IMMINGHAM EASTERN RO-RO TERMINAL DCO APPLICATION

PINS REFERENCE TR030007

WRITTEN REPRESENTATION FROM DFDS

INTRODUCTION

1. This document is a Written Representation from DFDS Seaways plc (**DFDS**) in respect of Associated British Ports' (**the Applicant**'s) application for development consent for the proposed Immingham Eastern Ro-Ro Terminal (**IERRT**), prepared for Deadline 2 in the examination, 5 September 2023.

2. It expands upon the issues set out in DFDS' Relevant Representation [**RR-008**] in the light of further analysis by DFDS, the holding of Issue Specific Hearing 1 on 25 July 2023 and Issue Specific Hearing 2 on 27 July 2023, submissions by other parties made so far, and the publication of the Examining Authority's first written questions [**PD-010**]. Answers to those questions addressed to DFDS (and other questions DFDS wishes to comment on) are submitted separately.

3. This representation contains the following sections:

   a. DFDS' operations at Immingham,

   b. the complex navigational environment at Immingham,

   c. governance issues,

   d. history of engagement on this project,

   e. navigational simulations,

   f. Navigational Risk Assessment,

   g. vessel congestion,

   h. highway issues, and

   i. conclusion.

DFDS' OPERATIONS AT IMMINGHAM

4. The Port of Immingham is consistently in the top 3 UK ports for total throughput and ranked number 4 in terms of unit load movements. These statistics are only achievable due to the large operation that DFDS has in the port. DFDS operates its own terminals with controlled access gates effectively making it a port within a port. If DFDS' operation in Immingham were to be measured as a stand-alone port, it would be classed as the 8th largest in the UK measured by unit throughput. As a result, any impact from disruption or incidents in the river Humber that could impact shipping lanes or Immingham lock, is considerably larger for DFDS than other port users.

5. The Port of Immingham is the North Sea hub for DFDS' unaccompanied freight services with 5 of their short sea routes operating through the facility. DFDS has 24 arrivals and 24 departures per week on their scheduled freight services with 5 out of seven days seeing at least 3 scheduled arrivals and departures. In addition to the ferry activity, DFDS offers a vertically integrated door to door service for customers which includes collection and delivery on both sides of the North Sea. Over 30% of all the volume handled through the DFDS Ferry activity in Immingham is aligned to the wider DFDS Logistics organisation, which would cause more organisational disruption and consequence if the Humber was impacted due to the direct link to manufacturers.

6. DFDS Immingham does not only facilitate the loading and unloading of their own vessels but also perform the loading and unloading operations for shipping lines Eimskip and Sea-Cargo on their regular scheduled services that call through Immingham.

7. DFDS is seen as strategic to the supply chain in the UK with services secured by HMG for resilience in the lead up to EU exit. During the COVID pandemic, particular focus was kept on services by authorities to ensure robust supply chains.

8. With DFDS Immingham having one of the largest Ro-Ro operations in the UK, the 2023 forecast is to move 550,000 freight units consisting of trailers, containers, tank-containers and mafis, (a mafi is a wheeled unit designed for use on terminals for port-to-port movements carrying up to 100 tonnes) and 210,000 wheeled units consisting of cars, tractors and numerous types of mobile machinery, a total of 760,000 freight units. Freight units moving through the DFDS operation carry all types of cargo from medical and food supplies to construction materials. The mafi traffic consists of cargo such as large paper reels, timber, and raw steel supporting critical production lines for manufacturing purposes. These cargoes are discharged from the mafi and stored in our warehouses before being loaded to collecting road vehicles.

9. The DFDS operation has evolved from its original 50 acre, 3 berth inner dock site in 1995, to todays 175-acre 6 berth site – with 3 berths at the inner dock inside the lock known as 'Dockside' and 3 berths which are river accessible known as 'Riverside' The footprint of the operation has grown 3-fold, but the throughput has grown 8-fold in this time, resulting in a very slick and mature operation, that 'turns the capability of the site' every 30 hours. Many of our customers who support critical UK supply chains rely on the efficiency and robustness of our service to ensure they can meet the requirements of their customers.

10. Due to the layout and available land at Immingham, the expansion of the operations has resulted in a layout which is sub optimal, with unit load operations split onto the Riverside and Dockside terminals with warehouses located away from the main vessel operations. Due to this complexity, the DFDS footprint in Immingham is dissected by the main road network within the port. There are several bottlenecks where multiple tenants' operations overlap. Due to the imbalance of shipping volume DFDS needs to move around 1000 units each week from one part of the DFDS terminal to the other to continually create space where we need it.

11. Along with moving our customers cargoes between our Riverside and Dockside operations, every day we need to move multiple units from the main terminal area to one of our warehouses or transhipment areas, which requires us to traverse the main dock road network. We also move equipment to our repair and maintenance contractor on Immingham dock, as well as the requirement

for our staff to visit several site locations and make customer or stakeholder visits on or around the port estate (for example to visit customs or ABP).

12. The DFDS terminal operation is 24/7/363 (closed Christmas and New Years Day), with vessel and terminal activity relatively evenly balanced around the clock because we have scheduled vessel arrivals through the night as well as the day.

13. We are extremely concerned about the Applicant's proposed development as we believe this will cause congestion on the main dock road network, which will impact our operational activities as well as our customers abilities to access or depart our site. Whilst our terminal activities are relatively evenly balanced throughout a 24-hour 7-day period, the same cannot be said for gate activities i.e., the arrival and departure of freight units for export / import.

14. We experience peaks through our own gate houses at certain times and days. We know that on a Monday morning between 05:00 and 08:00 there is a peak for collections of import units from our Riverside terminal with a similar peak on Tuesdays, Wednesdays and Thursdays and a smaller peak on a Friday. We then see another peak between 14:00 and 18:00 on Mondays, Tuesdays, Wednesdays and Thursdays (see **Figure 1**).

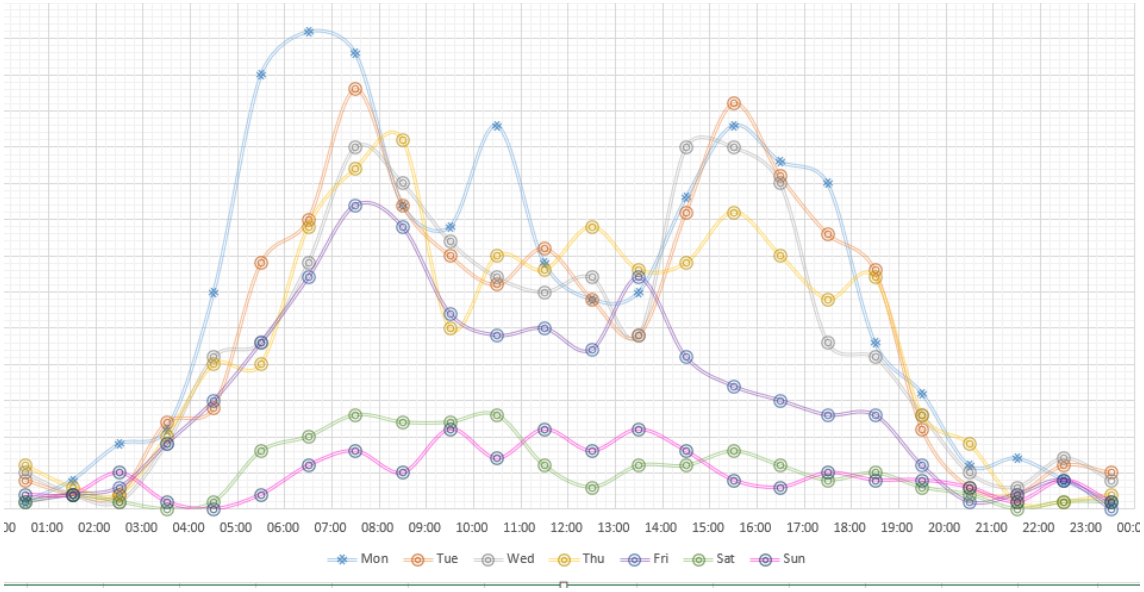


Figure 1: Hourly volumes of import units at DFDS Immingham by weekday

15. We experience a similar trend for the delivery of export units, and these peaks are seen between 15:00 and 19:00 Monday through to Friday towards scheduled sailing times as demonstrated in **Figure 2**.

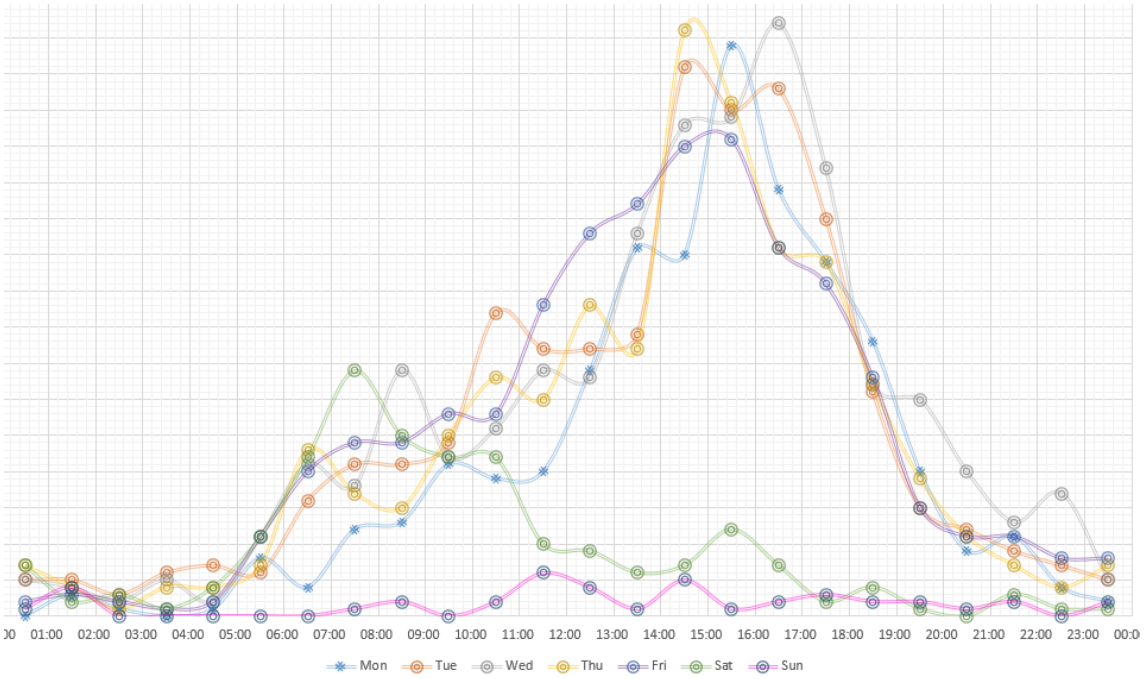


Figure 2: Hourly volumes of export units at DFDS Immingham by weekday

16. **Figures 1** and **2** show that for the flow of traffic to remain un-impaired the peaks must be taken into consideration when looking at any mitigation around congestion.

17. DFDS believe the proposed migration of traffic from West Gate to East Gate is unrealistic due to the information detailed in our Written Representations, however, even if this was achieved this would create an alternative problem at the East Gate due to the inadequate enhancements to the road infrastructure that have been proposed.

18. DFDS believe that most traffic would continue to access the dock estate from the West Gate due to the direction of approach (west to east onto the A160), and then travel through the dock estate to the new proposed site. This would result in a large increase in traffic traversing the dock estate from west to east, causing congestion along the main dock artery and importing unacceptable risk to our operation and the ability of our staff to perform their jobs and get in and out of their place of work safely and efficiently.

19. DFDS believe that if traffic did migrate to the East Gate as proposed, this would cause significant congestion which would impact our customers and colleagues. The East Gate is adjacent to Laporte Road, which in the last 2 years has been developed and linked as an alternative public route to Grimsby, and one which many people heading from the East to Immingham Dock now use. There is already congestion here during peak times, if a vehicle stops (or is stopped) at the gatehouse then a queue builds up on the road directly behind it, as well as on Laporte Road because vehicles can no longer turn right from here to access the gatehouse. The proposal to route 85% of up to 660,000 additional units through this location would cause significant impact for everyone attempting to access the docks.

20. DFDS also have two areas of land ('Pad five' and a 1-acre plot located next to the multi-purpose terminal) which DFDS Logistics use for trailer storage and strategic placement. The ability to

access these in a fluid manner will be impacted if there is a continuous stream of traffic going across the dock estate from west to east.

21. Congestion on the dock estate will impact our ability to perform our core operations, as the additional time and resources required will degrade the effectiveness and efficiency of the operation and will increase the CO2 emissions from our terminal machinery, which goes against a core DFDS strategic target to reduce relative emissions by 45% by 2030, and a fundamental requirement of the Humber Freeport Business Case.

22. The DFDS global strategy for decarbonisation has a significant reduction associated with our vessels. With technology innovation for cleaner vessels being not immediately accessible, a key strategy to achieve reduction in CO2 is schedule optimisation. Whilst there are some mitigations for this by ensuring a clean hill and correct hull coatings to reduce any drag, the only real way to achieve significant CO2 reduction is through the vessel arriving later and departing earlier allowing for slower steaming on the sea, burning less fuel and emitting less CO2. To achieve this, it is more important than ever that the terminals perform efficiently, and that there is resilience in the operation to continually allow vessels to optimise their schedules. Any delays caused by changes to how the river operates in terms of stemming or reduced manoeuvring windows because of the proposed new facility will impact our ability to reduce CO2 not only in terms of DFDS global strategy but also in line with Government ambitions and our social responsibility.

23. **Figure 3** highlights DFDS operations and footprint, with the red line being the dock road network which needs to be crossed on many occasions throughout the day.

Figure 3: Extent of DFDS operations at Immingham

THE COMPLEX NAVIGATIONAL ENVIRONMENT

24. The Port of Immingham is at the heart of the UK's busiest commercial port complex, handling over 30,000 vessel movements per year. Immingham is the UK's busiest port by tonnage, handling around 45 million tonnes of cargo each year and over 20 million tonnes of oil and chemical products. Consisting of an early Edwardian enclosed dock and multiple river berths Immingham has expanded considerably over the last 60 years creating numerous deep water river berths and Roll On Roll Off (RO-RO) facilities for daily ferry services.

25. Immingham is located 12 miles to the west of the entrance to the highly tidal Humber Estuary. Located effectively on a bend in the river in which the channel turns from a predominately east-west direction turning to a north-south direction at Killingholme and heading toward Hull. This change in direction of the channel in the Immingham area is significant, especially on the ebb tide as the flow of water does not readily turn to follow the hydrography of the river.

26. This location combined with the fast flowing tidal current and high density of traffic make Immingham a particularly challenging and technical area in which to navigate and is renowned to the many mariners that visit the port as a dangerous waterway for the unwary. What complicates the Port of Immingham further is that much of the infrastructure is built at an angle to the tidal flow. This makes the Immingham Oil Terminal (IOT) and the entrance to the lock, which are two of the busiest areas for vessel movements, areas with a high number of marine incidents. Small errors in judgement can have potentially disastrous consequences and this is reflected by the number of reported incidents in the area. This has resulted in the publication of multiple notices to mariners, general notices to PEC's and Pilots from the Humber Harbour Master regarding explicit procedures for manoeuvring in and out of the Immingham area.

27. As Immingham has continued to develop, available space, both on the waterfront and landside, have become increasingly scarce. The Applicant has had to become increasingly creative in developing new facilities in previously unconsidered areas to allow for expansion and growth within the port.

The IERRT Location

28. The new terminal structure is proposed within this complex area close to 5 operational berths handling dangerous liquid bulk cargoes. The IOT finger pier, with four berths for the export of oil product, sits some 95m to the northeast and the Immingham East Jetty, a berth for the importation of hazardous chemicals in bulk, sits 250m to the west of the proposed IERRT. Additionally, the IOT jetty stem has extensive unprotected pipework carrying oil and oil products to/from the visiting vessels.

29. The IOT finger pier and pipelines are in a vulnerable position when vessels would be manoeuvring for IERRT Berth 1. The strong tides in this area as previously mentioned leave little room for error. Without adequate impact protection DFDS are concerned about the possibility of an allision with either the IOT pier, a berthed tanker, or the trunkway pipelines.

30. Any chemical tankers berthed on Immingham east jetty would be vulnerable to vessels manoeuvring for IERRT berths 2 & 3. Again, the strong tides in this area and the restricted nature of the 2 berths mean vessels bound for berths 2&3 would need to manoeuvre very close to the chemical tankers berthed on the east jetty where again there is little room for error or the ability to deal with

machinery breakdowns and failures. DFDS believe that protection or relocation of this berth should also be considered by the Applicant.

31. It is of note that prior to 2004, APT used to berth vessels on the IOT finger pier on both flood and ebb tides with vessels 'backing down' onto the berths during the ebb tide. However due to the amount of jetty damage caused during these ebb approaches APT took the decision to only accept vessels in a strict tidal window and only on the flood tide with vessels approaching the berth 'head in' despite the commercial impact this caused.

Congestion at the Port of Immingham

32. The enclosed dock operation is, by its very nature, a considerably slower evolution than that of the riverside berths requiring vessels to lock in and out of the dock in order to raise or lower ships to either dock level or river level. Average lock in and lock out evolution times are 45 minutes per vessel. The enclosed dock evolutions are further compromised by the complex and fast flowing nature of the tide in the bellmouth area which requires vessels to manoeuvre from an area of fast flowing water to the static water conditions of the lock. The lock was constructed well over a century ago and whilst the engineers showed foresight of increasing vessel sizes, the trend for larger and larger vessels driven by globalisation of trade means increasing numbers of vessels are testing the capacity of the infrastructure to the limit. This clearly only adds to the complexity of lock operations for the traffic servicing the enclosed dock.

33. Many of the vessels now using the lock at Immingham have reached the maximum dimensions that can physically fit into the lock. When combined with the effects of wind and the need for many vessels to use tugs to safely transit the lock, this inevitably causes much slower lock evolutions than the standard 45 minutes.

34. In order to enhance vessel programming, ships are effectively allocated 'lock slots' similar to those used by aircraft at an airport. These slots represent the time it is anticipated a vessel will take to transit from the river to the dock or vice versa. There are a limited number of slots per day. This is increasingly the main limiting factor for the capacity of the in-dock cargos operation. As vessels have increased in size this has led to ships taking longer to enter and leave the lock which is frequently a cause of congestion and knock on delays for all customers of the enclosed dock.

35. Vessels that are considered tidally restricted (defined as "a standard equipped ship single fixed pitch propeller, conventional rudder, no thrusters units and a LOA (length over all) of 140 metres or more") require two tugs and are usually admitted to the dock close to high water and will take considerably longer than the 45 minute slot which can have knock-on effects for later vessels.

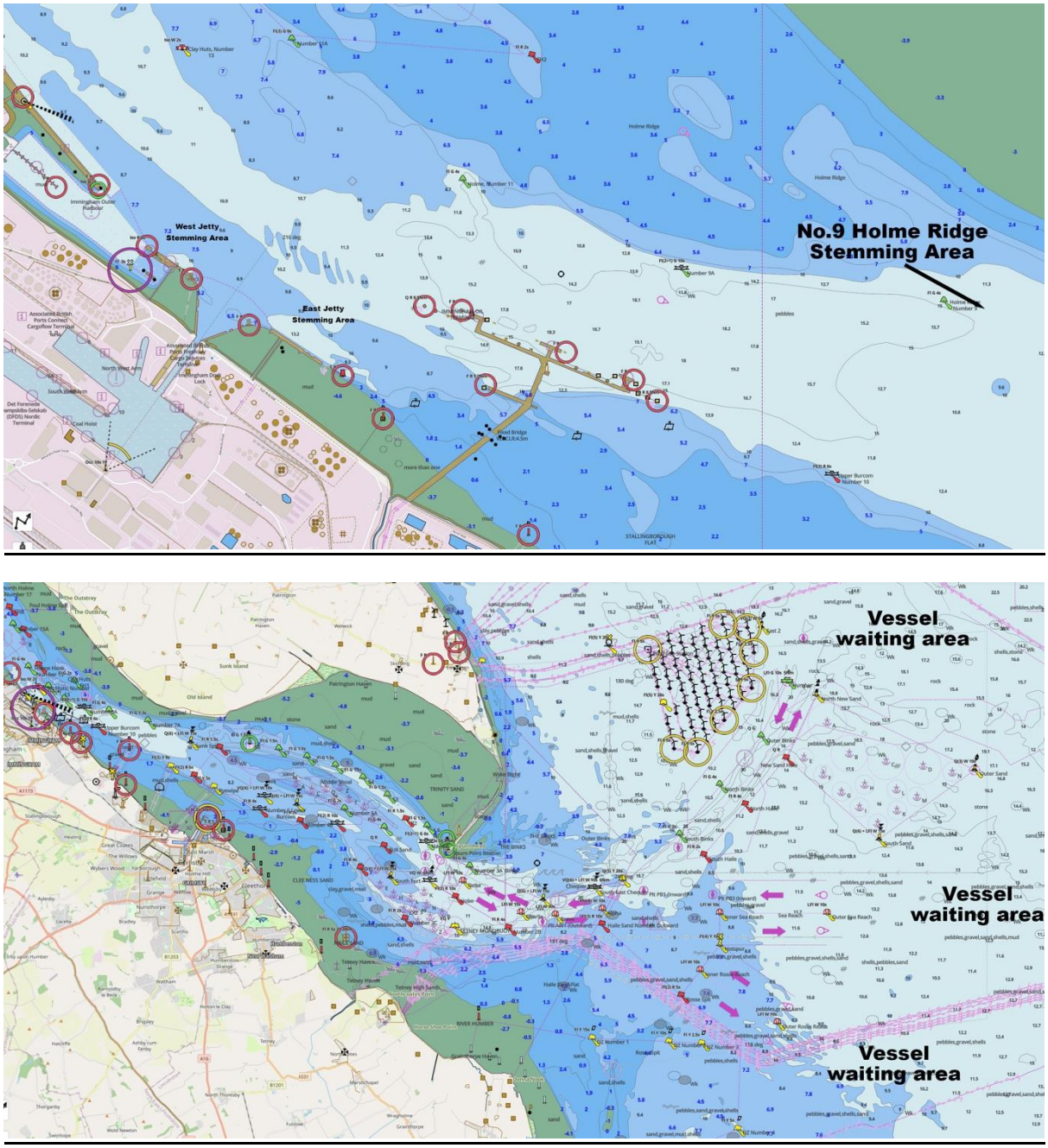
Stemming Areas

36. When the lock is in use there are waiting areas for other vessels known as stemming areas (where a vessel sits head to tide stopped relative the seabed). Outside of the lock there are 2 stemming areas, one adjacent to the Immingham east jetty and one adjacent to the west jetty, as shown below in **Figure 4**. These are extensively referenced in the Immingham Dock section of '*Humber Pilot Handbook*' published by the Humber Estuary Services (Page 120-134) (**Appendix 1** of this document).

Figure 4: Map showing West Jetty Stemming Area and East Jetty Stemming Area

37. Typically the east jetty area is used on the ebb tide and the west jetty on the flood tide allowing the vessels to sit 'head to tide', using the engine and helm to counteract the tide and maintain position, which facilitates a quicker manoeuvre into the lock when it becomes available. These stemming areas increase lock productivity as it allows vessels to await their turn for the lock as close as possible to Immingham dock.

38. The construction of the IERRT will limit or more likely remove the ability of vessels to stem the tide off the east jetty. This will then require vessels to use the west jetty stemming area (if available), slowing down lock approaches on the ebb tide which will lead to delays and a subsequent 'backing up' of inward vessels. This process is managed by The Statutory Harbour Authority's Vessel Traffic System (VTS) under the strict criteria of '*Standing Notice To Mariners S.H.22 'RIVER HUMBER: ENTRY TO IMMINGHAM DOCKS*' (**Appendix 2** of this document). This notice from the Harbour Master only allows 2 vessels to be within the Humber VTS area bound for Immingham Dock at any time. One vessel is permitted in the stemming areas off the east & west jetties and one vessel close to the No 9 Holme Ridge buoy to the east of IOT. All other inbound vessels are required to wait outside the VTS area 20 nautical miles to the east in the North Sea, as shown in **Figures 5** and **6**.



Figures 5 and 6: Locations of remote stemming areas

39. The east jetty and west jetty stemming areas are unavailable when vessels are manoeuvring on or off the IOT finger pier or entering and leaving the Immingham Outer Harbour respectively. The addition of the IERRT development would add further to this, preventing vessels from stemming to the east when vessels are entering and leaving giving an additional three and a half hours a day when traffic would be required to stem at the Holme Ridge buoy and outside the Humber VTS area. Since the IERRT movements are likely to be at similar times to the existing DFDS IOH scheduled movements, both east and west jetties would be unavailable during the scheduled arrival and departure times (AM/PM).

Oversight

40. Under the Port Marine Safety Code (PMSC), the duty holder is responsible for ensuring that their organisation complies with the Code. In order to assist the duty holder, who may not be a trained mariner, it is normal practice to appoint a 'Designated Person' whose duty it is to ensure harbour authorities' PMSC are complied with, and that appropriate Safety Management Systems are in place.

41. In most major ports an independent consultant is appointed to function in the role of the Designated person. This provides a degree of separation between the commercial and statutory functions of the port. An analysis of other UK major ports indicates demonstrates the role is generally independent from the duty holder.

- Port Of London - Captain Martin Phipps of ABPmer (Independent)
- Port of Harwich - Captain Martin Phipps of ABPmer (Independent)
- Milford Haven – ABPmer (Independent)
- Peel Ports (Clydeport, Dublin, Great Yarmouth, Heysham, Mersey & Birkenhead, Manchester Ship Canal, Shearness) - Captain Trevor Auld of ABPmer (Independent)
- Forth Ports – Unnamed Consultant – (Independent)
- Teesport – William Heaps of MARICO MARINE (Independent)
- Port Of Tyne – Unnamed (Independent)

42. ABP chooses not to use an independent consultant, preferring instead to directly employ their Designated Person who acts for the Applicant in all their 21 ports in the UK. On the Humber Estuary (as elsewhere in ABP Group) the Duty Holder role appears to be carried out by the ABP board of directors. At the first HAZID workshop the ABP team indicated that the Duty Holder was Simon Bird, Port Director (Humber) who is an ABP board member.

43. Given the complexities of the Navigational Risk Assessment, simulations and associated data, the duty holder has relied upon the assurance of the designated person that the new development is safe.

44. Despite the critical role the Designated Person serves in this application, ABP's Designated Person failed to attend any of the HAZID workshops, the simulations and other stakeholder meetings relating to this proposed development.

45. Despite this the DP has felt able to confirm the proposed development is indeed safe and that stakeholder concerns have been addressed. This is despite the presence of any concrete mitigations or a detailed understanding of stakeholder concerns. This issue is expanded upon further in DFDS' comments on the Applicant's 'governance' paper in the separate document of Comments on Deadline 1 Submissions.

Tug Use and Availability

46. Due to the presence of strong tides, frequently strong winds, ever increasing vessel size and the physical constraints of port infrastructure tugs are frequently employed by many of the vessels manoeuvring in the Immingham area. These dangers are so critical that the Harbour Authority mandate the use of tugs on certain vessels and on certain berths in this area.

47. There are 2 main towage providers in the Humber with a combined fleet of around 17 tugs. The main duty of the tugs is to assist the VLS (very large ship) passage plan vessels on and off their deep water berths in the Humber, to carry out additional towage for other vessels in particular at times of peak tidal flows and strong winds and to a lesser extent in a salvage and firefighting role.

48. Following a serious incident in 2002 in which the RO-RO vessel Stena Gothica was holed on approach to Immingham dock and subsequently sank in the lock at Immingham, blocking any traffic from entering or leaving the lock, it exposed a vulnerability of towage in the Humber as at the time all of the tugs were housed with the docks, the vast majority of those in Immingham lock. The sinking of the Stena Gothica led to the lock at Immingham being rendered out of action for over 14 hours. The inability of tugs to depart the dock to assist other vessels caused multiple vessel cancelations and caused widespread disruption of pilotage on the Humber.

49. Following the incident the port authority established tug barges outside of the dock to prevent a similar incident occurring in the future, the first being stationed at the eastern extremity of the east jetty and later within the Immingham Outer Harbour.

50. The East Jetty Tug Barge is an essential component of estuarial safety not only in preventing a similar incident in the future but also in being the permanent berth for the “Immingham Fire Tug’, a tug whose primary function is to assist in case of an emergency at IOT and also to provide rapid response to all other vessels in the area. The Immingham Fire Tug has been used countless times over the last 2 decades to assist vessels in difficulty following machinery breakdowns or other emergencies and has also had a major role in averting a major pollution incident when the unmanned vessel Fast Ann collided with the IOT in 2015.

51. The Applicant has not shown the East Jetty Tug Barge in their simulations but it is not clear if it has been omitted accidentally or is to be removed. If the former, then the simulations have been carried out on the wrong basis, and if the latter, the Applicant has failed to explain how the safety issues this will raise will be mitigated. The loss of this key component of estuarial safety would have far-reaching effects for all Humber traffic and general safety issues for all river users.

52. **Figure 7** below shows the tug barge added to one of the simulations (left) with the original simulation diagram on the right. This is simulation 4 from [**APP-090**].

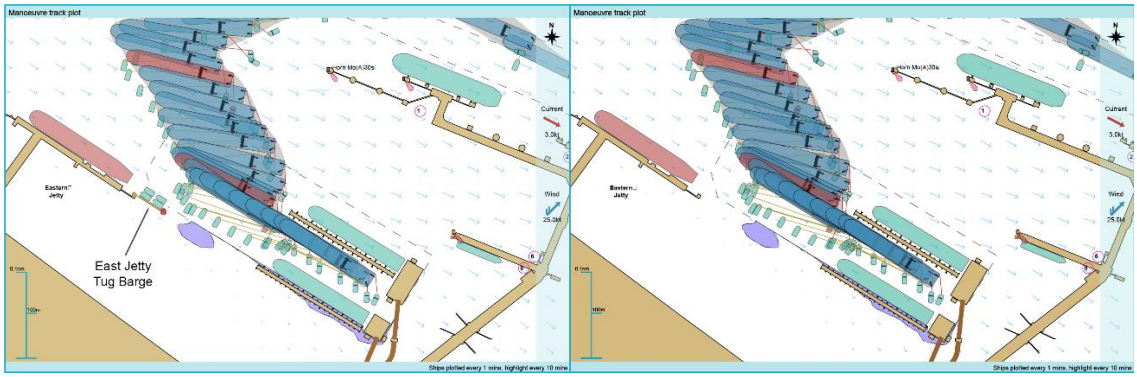


Figure 7: simulation with tug barge added

53. If however this is an error in the simulations and that the East Jetty Tug Barge is to remain in its current position this would again bring into question the validity of the simulations. If the barge had

been included in the simulations then in DFDS's opinion simulations 4,7,10,19,20,50,55 and 64 would also have been considered failures due to the fact that the IERRT vessel or her tugs would have made contact with either the barge or the tugs stationed on it or that the wash generated due to the amount of power being used would have compromised the safety to the tugs berthed at it.

54. The simulations have also shown that in order to operate safely the terminal will make extensive use of tugs whenever the wind is greater than 20 knots. This will no doubt be mandated by the Harbour Authority to preserve the safety of the IOT and East Jetty operations and reduce the risk of a major pollution event.

55. Given the limited number of tugs available and given the increasing issues the towage operators face with ensuring adequate rest hours for their tug crews, the Applicant does not appear to have ensured there will be adequate towage provision. Relying upon market forces to ensure adequate towage provision is in place will and has been insufficient in the past as tug operators have to balance need against the reality of a fully manned tug sitting idle when the weather is benign. Towage has always been a 'feast or famine' industry in which when the weather deteriorates every vessel wants a tug simultaneously and when the weather is benign they sit redundant. Towage firms have found over the years the 'sweet spot' of tug provision but this invariably leaves ships without towage when the weather deteriorates and decisions being made about which customers get towage and which do not. The Applicant so far has made no comment, given the intense towage requirement for this new development, how this will be facilitated and the impact this may have on other river users.

Wind Data

56. During the initial hearings Mr Mike Parr of HR Wallingford, on behalf of the Applicant, made a valiant defence of the use of wind data from Humberside Airport which is located well inland from the proposed development and in a comparatively sheltered location.

57. Mr Parr asserted that datasets from airport anemometers represented valuable datasets given the amount of historical data they provide. DFDS do not contest that airport anemometer datasets are indeed valuable and in the absence of any other data might need to be relied upon to give reliable historical data regarding the conditions in an area of planned development.

58. However DFDS are aware of the 2 anemometers in the area of the Port, owned and operated by ABP as Statutory Harbour Authority, at the Immingham Marine Control Centre located some 900m away from the development and the Stone Creek radar mast located on the opposite bank to the proposed development. Indeed the Applicant could also have approached APT for their historical wind data from the IOT anemometer. However despite these more appropriate resources, two of which they themselves operate, they chose to use the Humberside Airport Anemometer at Kirmington.

59. In their response to DFDS' relevant representation, the Applicant cites the Tilbury 2 NRA in which wind data was from London City Airport. Whilst this is true the Applicant also acknowledges that additional data came from the Gravesend anemometer approximately 600m from the Tilbury 2 development.

60. It is interesting that the Applicant has now claimed that whilst they have anemometers at the MCC at Immingham and Stone Creek there is no requirement for these to be recorded, implying that this data is not stored or no longer available. This statement comes from the Applicant's response to relevant representations [**REP1-013**], page 175: '*There is no requirement for an LPS to have wind*

recoding(sic) capability. Immingham is an LPS, MGN 401 (Amend 3) sets out LPS equipment requirements and does not specify wind sensor or met recording as requirement for sub VTS (LPS) level' (Page 175).

61. However it is stated in the Applicant's simulation report (DJR6612-RT002-R03-00), originally shared with DFDS, that the wind data used was taken from 12 months of recordings from the Immingham MCC, as shown in the extract below at **Figure 8**.

2.2.3 Wind

ABP Humber provided wind data collected from the Immingham Maritime Control Centre (at a height of 24m) between August 2020 and 2021. The data was analysed by HR Wallingford, as shown in Figure 2.12 and Figure 2.13.

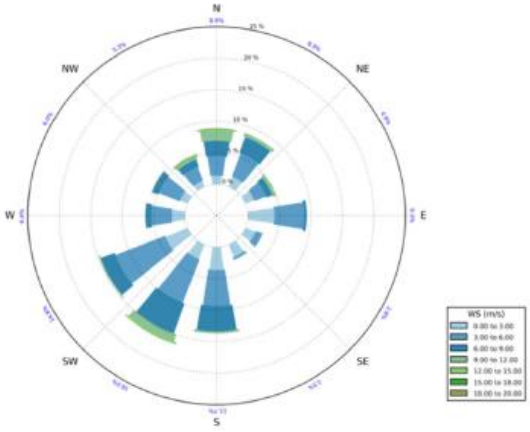


Figure 2.12: Wind rose showing distribution and strength of wind at IOH

Source: ABP/HR Wallingford

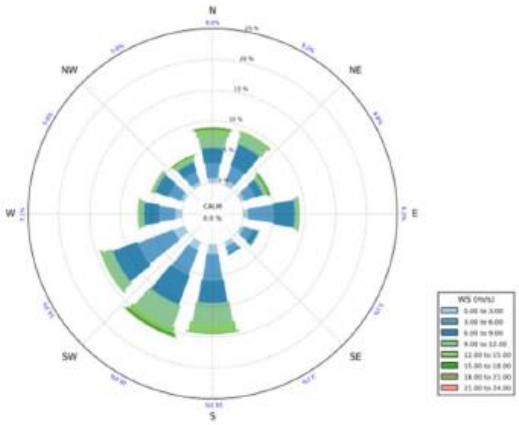


Figure 2.13: Wind rose showing distribution and strength of wind gusts at IOH

Source: ABP/HR Wallingford

Figure 8: Extract from the Applicant's Simulation Report

62. This data looks different from the HUY (Humberside Airport) data used in the Navigational Risk Assessment [APP-089] (page 12) – see **Figure 9** below:

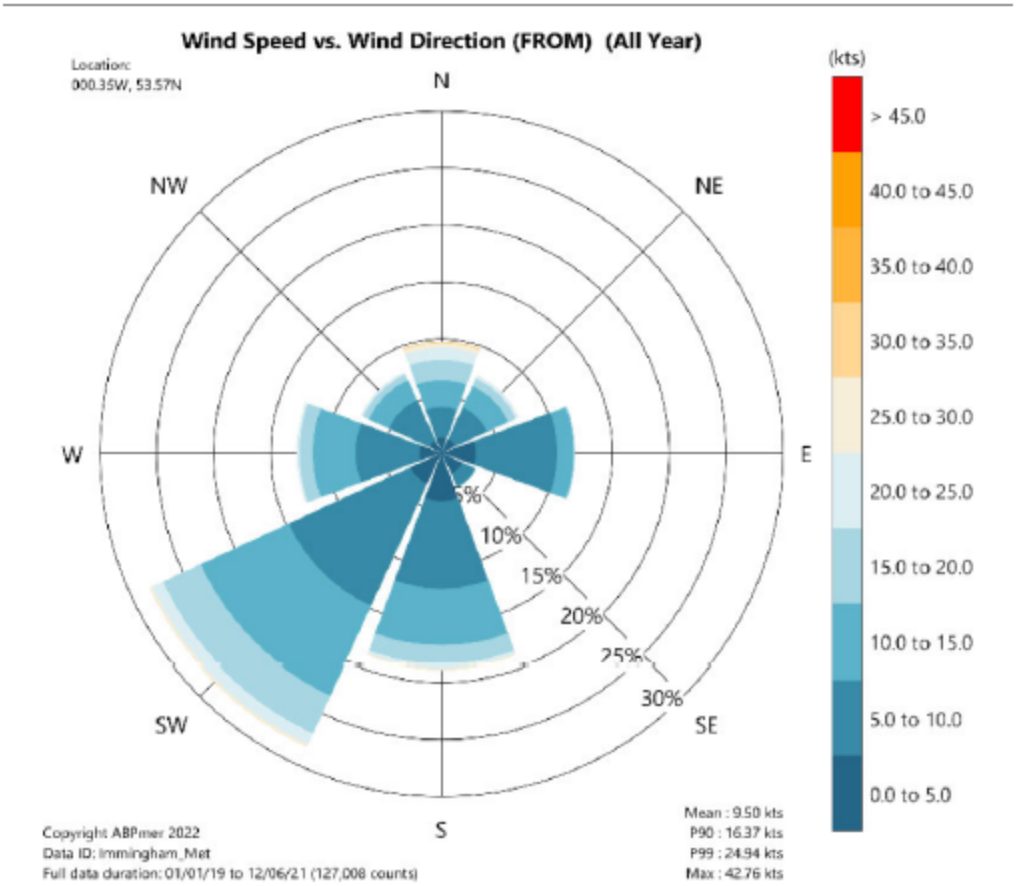


Figure 2 Wind Speed and Direction at 10 m Above Sea Level, Rose Plot

Table 1 Wind Speed Statistics

Period	Wind Speed Percentage (of Period) Occurrence					Mean Wind Speed [kts]	Max Wind Speed [kts]
	0-10 kts	10-20 kts	20-30 kts	30-40 kts	40-50 kts		
January	57.29	39.81	2.89	0.01	-	9.83	31.11
February	47	45.37	7.28	0.34	0.01	11.04	40.03
March	50.14	41.82	7.7	0.32	0.02	11.01	42.76
April	68.63	29.57	1.8	0.01	-	8.52	34.92
May	73.6	23.19	2.99	0.23	-	8.29	32.96
June	60.21	20.16	3.17	0.46	-	8.70	36.73
July	73.88	25.39	0.73	-	-	8.18	27.03
August	54.76	38.8	5.95	0.47	0.01	10.35	40.32
September	62.34	33.43	4.19	0.04	-	9.33	31.49
October	59.86	38.26	1.88	-	-	9.58	28.35
November	60.96	35.14	3.85	0.05	-	9.19	33.12
December	59.74	37.1	3.11	0.06	-	9.48	33.79
All-Year	61.15	34.78	3.9	0.17	0	9.50	42.76

Figure 9: Extract from Applicant's Navigational Risk Assessment

63. Whilst the data gathering and storage at Kirmington (i.e. the airport) are no doubt of high quality they are not representative of the conditions at the proposed development given the fact they are over 15km away and due to the topography surrounding Kirmington are sheltered from the full effect of the prevailing winds. The purpose of the anemometer at the airport is, understandably, by design, to give aircraft pilots important data about the conditions at the runway in order to make considered decisions regarding their approach or departure and for the exact same reason they would not wish to rely on wind data from the Immingham Marine Control Centre.

Dredging

64. The proposed deposit grounds for the capital dredge required for the development lie close to the north of the navigational channel at Immingham and Killingholme. These deposit grounds are currently used for the disposal of maintenance dredging material.

65. DFDS are concerned that the deposit of capital dredge material from the proposed development will lead to a greater amount of shoaling within the main channel at 'Halton Middle' (which is an area that already restricts the draft of vessels bound to and from Hull docks) and also in the deepwater dredge boxes for the Humber Sea Terminal, Immingham Gas Terminal, South Killingholme Jetty, Humber International Terminals, Immingham Bulk Terminal, and of particular concern to DFDS, the Immingham Outer Harbour.

66. All of these areas are currently prone to siltation and require constant maintenance dredging to ensure adequate under keel clearance for vessels. DFDS recently had one of their RO-RO vessels aground in the IOH due to insufficient maintenance dredging. Given the dredgers on the Humber are currently struggling to cope with this baseline siltation DFDS are extremely concerned about the ability of these vessels to cope with the additional material that will be carried from the deposit grounds into these areas by the tidal flows.

GOVERNANCE

67. DFDS was proposing to include its own description of the governance of the Port of Immingham at this point, but given the Applicant's paper submitted at Deadline 1 [**REP1-014**], it has instead responded to that paper in its comments on Deadline 1 submissions, which is submitted separately at Deadline 2.

HISTORY OF ENGAGEMENT

68. DFDS have repeatedly brought its concerns to the Applicant's attention since the project was first made public. A full schedule of correspondence is included at **Appendix 3** of this document. What follows is an issue-by-issue explanation of the engagement that has taken place.

The Applicant's vessel simulations

69. Although all correspondence merits review, DFDS would particularly draw the Examining Authority's attention to the DFDS letters/emails of 15 July, 23 August, 29 August, 5 October, 18 October, 22 November 2022 and 12 January, 16 February and 21 March 2023, as well as the separate letters/emails sent to Captain Andrew Firman, the Humber Harbour Master, sent on 29 August and 8 November 2022. DFDS has expressed concerns about the vessel simulations as far back as early 2022. Initially the concern was simply that the Applicant was reluctant to share the vessel simulations

which underpinned its marine safety case with DFDS. From at least April 2022, DFDS repeatedly requested the Applicant make the simulations available to DFDS and other stakeholders. Details of the simulations were clearly needed for DFDS (and other stakeholders) to understand the marine risks which feed into the Navigational Risk Assessment (NRA).

70. In addition to verbal requests made by DFDS, the initial request being made at the HAZID workshop on 7 and 8 April 2022 (noting that this was the first workshop DFDS attended as they were not invited to the first workshop apparently held on 29 October 2021), DFDS requested that vessel simulations be made available in numerous letters/emails to the Applicant dated 29 April, 25 May, 1 June, 28 June and 15 July 2022. The simulations were only released by the Applicant on 2 August 2022 (via email), ahead of the HAZID workshops held on 16 and 17 August 2022. DFDS assume that the Applicant was reluctant to share the vessel simulations with stakeholders because the Applicant was concerned that they were based on flawed data, or at the very least would be subject to critical scrutiny.

71. Once the vessel simulations had finally been shared, and DFDS was able to review and evaluate the data and assumptions underlying the simulations, DFDS raised concerns over the validity of the simulations. These concerns covered a number of issues including the fact that flawed tidal flow and wind data have been used by the Applicant in the simulation model, the use of unrepresentative vessels to provide best possible outcomes (the Applicant used the highly manoeuvrable and powerful DFDS Jinling class of vessel for its simulations but these are not representative of the vessels which will use IERRT, at least initially) and the over use of bow thrusters and the most powerful tugs available on the Humber to achieve successful outcomes. DFDS has also raised concerns over the Applicant's assessment of what constituted a successful simulation run, as opposed to a marginal, failed or aborted simulation run (the Applicant does not count certain aborted runs as failures which DFDS consider they should be as aborting a run to avoid it being classified as a failure is misleading and distorts the true picture of the risks inherent in the IERRT berths) – DFDS consider that the Applicant materially understates the number of failed and marginal simulation runs. In addition, in its email of 16 February 2023 (which takes account of the additional simulations run by the Applicant in November 2022 but reports of which were only provided to DFDS in late January 2023) DFDS raised concerns over the scope of the simulations, namely that nearly all simulations have been run for Berths 1 and 2 at IERRT but only a single simulation has been run for Berth 3, the most difficult and therefore most risky berth to operate from.

72. Concerns were initially raised at the HAZID workshop on 16 and 17 August 2022, which as noted above, was the first opportunity DFDS and other stakeholders had to scrutinise the Applicant's simulation work in this forum. DFDS has continued to raise its concerns with the Applicant, and also to make constructive feedback as to how its simulations could be improved, on a regular basis, including in emails and letters sent to the Applicant on 23 August, 29 August, 5 October, 18 October (sent directly to the Applicant's CEO, Henrik Pedersen due to concerns that the Applicant's project team were not treating DFDS or other stakeholder concerns seriously), 24 October and 22 November 2022. DFDS's concerns remain. DFDS also sent a detailed email to the Applicant on 16 February 2023, after the Applicant submitted its revised application for development consent. This response dealt with the simulation re-runs carried out by the Applicant in November 2022 and was not sent by DFDS earlier due to the fact that the Applicant did not send copies of the reports on the simulation re-runs to DFDS until 23 January 2023, after the Applicant submitted its application for development consent.

73. Concerns over the validity of vessel simulations were also raised at various meetings held between DFDS and the Applicant over this same time period and were included in DFDS's response to the Applicant's supplementary statutory consultation submitted on 25 November 2022, extracts of which are included in the Applicant's Consultation Report, Appendix L (**APP-034**).

74. At the same time, DFDS also raised its concerns regarding the simulations separately with the Humber Harbour Master (Captain Andrew Firman) in letters/emails sent on 29 August and 8 November 2022 and at a meeting on 13 October 2022.

75. The Applicant indicated that even though additional vessel simulations were going to be undertaken in response to concerns that the original simulations were based on incorrect data and were flawed in other ways, no new NRA would be produced as a result of those simulations and no new HAZID workshop would be held.

76. Copies of all relevant correspondence between DFDS and the Applicant, including correspondence referred to in this Written Representation, is included in **Appendix 4** of this document.

77. As noted above, despite undertaking additional vessel simulations to help to properly inform the process and the NRA, the Applicant submitted an application for development consent on 5 January 2023, before the Applicant shared the results of the simulation re-runs with DFDS. DFDS assumes these were also not shared with any other relevant stakeholders, prior to the application being submitted, thereby preventing the stakeholders commenting on the simulation re-runs prior to application. The Applicant shared the results of the simulations re-runs with DFDS on 23 January 2023, over two weeks after their application was submitted.

The Applicant's Navigational Risk Assessment (NRA)

78. DFDS has made clear throughout the progression of this proposed development that it considers the NRA produced by the Applicant is not fit for purpose and cites a number of reasons for this, at various points of the proposal's development. DFDS concerns regarding the fitness for purpose of the NRA were made in letters and emails from DFDS (or DFDS' legal advisers) to the Applicant on 29 April, 25 May, 1 June, 15 July, 23 August, 29 August (both in a letter to the Applicant's project team and in a separate letter to the Applicant's CEO), 5 September, 5 October and 18 October 2022 (to the Applicant's CEO) as well as in DFDS's response to the Applicant's supplementary statutory consultation in November 2022 and in various meetings involving the Applicant and DFDS personnel. Concerns relating to the NRA were also raised with the Humber Harbour Master in DFDS letters to him on 29 August and 8 November 2022.

79. One component of the lack of fitness for purpose of the Applicant's NRA, but a material component, is the use by the Applicant of mixed methodology which uses both the Offshore Renewable Energy Installations (OREI) methodology – which is not appropriate for a port facility which is clearly not offshore renewable energy installation – and the IMO FSA methodology. This issue was first raised in writing by DFDS in BDB Pitmans' letter to the Applicant of 15 July 2002 and then repeated in letters/emails of 29 August, 5 October, 18 October and 8 November 2022 and in DFDS's response to the supplementary statutory consultation of 25 November 2022.

80. DFDS would like to draw the Examining Authority's attention to the Applicant's email to DFDS dated 20 March 2023 which, in response to the continuing and material concerns raised by DFDS and other key stakeholders, invited senior representatives of key stakeholders to a "very important"

meeting so that the Applicant could present the proposed development and how it was intended to operate including to attempt to address the key process issues raised by stakeholders. This meeting had been promised by Henrik Pedersen, the Applicant's CEO, who had indicated that Simon Bird, ABP Humber Director would follow up. In the event, having arranged the meeting and asked stakeholders for representatives' names, the Applicant cancelled the meeting with less than a week's notice, and after relevant travel arrangements to the UK had been made by DFDS representatives travelling from Denmark. The Applicant noted it would arrange individual meetings with stakeholders instead of a gathering of stakeholders, the Applicant has still not contacted DFDS to arrange this meeting.

Tidal Flow Direction

81. The fact that the Applicant has consistently not reflected the correct tidal flow direction in the IERRT approach areas has been flagged on numerous occasions by DFDS and also acknowledged at HAZID workshops by attending pilots and PEC holders and also by Captain Andrew Firman, the Humber Harbour Master.

82. This issue was raised in the HAZID workshop held on 16 and 17 August 2022 and in subsequent meetings with the Applicant and followed up in letters/emails to the Applicant dated 23 August, 29 August (letters to both the Applicant project team and to the Applicant's CEO), 5 October, 18 October 2022 (to the Applicant's CEO) and 16 February 2023, as well as in the DFDS response to the Applicant's supplementary statutory consultation and in letters/emails to the Humber Harbour Master dated 29 August and 8 November 2022.

Wind Data

83. DFDS has also consistently raised concerns over the wind data being used by the Applicant both in its vessel simulations and in its NRA.

84. The Applicant's simulations exclusively used the Immingham Marine Control Centre, which is known by mariners to be in a relatively sheltered location, as opposed to the Stone Creek anemometer on the Humber estuary, generally considered to be more representative of wind experienced in navigation of the Humber in the Immingham area, was flagged in DFDS letters/emails of 29 August (to the Applicant and Humber Harbour Master), 5 October and 18 October 2022, as well as in the DFDS response to the supplementary statutory consultation, November 2022.

85. In the Applicant's NRA, however, the wind data comes exclusively from the Humberside Airport Runway Anemometer at Kirmington located 15km south west of the proposed development. Due to the data source being identified by latitude and longitude rather than an anemometer station name this issue was only identified by DFDS more recently and is in DFDS' Relevant Representation [**RR-008]** and was raised at ISH2.

Commercial Impact of IERRT Vessel Movements on Existing Port Operations

86. DFDS's response to the statutory consultation in February 2022 highlighted its concern that the additional vessel movements associated with the proposed development would result in marine congestion and delays for all existing operations at the Port. This issue has been consistently flagged by DFDS to the Applicant, and DFDS have requested that the Applicant should hold a workshop on the commercial and operational impacts of the proposed development on existing port operations,

including all in-dock operations, given that the entrance to Immingham lock is in the same area as the approaches to IERRT and is a particularly difficult area to navigate in. The Applicant agreed that it would hold such a workshop, but no such meeting has taken place.

87. This issue was also raised in the HAZID workshop held on 16 and 17 August 2022 and in a meeting between DFDS and the Applicant on 13 October 2022 and is highlighted in DFDS letters/emails of 5 October, 8 November (to the Humber Harbour Master) and 22 November 2022. The Applicant confirmed in an email of 24 November 2022 that it would be happy to arrange a commercial/operational workshop to explore the impact of the proposed development and noted this would be followed up, but it never was.

Landside Road and Access Gate Congestion

88. Another key issue which DFDS has raised throughout the process is DFDS's concerns regarding potential congestion at the gate accesses and on local roads, the impact on existing Port users and how this has been assessed by the Applicant. DFDS has consistently raised this concern, including in its response to the statutory consultation in February 2022, in its response to the supplementary statutory consultation in November 2022, in various meetings held with the Applicant and in its letters/emails of 15 July (sent by BDB Pitmans) and 29 August 2022 (to the Applicant's CEO) and in its Relevant Representation [**RR-008**] and further detail is provided in paragraphs 148 to 192 of this Written Representation.

Promised Meetings Cancelled or Not Followed Up by The Applicant

89. As noted in paragraphs 80, 86 and 87 above, the Applicant agreed to arrange a couple of key strategic meetings with material stakeholders to try to address some of the main concerns raised by DFDS and other stakeholders.

90. The meeting offered by the Applicant's CEO for senior stakeholder representatives so that the Applicant could present the proposed development and how it was intended to operate, including to attempt to address the key process issues raised by stakeholders, was arranged by the Applicant's project team and was then cancelled at short notice, without a satisfactory explanation. A promise to arrange individual stakeholder meetings instead was never followed up by the Applicant.

91. The meeting offered, in response to repeated requests from DFDS that a workshop for all existing port users whose operations might be impacted was needed to discuss the commercial/operational impact of marine operations at the IERRT on existing vessel movements at the port was agreed to by the Applicant, but again never followed up.

Summary of Key Correspondence

92. As can be seen from the correspondence enclosed in the Schedule of Correspondence at **Appendix 4**, DFDS has been regularly and consistently raising its key concerns with the Applicant's proposed development since it submitted its response to the statutory consultation in February 2022, and before that date in various meetings held with the Applicant. DFDS has raised concerns not only in general terms but also making clear its specific issues with the Applicant's proposed development, processes followed and underlying data.

NAVIGATIONAL SIMULATIONS

93. The Applicant has conducted navigational simulations that are recorded in application documents [**APP-090**], [**APP-091**] and [**APP-092**]. These had several shortcomings, set out in the following paragraphs.

94. DFDS has attempted to engage with the Applicant on numerous occasions over their serious concerns regarding the navigational simulations conducted at HR Wallingford. Our primary concerns surround the simulations conducted between November 2021 and April 2022 in which a simulated model of our own Jinling Class of RO-RO vessel was used to demonstrate the manoeuvring of a vessel onto and off from the proposed terminal.

95. This vessel was deemed '…a good representation…' of vessels that may use the proposed development when operational. Obviously, it is a vessel DFDS has a great deal of experience with.

96. Our primary concerns with the simulations are:

a. The over-reliance and unrealistic use of tugs to assist in the manoeuvres.

b. A concern as to whether the East Jetty Tug Barge has been omitted from the simulations or is being removed;

c. Classification of some aborted simulations as successful and some failures as marginal.

d. The lack of simulated arrivals and departures from IERRT Berth 3.

e. The excessive use of machinery to achieve 'successful' simulation runs,

f. The tide as represented in the simulations, in particular the tide around the IOT and Immingham Bellmouth areas, both geographical locations that our experienced ships masters have considerable experience in.

The Unrealistic Use of Tugs

97. Many of the simulations relied on the assistance of compact (<25m LOA), high power (70t) tugs in order to successfully conduct the intended manoeuvre. DFDS has raised the issue that tugs with these twin properties are in short supply on the Humber, numbering only 4 such tugs on the Humber (as of 25 July 2023). These 4 tugs are split between 2 towage companies, 2 tugs operating for Svitzer and 2 for SMS Towage. The companies do not work together and therefore will not provide split towage between the two companies.

The Effect of Ship's 'wash' on a Tug

98. When generating thrust either from a vessel's bow thruster(s) or via the main propeller(s) an area of highly turbulent water is created known as 'wash'. The wash effect of propeller(s) can be seen on most vessels in the 'wake' they leave behind them as they move through the water.

99. A vessel's 'wash' can however be extremely dangerous for a tug when assisting a vessel as this turbulent water can destabilise the tug or swamp it. It is therefore good seamanship to use reduced amounts of bow and engine thrust when operating with tugs, especially in enclosed areas as the wash

effect is effectively funnelled and reflected making it more intense and allowing it to be reflected in different directions making it unpredictable.

100. During many of the simulated manoeuvres high levels of thrust from both the ships main propellers and bow thrusters were used whilst tugs were employed to assist the vessel. Use of such excessive power is highly dangerous in that it may destabilise the tug, compromising the tug master's ability to control the tug or possibly swamp the vessel with the risks to stability and safety of life this may cause.

101. Whenever a tug is employed to assist a vessel due caution should be exercised to limit the amount of thrust that is being directed onto the tug whilst manoeuvring. DFDS do not consider many of the manoeuvres to be conducive to the safety of the tug nor good seamanship practice.

102. Following incidents in which tugs were badly damaged when assisting vessels (FINHAWK September 2009 & STONESS February 2013) the Harbour Authority used these as examples of the danger of ships wash in confined areas in the pilot training and PEC renewal meetings our masters attended.

Omission of Eastern Jetty Tug Barge

103. Following the STENA GOTHICA Incident of 2002 in which a RO-RO vessel bound for Immingham Dock allided with the eastern approach jetty, holing herself and subsequently sinking in Immingham lock and the subsequent impact this had on estuarial safety, a decision was made by the SHA (both Humber & Port Of Immingham) to create a mooring barge at the end of the Eastern Jetty to provide safe mooring for up to 4 Svitzer tugs.

104. The barge has been in position for over 20 years and appears on all navigational charts from the Admiralty and the Applicant's own hydrographic department charts, both paper-based and electronic. In addition to providing general moorage for Svitzer's tugs it also provides a permanent mooring for the 'Fire Tug'. The fire tug is, as the name suggests, on immediate notice to assist in IOT emergencies or indeed any vessel in unforeseen difficulties in the Immingham area, this is generally limited to a machinery failure (of a vessel).

105. Despite this the barge fails to appear on any of the navigational simulations conducted by HR Wallingford but does appear on the engineering drawings provided by Jacobs, the Applicant's main contractor. DFDS are unsure as to whether this barge is to be removed or if it has been omitted in error in all the navigational simulation exercises.

106. If it is an error then it calls into question the 'success' of many of the Applicant's simulations given the proximity the simulated vessel and her tugs have in relation to the barge and any moored tugs, which may have led to an allision or seriously compromised the safe mooring of the tugs stationed thereon. DFDS believe this would have led to simulations numbered 4,7,10,19,20,50,55 and 64 being classed as failures.

107. Alternatively if this is not an error, the Applicant has failed to provide details of how adequate moorings, external to Immingham Dock are to be provided to protect against the issue of tugs effectively becoming trapped within the dock should a similar incident occur in the future. It also fails to identify where the fire tug will be stationed nor does the Applicant include anything in their NRA to indicate how such a removal would impact navigational safety.

Navigational Simulation Analysis

108. At the first hearing dealing with navigation, ISH2, counsel for the Applicant stated that the simulations were designed to '…test the absolute limits…' ([**EV3-008**] at 1:02:35) . If this is indeed the case what are those limits as there is no indication in either the simulation reports nor the NRA what limits have been decided upon? DFDS is sceptical as to whether extreme settings were used rather than typical ones. Without this very basic and critical information it is impossible to decide on the safety of the proposed development.

109. In fact, the Applicant has been vague throughout the process as to exactly what is proposed in terms of tide and wind limits, mandatory tug use and impact protection. Without these critical pieces of data how are stakeholders and the Examining Authority able to make an informed decision as to whether this terminal can operate safely.

110. The Applicant states in the Navigational Risk Assessment [**APP-089**] in that 'additional training' of the CHA's pilots is the extra safety measure that will make the development safe (page 89) however one would hope that such routine safety measures were already in place and is therefore not an additional risk mitigation.

111. The maritime experts at DFDS have analysed the simulations conducted on the Jinling vessels at HR Wallingford onto and away from the proposed terminal. Our mariners have undeniable experience in the manoeuvring of these vessels as they are doing it for real on a daily basis. When analysing the simulations our masters used their experience from real world manoeuvres and previous simulator experience and the criteria for a successful, marginal and failed outcomes was set by our team as such:

a. 100% Bow thruster use in excess of 3 minutes (continuously or nearly continuously) was deemed to be marginal as it indicated a vessel on the very limit of what should be considered a 'safe' manoeuvre.

b. Engine use in excess of 60% was deemed marginal as from experience our masters know this is the limit of what should be considered a 'safe' manoeuvre. Our masters only use more than 60% when on passage but NEVER whilst manoeuvring.

c. If either of the first 2 criteria were met whilst working with the assistance of a tug they were deemed a failure due to the danger to the tug and her crew by the excessive wash this amount of machinery use would cause.

d. Tug power in excess of 100% for more than 3 minutes were considered marginal as again they do not represent 'safe' manoeuvres.

112. Our analysis of the simulations conducted in 2022 demonstrate that only 50% of the runs could be deemed a success which is hardly a reassuring figure (see **Tables 1 - 3** below).

Run Number	Analysis	Berth	Result	Result Wallingford
1	This run appears to have been aborted However, if continued to berth marginal due to bow thruster use	2	Abort	Success

2	Successful manoeuvre	2	Success	Success
3	Successful manoeuvre However, 100 % bow thruster use for more than 1 minute	2	Success	Success
4	Marginal due to use of propellers. Propellers will wash the tug away with 60% ahead.	2	Marginal	Success
5	Successful manoeuvre	2	Success	Success
6	Successful manoeuvre	2	Success	Success
7	Successful manoeuvre	2	Success	Success
8	Fail due to bow thruster use (100% for 7 minutes) and excessive propeller wash for tugboat	2	Fail	Fail
9	Marginal manoeuvre – no room for error and excessive propeller wash for tugboat	2	Marginal	Marginal
10	Marginal due to excessive bow thruster use	2	Marginal	Success
11	Insufficient information However, 100 % bow thruster use for more than 4 minutes	2		Marginal
12	Tug grounded and excessive bow thruster use (100% for 9 minutes) whilst tug assisting.	2	Fail	Marginal
13	Excessive bow thruster and engine use	2	Marginal	Success
14	Excessive bow thruster and engine use	2	Fail	Success
15	With correct tide in the simulation the vessel would allide with the No11 Buoy at the start of the manoeuvre	2	Fail	Success
16	Incomplete	2	Abort	Abort
17	Incomplete	2	Abort	Abort
18	Incomplete Current at very different angle both north of IOT but also at IERRT berths?	2		Abort
19	Marginal due to almost 100 % tugboat use for 4 minutes (turning)	2	Marginal	Success
20	Excessive bow thruster and engine use	2	Marginal	Success
21	Excessive bow thruster and engine use	2	Marginal	Marginal
22	Successful manoeuvre	2	Success	Success
23	Excessive bow thruster and engine use	2	Marginal	Marginal
24	Successful manoeuvre however the current is at a *very* different angle both North of IOT but also at berths. Now working against wind?	3		Success
25	Engines at 75 % pitch astern. Marginal at best and tugboats could be washed away	2	Marginal	Success
26	At 3-8 minutes port propeller more or less 70% ahead tugboat would be dangerously affected	2	Fail	Success
28	Successful manoeuvre	IOT 8	Success	Success
29	Successful manoeuvre	IOT 8	Success	Success
30	Successful manoeuvre	IOT 8	Success	Success
31	Incomplete	IOT 8	Abort	Abort
32	Vessel lands heavily	IOT 8	Fail	Abort
33	Incomplete	IOT 8	Abort	Abort
34	Successful manoeuvre	1	Success	Success

35	Almost 100% bow thruster use for 4 minutes and engine use up to almost 80 % power. Tug endangered and the mooring lines on the vessel on berth No. 2 will be under excessive strain and stretched.	1	Fail	Success
44	Vessel unable to lift off berth despite the wind of only 12.5 knots (effectively a summer's day)	2	Fail	Fail
45	Vessel unable to lift off berth Bow thruster at 100% from start to end of simulation and port propeller more or less 75-85 % forward	2	Fail	Fail
46	Vessel starboard quarter unable to lift off berth, possible allision with tanker on eastern jetty if simulation continued as vessel not yet head to tide.	2	Marginal	Success
47	Vessel unable to lift off berth	2	Fail	Fail
48	Successful manoeuvre	2	Success	Success
49	Successful manoeuvre however RPM cannot be in zero as the vessel is moving forward. Not possible to judge	2		Success
50	Marginal due to bow thruster use 100% for 4 minutes	2	Marginal	Success
51	Fail due to danger to the tug boat in regards to the wash from the bow thruster	2	Fail	Success
53	Successful manoeuvre	2	Success	Success
54	Successful manoeuvre	2	Success	Success
55	Successful manoeuvre	2	Success	Success
56	Marginal due to bow thruster use for almost 9 minutes	2	Marginal	Success
57	Successful manoeuvre	2	Success	Success
58	Uncontrolled approach and excessive bow thruster use (100% for 20 minutes) endangering the tug and tug boat using 75-100% power.	2	Fail	Success
59	Allision with vessel on east jetty	2	Fail	Abort
59A	Marginal due to bow thruster use in excess of 5 minutes. Could utilize tug better therefore marginal	2	Marginal	Success
60A	Tide completely wrong in simulation	2		Success
61A	Fail due to bow thruster use of 100% in excess of 8 minutes whilst tug assisting endangering the tug	2	Fail	Success
62	Successful manoeuvre	2	Success	Success
63	Successful manoeuvre	2	Success	Success
64	Marginal due to bow thruster use. Could utilize tug better therefore marginal	2	Marginal	Success

Totals DFDS Analysis ABP Analysis Berth Analysis

Success	14
Marginal	14
Failed	13
Aborted	3
Unable to assess	5

Success	36
Marginal	5
Failed	4
Aborted	4
Unable to assess	0

Berth 1	2
Berth 2	46
Berth 3	1
IOT 6	1
IOT 8	20

Table 1: The Applicant's simulations with DFDS' results, the Applicant's results and the berths used

Stakeholder Simulations

These were ungraded by the Applicant, however the berths utilised in the simulations were as shown in **Table 2**:

Berth 1	16
Berth 2	0
Berth 3	0
IOT 6	0
IOT 8	15

Table 2: Totals of 'stakeholder' simulations by berth

Totals of ABP simulations and stakeholder simulations

Berth 1	18
Berth 2	46
Berth 3	1
IOT 6	1
IOT 8	35

Table 3: Totals of all simulations by berth

113. The simulations seem to have been designed to prove what is possible in a simulator rather than how this terminal will operate in a safe manner once operational. The Applicant has failed to identify the vessels that will operate to the berth once operational and make unrealistic use of tug types and abilities. They also do not fully test the ability to arrive and depart from Berth 3.

114. Only one Berth 3 simulation has been undertaken by the Applicant in 101 simulations undertaken (simulation 24 – see **Figure 10** below) which is inadequate given the complexity this berth presents. The manoeuvring for berths 2 and 3 will be significantly different depending upon the direction of the wind. The prevailing wind in the area is south-westerly resulting in the wind pushing vessels off the berth. This creates severe manoeuvring issues given the confined nature of the IERRT especially when vessels are berthed on berth 2. It also creates potential difficulties in clearing the chemical tankers berthed on the Immingham East Jetty in northerly winds. The failure to adequately simulate these means the risks involved with Berth 3 have not been adequately considered.

115. It is also of note that in the solitary Berth 3 exercise the tide appears to be completely different as it is moving in a northerly direction which is diametrically opposed to the wind direction in the

simulation making the manoeuvre significantly easier. None of the experienced mariners nor our consultants have ever experienced a tide running in this direction in these locations with which we are familiar.

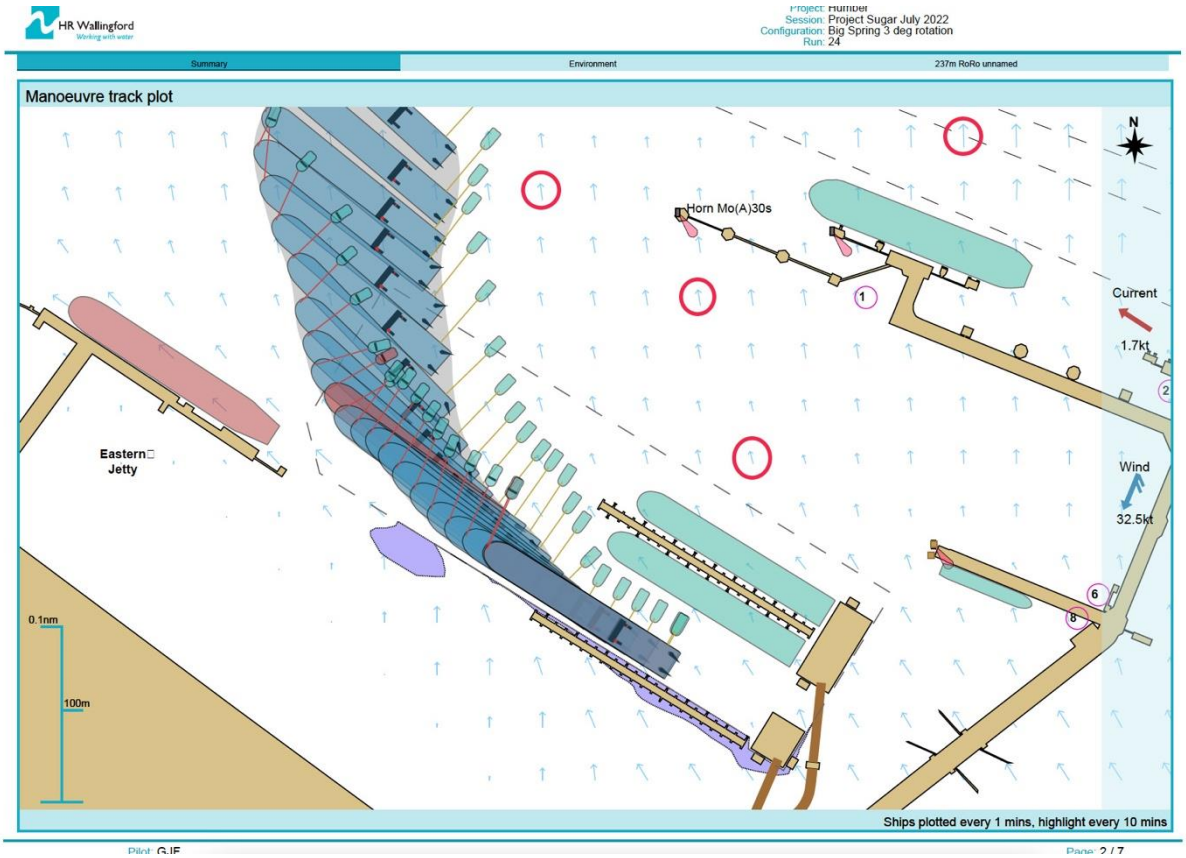


Figure 10: The Applicant's Simulation 24, using Berth 3

116. DFDS also has concerns over the ability of large vessels to operate on and off the terminal in all but the lightest of winds. In simulations with a south-westerly wind of just 12.5 knots, which is benign by Immingham standards, the vessels struggled to depart easily from the berth unaided.

Use of 'Abort'

117. The Applicant stated both at the initial hearings and in the reports that 'Aborted' runs were simulations that were 'bound to fail' and therefore halted. When asked what would happen in 'the real world' after some consideration Mr Parr of HR Wallingford on behalf of the Applicant stated that the pilot or PEC holder would recover the situation and start again. As experienced mariners we dispute this theoretical assessment and if this is indeed the case, why was this not clearly demonstrated in the simulations?

118. Our experienced mariners also know that there is no reset button in real life and to liken the manoeuvring of a large RO-RO vessel to parallel parking a car in which it is simple to simply 'start again' completely misrepresents the complexities of manoeuvring in this complex, dangerous and unforgiving area.

119. It is also noteworthy that in simulation run 59 (the simulation highlighted by Mr Bradley) the simulation is aborted a few seconds before the tugs assisting the vessel allide with the chemical tanker berthed on the Immingham East Jetty.

Machinery Use

120. Many of the simulations that were deemed successful by the Applicant relied heavily on the excessive use of the vessels' machinery. The vessel model used in the first 2 simulation studies was a DFDS vessel currently in service – a the 'Jinling Class' vessel is a highly manoeuvrable vessel built to handle the confined and complex navigational challenges of the port of Vlaardingen. It is a vessel that DFDS has designed and built and have a considerable amount of experience with and on which our mariners can speak with some authority.

121. In many of the simulations there was excessive and prolonged use of the bow thruster unit. These units designed to give greater control of the vessel during manoeuvring are intended for fine control of the vessel's head.

122. Despite this in some simulations the bow thruster unit is used at full power for up to 22 minutes continuously. The unit is not intended for this level of extreme operation and this is clearly not consistent with a 'controlled manoeuvre' as it leaves nothing in reserve, as can be seen from **Figures 11-13** below:

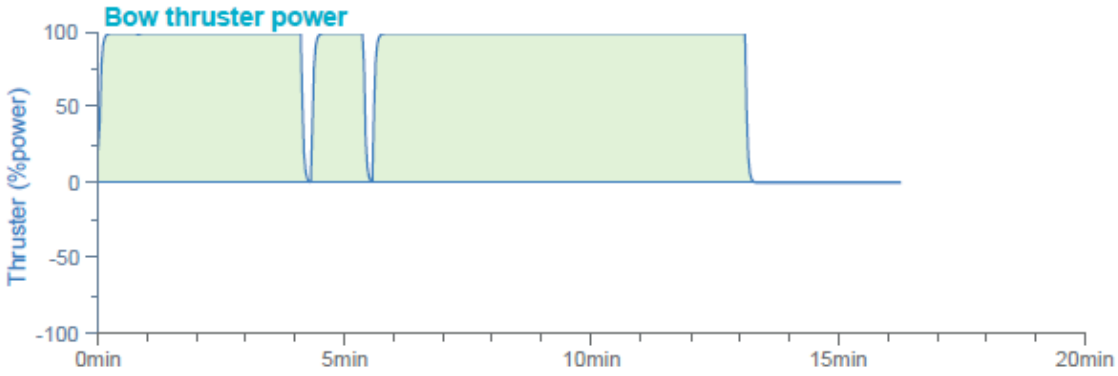


Figure 11: bow thruster use for Run 14

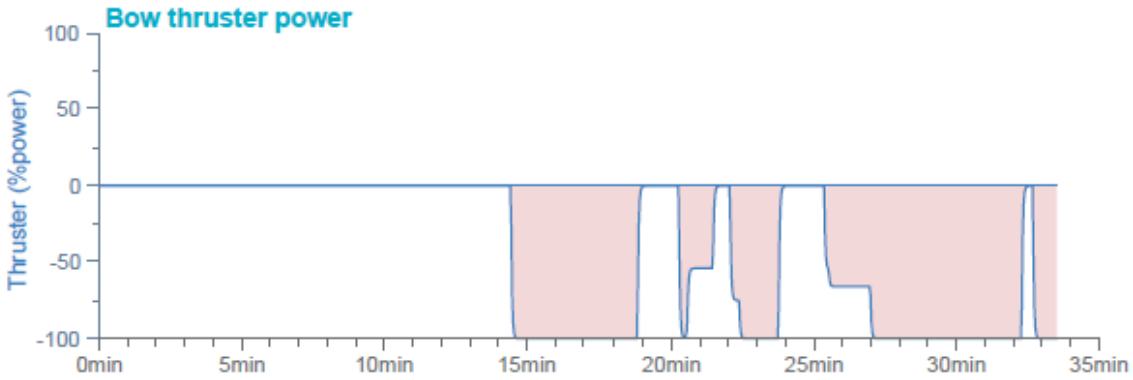


Figure 12: bow thruster use for Run 20

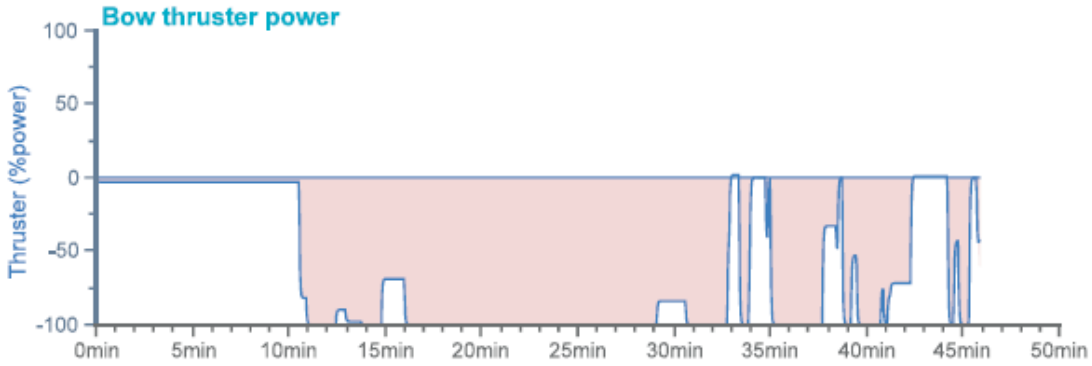


Figure 13: bow thruster use for Run 58

123. In addition, this unrealistic reliance on the vessels' machinery frequently coincides with the use of 2 tugs. When in use the propellors of both the bow thruster unit and main engines produce turbulent water and large opposing forces that would be extremely dangerous for the tugs making it difficult for them to maintain their positions and apply any force to the vessel. Since many of the simulations combine excessive machinery use with high levels of tug power they are both dangerous and unrealistic. The excessive use of bow thruster limits the tug to maintain directional stability and hold station and presents the possibility of swamping the tug endangering both the vessel and her crew.

124. As an example, run 25 can be viewed (**Figure 14** below). Both propellers are used with a stern pitch of up to 75%, which would create excessive wash and turbulence in the area where the aft tugboat is working.

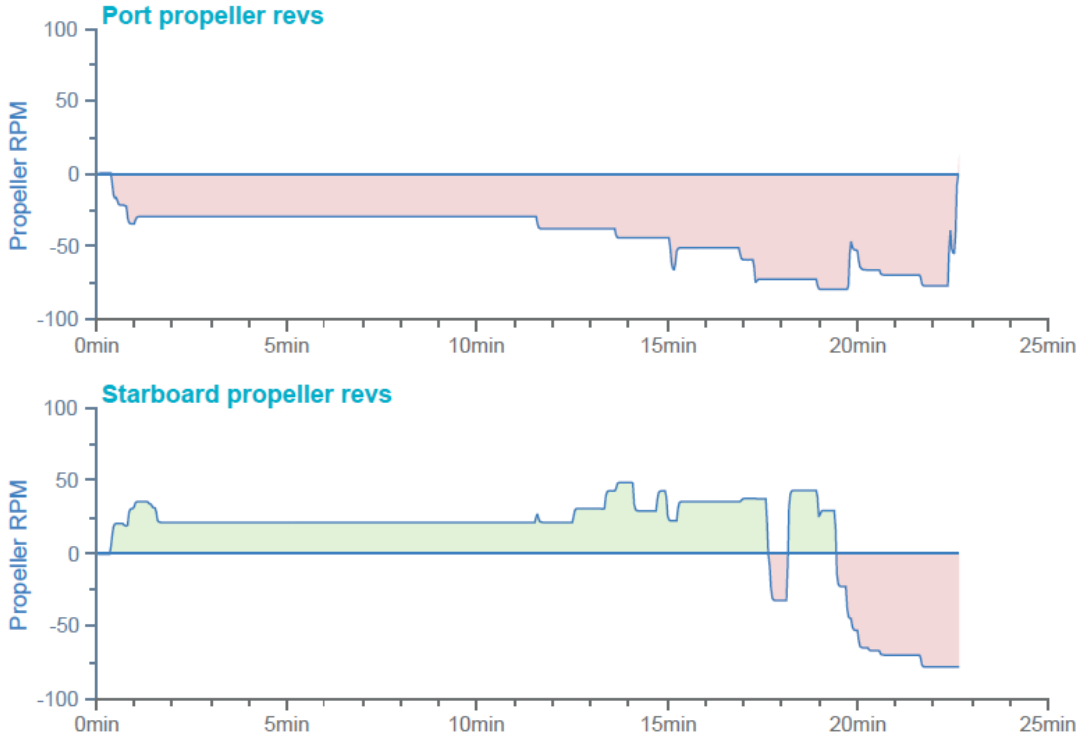


Figure 14: propeller use for Run 25

Simulated Tide

125. DFDS have for some time been attempting to engage with the Harbour Authority regarding the tide as depicted in the simulations. DFDS are of the opinion that the tidal flow off the IOT is incorrect and that this leads to wider concerns regarding the reliability of the data.

126. Mr Parr of HR Wallingford on behalf of the Applicant admitted at the initial hearings that the tide off the IOT was indeed wrong but stated that this had not affected the purpose of the simulations as the tide was correct in the vicinity of the proposed development.

127. As can be seen in the simulations conducted by the Applicant the manoeuvre is started in the position where the tide is incorrect and as such has a significant impact on how a vessel would 'shape up' to get into a position in which it can back down onto the berth.

128. Without a realistic tide north of the IOT the simulations prove worthless as they are not representative of the whole manoeuvre required to get into a good position prior to commencing the final approach – the earlier manoeuvring cannot be ignored. The Applicant deliberately started each simulation north of the IOT for this very reason but with incorrect tidal flows, particularly at IOT 1 the whole manoeuvre dangerously appears significantly easier and unrealistic. If we consider simulation run 15 from the December 2022 report had the tide north of the IOT been correct the vessel or her tug would, in our opinion, allided with the No 11 Holme buoy. This buoy in notorious for vessels being set onto it with a (correct) flood tide.

Simulation Analysis

129. DFDS were so concerned regarding the issues with the simulations that a meeting was held at their offices in Copenhagen on 13 October 2022 attended by the Harbour Master (Humber), Head of Marine (Humber) and the Group Head of Projects from ABP, in which their genuine concerns were raised regarding the tidal direction, the use of certain vessel models and the unrealistic use of engine machinery and tugs.

130. At the meeting the Harbour Master indicated he was unable to answer the issues raised as he had not read the simulation reports and had relied on a conversation with the personnel who had undertaken the simulations in which he had been reassured they had been successful.

NAVIGATIONAL RISK ASSESSMENT

131. DFDS has serious concerns about the Navigational Risk Assessment carried out by the Applicant and submitted with its application [**APP-089**]. Instead of just using the Port Marine Safety Code methodology (which the Applicant itself commends as 'best practice' in the PEIR for its neighbouring Immingham Green Energy Terminal project – see **Annex B**), it has used a mix of that methodology and the Offshore Renewable Energy Installations (OREI) methodology, which, as its name suggests, is suitable for assessing navigational risk at offshore renewable energy installations.

132. Additionally DFDS has commissioned NASH Maritime to carry out an independent NRA using the PMSC methodology alone, which can be found at **Annex D**. It notes at section 5.2.1 that the Applicant's NRA does not provide any quantitative upper or lower bounds to allow an objective judgement as to the likelihood of a hazard occurring, and at 5.2.3 that it did not use a structured risk calculation or the MarNIS risk matrix (a software tool for assessing risk in compliance with the PMSC).

133. Its conclusions can be summarised as:

a. The challenging environment and close proximity to existing infrastructure is acknowledged;

b. The initial assessment produced four 'intolerable' hazards, 22 medium hazards that would be acceptable if 'as low as reasonably practicable' (ALARP) and two 'low' hazards;

c. With six proposed mitigation measures, these reduce to 23 medium if ALARP and four low;

d. The mitigation measures are:

i. the introduction of berthing/unberthing criteria (e.g. maximum wind conditions) for the three IERRT berths;

ii. the provision of an additional tug for IERRT on immediate standby;

iii. greater restrictions on the management of vessel movements for IERRT;

iv. additional mooring equipment and infrastructure such as hooks and storm bollards;

v. the installation of impact protection for the IOT, as per Work No. 3; and

vi. relocation of at least Berths 8 and 9 of the IOT finger pier to be closer to the IOT river berths, if not all of Berths 6-9.

VESSEL CONGESTION

134. Even if navigation were to be carried out safely, the additional infrastructure and vessels in the Port of Immingham will increase congestion, the impact of which has not been assessed in the Applicant's Environmental Statement. DFDS assesses the impacts as follows.

135. Immingham is one of the UK's busiest ports. DFDS is a significant part of the traffic that makes this the case, and protecting our operational performance and ability to meet our customers' demands with no detriment for the Applicant's proposed new development is a concern for us.

136. Immingham is the North Sea hub for DFDS' unaccompanied freight services with 5 of their short sea routes operating through the facility. DFDS has 24 arrivals and 24 departures per week on their scheduled services, with five out of seven days seeing at least three scheduled arrivals and departures. In addition to the ferry activity, DFDS offers a vertically integrated door to door service for customers which includes collection and delivery on both sides of the North Sea. Over 30% of all the volume handled through the DFDS Ferry activity in Immingham is aligned to the wider DFDS Logistics organisation, which would cause more organisational disruption and consequence if the Humber was impacted.

137. DFDS Immingham does not only facilitate the loading and unloading of their own vessels but also perform the loading and unloading operations for shipping lines Eimskip and Sea-Cargo on their regular scheduled services that call through Immingham, as well as bespoke vessel cargo operations for customers such as British Steel and Tata.

138. The DFDS services are a mature market offering and support many just in time UK supply chains. This is only achievable by delivering a metronomically dependable high service level, giving our customers the confidence to operate efficiently and effectively. The DFDS vessel schedules and terminal operations at continental ports have been finely tuned over many years based on the Immingham terminal consistently performing to its operating plan.

139. DFDS have engaged with ABP regarding this project to understand how it could impact the existing operations (not only for DFDS vessels but for external customers vessels) and have been advised there will be no impact at all. A commercial workshop to demonstrate this was promised by ABP but never happened, and a senior meeting with stakeholders to discuss these concerns was arranged and subsequently cancelled by ABP days before the meeting was planned to take place.

140. There is no doubt that the proposed new terminal will impact on the existing river operations, the lock operation, and waiting times for vessels entering and exiting the port of Immingham.

141. DFDS have modelled river traffic using additional movements to the proposed facility (based on one scheduled daily service per day from each of the three new proposed berths, arriving between 0500-0900 and departing between 1800-2100, 6 days per week). Using the data from the simulations conducted by ABP (demonstrating arrivals will take on average 45 minutes, and departures around 20 minutes) we believe disruption is inevitable.

142. During movements to the proposed facility, VTS[1] would not allow other vessel movements in the Immingham area for safety reasons, and this is further compounded by the Standing Notice to Mariners (SH22), which limits the number of inbound vessels allowed to enter the river at any one time. This direction from the Harbour Master, coupled with the additional traffic to the proposed facility, means vessels will be forced to stem the tide to the East of the Immingham Oil Terminal, or they may be completely prevented from entering the river and must wait in the North Sea before entering the river. To deal with the high volume of traffic at Immingham Dock it is accepted practice for vessels waiting to enter the lock to 'stem the tide' either to the East or West of the Immingham lock. This allows the safe departure of the vessel from the lock and expedites the entry of the next vessel. Additionally, this allows the waiting vessel to be removed from the busy navigational channel to a point of safety in which to await their turn to enter the lock. Positioning a terminal on the East side of Immingham lock means stemming to the East of the lock may no longer be viable, meaning all waiting vessels would need to stem to the west which effectively block ships from entering or departing the DFDS Immingham Outer Harbour (IOH).

143. This restriction elongates the time for vessel manoeuvres and DFDS believe could lead to delays of over 3 hours per day for lock users on most days. During days when weather impacts vessel manoeuvring or there are other operational delays, the delays will be significantly higher. DFDS also believe that during days when the shipping programme is already particularly busy, the additional traffic and operational restrictions will cause a significant over-demand and under-capacity for the lock, resulting in further vessel days which will take longer for the operating plan to recover from.

144. The services currently operated by CLdN, DFDS, Stena and P&O North Sea Ferries all arrive and depart at similar times. These services are already operationally fragile in their currant locations and cause congestion with traffic being delayed due to peak demand in a short time window. Any additional movements around these peak periods will cause disruption to established scheduled operations. When these schedules coincide with high water movements for tidally restricted vessels the risk increases exponentially, given the many large vessels attempting to manoeuvre in a finite amount of water. The introduction of the proposed facility in the suggested location will place further restrictions on the manoeuvring of the vessels causing extended periods of congestion and delays to vessels.

145. The impacts of congestion will impact DFDS' customer service offering across unit load customers and door to door solution customers. Vessel disruption leading to later arrivals can result in missed or late deliveries which can impact production lines and carry financial penalties throughout the supply chain. The DFDS services from Esbjerg (Denmark), Gothenburg (Sweden) and Cuxhaven (Germany)only remain in port for the time it takes to discharge and immediately reload the vessel. This means that a late arrival results in a late departure as it is often not possible to perform the discharge and loading operations in a shorter timeframe as these have already been highly optimised. A late departure can often be further delayed because once out of schedule, departures can clash with another scheduled service operating on time, so the delayed service will need to be given a

[1] The port authority manages traffic through VTS (Vessel Traffic Service) and the river is divided into3 sections with 1 operator controlling traffic east of Grimsby, another controlling traffic for a 12-mile stretch between Grimsby and the Humber Bridge, and a third responsible for traffic west of the Humber Bridge. The VTS is rated as a Traffic Organisation Service (TOS) which is there to provide safe and efficient movement of traffic and manage potentially dangerous situations. They are responsible for giving vessels clearance to sail from berths and locks, for deconflicting traffic to avoid dangerous situations and to offer advice and warnings to river users to assist in their safe navigation.

departure time which does not disrupt on time operations of other operators, which can often be at an even later time than vessel is ready to depart at. If the service requires support such as a pilot or tug vessels, these may have been available at the original scheduled time but not at the later delayed time, causing even further disruption and delays.

146. This scenario also impacts the continental port as the vessels' optimised sailing speed and schedule will result in the vessel arriving late, causing issues with labour planning and provision, as well as all the same risks to the operation as described in the delayed departure scenario. This process will often continue until either a service is cancelled to reset the schedule, or the schedule reaches 'layover day' which allows it to be reset. In both cases the customers have been impacted and additional costs have been incurred.

147. As a responsible operator, DFDS has committed to robust sustainability targets of carbon neutrality by 2025 and reducing CO2 emissions from its ferries 45% by 2030 (relative CO2 emission from vessels from 2008 baseline, measured as CO2 per gross tonnage per nautical mile). This commitment is underpinned by a long-term strategy to replace fossil fuel in our vessels with more sustainable fuel types, but in the shorter term, improvements will be made by reducing drag on our vessels with anti-fouling hull paint, using scrubber technology to capture C02, and reducing steaming speed, which is a very effective way of reducing fuel consumption and as a result emitting less C02. Reduced steaming speed (schedule optimisation) has been implemented on all DFDS routes operating in and out of Immingham. Optimisation is achieved by spending less time in port by arriving later and departing earlier, giving more time to the sea journey which can then be completed slower. Robust and undisrupted port operations are essential to making this strategy a success, and any delays or disruption caused to DFDS services by the proposed facility will impact our ability to achieve this global corporate commitment which is in place to safeguard the environment for future generations.

HIGHWAY ISSUES

148. DFDS' other main area of concern is the impact of additional onshore traffic, which it considers has not been properly assessed or mitigated and will cause significant delays to port users on the internal port road network and at the gatehouses providing access to the Port of Immingham. In addition, DFDS are also concerned that controls or mitigations have not been appropriately assessed for the local and strategic road networks, causing delays and additional congestion for local residents and road users.

149. To further expand on these concerns, DFDS have tested the analysis, assumptions and conclusions being presented by the Applicant and the effects alternative views or assessments may have on the existing operations at the Port and local area. To address the concerns DFDS have with the Applicant's proposed development, the following areas have been assessed and compared to the Applicant's assumptions:

a. Capacity of the proposed terminal and associated daily and annual estimated throughputs;

b. Behavioural implications of drivers, including consideration of how drivers will utilise entry gates to the Port, local truck stops, location of major transport companies and other amenities;

c. Impacts upon the existing operation of the Port of Immingham and congestion at East and West gate houses;

d. Interoperability of hauliers within the terminal, particularly on the way hauliers and units move around the terminal;

e. Implications of current and known future developments within the local community, including business parks and residential projects;

f. Environmental and social implications of increased traffic within the local area; and

g. Secondary facilities for hauliers.

150. Factors noted above in paragraph 140(a) to (c) are considered to make a material difference to the Transport Assessment [**AS-008**].

151. The following paragraphs provide a summary of assessments and analysis associated with responses received from the Applicant, its consultants (DTA) and the Examining Authority as raised during ISH2 and from Deadline 1 submissions.

Terminal Capacity

152. No evidence has been provided within the Applicant's Transport Assessment [**AS-008**] regarding how the terminal is to achieve the nominal maximum throughput. The Applicant currently has an outstanding request from the planning authority to respond to Terrestrial Transport and Traffic question TT.1.1 [**PD-010**] to justify the terminal capacity to ensure all HGVs will be catered for on-site.

153. As the Applicant has indicated this information will not be made available until after Deadline 2, DFDS has conducted an independent review. This review has considered the terminal configuration and identified operational parameters, concluding that the capacity of the terminal as being approximately 300,000 units per year. With the Applicant's aspirations to achieve a maximum throughput of 660,000 units (the control as stipulated in Article 21 of the draft Order [**REP1-005**], the terminal would regularly exceed the terminal capacity leading to implications on the Port Road Network including congestion and queuing of vehicles.

154. The Applicant has also identified that the terminal could operate up to a peak throughput of 1,800 units per day [**AS-008**]. DFDS' review has identified that this can be theoretically achieved if the terminal was operating at 100% utilisation of the yard, with dwell rates at the lower bound for unaccompanied units, and coordinated arrival and loading of accompanied units. Given the operational complexities with achieving this, there is likely to be congestion at the terminal gatehouses, which will in turn create delays for vehicles entering the terminal, leading to queuing back onto the Port Road Network. Further information regarding the terminal capacity is provided in **Appendix [3]** of this document.

155. It is DFDS' position that the peak daily volume as presented within the Transport Assessment [**AS-008**] is actually a reflection of the average day volume. With the addition of weekly and daily fluctuations to replicate seasonal and operational variations, the true daily peak could rise to over 2,200 RoRo units per day, before consideration of modification factors to account for other elements such as tractor only movements. This would only serve to further increase yard utilisation and

congestion on to the Port internal road networks. Further information regarding the annual throughput and daily peak volumes is provided in **Appendix 5** of this document.

156. It is noted that the Examining Authority has requested, in question TT1.1 of **PD-010**, that the Applicant provide evidence which underpins the assessment and conclusions in paragraph 7.3.1 of the Transport Assessment [**AS-008**], in relation to accommodating throughput of HGVS. DFDS welcomes this information and will comment in due course, if appropriate. During a discussion held between the Applicant, CLdN, DFDS and their consultants on 10 August 2023, the Applicant identified that it would consider imposing a daily limit on the number of units that enter or exit the IERRT facility within the dDCO. This would mitigate the potential for daily volumes to exceed the currently utilised peak volume, however, further considerations are likely required to mitigate congestion and queuing on the internal port road network being generated by high utilisation of the terminal.

Traffic Assignment to Gatehouse

157. DFDS have provided a commentary of the East versus West Gate assignment, in response to Action Point 15, this is provided in **REP1-032**. The Applicant's assessment [**AS-008**] assumes that the majority of the traffic will enter and exit the Port via the East Gate based on:

a. Proximity to the East Gate; and

b. Driving time as provided by GIS (GPS) and Google Maps.

158. An allowance of 15% has been allowed for within the Applicant's assessment [**AS-008**] for vehicles using the West Gate, however no further justification has been provided in regards to establishing this distribution.

159. DFDS consultants reviewed the differences in journey times between the three routes (A160 to West Gate, A160 to Manby Rd to East Gate, and A1173 to East Gate). From this review, DFDS noted that whilst the East Gate is equal quickest, there is insignificant differences in journey times between the three available routes with differences only equating to a one (1) minute drive time. It is DFDS' view that differences in journey time would, on its own, be unlikely to justify the heavy weighting towards the use of the East Gate without the implementation of management controls which would essentially remove natural route choice and enforce the use of prescribed routes to the IERRT.

160. Driving time will also be highly influenced by congestion on the road network, particularly as there is only a minimum difference between routes. For example, during busy periods where passenger vehicles are entering or exiting the nearby business parks located on the A1173. The Applicant assumes that the majority of HGV drivers will have access to, and follow the directions of GPS devices. Anecdotal evidence provided by operators and hauliers indicates that GPS is not utilised on most occasions, particularly for movements between repeated locations.

161. Driver route choice is typically decided based on a number of factors in addition to drive time. Though the proposed development is located closer to the East Gate, a number of behavioural factors are likely to incentivise use of the West Gate, including habits, direction of travel, wayfinding and suitability of carriageway (these factors are further described within **REP1-032**).

162. In addition to the above, a major influence on route choice will be driver facilities. There are several major facilities on the A160, including DSV road limited depot and distribution centre, and

DFDS Logistics depot and distribution centre. These two sites represent a large percentage of offsite capacity and are major contributors to trip generations and were not part of the offsite truck stop or driver amenity facilities considered by the Applicant in the Transport Assessment [**AS-008**].

163. As such it is recommended that the Applicant:

a. Complete the review of data provided by interested parties and provide commentary;

b. Undertake an assessment of all freight facilities within the region rather than just a selection, with consideration of potential trip generation or termination;

c. Coordinate further discussions to enable the Applicant and interested parties to agree an appropriate range of distributions for accompanied and unaccompanied movements;

d. Provide evidence to support the current forecasted distribution between accompanied and unaccompanied units;

e. Establish a range of distributions for accompanied versus unaccompanied freight units in accordance with current operations, future forecasts, and uncertainty around freight modes;

f. Provide evidence to support the assumption of tractor only movements and how this is influenced by changes to the unaccompanied versus accompanied distribution (refer DFDS response to ISH2 Action Point 12 in **REP1-030**);

g. Establish a range of distributions for the West Gate and East Gate in accordance with current operations, existing facilities, future facilities, and uncertainty of driver route selection; and

h. Consider the application of controls to achieve the desired routing, whilst also be considerate of conditions that may prevent controls from being followed;

i. Re-evaluate the Transport Assessment modelling where necessary where input parameters have been updated subject to the above; and

j. Review the need for provision of controls and additional signage to aid in directly drivers along the appropriate pathways.

164. It is noted that in Annex C of the Applicant's Transport Assessment [**AS-008**], that a signage strategy was provided to North East Lincolnshire Council, North Lincolnshire Council, and National Highways for review on 31 May 2022[2].. As far as DFDS are aware, this signage strategy has not been provided as part of the DCO Application, nor is it included in the Schedule 2 Requirements in the dDCO [**REP1-005**]. It is therefore requested, that the Applicant confirm if a signage strategy has been agreed, and whether this may influence East Gate versus West Gate assignment, and volume of

[2] The signage strategy was identified, in communications between the Applicant, North East Lincolnshire Council, North Lincolnshire Council, and National Highways in an email dated 31 May 2022, identified as Appendix I.

existing and future vehicles projected to utilise the A1173. Intent to modify the strategic signage is also identified within the Chapter 17: Traffic and Transport of the Environmental Statement [**APP-053**].

165. Due to the unknowns associated with driver behaviours, without controls it is DFDS recommendation that a broad assessment is conducted, considering the potential that:

a. 100% of development traffic uses the A1173 corridor; and

b. Existing distribution of traffic between East and West Gates is maintained (i.e. 18% to the East Gate, and 82% to the West Gate)

Gatehouse Capacity

166. For DFDS to better understand the existing gates' conditions and capacity, a video survey was commissioned on Wednesday 15 June 2022 at both the East and West Gates. The footage was analysed to determine the gates' typical processing times with results presented in **Appendix 6** of this document. This review showed the presence of queues at both security gates, indicating that the Terminal approaches are already operating at capacity or close to capacity during existing peak hours. The photo in **Figure 15** shows vehicles queuing to enter the Port of Immingham whilst security checks are being completed. The queue is of sufficient length that it extends to a point where vehicles turning into the East Gate from Laporte Road are queuing across the intersection. It therefore follows that both gates will be sensitive to additional demand and will likely require improved management or infrastructure improvements to ensure that security processes are not unacceptably compromised to avoid further congestion on the external road network.

Figure 15: Vehicles Queuing to Enter the Port of Immingham at the East Gate

167. The demand for the gatehouses generated by IERRT will be influenced by a number of factors, including the daily peak volume, the assignment between the West and East Gate, the ratio of accompanied versus unaccompanied units, and the number of tractor only units. As discussed previously in this written representation, DFDS have concerns with the generation of all of these

variables. It is DFDS view that following the agreement between the Applicant and interested parties regarding these input elements, that the gatehouse capacity assessment will be revisited, and where necessary appropriate mitigations be provided. Any mitigations proposed should be accompanied with sufficient justification and evidence of the suitability and level of impact these mitigations provide (i.e. justification of how the proposed additional lane at the East Gate provides the appropriate capacity).

Surveys of Existing Traffic Flows

168. Surveys of existing traffic flows on the network were undertaken between 27 September 2021 and 22 November 2021, during a period when the conditions on both the road network and global freight and logistics operations were still being affected by the COVID-19 pandemic. The baseline traffic flows require validation to ensure they are representative of typical network conditions and port operations.

169. DFDS have provided the survey data captured in June 2022 as a response to ISH2 Action Point 11 [**REP1-029**]. This analysis showed that the Applicant's 2021 baseline traffic volumes presented within Table 2 of the Transport Assessment [**AS-008**] are generally lower than the volumes recorded within other data sources reviewed by DFDS landside consultants, GHD. This conclusion is consistent across the A1173, A160, A180 and Queens Road.

170. The Applicant has provided a response to ISH2 Action Point 10, as summarised in Table 2 of the Written Summary of the Applicant's Oral Case at ISH2 [**REP1-009**] and provided traffic survey data at Deadline 1 [**REP1-019**]. This information presents the Applicant's survey of road conditions for a short period in June 2023.

171. It is acknowledged that the 2023 ATC survey counts [**REP1-019**] provided by the Applicant generally appear to be lower than the 2021 ATC survey counts [**AS-008**]. The baseline traffic volumes used in the Transport Assessment [**AS-008**] remain lower than DDFDs baseline traffic volumes which use the 2019 North Killingholme Power Project volumes[3] (see **Appendix 7** of this document). The Applicant has not yet provided commentary on why the data obtained by the Applicant should be used as the baseline assessment in favour of other datasets from the same locations that were recorded within the last five years, for example the 2019 North Killingholme Power Project counts.

172. The continued use of the 2021 traffic flows incorporated within the Applicant's assessment therefore risks overstating the current capacity of the road network, DFDS considers the 2019 North Killingholme Power Project data to be a more robust assessment of the road network capacity and better reflect a return to normal business and trade levels. During the years following the pandemic, a large portion of the supply chain had become disrupted on a global scale. Based on trade from DFDS, normal trading behaviours have not yet returned, however, with 2022 being closer to ordinary flows. In 2021, the flows were heavily subdued and therefore traffic data from this period risks under-representing good vehicle movements associated to international trade. It is DFDS view that data from 2019 (pre pandemic) is more robust as it provides a reflection of return to normal business volumes. However, DFDS is aware that the implications of the pandemic have changed local driver behaviours (such as the increased utilisation of remote working and working from home), which has also

[3] This refers to the traffic volumes identified in the Transport Statement for the 2020 application (application reference EN010038), for a non-material change to the North Killingholme (Generating Station) Development Consent Order 2014 (SI 2014/2434).

influenced public vehicle traffic volumes on the network. The Applicant has provided 2023 data (Action Point 10 from ISH2) [**REP1-009** and **REP1-019**] which presents similar volumes to 2021. DFDS request that the Applicant provide a justification for the use of the 2021 / 2023 data with assessment of international trade vehicles versus local traffic and high level commentary on impacts of the pandemic on traffic volumes and how this effects assumptions regarding the baseline used within the traffic assessment. DFDS would expect the Applicant to:

a. Justify the use of the 2021 data;

b. Appropriately factor in the future growth of the Port of Immingham and surrounding facilities; and

c. Make necessary amendments to other parameters affecting the flow of the IERRT traffic to and from the terminal area, including potential gate assignment amendments and changes to the tractor only ratio, unaccompanied to accompanied ratio, and peak IERRT volume figure.

Tractor Only Movements

173. DFDS have provided a detailed review of the tractor only movements which is presented in the response to ISH2 Action Point 12 in its Deadline 1 submission [**REP1-030**]. The sample collected by DFDS identified that 18.9% of HGV movements through the port gatehouses are tractor-only movements. This is more than the Applicant's current assumption of 10% (**APP-053,** paragraph 17.8.39) of trips are solo units, meaning that the total volume of vehicles is underestimated.

174. Note: DFDS operations are currently spread between trailers and mafi traffic. The values provided within DFDS's response to Action Point 12 [**REP1-030**] include both tractor units hauling empty trailers (HGV Empty: i.e. skeleton trailers without containers) and tractor only units (HGV solo) as both of these unit types count toward the duplication of movements for hauliers that are dropping off, or picking up only. the proposed development in contrast may not have mafi trailers, or may have a limited number of mafi trailers. It is DFDS position, that without other forms of evidence provided by the Applicant, both HGV Empty and HGV solo should be considered to estimate the existing level of equivalent tractor only movements at the Port of Immingham gate houses.

175. This figure (18.9%) only accounts for movements through the port gatehouses. There is a high likelihood that additional tractor only movements will be generated by HGVs that have a split drop off / pickup location between operators across the Port (i.e. a haulier brings a trailer to DFDS dockside facilities, and is picking up a trailer from IERRT). These additional movements will generate further traffic volumes on the Port internal road networks, the percentage of which have not been taken into account within the current Transport Assessment [**AS-008**].

176. As such it is recommended that the Applicant:

a. Complete the review of data provided by interested parties and provide commentary;

b. Coordinate further discussions to enable the Applicant and interested parties to agree an appropriate range of distributions for tractor only movements;

c. Provide evidence to support the assumption of tractor only movements; and

d. Re-evaluate the Transport Assessment modelling where necessary where input parameters have been updated subject to the above.

Accompanied versus unaccompanied

177. During the ISH2, the Examining Authority requested that the Applicant and interested parties endeavour to agree a ratio for accompanied and unaccompanied RoRo freight throughput (Action 14 of **EV3-012**). DFDS is currently working with the Applicant's transport consultant to complete this task. As an interim measure, and as part of response to Action Point 14 of ISH2, DFDS has made available gatehouse data [**REP1-031**] and provides the commentary in the following paragraphs.

178. The Applicant's Transport Assessment [**AS-008**] only provides a singular view of the distribution between the accompanied and unaccompanied freight units as a percentage split. No evidence is provided to indicate how this split has been generated, whether this is a forecasted distribution for future volumes, or if this a representation of current distribution of the operator.

179. During a discussion held between the Applicant, CLdN, DFDS and their consultants on 10 August 2023, the Applicant's consultants, DTA, confirmed that the distribution provided is representative of the future volumes, and assumes the split is applicable to current volumes as well

180. DFDS does not have specific values of the operators current split and are unable to comment on the validity of the split being representative of current operations, however, CLdN (as per Action Point 8 of ISH2 [**EV3-012**]) are expected to provide this detail at Deadline 2, DFDS welcomes this information and will comment in due course, if appropriate.

181. In contrast to the Applicant's view, DFDS do not agree with the assumption that the current distribution between accompanied versus unaccompanied units will remain static. The Department for Transport Freight Statistics for the UK indicate that for the last 5 years, the percentage of unaccompanied units has been increasing from 43% of RoRo trade in 2018, to around 50% in 2022 (see **Appendix 8** of this document).

182. Due to the variations in impacts of accompanied and unaccompanied freight units, and the uncertainty of future freight unit modes (i.e. either accompanied or unaccompanied), it is DFDS' recommendations that a range of distributions are considered. This range of distributions should be established following evidence of historical operations from CLdN, with the implications of the distribution amendments flowing through to the Transport Assessments Modelling.

183. DFDS have provided the Applicant with modelling and assessment for the five public highway junctions that have been identified to be operating above capacity by 2032, in response to ISH2 Action Points 17 [**REP1-033**]. The modelling provided in **REP1-033** showed that without appropriate mitigations, five junctions will operate over capacity in 2032. DFDS would expect the Applicant to justify why it has not included highway capacity mitigations as part of the proposed development and to provide detail how on how the Applicant intends to address the junctions' capacity issues.

Junction Capacity

184. The junctions identified as being above capacity include:

a. A160 Humber Road / Eastfield Road Signalised Junction;

b. A160 Humber Road / A1173 Manby Road Roundabout (Manby Roundabout);

c. A1173 / Kiln Lane Roundabout;

d. A1173 / New Site Access (Pioneer Park) Roundabout; and

e. A180 / A1173 Roundabout.

185. Capacity issues at some of the above junctions have also been identified in other committed developments in the area as detailed in paragraphs 182 and 183 below.

186. Stallingborough Interchange4- this identified that the A1173 / Kiln Lane Roundabout will be operating over its capacity in 2032 in both AM and PM peaks in spite of the proposed mitigations to the roundabout geometry (see **Appendix 9** of this document).

187. Altalto Immingham Ltd[5] - this showed that the A1173 / Kiln Lane roundabout is operating above its recommended design capacity in 2029 (with an RFC of 0.86 in the AM Peak) (see the Transport Assessment at **Appendix 10** of this document).

188. The impact on these junctions could be further worsened with the additional traffic generated by the proposed development and any amendments to the daily peak volume, the assignment between the West and East Gate) and the number of tractor only units.

189. In light of the limitations identified above, confirmation is requested that the respective Highway Authorities are content with the approach to the assessment of existing and future traffic conditions on the road network, particularly on the A160 corridor (National Highways), the A1173 corridor (North East Lincolnshire Council) and the Eastfield Road and Rosper Road corridors (North Lincolnshire Council).

Impacts on the A1173

190. The A1173, which must be used to access the East Gate from the strategic road network, has not been assessed for its suitability for this intensified use. Chapter 17- Traffic and Transport of the Environmental Statement [**APP-053**] disregards the impact of the proposed development on the A1173 corridor, despite it being the primary access route.

191. Whilst it is recognised that there are limited receptors along this route at present, in the future that will no longer be the case with the implementation of developments such as the Stallingborough Interchange Business Park which will result in increased activity of pedestrians, cyclists and vehicles in this area. The effects of significant increases in HGV traffic along this route in terms of severance, driver delay, pedestrian delay and amenity, accidents, and safety, fear and intimidation, need to be appropriately considered and mitigated.

[4] Environmental Statement Vol 2 Technical Appendices Part 2 - EIA/248164/00 - 26 January 2018 (application reference number DM/0105/18/FUL)

[5] Transport Assessment - waste to sustainable transport fuels plant - Portlink 180, off Hobson Way, Immingham, North East Lincolnshire - CRM.0120.001.TR.R001 – July 2019

192. In addition, the assessment of impact on receptors should be considerate of any changes derived from responses to the daily peak volume, the assignment between the West and East Gate, the ratio of accompanied versus unaccompanied units, and the number of tractor only units. Some of these changes will have a positive influence on the A1173 (i.e. if more traffic is assigned to the West Gate, this would reduce the A1173 volume), whilst others will have a negative impact (i.e. higher traffic generation from changes in daily peak volumes).

CONCLUSION

193. In conclusion, DFDS consider that if it were to go ahead in its current form, this project would have navigational impacts that constitute an unacceptable risk to people, property and the environment. Furthermore, the additional traffic in the river and on the roads will have an unacceptable impact on businesses and people in the vicinity.

194. DFDS consider the Applicant's Navigational Risk Assessment to be seriously flawed in multiple areas, as set out below:

a. The **incorrect tidal flow** has been used in critical approach areas with which DFDS are very familiar. Tidal data published by the Admiralty and the Applicant confirm that the tidal flow north of the IOT and Immingham bellmouth area does not match the tide as represented on the Applicant's simulations.

b. **Unrepresentative wind data**. The applicant has exclusively used the wind data taken from the Humberside Airport runway anemometer at a height of 10m. Whilst the use of such data is useful in it's quality and depth it should then be benchmarked against localised data (as with the Tilbury 2 NRA highlighted in the applicant's written response) to ensure it is representative of the 'real world' conditions experienced at the berth. This data should also include 'wind gusts' which are critical for such high sided vessels.

c. **Excessive use of bow thruster and engine power**. The excessive use of bow thrusters, which in the applicant's simulations (APP-90 and APP-91) were used at full power for over 15 minutes combined with huge amounts of main engine power, exceeding 75% thrust, is not only indicative of a 'reckless manoeuvre' but would never be seriously attempted in 'real world' berthing manoeuvres.

d. The **excessive use of propulsion units** is also highly dangerous for the tugs assisting the vessel and the safety of their crews due to the wash created, which, not only reduces the effectiveness of the tug but compromises the tugs directional stability and creates a possibility of swamping the tug endangering both the tugboat and her crew.

e. The **omission of the Eastern Jetty Tug Barge** in any of the applicant's simulations without an explanation as to whether this is intended or an error on the part of the simulation team. If the barge is to be removed as part of the development the applicant has failed to explain how the risks of this will be mitigated and if an error of simulation has failed to appreciate the risks of allision or breakaway created in the applicant's simulations.

f. The applicant's failure to make any credible simulations onto and away from **berth 3** which in DFDS and their consultant's view is the most challenging and the manoeuvre with the

most inherent danger involving close quarter manoeuvring around the Chemical Tankers berthed on the Eastern Jetty.

195. In order to make the project acceptable, the Applicant should:

a. Rerun the navigational simulations so that all three berths are fully simulated, vessels typical of those that will use the IERRT are simulated, aborted simulations are treated as failed, high use of bow thrusters and engine power are treated as failed, the tug berth is included, tugboats are not dangerously affected by wash from propellers and the correct wind data and current north of IOT is used in the model;

b. Use the outcome of those simulations to prepare a new Navigational Risk Assessment based solely on the Port Marine Safety Code Methodology;

c. Incorporate the mitigation necessary to make the project risks ALARP, which according to DFDS' NRA means moving the southern Immingham Oil Terminal berths, requiring IOT impact protection from the outset and four other mitigation measures;

d. Properly assess the impact of the project on existing vessel arrival and departure times;

e. Carry out the traffic reassessment measures set out at paragraph 163.

196. If these steps are not taken then the Examining Authority should recommend refusal of the application.