment effects that may occur during the construction, operation and decommissioning of the Project if the relevant impacts were not appropriately mitigated. This approach is best explained through review of **Tables 18-12, 18-13 and 18-14**, which demonstrates that the resultant effects, once mitigation has been applied, reduce to negligible to minor adverse (not significant). There are no significant effects and therefore no discrepancy between the conclusions of APP-060 and APP-050. The potential risks to the water environment (which the proposed mitigation referenced below addresses) may include deterioration in water quality due to contaminants, e.g. in surface water runoff, direct spillage, and increased flood risk and overwhelming the drainage network. North Beck Drain is a Water Framework Directive surface water body with limited aquatic fauna and biodiversity, the value of which is assessed as Low, as set out in **Table 18-11: Importance of receptors** in **ES Chapter 18: Water Use, Water Quality, Coastal Protection, Flood Risk and Drainage [APP-060]**. Based on the relatively low value of the habitats (see **Figure 3,** which shows no substantive emergent or marginal vegetation), any water voles or otters using the North Beck Drain, are expected to use the drain to disperse through the landscape rather than the drain supporting any resident populations. Any possible reduction in water quality, as a result of such indirect effects would not be expected to impact this dispersal function. Similarly, any slightly increased local flood risk or any temporary overwhelming of the drainage network would not be expected to impact these aquatic animals, which are well adapted to short term variations in water levels. The likelihood of reduction in water quality and increase in flood risk and overwhelming of the drainage network and any other such impacts is very low as they will be avoided through the implementation **of ES Appendix 18.B: Drainage Strategy [APP-210]** to manage surface water

	run-off and through the **Outline Construction Environmental Management Plan [APP-221]**. Even assuming that otter and water vole might occasionally use North Beck Drain for dispersal, these embedded mitigation measures would minimise any effects on North Beck Drain and these two species.
Q1.5.3.4	
Question	**Response**
Temporal Scope The Assessment in ES [APP-050, Paragraph 8.8.1] has been carried out for construction, operation and decommissioning of the Proposed Development, although no specific timescales have been set out. Clarify what assessment years have been used to represent the construction, operation and decommissioning phases for the terrestrial ecology assessment and explain why these years are representative of a worst-case scenario.	A similar question is asked in respect of marine ecology (Q1.5.2.7), terrestrial ecology (Q1.5.3.4, this question) and ornithology (Q1.5.5.1) and a combined response to these questions is provided at Q1.5.2.7.
Q1.5.4 Woodland	
Q1.5.4.1	
Question	**Response**

Compensatory woodland proposals – Site Selection The Examining Authority have some concerns regarding the choice and suitability of location for the Compensatory Woodland and these concerns were echoed in North East Lincolnshire's Relevant Rep. Following discussion at ISH2 [EV4-006] [EV4-007], it is understood that that the Applicant and NELC are in discussion regarding this matter. a) Provide a high level indication of the proposal, including a plan and a note of whether Compulsory Acquisition may be triggered. b) Provide the final details of the agreement reached with NELC at Deadline 2, 26 March 2024.	a) The Applicant has engaged with North East Lincolnshire Council ("NELC") and would, for the sake of good order, suggest that it has provided further reassurance to NELC as to the future functionality of its proposed compensation planting scheme. Further dialogue will take place, but it is believed that NELC will concur with the Applicant's current understanding that the enhancement of that part of Long Strip woodland that remains and the compensatory planting at Manby Road should provide a substantive part of the required woodland compensation. The Applicant looks forward to further engagement with NELC on this matter as it develops a Woodland Compensation Plan, following on from the **Outline Woodland Compensation Strategy ("WCS")** **[APP-224]** which was submitted with the Development Consent Order application. A Draft Woodland Compensation Plan, submitted at Deadline 1 **[TR030008/EXAM/9.34]**, describes the enhancement of that part of Long Strip woodland that remains and the creation of the new compensatory woodland on the Manby Road Bund. In addition to these measures, discussions are ongoing between the Applicant and NELC regarding potential options to contribute towards a new woodland expansion planting scheme at Battery Street Playing Field which is being developed by NELC. A plan showing the relevant locations is provided in the **Draft Woodland Compensation Plan**, submitted at Deadline 1 **[TR030008/EXAM/9.34]**. Compulsory Acquisition is not expected to be triggered. The Manby Road site is in the ownership of the Applicant, whilst the Battery Street Playing Field site is owned by NELC. As noted above, discussions on how woodland planting could be brought forward at that site are ongoing. b) The Applicant will provide an update on any agreement, or the progress towards that agreement, at Deadline 2.

Figure 4 - Map of Compensatory Woodland Proposals – Site Selection

Table 2: Detailed Options Appraisal for compensatory woodland creation (See Figure 4 for locations A-G)

Option	Site Name	Site Description	ABP Ownership	ApproxSize (ha)	Ability to plant ahead	Accessibility	Connection to existing established woodland	Existing Land Use	Further considerations
A	Manby Road Bund	Grassland and trees	Yes	5.66	Yes	Yes – via proposed England Coastal Path which will abut south-western boundary of the Manby Road Bund (opportunity for enhancement of route)	Yes – whilst not established woodland, there is an established belt of tree planting to the north-eastern boundary which would increase the overall footprint of the compensatory woodland proposal area	Part of statutory estate and part of a historic screening project	Provides screening to the industrial port estate originally implemented to assist with the management of fugitive dust emissions from bulk cargo storage
B	Rear of Pad 1	Narrow strip of existing trees	Yes	1.22	Yes	No – Private Operational Port Estate	Yes – however minimal opportunity for compensatory planting	Port Operational land so its loss could affect future operational flexibility	Narrow width
C	West Haven Way Fly Over	Grassed area with a few existing trees	Yes	0.89	Yes	No – Private Operational Port Estate	No	Port Operational land lying immediately adjacent to arterial access road within the port	Narrow width. Limited biodiversity opportunities given its industrial nature
D	Rear of IBPW	Pond, reeds, shrubs & grass	Yes	0.44	Yes	No – Private Operational Port Estate	No	Port Operational	Existing pond area and therefore minimal opportunity for compensatory planting
E	Rear of PAM Building	Grassland and trees	Yes	1.37	Yes	No – Private Operational Port Estate	Yes – however minimal opportunity for compensatory planting	Port Operational	Narrow width

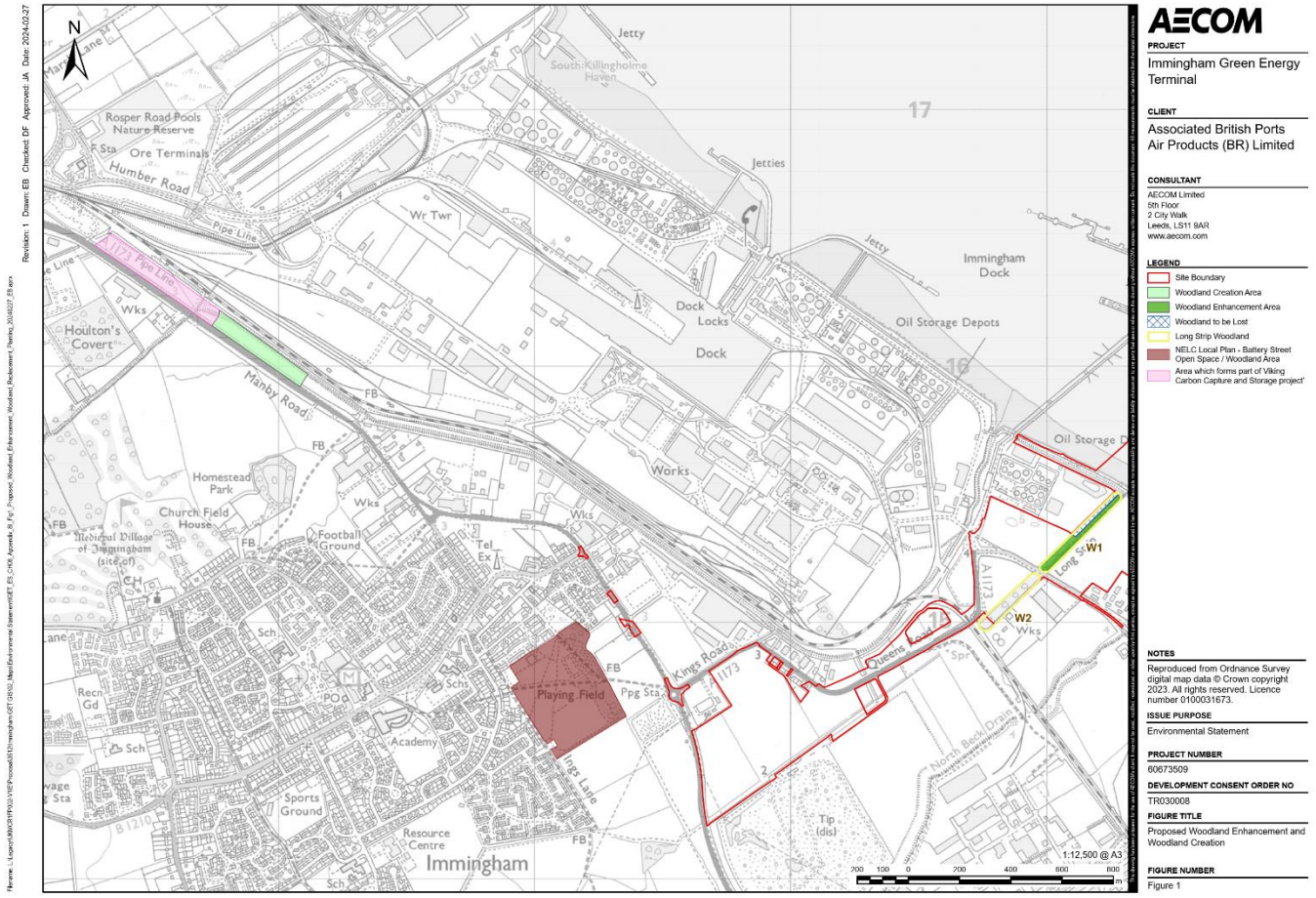
F	Habrough Marsh Drain	Existing woodland & reedbeds	Yes	2.01	Yes	No – Private Operational Port Estate	Yes – however minimal opportunity for compensatory planting	Port Operational	Previous woodland and reedbed habitat enhancement scheme Narrow width
G	Field to the east of Long Strip	Agricultural field	No	9	No	Yes – via existing PRoW	Yes – connection to existing Long Strip, however drainage ditch and existing Anglian Water Outfall would preclude planting immediately adjacent	Agricultural (Allocated Employment Land)	Required for IGET construction laydown area – important part of IGET project Prime river front location

Q1.5.4.2

Question	**Response**
Potential Land Take by Viking CCS Project Further to the Action Point noted at ISH2 [EV4-006] [EV4-007], a plan was shown at ISH2 that indicated the potential land take required should the Viking CCS project be granted DCO and the implications that this would have on the land availability for compensatory woodland for IGET. This plan and an explanatory note on the potential impacts on the Proposed Development is to be submitted into the Examination.	The plan will form part of the Woodland Compensation Plan, the final version of which is intended to be submitted and approved under **Requirement 11** of **Schedule 2** of the **draft Development Consent Order [PDA-004]** and will be produced in accordance with the **Outline Woodland Compensation Strategy [APP-224]**. The **Draft Woodland Compensation Plan [TR030008/EXAM/9.34]** submitted at Deadline 1 is the first step in developing the final Woodland Compensation Plan, to enable the requirement to be discharged. The explanatory note is provided by the text below: The area of blue diagonal shading on the plan shows the overlap between (i) the area originally proposed for woodland compensation, shown to its full extent in green, which was included in the **Outline Woodland Compensation Strategy [APP-224]**; and (ii) that part of the application boundary for the Viking CCS Pipeline application for development consent (PINS Reference: EN070008) (the "Viking CCS Application") which overlaps with the same area. Assuming the Viking CCS Application is consented to the full extent of its proposed order limits, the effect of the overlap is to reduce the area available for long-term woodland compensatory

	planting for the Project. The **Draft Woodland Compensation Plan [TR030008/EXAM/9.34]** submitted at Deadline 1 has been taken forward on the basis that only the reduced area would be available for woodland compensation. No other impacts of the Viking CCS proposals on the new woodland planting in this location, other than this reduced extent for compensatory planting, are expected. For this reason and following discussions with North East Lincolnshire Council ("NELC"), the Applicant is evaluating the approach to delivering part of the compensatory planting on a separate area of land, off Battery Street, at the southern edge of Immingham. The location for this is shown as an area for enhancement for nature conservation in the local plan, viewable on the inset maps[1], and is shown by the green-coloured polygon on the plan provided in the **Draft Woodland Compensation Plan [TR030008/EXAM/9.34].** **References:** [1] North East Lincolnshire Council (2018). North East Lincolnshire Local Plan 2013 to 2032 – Inset Maps. [Online] https://www.nelincs.gov.uk/assets/uploads/2018/05/20180322-PolicyMapInsetMaps-WEB-1.pdf (accessed March 2024).

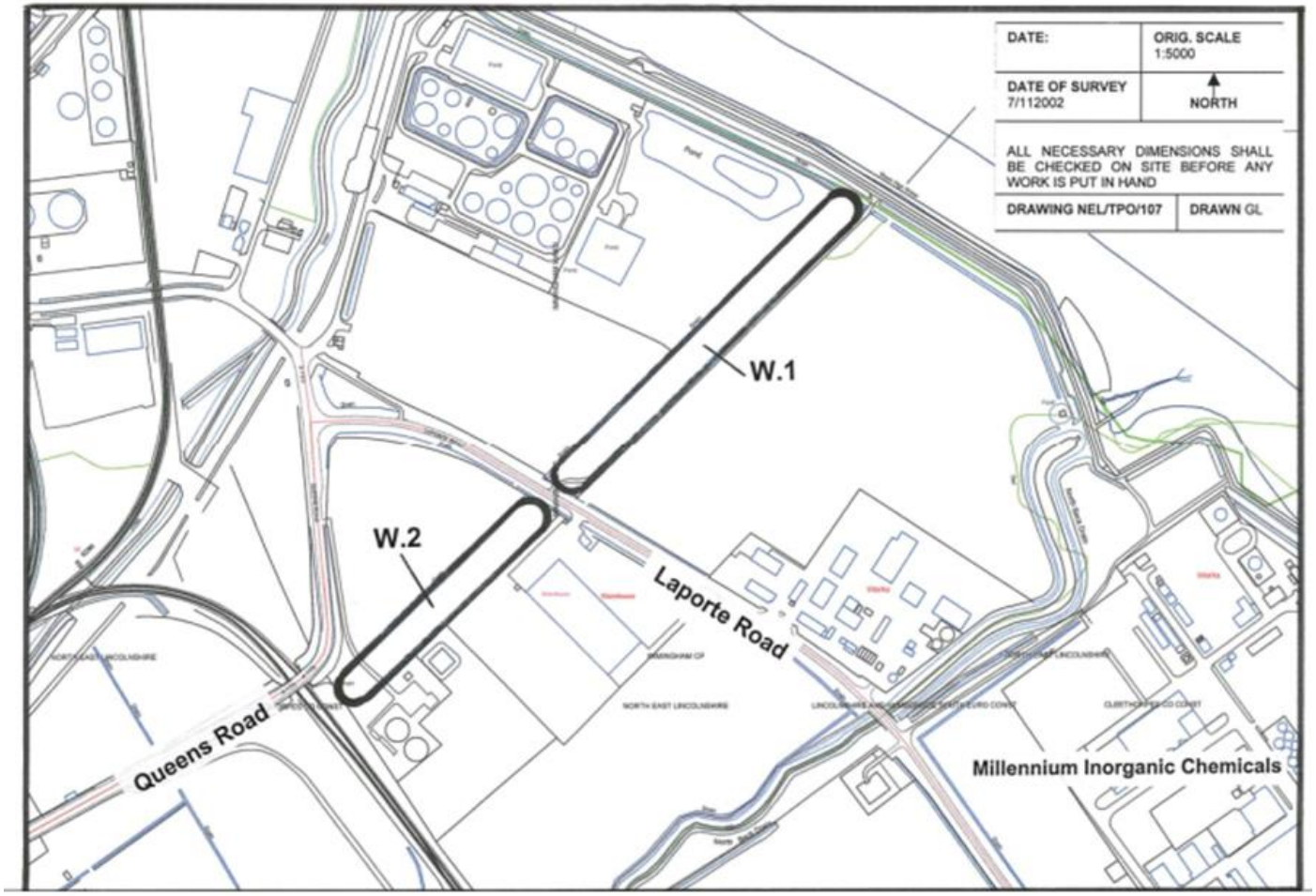
Figure 5: Proposed Woodland Enhancement (Woodland Replacement Planting)



Q1.5.4.5

Question	Response
Proposed enhancements to south section of Long Strip through IERRT ES [APP-224, section 1.1.6] notes proposed enhancements to the southern section of the Long Strip as part of the adjacent IERRT that is currently in Examination and for which you are the Applicant. In order to gain a complete understanding of the proposals for the Long Strip, provide the details of this proposed enhancement. See related question in the Cumulative Effects and In-combination Effects section.	The details of proposals for the enhancement of the southern section of the Long Strip woodland (W.2 as shown on the TPO schedule in **Figure 6** below) that form part of the Immingham Eastern Ro-Ro Terminal ("IERRT") project are provided in the IERRT Woodland Enhancement and Management Plan ("WEMP"), produced in December 2022[1]. The enhancement of W.2 relates solely to the IERRT proposals. The inclusion of the same area within the Order Limits of the Project is solely to ensure that existing informal access through this woodland can be temporarily removed to enable the safe construction of the adjacent works, as explained in **Paragraph 2.5.41(c)** within **Environmental Statement Chapter 2: The Project [APP-044]**. The Outline Woodland Compensation Strategy **[APP-224]** and the **Draft Woodland Compensation Plan [TR030008/EXAM/9.34]**, which is submitted at Deadline 1, includes enhancement measures for the retained part of section W.1 of the woodland and follows a similar programme of woodland enhancement and management as to those of the south section of the Long Strip woodland (section W.2 of the TPO) that was developed and agreed with NELC in the IERRT WEMP to provide ecological enhancements in connection with the IERRT scheme. The measures agreed for the IERRT scheme involved removal of localised areas of dense scrub to open up the canopy and encourage the natural development of a more diverse woodland ground flora.

Figure 6: Long Strip Tree Preservation Order (Source: Plan extracted from Tree Preservation Order)



	References: [1] ABP (2022). Immingham Eastern Ro-Ro Terminal – Woodland Enhancement Management Plan (WEMP), Document Reference 9.4. [Online] https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/TR030007/TR030007-000313-9.4_IERRT_Woodland%20Enhancement%20Management%20Plan.pdf (accessed March 2024).
Q1.5.4.6	
Question	**Response**
Existing Woodland in East Area (Ammonia Storage) Plans show that Work Nos. 3 and 3a [APP-013] would require the loss of all existing woodland on this part of the site, generally noted as Cat B trees in the Arboricultural Impact Assessment [APP-185], although [APP-052, Paragraph 10.6.54] notes that the area has been surveyed and found to be of low value. Whilst it is understood that this area of woodland is not protected, it has a contiguous border with the southern section of Long Strip and as such might contribute to the habitat provision on the site. a) Applicant: explain the discrepancy between the Arb report (Cat B	a) This part of the East Site was assessed through: • a Phase 1 Habitat survey, as set out in **Environmental Statement ("ES") Appendix 8.B: Preliminary Ecological Appraisal Report [APP-181]** • surveys of bats, badger, birds and invertebrates, as set out in **ES Appendix 8.B: Preliminary Ecological Appraisal Report [APP-181]** • a bat survey, as set out in **ES Appendix 8.C: Bat Survey Report [APP-182]** and • the Arboricultural Impact Assessment, as set out in **ES Appendix 8.F: Arboricultural Impact Assessment [APP-185]** The part of the East Site referred to in the question that will be lost as a result of Work Nos. 3 and 3a is divided into two parts: IG418 and IG419 (as shown in **ES Appendix 8.F: Arboricultural Impact Assessment [APP-185]**. IG418 is described as "*predominantly scrub hawthorn growth, dense bramble undergrowth roadside limiting access, surveyed from LaPorte Road*", categorised as C1,2 comprising self-seeded Goat Willow (*Salix caprea*) and Hawthorn (*Crataegus monogyna*). IG419 is described as "*Goat Willow*" and categorised as B1,2. These areas have little in common with the adjacent long-established Long Strip woodland, being of much younger origin and a very different species composition and structure.

trees) and the ornithology report (low value) b) NELC and NE: Are you content that this area has been properly assessed in relation to the potential fragmentation of the woodland area and the losses of potential habitats? c) NELC: Do you consider that the RPA of the South Long Strip TPO is correctly drawn on Tree Constraints Plan sheet 2 in the arb report [APP-185] See related question in the Cumulative Effects and In-combination Effects section.	The trees were judged to be Cat B in the context of arboriculture because they are of relatively good quality and good health, but as they do not support anything other than commoner bird species, this area is attributed low value in respect of ornithology. The two points are not inconsistent and simply reflect the different values ascribed from two different technical perspectives.
Q1.5.5 Ornithology	
Q1.5.5.1	
Question	**Response**
Temporal Scope The Assessment in ES [APP-052, Paragraph 10.8.1] has been carried out for construction and operation and decommissioning of the Proposed Development, although no specific timescales have been set out. Clarify what assessment years have been used to represent the construction,	A similar question is asked in respect of marine ecology (Q1.5.2.7), terrestrial ecology (Q1.5.3.4) and ornithology (Q1.5.5.1, this question) and a combined response to these questions is provided at Q1.5.2.7.

operation and decommissioning phases for the terrestrial ecology assessment and explain why these years are representative of a worst-case scenario.	
Q1.5.5.2	
Question	**Response**
Decommissioning The Assessment in ES [APP-052, Paragraph 10.8.1] has been carried out for construction and operation and decommissioning of the Proposed Development. ES [APP-052, Paragraph 10.10.7] states that the main elements of the marine infrastructure above and below water level would not be decommissioned as a result an assessment of decommissioning effects on both terrestrial and marine ornithology has been scoped out. Explain why decommissioning of the landside elements of the Proposed Development are not considered to have the potential to result in likely significant effects to either	The DCO Application does not make any provision for the decommissioning of the approach jetty, jetty head, jetty access ramp and the jetty access road. This is because these elements would, once constructed, become part of the fabric of the Immingham port estate and would, in simple terms, continue to be maintained so that they can be used for port-related activities to meet a long-term need (see response to Q1.15.1.3 for further detail). On this basis decommissioning of these elements is not considered within **Environmental Statement Chapter 10: Ornithology [APP-052]** or the **Shadow Habitats Regulations Assessment ("HRA") [APP-238]** as no pathways exist that would cause potential effects on features of the Humber Estuary European Marine Site. When appropriate, the infrastructure associated with the hydrogen production facility may be decommissioned; any such landside decommissioning would be in accordance with the relevant final Decommissioning Environmental Management Plan ("DEMP"), to be prepared in accordance with the **Outline DEMP [APP-222]**. The majority of the proposed landside works that may be decommissioned are well in excess of 200m from the foreshore (located within Work No. 5). Similarly, there are no areas of terrestrial habitat within or adjacent to the Order Limits that are considered functionally linked land (and as such do not provide important habitat for Special Protection Area ("SPA") species). On this basis, marine ornithology receptors (i.e. coastal waterbirds) are considered to be out of the zone of potential effects associated with most landside elements that may be decommissioned. The exception to this will be the removal of pipe racks

terrestrial or marine ornithology receptors?	within Work No. 2 (the jetty access road) and plant and equipment on the approach jetty topside associated with hydrogen production (within Work No.1). Due to the uncertainty associated with the techniques that may be used to undertake the decommissioning works within Works Nos. 1 and 2, a commitment has been made within the Deemed Marine Licence (Schedule 3 of the dDCO updated at Deadline 1 **[TR030008/APP/2.1(3)]**) to undertake decommissioning within these areas outside of the overwintering period (October to March inclusive) where the works are located within 200m of exposed intertidal foreshore. This will avoid the potential for significant adverse effects on ornithology receptors and an adverse effect on integrity ("AEOI"). This clarifying information has been provided in Paragraph 4.10.45 to 4.10.48 in the updated Shadow HRA submitted at Deadline 1 **[TR030008/APP/7.6 (2)]**. Only a small number of common terrestrial bird species are likely to be present in the limited habitats that will be created within the operational hydrogen production facility. Similarly, only common terrestrial bird species are likely to be present in the retained areas of Long Strip woodland and in other adjacent areas. The decommissioning of the hydrogen production facility is therefore not expected to lead to any significant adverse effects on terrestrial bird species and it is for this reason that decommissioning could be robustly scoped out for terrestrial birds species in the **Environmental Statement Chapter 10: Ornithology [APP-052]**.