Needs Case Review

Market demand on the Humber

September 2023

volterra.co.uk

CLdN

Contents

1. Executive summary

Commented [LT1]: **Note to all:** Please note I've drafted this in a bit of a rush with an aim to get this out for review and input into WRs as quickly as possible. I only realised we'd need an exec summary when I saw length of the main report having finished drafting!

Will review and edit in more detail in final version - welcome feedback on content that's included and what you'd like to see in the summary.

1.1 Volterra Partners LLP has been instructed by CLdN Ports to provide an independent study of the market demand and capacity for port freight in the Humber region. This report provides a critique of ABP's **market study** (**ES Volume 3 Appendix 4.1: Market Forecast Study Report**), which was produced as evidence to demonstrate an 'identified economic need' justifying the Development Consent Order proposed for the construction of a new commercial Ro-Ro cargo and passenger facility at the Port of Immingham, to be operated by Stena.

1.2 This report focuses on the fundamental issues outlined in the **market study's** approach to assessing both capacity and demand for freight on the Humber. Illustrative sensitivity tests are used to allow the Inspector's to focus on the key issues that lead to a conflation of identified economic need for more freight capacity on the Humber with a commercial preference of both ABP and Stena.

Capacity on the Humber

1.3 The calculated current static storage capacity at Killingholme outlined in the **market study** is incorrect, particularly for container ground slots where they are significantly underestimated. The **market study** also does not allow for any planned expansion in storage capacity at Killingholme in the future, which is something that CLdN intend to bring forward, providing a potentially more economically efficient solution to meet growing demand.

1.4 The 'industry standard' average dwell time of 2.25 days utilised in the **market study** is considered to be far too high, particularly for operations at Killingholme where average dwell time was previously 1.45 days in 2021, but has since dropped to 1.2 days recently. The implausibility of this 2.25 day dwell time is perhaps most obvious when considering the implication of this lengthy dwell time for storage capacity at the Proposed Development itself. Analysis presented in this report shows that given the number of trailer bays and container slots allocated at the Proposed Development, an average dwell time of 0.9 days would need to be achieved to be able to accommodate the 475,000 unaccompanied Ro-Ro units that the Applicant states will be the expected throughput of the Proposed Development (72% of the 660,000 unit maximum cap). This is clearly significantly below the 2.25 days used to understate existing capacity, casting substantial doubt on the credibility of the Applicant's assumptions. With a 2.25 day dwell time, it is estimated that the Applicant would only be able to accommodate around 195,000 unaccompanied Ro-Ro units yearly.

1.5 Meanwhile, real time operational data collected and provided by CLdN suggests that stack efficiency is 0.8 at Killingholme, rather than 0.6 as suggested in the market study. Together these errors result in current capacity at Killingholme being underestimated by the Applicant by between 70% and 170%. Once combined with capacity at the other Humber ports, this results in an underestimate of existing capacity of between 35% and 85%. This is a very significant limitation of the Applicant's evidence, undermining the need for the proposed development.

1.6 Finally, the Applicant's assertion that there is no spare berth capacity at Killingholme is incorrect. There is sufficient berth capacity at Killingholme to accommodate existing and future demand, as well as provide resilience. Displacing the use of two berths (Stena's services) at Killingholme to the Proposed Development is not economically efficient, given that it would leave up to four spare berths at the existing port.

Demand on the Humber

1.7 Whilst the **market study's** overarching approach to producing future freight forecasts is not fundamentally challenged at this stage, it is demonstrated that the GDP forecasts used to underpin the study's forecasting model could be considered bullish when compared to other publicly available forecasts, and past trends of growth in GDP.

1.8 This would have the impact of the **market study** having over-estimated future growth in freight in the Humber. Analysis presented in this report shows that forecasts might be overstated by in the region of around 20% over the longer term.

Is there an identified economic need for more freight capacity on the Humber?

1.9 Comparing the amended storage capacity scenarios to the Applicant's demand forecasts for unaccompanied Ro-Ro shows that in the worst case capacity is breached much later than the stated 2026 in the market study (2038-2044), whilst in the most likely scenario of existing storage capacity, capacity is in fact not breached at all in the period to 2050.

1.10 The need for additional storage capacity to meet future demand is even less certain when considering lower scenarios of forecast unaccompanied Ro-Ro demand, based on illustrative adjustments presented throughout this report.

1.11 When comparing the adjusted storage capacity on the Humber following the build out of the Proposed Development with demand scenarios, it is clear that there is likely to be significant spare storage capacity in the Humber in future years. This is not economically efficient, and casts doubt on whether the Proposed Development does in fact constitute "sustainable port development that caters for long term growth in volumes of imports and exports by sea with a competitive and efficient port industry capable of meeting the needs of importers and exporters cost effectively and in a timely manner" (paragraph 3.3.1 on the NPSP), or if in fact it just serves to displace freight from Killingholme and create idle capacity.

1.12 It is likely more efficient to "cater for long-term forecast growth in volumes of imports and exports" (paragraph 3.5.1 of the NPSP) by incrementally increasing storage capacity on the expansion land available at Killingholme, allowing for a more responsive reaction to future levels of market demand, which are currently uncertain.

1.13 The findings presented in this report cast substantial doubt on whether there is in fact an identified economic (not commercial preference) need to deliver more capacity for freight in the Humber region. The overarching conclusions of this report centre on the need for increased capacity in the Humber region, foregrounding the uncertainty surrounding projected capacity breaches on the Humber and emphasising the potential overestimation of demand. It challenges the urgency of the Proposed Development, drawing attention to the substantial spare storage capacity that questions its economic need and alignment with sustainable port development goals. In this sense, it is questionable whether the Proposed Development does in fact constitute 'sustainable port development' that meets the requirements of the NPSP. It has been shown that in line with the AFPF regulations, it may be in fact be more economically efficient to allow existing port infrastructure (through expansion land, a reduction in dwell times and/or increased berth utilisation) to respond to changes in future market demand and continue to facilitate the efficient and economic transport of goods through the Humber region.

2. Introduction

Purpose of this document

1.14 Volterra Partners LLP ("Volterra") has been instructed by CLdN Ports to provide an independent study of the market demand and capacity for port freight in the Humber region. This independent study is intended to be used as evidence for the Planning Inspectorate to consider in the examination of the Development Consent Order ("DCO") made by Associated British Ports ("ABP", otherwise referred to as "The Applicant") to construct a new in-river three berth commercial roll on / roll off ("Ro-Ro") cargo and passenger facility with landside storage within the Port of Immingham ("the Proposed Development").

1.15 This summary report focuses primarily on the economic need for additional freight capacity in the Humber region specifically. Whilst national and regional forecasts are discussed briefly, we reserve the right to provide further comment on the national and regional projections put forward by the Applicant's team at a later date, should the Inspectors leading the examination require this. The DCO application document that is considered most relevant to this report is the **Environmental Statement: Volume 3: Appendix 4.1: Market Forecast Study Report (hereafter the "market study").**

1.16 Volterra is an economic consultancy specialising in the economic impact of major infrastructure and development. We specialise in economic modelling and strategy. We work for both public and private sector clients in understanding the potential effects of proposed developments, infrastructure (mainly transport), specific sectors, and individual policy proposals on the local, regional, and national economy.

What legal, policy and examination tests are relevant to this report?

1.17 Whilst CLdN (supported by Pinsent Masons) are providing an opinion as to whether the Proposed Development aligns with national policy and legal tests, it is relevant to consider some key elements of policy and examination questions that are relevant to this report. It is contentious as to whether the Proposed Development meets policy tests in the National Policy Statement for Ports ("NPSP"), specifically whether it constitutes "sustainable" port development in terms of being the right development in the right place and responding to a need. This report seeks to provide an evidence-based opinion on whether the Proposed Development does in fact respond to a wider market need.

1.18 In terms of the NPSP, there is a requirement to demonstrate that the Proposed Development constitutes "….sustainable port development that caters for long term growth in volumes of imports and exports by sea with a competitive and efficient port industry capable of meeting the needs of importers and exporters cost effectively and in a timely manner, thus contributing to long-term economic growth and prosperity" (paragraph 3.3.1 of the NPSP). Testing whether there is a need for the Proposed Development to cater for long term growth within this report also responds to Item 5 of the Action List from Issue Specific Hearing ("ISH") 2, in which the inspectors requested that CLdN provide their expectation for future demand on the Humber for Ro-Ro capacity through to 2050 including the anticipated distribution between accompanied and unaccompanied Ro-Ro freight.

1.19 Paragraph 3.5.1 of the NPSP states that "when determining an application for an order granting development consent in relation to ports, the decision-maker should accept the need for future capacity to:

- cater for long-term forecast growth in volumes of imports and exports by sea for all commodities indicated by the demand forecast figures set out in the MDST forecasting report accepted by Government, taking into account capacity already consented. The Government expects that ultimately

Commented [LT2]: Comment / request from Pinsents - "is there any other Government policy and guidance that we may wish to reference here?"

Freeports - displacement / lack of additionality?

Levelling up agenda?

Brownfields Land mission from DLUHC?

Commented [LT3R2]: Response: I think for the purposes of this round of hearings (and the time constraints) we probably don't need to mention any other relevant policy at this stage from our perspective. I was considering diving into levelling up policy and Freeports policy but not sure it will make much difference / help our case, so fine to leave out for the time being.

all of the demand forecast in the 2006 ports policy review is likely to arise, though, in the light of the recession that began in 2008, not necessarily by 2030;
- support the development of offshore sources of renewable energy;
- offer a sufficiently wide range of facilities at a variety of locations to match existing and expected trade, ship call and inland distribution patterns and to facilitate and encourage coastal shipping;
- ensure effective competition among ports and provide resilience in the national infrastructure; and
- take full account of both the potential contribution port developments might make to regional and local economies."

1.20 This report also addresses the Proposed Development's compatibility with the 'desirability' tests in Regulation 6(3) of the Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 (the "APFP Regulations"). That is:

"(3) If the application is for the construction or alteration of harbour facilities, it must be accompanied by a statement setting out why the making of the order is desirable in the interests of—
(a) securing the improvement, maintenance or management of the harbour in an efficient and economical manner; or
(b) facilitating the efficient and economic transport of goods or passengers by sea or in the interests of the recreational use of sea-going ships."

3. Background

The economics of freight

Relationship of freight with the wider economy

1.21 Freight volumes over time have been broadly shown to correlate to some extent with GDP growth and the wider economic performance of a country. Research has shown that higher GDP growth rates are often accompanied by increased trade volumes, indicating a positive correlation between economic prosperity and the movement of goods through ports.[1] With an increase in a nation's GDP comes a rise in consumerism. This surge in demand has a subsequent effect on port freight economics. It necessitates the efficient handling of larger quantities of cargo, lesser dwell times, and enhanced infrastructure capacity. There is a need for ports to adapt to these shifts in trade patterns to ensure seamless freight movement and to capitalise on economic opportunities.

1.22 This relationship also works the other way. A report by the World Bank emphasises that an increase in port efficiency within a nation will contribute to higher GDP growth rates as streamlined trade processes and improved logistics performance enhances a country's overall economic competitiveness.[2]

1.23 As a result, the rationale for a symbiotic relationship between the indicators of freight volume and GDP is clear. Proof of this presents itself in freight elasticity relative to GDP. In developed countries freight elasticity relative to GDP is often around 1.0. This means that a 1% increase in GDP could approximately lead to a 1% increase in freight volumes.[3] In this regard Volterra broadly agrees with the statements made on behalf of the Applicant in the **market study** with respect to drivers of future growth in freight at a national level (refer to the section **Future market demand and throughput** for more detail on this topic).

The importance of dwell times

1.24 The time vessels spend waiting in port is a major factor contributing to port performance. Vessel dwell times are the amount of time that vessels spend in port actively loading or unloading cargo, which in turn contributes to both port capacity and throughput performance. Shorter dwell times are usually desirable because port operating costs rise with dwell time. Similarly, once landside, shorter dwell times for unaccompanied Ro-Ro trailers and Lo-Lo containers means that the operator can be more profitable. Whilst there is a need to accommodate some dwell time to keep landside freight operators (e.g. hauliers) satisfied with a port freight operator's service, there is a financial incentive for ports and their operators to minimise dwell times wherever possible.

1.25 Dwell times differ for each type of cargo, for example container, dry bulk, liquid bulk, and Ro-Ro. The dwell times for these types of cargo are influenced by a range of factors. Viewing freight dwell times through the lens of just in time logistics (JIT) exemplifies the importance of short dwell times. JIT is an idealistic inventory management system that aims to deliver goods immediately before they're needed for the next stage in the logistics process to improve efficiencies.[4] To reach maximum efficiency through the lens of JIT, ports must receive, process, and dispatch cargo effectively. If dwell times are prolonged the synchronisation of the JIT process is disrupted and cost-saving benefits are lost.

[1] Helpman et al, 2008. Estimating Trade Flows: Trading Partners and Trading Volumes

[2] World Bank, 2019. Connecting to Compete 2018: Trade Logistics in the Global Economy

[3] Dunkerley et al, 2014. Road traffic demand elasticities: A rapid evidence assessment

[4] Vector, 2023. Just in Time (JIT) Logistics, Explained in Detail

1.26 Assumptions regarding dwell times are a fundamental input into the Applicant's conclusions about existing capacity. These are challenged in Section **Existing capacity and short term planned growth** of this report.

Increasing freight demand and port operating models

1.27 Historically, an increase in freight demand prompts a shift in port operating models. Ports face the challenge of efficiently handling larger quantities of diverse cargo types. The Ro-Ro operating model is extremely efficient for handling wheeled cargo as it reduces handling time and risk of damage.

1.28 The growth in e-commerce and JIT requires ports to be more agile in their operations. Ro-Ro freight results in faster loading and unloading, meeting the time-sensitive demands of certain goods and requirements of modern supply chains.

1.29 There are also economic incentives behind a paradigm shift towards the Ro-Ro operating model. For example, if dedicated facilities for wheeled cargo are provided, then a competitive advantage can be created that will attract companies seeking the most efficient solutions for transporting specialised cargo types.

1.30 Commercial preferences between unaccompanied Ro-Ro and accompanied Ro-Ro are more nuanced, with many factors underpinning preferences outlined in detail in the Applicant's **market study.** Yet history does show that when ports tend to become capacity constrained from a storage (land) perspective, they tend to shift to a higher proportion of accompanied Ro-Ro freight rather than choose to refuse unaccompanied Ro-Ro freight through the port. The port of Dover, a notoriously land-constrained port, is a good example of this.

Commented [LT4]: Nigel / Ben - could you please review this paragraph and confirm you're happy with the assertion made here.

Uncertainties in forecasting

1.31 Whilst economic models are useful tools for forecasting future demand, it is important to note that they are still only models. They rely on key assumptions which will always contain a degree of uncertainty and can therefore not be considered to accurately represent a future scenario. Such scenarios will change as inputs are revised over time; the likelihood of outcomes changing is increasingly likely when forecasting over longer periods. This uncertainty in all economic modelling highlights the importance of sensitivity testing, to understand how specific inputs (assumptions) to economic models impact the results. Throughout this report we highlight the significant impact that realistic changes in input assumptions have upon the conclusions. This demonstrates that there is considerably more uncertainty that the Proposed Development is required to meet a future need than is implied in the Applicant's **market study**.

What types of freight and geographies does this report consider?

Types of freight

1.32 Paragraph 59 of the **market study** states that Department for Transport ("DfT") offers detailed trade statistics of UK maritime freight transport; this data is utilised in the **market study**. This study then sets out the three main types of cargo that are considered in the study:

1. All container traffic representing both shortsea and feeder Lo-Lo volumes.
2. Roads goods vehicles and trailers representing accompanied Ro-Ro traffic.
3. Unaccompanied roads goods vehicle trailers representing unaccompanied Ro-Ro traffic.

1.33 As part of this report's analysis, historic DfT statistics have been analysed and compared to the **market study**'s historic figures that are set out in the report (noting that Ireland needs to be removed from shortsea

data). Note that whilst 2022 DfT data is now available, for the purposes of trying to replicate the **market study**'s analysis historic data is only carried forward to 2021 in this report. This comparison exercise allows for a clear establishment of the exact DfT freight categories that have been used to define the three types of freight outlined in the **market study**, as well as ensure that any adjusted forecasts begin with the same starting point as those set out in the **market study**.

1.34 The exact DfT category definitions for the three types of freight considered in the **market study** are transparently set out below. Utilising these definitions matches with the Applicant's historic data presented in the **market study**.

Table 3.1 Definitions of the three main types of freight considered in this report and the market study

Name	Category	Description	Code	Empty units?
Accompanied Ro-Ro	Roll-on/Roll-off (self-propelled)	Road goods vehicles with or without accompanying vehicles	51	Yes
Unaccompanied Ro-Ro	Roll-on/Roll-off (non-self-propelled)	Unaccompanied road goods trailers & semi-trailers	61	Yes
Lo-Lo	Containers	20 ft freight units	31	Yes
	Containers	40 ft freight units	32	Yes
	Containers	Freight units > 20 ft & < 40 ft	33	Yes
	Containers	Freight units > 40 ft	34	Yes

Source: DfT, 2023 (download). Port and domestic waterborne freight statistics (table 0499). Weblink available here – https://www.gov.uk/government/statistical-data-sets/port-and-domestic-waterborne-freight-statistics-port

1.35 It is noted that some potentially key types of freight are excluded from consideration within these definitions, namely:

- Automotives (motor vehicles, passenger cars, vans etc.) are excluded from the accompanied Ro-Ro definition, which is considered reasonable given that whilst automotives form a reasonable share of current activities at Killingholme, they are essentially a completely different type of freight market to the three types of freight considered in the **market study**.
- Category 63 of unaccompanied Ro-Ro (rail wagons, shipborne port to port trailers etc.) also appears to be excluded from the definition, which is again considered reasonable given that the **market study** considers the shortsea market, which is the market relevant to the DCO application and one which is typically less reliant on this type of freight.

1.36 Paragraph 61 of the **market study** notes that within the DfT statistics, UK port traffic is classified geographically according to where the goods were last loaded or next unloaded at the other end of the sea journey. As a result, the real origin / destination of cargo is not properly recorded in the DfT data set and European feeder volumes are aggregated with pure European shortsea volumes. From analysis carried out for this report, it appears that the **market study** excludes feeder volumes from the Lo-Lo statistics when analysing freight at the UK and East of England geographies, but then does include feeder volumes when analysing freight volumes at the Humber region level. For example, refer to Figure 8-13 of the **market study** report it appears feeder volumes are included in the data, where the latest year of historic data from 2021 suggests Humber region Lo-Lo imports of approximately 215,000 units, which aligns exactly with the DfT's Lo-Lo estimate of imported units for 2021. Volterra estimates of excluding feeder (applying the same methodology as the **market study**) would result in a drop of shortsea Lo-Lo imports to around 130,000 to

140,000 units, showing clearly that the **market study** includes feeder units in the Lo-Lo data for Humber level forecasts.

Defining the Humber region

1.37 Finally, as indicated in paragraph 80 the **market study**, the DfT classifies 'Immingham & Grimsby' as one statistical geography for the purposes of their reporting, which combines Immingham and Killingholme. Yet when the **market study** refers to the Humber region as a whole, a comparison with historic DfT data suggests that the following major port DfT geographical definitions are included in the definition of the Humber region:

- Grimsby and Immingham, which as stated above includes Immingham and Killingholme ports;
- Hull;
- Goole; and
- Rivers Hull and Humber.

1.38 Within this definition, there are three major ports on the Humber Estuary – Immingham, Killingholme and Hull. As demonstrated in the table below, these three ports account for the majority of the three types of shortsea freight that are considered in this report and the **market study**. The table shows that when considering freight statistics in units, rather than tonnage, only three ports are really relevant in the Humber region.

Table 3.2 Market shares for different types of freight in the Humber region, split by major port definition (2021, total units)

Type	Grimsby & Immingham	Hull	Goole	Rivers Hull & Humber	Total
Accompanied Ro-Ro	57%	43%	0%	0%	100%
Unaccompanied Ro-Ro	97%	3%	0%	0%	100%
Lo-Lo	58%	42%	0%	0%	100%

Source: DfT, 2023. Table PORT0499: UK major port freight traffic, port level downloadable dataset: 2000 to 2022. Weblink available here - https://www.gov.uk/government/statistical-data-sets/port-and-domestic-waterborne-freight-statistics-port

1.39 Table 8-2 in Appendix 7 of the **market study** sets out the three Humber ports for which capacity is calculated – Immingham, Killingholme and Hull. Whilst it is acknowledged that these are the three major ports in the Humber (especially for the type of freight considered in the **market study**), it is conceivable that there could be (albeit a small amount of) further capacity for freight in the Humber that could be used to accommodate expected future growth that has not been considered in the **market study**. It does, however, seem appropriate that given current operations only three Humber ports are included in the capacity calculations.

4. Capacity on the Humber

Existing capacity and short term planned growth

Summary of key challenges:

- The calculated current static storage capacity at Killingholme outlined in the **market study** is wrong, particularly for container ground slots where they are significantly underestimated. The **market study** also does not allow for any planned expansion in storage capacity at Killingholme in the future.
- The average dwell time of 2.25 days utilised in the **market study** is considered to be far too high, particularly for operations at Killingholme where average dwell time was previously 1.45 days in 2021, but has since dropped to 1.2 days recently.
- Real time operational data collected and provided by CLdN suggests that stack efficiency is 0.8 at Killingholme, rather than 0.6 as suggested in the **market study**.
- Together these errors result in current capacity at Killingholme being underestimated by the Applicant by between 70% and 170%. Once combined with capacity at the other Humber ports, this results in an underestimate of existing capacity of between 35% and 85%. This is a very significant limitation of the Applicant's evidence, undermining the need for the proposed development.

1.40 In terms of existing capacity on the Humber, the Applicant asserts that the Proposed Development is needed now because capacity on the Humber is constrained. In particular, the Applicant asserts that storage capacity at Killingholme is especially constrained.

Killingholme

1.41 Killingholme Port's capacity has been estimated by the Applicant using a methodology that utilises google maps to estimate trailer parking bays and ground slots that are used for stacking conventional containers that are shipped on Ro-Ro vessels (refer to paragraphs 202 to 204 of the **market study**). The estimated container storage capacity is determined by multiplying the number of ground slots by the estimated stacking height (assumed to be 3, which is considered reasonable and reflective of normal operations by CLdN), and the stack efficiency, which is assumed to be 0.6 in the **market study**.

1.42 The storage capacity is then estimated by multiplying the static capacity by the number of operational days (365) and then dividing this by the dwell time, which is the number of days a unit will on average occupy a trailer parking bay or ground slot prior to it being collected or loaded. This is then multiplied by a peak factor

Commented [LT5]: Nigel / Ben: Any further evidence able to be provided to back this up?

Commented [LT6]: Nigel - happy for us to state we consider this reasonable? I know you mentioned it is from 2-4 typically, so 3 feels reasonable?

of 1.25 (considered reasonable by CLdN), to account for the fact that the efficiency capacity of a terminal is somewhat lower than the peak capacity of a terminal.

1.43 The **market study** refers to using an 'industry standard dwell time'. In fact, it appears in paragraph 206 of the **market study** that this average dwell time (2.25 – which is applied across all capacity calculations) is simply an average of four numbers that are stated in this paragraph – 1.5 days, 2.5 days, 2 days and 3 days. Very little basis or justification is given for the justification of dwell time in the **market study**. Sensitivity tests are then applied in Table 8-3 of the **market study**, yet a variation of only 0.5 days lower is tested against a variation of up to 1.25 days higher (dwell time is varied from 1.75 days to 3.5 days in Table 8-3), biasing the results presented in the table towards implying a higher dwell time and thus lower capacity for unaccompanied Ro-Ro in the Humber ports. Information provided by CLdN suggests that this average dwell time is fundamentally incorrect, at least for the port of Killingholme.

1.44 This report outlines the corrected capacity for unaccompanied freight at Killingholme, based on information provided by the Applicant. Table 4-2 of the **market study** assumes 32.9 hectares ("ha") of land is available for trailers and containers storage at Killingholme, allowing for a current figure of 950 trailer bays with a potential to rise to 1,790 in the future. Yet this underplays the total land available at Killingholme – there is a maximum size available of 125ha, which includes 19ha owned by Centrica (a CLdN subsidiary). All of this land can be made available for expansion of the existing port to accommodate growth in demand, if this materialises and is required. For context, CLdN estimates that if all of this 125ha of land was converted to be able to accommodate unaccompanied trailers and containers, there would be capacity for up to a maximum of 6,500 trailer bays and 1,800 containers. It is noted that in this hypothetical maximum scenario there would not be any storage capacity left to hold automotives, which are currently brought through Killingholme Port, but could likely be stored elsewhere relatively easily should this be required. Information provided by CLdN suggests that constructing and enabling allocated expansion land to be able to store containers and trailers requires relatively short lead times of around 2 to 3 years to deliver, showing that additional capacity at Killingholme can be responsive to future growth in demand.

1.45 Estimated storage capacity is incredibly sensitive to the assumed dwell time. As demonstrated in **paragraph 1.24,** freight does not make money when it is not moving. Permitting trailers or containers to dwell for a certain amount of time is simply a commercial decision. The assumed 2.25 day dwell time is a long way off the reality at Killingholme, where dwell times were previously estimated to be 1.45 days, but are now moving down to 1.2 days. CLdN monitors dwell time for different types of freight and different operators that move through Killingholme Port; based on past operations at Killingholme, CLdN estimates that Stena (the proposed occupier and operator at the Proposed Development) currently operates an average dwell time that is below the already low 1.2 day port-wide Killingholme average.

Commented [LT7]: Nigel - happy for us to state this? Any evidence we can provide to back this assertion up?

1.46 The table below clearly sets out the revised key assumptions that provides an updated and more accurate estimate of storage capacity available at Killingholme. This revised estimate of 637,533 units in 2023, growing to 765,040 by 2025, is carried forward for the remainder of this report.

Table 4.1 Revised storage capacity calculations for Killingholme (total units)

Assumption	Applicant's assumptions	Correct figures provided by CLdN			
	All years	2021	2023	2024	2025
Trailer bays	1,790	950	1,176	1,481	1,700
Container ground slots	220	602	602	602	602
Container unit slots (multiply by three)	660	1,805	1,805	1,805	1,805
Stack efficiency	0.6	0.8	0.8	0.8	0.8

Commented [LT8]: Nigel - I have inferred this out of your tables provided to us which just simply state 1,805 ground slots without any calculation that involve stacking assumption (so I've worked backwards by dividing by 3) - can you confirm please?

Commented [LT9]: Nigel - are we able to justify / evidence this increase any way?

Assumption	Applicant's assumptions	Correct figures provided by CLdN			
	All years	2021	2023	2024	2025
Total container units static capacity (3 * slots * efficiency)	396	1,444	1,444	1,444	1,444
Total static capacity (container units capacity plus trailer bays capacity)	2,186	2,394	2,620	2,925	3,144
Multiply by days per annum	797,890	873,810	956,300	1,067,625	1,147,560
Average dwell days	2.25	1.45	1.2	1.2	1.2
Peak multiplier	1.25	1.25	1.25	1.25	1.25
Total storage capacity	**283,694**	**482,102**	**637,533**	**711,750**	**765,040**

*Source: Information provided by CLdN and applying the same methodology as is used in the **market study**. Note figures are not rounded.*

Commented [LT10]: Nigel - please confirm that CLdN would be happy to defend this; it is the information that was provided to us in the tables

The Humber as a whole

1.47 This report re-calculates storage capacity in the Humber region as a whole, to account for the updated and accurate storage capacity available at Killingholme, but also to test some simple scenarios where key dwell time assumptions are varied at both Immingham and Hull. Revised dwell time assumptions that are tested include:

- At Immingham, it is estimated that the dwell time varies from between 1.5 days to 3 days. Both 1.5 and 3 days are tested for completeness. This 1.5 day to 3 day range is based on information provided explicitly by the Managing Director of DFDS during ISH2, where the transcript states the dwell time vary as such.[5]
- At Hull, a revised dwell time of 1.5 days is also tested. Ro-Ro at Hull are moved by P&O and Finnlines, who are thought (based on information provided by CLdN) to have relatively short dwell times compared to the industry average. Conservatively assuming a dwell time equivalent to 1.5 days (above Killingholme and equivalent to Immingham) is therefore considered reasonable for Hull.

Commented [LT11]: Nigel / Ben - two questions please:
- First, is there any evidence we can provide to strengthen this assertion / claim of 1.5 days average dwell at Hull?

- Second, what can we say about the fact that ABP won't actually know dwell times given that this is monitored by the operator? I think you mentioned this during our site visit but not sure how to phrase it without jeopardising our own credibility of claiming we know Stena's average dwell time.

1.48 The table below outlines what the revised capacities would be as a result of varying these assumed dwell times. This compares to stated storage capacities of 130,000[6] at Hull and 570,000 at Immingham in the **market study** (refer to Table 8-2).

Table 4.2 Revised storage capacity calculations at Immingham and Hull

Assumption	Immingham – minimum	Immingham – maximum	Hull
Trailer bays	3,660	3,660	220
Container ground slots	370	370	380

Commented [LT12R11]: Need evidence for both P&O and Finnlines ideally, if you have any.

Commented [LT13]: Nigel / Ben - query from me is if Hull is mainly container slots and not trailer bays then how come we are sure they have a low dwell time? Think we need to try and be more robust on this point to avoid challenge.

[5] TR030007-000546-Issue Specific Hearing 2 PT1.pdf (planninginspectorate.gov.uk)

[6] Note that Volterra has been unable to match this calculation of 130,000 unit storage capacity at Hull. Following the **market study**'s assumption and methodology suggests the estimated capacity should be 117,000 units.

Assumption	Immingham – minimum	Immingham – maximum	Hull
Container unit slots (multiply by three)	1,110	1,110	1,140
Stack efficiency	0.6	0.6	0.6
Total container units static capacity (3 * slots * efficiency)	666	666	684
Total static capacity	4,326	4,326	904
Multiply by days per annum	1,578,990	1,578,900	329,960
Average dwell days	**3.0**	**1.5**	**1.5**
Peak multiplier	1.25	1.25	1.25
Total storage capacity	**421,064**	**842,128**	**182,047**

*Source: **Market study**, plus information provided by CLdN and information provided by DFDS at previous hearings.*

Commented [LT14]: Nigel: Please confirm you are happy with this assumptions at Hull and that it doesn't seem too bullish?

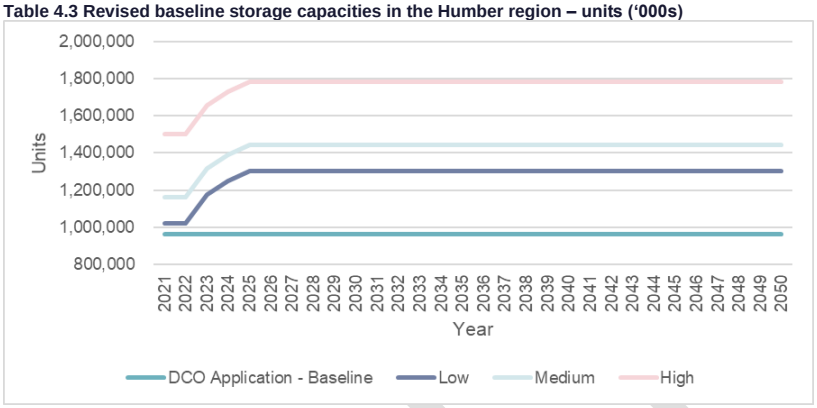
1.49 Three scenarios of revised storage capacity in the Humber are then tested in this report and compared to the **market study**'s estimate. These are:

- **Low:** Killingholme's revised capacity is utilised, and combined with the minimum capacity at Immingham (422,000 units) and the minimum capacity at Hull (assumed to be 117,000 units; refer to **footnote 6**). This results in a conclusion that the Applicant has underestimated capacity by around 35%.
- **Medium:** Killingholme's revised capacity is utilised, and combined with the **market study**'s estimated capacities at both Immingham (561,000 units)[7] and Hull (117,000 units). This results in a conclusion that the Applicant has underestimated capacity by around 50%.
- **High:** Killingholme's revised capacity is utilised, and combined with this report's estimated maximum capacities at both Immingham (842,000 units) and Hull (182,000 units). This results in a conclusion that the Applicant has underestimated capacity by over 85%.

1.50 These revised capacity scenarios are outlined and compared to the **market study**'s estimate in **Table 4.3**. These very simple variations in just a few key assumptions highlight the sensitivity of the capacity modelling.

[7] Similar to Hull, applying the **market study**'s assumptions and methodology suggests that Immingham's estimated capacity under these assumptions should be 561,000 units. This figure is carried forward in this report.

Table 4.3 Revised baseline storage capacities in the Humber region – units ('000s)



Source: Volterra calculations, 2023.

Capacity at the Proposed Development

Summary of key challenges:

- Assuming dwell times in line with the **market study** when calculating storage capacity at the Proposed Development would only allow for around 40% of the estimated 475,000 unaccompanied Ro-Ro units per years at the Proposed Development to be accommodated.
- A dwell time of 0.9 days on average needs to be achieved at the Proposed Development to be able to accommodate its estimated 475,000 unaccompanied Ro-Ro units per year.

1.51 Within **Part 4 Article 21(1) of the draft DCO**, the Applicant proposed to include a maximum cap of 660,000 Ro-Ro units per annum:

"The Company may operate and use the authorised development as harbour facilities in connection with the import and export of ro-ro units to include all forms of accompanied and unaccompanied wheeled cargo units up to a maximum of 660,000 ro-ro units a year together with occasional use by passengers travelling by vehicle when space is available on a departing vessel."

1.52 The justification for this maximum provision is stated as follows: "with a view to mitigating the environmental impact of the authorised development, ABP has restricted the authorised development to a maximum throughput limit of 660,000 ro-ro units per year and the impact of the Proposed Development has been assessed on this basis" (refer to paragraph 8.3 of the **Explanatory Memorandum to Draft DCO Document Reference 3.2**).

1.53 For context, according to data provided by CLdN at Killingholme, Stena (the proposed sole operator of the Proposed Development) had a throughput of 144,000 unaccompanied Ro-Ro and 61,000 accompanied Ro-

Ro units at Killingholme in 2021, falling to 55,000 unaccompanied Ro-Ro and 67,000 accompanied Ro-Ro units in 2022, once the Europoort line contract was not renewed at Killingholme. To meet this maximum cap of 660,000 units per year, Stena would therefore need to increase their 2021 Killingholme throughput more than threefold (from 205,000 units to 660,000 units).

Commented [LT15]: Nigel / Ben: Is it spelt Europort or Europoort? Could you please confirm.

1.54 **Environmental Statement Volume 1 Chapter 4: Needs and Alternatives** states in paragraph 4.2.80 that "the objectives which have been defined are to provide the Humber Estuary with the ability to … (ii) provide for, at least, a proportion of future growth in demand for Ro-Ro freight capacity predicted within the estuary".

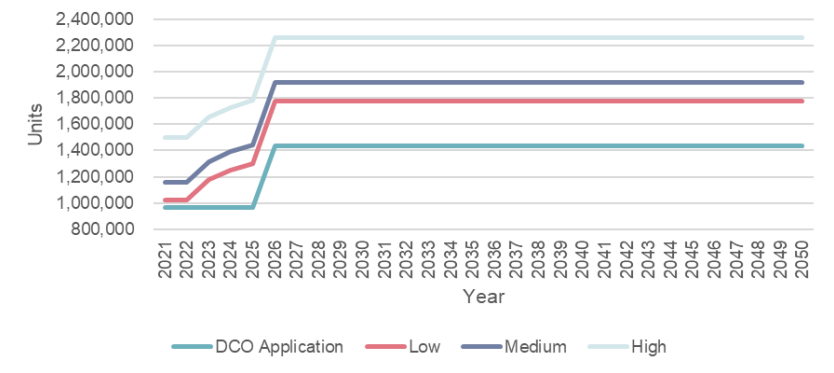
1.55 **Environmental Statement Volume 1 Chapter 3: Details of Project Construction and Operation** then estimates in paragraph 3.2.6 that:

"The annual throughput of the IERRT has been capped at 660,000 Ro-Ro cargo units per year. It is anticipated that of that number, approximately 72% of the embarking or disembarked units will be unaccompanied (cargo carried on the vessel without an accompanying heavy goods vehicle (HGV) and driver) with 28% of units will be accompanied (cargo which is accompanied by an HGV and driver on the crossing)."

1.56 Applying these proportional assumptions to the 660,000 units would imply that the Proposed Development has the capacity to accommodate throughput of 475,200 unaccompanied Ro-Ro units and 184,800 accompanied Ro-Ro units per year. This domination of unaccompanied Ro-Ro units at the Proposed Development aligns with assertions in the **market study** that unaccompanied Ro-Ro freight is by far the most important category in the Humber (refer to paragraph 11). This trend is only predicted to strengthen in the future, with accompanied Ro-Ro "set to further decline" (paragraph 28 of the **market study**).

1.57 Given that unaccompanied Ro-Ro units require storage capacity, this figure of 475,200 is assumed to equate to the maximum storage capacity available at the Proposed Development for the purposes of this assessment. The figure below outlines what the estimated storage capacity for unaccompanied Ro-Ro units would increase to in the Humber region under the four tested scenarios, after adding the Proposed Development's assumed capacity. Capacity rises to 1.4m to 2.3m units a year with the Proposed Development, dependent on which scenario is to be believed.

Figure 4.1 Revised storage capacity in the Humber with the Proposed Development – units ('000s)



Source: Volterra calculations, 2023

1.58 In addition to the 475,000 unaccompanied Ro-Ro units expected to result at the Proposed Development, the Applicant also states what their static storage capacity is expected to be within **Environmental Statement Volume 1 Chapter 2: Proposed Development.** In total, it is estimated that the Proposed Development has static storage capacity for a total of 1,430 trailer bays and 40 container ground slots.[8]

1.59 The table below tests two scenarios for what this allocated space would mean in terms of overall capacity for unaccompanied Ro-Ro units at the Proposed Development. The first scenario applies exactly the same assumptions that are utilised to calculate storage capacity at existing Humber ports in the **market study**. This results in an estimated annual capacity of just 195,000 unaccompanied Ro-Ro units at the Proposed Development, equivalent to just 41% of the 475,000 unaccompanied Ro-Ro units that is the estimated annual throughput in the proposed Development (refer to **paragraph 1.56 above**). Clearly there is an inconsistency here in the Applicant's documents. Either the estimated throughput of unaccompanied Ro-Ro units at the Proposed Development is unable to be accommodated by the storage capacity available there, or the assumptions that underpin the **market study**'s capacity methodology (in particular, the assumed dwell time) is inherently incorrect.

1.60 The second scenario in the table below therefore estimates capacity at the Proposed Development by calculating what dwell time would be required to be able to accommodate 475,000 unaccompanied Ro-Ro units per year. This shows that for this to be achieved within the allocated trailer bays and container slots, Stena would need to achieve an average dwell time of around 0.9 days. This is less than half of the assumed dwell time used to calculate existing capacity in the **market study**, further discrediting these estimates and instead providing further credibility to CLdN's assertion that existing dwell times at Killingholme (partly driven by Stena) are in fact substantially lower than 2.25 days.

Table 4.4 Estimated storage capacity scenarios at the Proposed Development

Assumption	DCO documentation assumptions	Achieving unaccompanied throughput
Trailer bays	1,430	1,430
Container ground slots	40	40
Container unit slots (multiply by three)	120	120
Stack efficiency	0.6	0.6
Total container units static capacity (3 * slots * efficiency)	72	72
Total static capacity	1,502	1,502
Multiply by days per annum	548,230	548,230
Average dwell days	2.25	**0.92**
Peak multiplier	1.25	1.25
Total storage capacity	**194,926**	**476,722**

Source: Volterra calculations, 2023.

[8] This comprises of 240 trailer bays and 40 container slots in the Northern Storage Area (paragraph 2.3.33); 160 trailer bays in the Central Storage Area (paragraph 2.3.35); 400 trailer bays in the Southern Storage Area (paragraph 2.3.37); and 630 trailer bays in the Western Storage Area (paragraph 2.3.40).

Alternatives for future capacity and longer term growth

Summary of key challenges:

- The assertion that there is no further expansion potential at Killingholme is incorrect. In fact, there is substantial space available for capacity to be expanded to meet freight demand at Killingholme in the future.

1.61 **Environmental Statement Volume 1 Chapter 4: Needs and Alternatives** states that:

"4.3.23 From the preceding summary analysis, it is concluded that the only realistic broad option for meeting the need that has been identified is to provide further Ro-Ro freight capacity within the Humber Estuary.

4.3.24 As already concluded, such further capacity can only be provided via the provision of sufficient additional suitable Ro-Ro berths and related sufficient suitable landside storage capacity in a suitable location. Existing facilities and capacity on the Humber Estuary is unable to meet the need and objectives which have been identified."

1.62 It is the shared view of CLdN that there should be sufficient capacity within the Humber region to accommodate any potential future increases in freight demand. CLdN, like ABP, wants the Humber region to be a successful port region, ensuring it can accommodate for demand and not allow it to be displaced elsewhere in the UK. What CLdN does not agree on, is the assertion that existing facilities are unable to provide the capacity to meet the estimated need on the Humber.

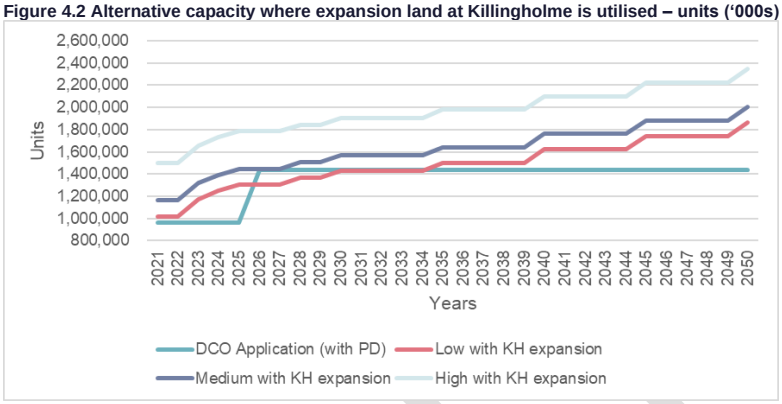
1.63 Paragraph 4.3.73 of **Environmental Statement Volume 1 Chapter 4: Needs and Alternatives** states that "from publicly available information, it would appear that the available storage areas – both Ro-Ro cargo and trade car storage areas – are extensively utilised. Whilst there may be opportunities to provide an incremental increase in storage provision in some way within the current footprint of the facility, there does not appear to be any opportunities for substantial expansion within the footprint of the facility". This is not the view of CLdN; as demonstrated in **paragraph 1.44**, CLdN believe they have expansion land available to accommodate up to 6,500 trailer bay and 1,800 ground container slots in the future. This would represent a substantial increase on current enabled capacity at Killingholme, which accommodate current demand. This assumed expansion potential provided by CLdN is carried forward in this report.

1.64 This report therefore builds on the three capacity scenarios defined earlier (refer to **paragraph 1.49**) by developing some illustrative expansion scenarios at Killingholme, whereby CLdN choose to incrementally increase trailer bay capacity over time if there is a need to respond to increased market demand. It is illustratively assumed that CLdN increase trailer bay numbers to 1,950 in 2028, 2,200 in 2030, 2,500 in 2035, 3,000 in 2040, 3,500 in 2045, reaching 4,000 total in 2050, for the purposes of this exercise. This incremental increase reflects information provided by CLdN that it can take approximately two to three years to construct and enable further trailer bays across the Port's site. It is noted that it would be unreasonable to assume a build out to maximum capacity of 6,500 trailer bays in these scenarios, as this would leave no space for automotives to be stored anywhere on the expanded Killingholme site. Under these scenarios, capacity would rise in the long run to between 1.9m and 2.3m unaccompanied Ro-Ro units, exceeding the Applicant's estimate of capacity as set out in their DCO documentation.

Commented [LT16]: Nigel / Ben: Please review this paragraph and check you are happy with the illustrative assumptions we are making, and that they would be deliverable in reality.

For context, it would imply Killingholme storage capacity rising to 1.3m units per year

Figure 4.2 Alternative capacity where expansion land at Killingholme is utilised – units ('000s)



Source: Volterra calculations, 2023.

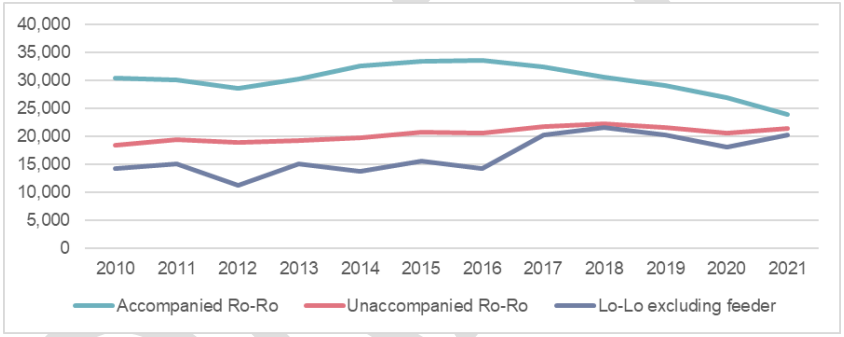
5. Demand for freight

Current market demand and throughput

National level

1.65 Since 2010, in terms of tonnage, the UK shortsea freight market (excluding to/from Ireland) has seen mixed-results across the different modalities. There has been a steady decline in the quantity of accompanied Ro-Ro from 2010 to 2021 (-22%) in contrast to a gradual rise in unaccompanied Ro-Ro (15%) and a notably sharper increase of Lo-Lo (less feeder) traffic (42%). It is only since around 2016 that growth rates of the three modalities have significantly diverged with accompanied Ro-Ro declining, unaccompanied plateauing and Lo-Lo (excluding feeder) continuing to increase.

Figure 5.1: UK shortsea historic growth excluding to/from Ireland (tonnes, '000s)



Source: Source: DfT, 2023 (download). Port and domestic waterborne freight statistics (table 0499). Weblink available here – https://www.gov.uk/government/statistical-data-sets/port-and-domestic-waterborne-freight-statistics-port

1.66 The historic data does, therefore, support the assertion that there has been a general shift away from accompanied Ro-Ro especially between 2016 and 2021. A broadly similar pattern is shown when considering the change in terms of units, where between 2010 and 2021 accompanied Ro-Ro fell by 7%, unaccompanied Ro-Ro rose by 29% and Lo-Lo increased by 49%.

Local level (Humber)

Key points to note: This section provides historic Ro-Ro data for Killingholme over the past decade, in line with the action identified following ISH2.

1.67 CLdN was asked following ISH2 to "provide for the Port of Killingholme historic data for Ro-Ro freight volumes for at least the last 10 years with an explanatory note. **Table 5.1** provides this information. The

table demonstrates units by three relevant cargo types passing through Killingholme – containers, unaccompanied Ro-Ro (trailers) and accompanied Ro-Ro (self-drives).

1.68 The compound annual growth rates ("CAGRs") of volumes for different types of freight at Killingholme vary. They show that, over the period 2013 to 2022, the following CAGRs were achieved in freight volumes at Killingholme:

- 1.8% in Lo-Lo unit volumes;
- 2.7% in unaccompanied Ro-Ro unit volumes; and
- 0.6% in accompanied Ro-Ro unit volumes.

1.69 These growth rates at Killingholme align with the **market study**'s wider assertion that unaccompanied Ro-Ro is the dominant type of freight in the Humber, with this trend only expected to strengthen in the future. Not only does it form the largest proportion of total units at Killingholme (51% of total units in both directions in 2022), but it has also recorded the fastest growth in recent years.

Table 5.1 Killingholme Port volumes over the past decade

Units in each direction, by cargo type, for 2013 to 2022

Killingholme Port	Direction	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Containers ('Lo-Lo')	Imports	85,181	83,182	86,994	87,920	84,141	82,962	84,844	86,083	95,709	**98,803**
	Exports	83,518	81,891	83,736	84,745	82,578	82,578	83,201	83,406	94,259	**99,616**
	Total	168,699	165,073	170,730	172,665	166,719	165,540	168,045	169,489	189,968	**198,419**
Unaccompanied Ro-Ro ('Trailers')	Imports	108,209	113,226	118,280	115,157	117,496	134,835	144,110	140,851	**172,710**	137,524
	Exports	108,210	111,319	115,369	111,959	117,929	135,719	143,259	138,382	**171,263**	137,826
	Total	216,419	224,545	233,649	227,116	235,425	270,554	287,369	279,233	**343,973**	275,350
Accompanied Ro-Ro ('Self Drives')	Imports	31,681	34,939	37,960	38,367	39,924	**41,586**	40,164	35,590	31,308	33,098
	Exports	32,123	35,540	36,595	37,369	38,575	**39,136**	37,200	33,925	31,965	33,974
	Total	63,804	70,479	74,555	75,736	78,499	**80,722**	77,364	69,515	63,273	67,072

Source: data provided by CLdN. Note that 2023 data is excluded as this only currently runs up to June 2023 and hence does not provide information on a full year. Note also that 'mobiles' (i.e. mainly automotives) and 'high & heavy' types of freight are excluded from the data.

1.70 As established earlier (refer to **paragraph 1.33** onwards), an exercise has been carried out to compare DfT statistics with the current levels of Humber freight that are outlined in the **market study**. The historic and current (2021 for the purposes of this report) data outlined in the **market study** are considered to be reliable for the purposes of this assessment, and are not challenged at this stage of the examination process.

Commented [LT17]: Note to Pinsents: this provides the information requested in ISH2.

Note to Nigel/Ben: happy for us to share this level of information publicly?

Commented [LT18]: Nigel - any idea on why unaccompanied spiked in 2021? A market correction after Covid? Any explanation we can provide in a footnote would be appreciated.

1.71 The **market study** (paragraph 73) notes that "even though national shortsea volumes have declined since 2018, shortsea tonnage in the Humber region has stayed stable. Over the 2010-2018 period shortsea unitised demand in the Humber grew by around 39%, which corresponds to a CAGR of around 4.0%." The next section of this report, focused on outlining future demand, presents graphs that demonstrate a baseline freight position in the Humber that is consistent with the graphs presented in section 8 of the **market study**.

Future market demand and throughput

Key challenges:

- Whilst the **market study**'s overarching approach to producing future freight forecasts is not fundamentally challenged at this stage, it is demonstrated that the GDP forecasts used to underpin the study's forecasting model could be considered slightly bullish when compared to other publicly available forecasts, and past trends of growth in GDP.
- This would have the impact of the **market study** having over-estimated future growth in freight in the Humber. Analysis presented here shows that forecasts might be overstated by in the region of around 20% over the longer term.

National level

1.72 In the **market study**, the Applicant states that "overall, UK shortsea trades are expected to grow in line with GDP developments in the years to come. The CAGR for UK's shortsea tonnage in the periods 2022- 2027, 2028-2032 and 2032-2050 are respectively 2.3%, 1.5% and 1.4%." This seems a plausible assumption particularly when considering a longer time period. The suggestion that shortsea freight will continue to grow over this period is not disputed; other national forecast studies (and our own professional opinion) also support this view.[9]

1.73 However, the approach of the Applicant may be queried in two respects. Firstly, the GDP assumptions which are said to form the basis of the model represent a relatively bullish outlook for the economy. A range of GDP scenarios have been presented based on Oxford Economics forecasts but the assumptions within these which represent the more favourable or less favourable economic outlooks are not set out. Given this, more conservative scenarios based on long term historical GDP growth or one solely based on long-term forecasts produced by the Government would perhaps represent more conservative estimates of demand; sensitivity scenarios that reflect this (for the Humber specifically) are discussed in more detailed below. Adjusted national freight scenarios have not been presented here due to the issues of replicating the existing study.

1.74 Finally, whilst the Applicant does set out some of their assumptions and methodology it is not clear how the GDP growth translates into the CAGRs stated above. It is stated that multipliers of roughly 1:1 for imports to GDP and 0.1:1 to 0.2:1 for exports to GDP have been used going forward yet these do not appear to be consistent across the different modalities when analysing historic DfT data, so it is not possible to accurately replicate their findings.

[9] MDS Transmodal on behalf of the National Infrastructure Commission, 2019. Future of Freight Demand

Local level (Humber)

1.75 The Applicant states throughout their DCO documentation that there is a need to accommodate additional freight growth in the Humber in the future. This identified 'need' relies on the forecasting model produced for Freight in the Humber within Section 8 of the **market study**. Specifically, Table 8-1 of the **market study** states that the Humber region shortsea Ro-Ro demand forecast model is based on a variety of inputs / assumptions, which are:

- Transportation cost model;
- Hinterland demand modelling;
- Facilities competitive reviews;
- Trends in the Ro-Ro demand segment;
- Trends in Ro-Ro shipping; and
- All of which come together to allow the preparation of the Humber region Ro-Ro accompanied and Ro-Ro unaccompanied forecast in tonnage and units.

1.76 Whilst the **market study** provides some limited explanation of this model in the main body of the report and its associated appendices, much greater transparency around the detailed approach and specific quantitative assumptions utilised in the Humber would allow for a fairer and more detailed critique of whether the uplifts applied to the capture estimated Humber freight growth are considered reasonable. From an initial review (reserving the right to comment further if the Applicant is willing to share more detailed information on the demand modelling for the Humber), the Humber forecasts do on the whole seem broadly reasonable (i.e., they are not fundamentally challenged here), barring a few unexplained jumps in the data and a general opinion that they are likely on the bullish side of expected growth. Broadly, it is accepted that there has been historic growth in freight on the Humber and that it is also reasonable (given past growth and current policy priorities) to expect future growth in the future, with CLdN's sharing ABP's ambitions to ensure the Humber continues to be a successful port region.

1.77 The Applicant's shortsea freight forecasts for the Humber are outlined in Figures 8-13 (imports) and 8-14 (exports) of the **market study**. Whilst not all results are repeated here, broadly the graphs appear to show that total units (exports and imports) on the Humber are expected to grow to approximately:

- More than 300,000 accompanied Ro-Ro units per year by 2050;
- 1.58m unaccompanied Ro-Ro units per year by 2050; and
- Over 750,000 Lo-Lo units per year by 2050.

1.78 It is noted that in the case of exported accompanied Ro-Ro units in particular, there is a large unexplained jump in forecast units per year from 63,000 in 2021, to around 140,000 units per year forecast in 2022. This appears strange given that historically imported and exported units have been broadly similar, as empty units (which are typically exported given the UK's trade imbalance) are still counted in the data for these categories of freight (as per DfT definitions). More explanation is needed from the Applicant on why this jump is expected to occur in exports only, in a type of freight that has been historically declining on the Humber (-1.6% CAGR from 2012 to 2021, as stated in paragraph 177b of the **market study**.

1.79 Paragraph 165 of the **market study** states that there has been a historic and widely documented relationship between macro-economic activity and trade, a relationship which is used as the basis for the UK's shortsea trade forecast. It is implied from the methodology that the UK shortsea trade forecast then informs the **market study**'s Humber specific forecasts. This means that all forecasts presented in the **market study** are in some way related to assumed GDP growth of the UK economy.

1.80 Without detailed knowledge of the specific inputs that have gone into the Humber freight forecasts, it is GDP growth assumptions that are simplest to critique and provide comment on within this report. Given that GDP growth appears to be inherent in the freight forecasting model, levels of GDP growth that are bullish compared to the UK's reality will likely overinflate freight forecasts at all geographies by some degree.

1.81 Paragraph 167 of the **market study** states that:

"In this study we have used the UK government forecast for 2022 (3.7%) and 2023 (1.7%) and those of Oxford Economics for 2024 and beyond. In 2025, the GDP growth is expected to be 2.2% in the base scenario, 2.4% in the high scenario and 2.0% in the low scenario. By 2050 the GDP growth is expected to reach 1.5%, 1.7% and 1.4% for respectively the base, high and low scenarios."

1.82 These GDP growth projections have been compared to both historic GDP data[10] and other publicly available forecasts, in particular short term forecasts released by the Treasury ("HMT")[11] and longer term GDP growth forecasts released by the Office for Budget Responsibility ("OBR") in June 2023.[12] A comparison of the **market study**'s outlined GDP growth projections with these sources suggests that the forecasts are bullish, particularly in the short term. For example, the **market study** outlines an expected GDP growth of 1.7% in 2023, when the OBR expects growth to be 0.2%, whilst the average of independent forecasts collated by HMT suggest growth of 0.1%.

1.83 Furthermore, the Humber level freight forecasts in the **market study** expect very substantial growth rates in freight to occur in the short term (2022-2027) – 2.8% in accompanied Ro-Ro (compared to a decline in the last decade, 4.5% in unaccompanied Ro-Ro and 3.1% in Lo-Lo – again which is largely unexplained.

1.84 Considering all of this, this report defines three illustrative scenarios to demonstrate how sensitive the Applicant's Humber demand forecasts likely are to these relatively bullish assumptions:

- **"OBR Adjustment":** This scenario factors down expected Humber-level yearly growth rates by type of freight (outlined in paragraph 77 of the **market study**, for the three freight types over different time periods to 2050) by the difference between the OBR long-run growth forecasts and the Applicant's stated GDP growth assumptions (paragraph 167 of the **market study**) for each year to 2050.
- **"CAGR Adjustment":** This scenario first factors down expected Humber-level yearly growth rates by type of freight (outlined in paragraph 77 of the **market study**, for the three freight types over different time periods to 2050) for the years 2022 to 2027 by the difference between the HMT's average of independent forecasts for GDP growth and the Applicant's stated GDP growth assumptions (paragraph 167 of the **market study**) to 2027. From 2027 to 2050, a factor is applied to account for the difference between the Applicant's stated GDP growth assumptions over this time period and the 20-year CAGR of GDP growth based on historic data, which is 1.4%.
- **"Slower Short Term Growth":** This simply amends the Applicant's Humber forecasts to apply the 2028-2032 forecast growth rates by type of freight (paragraph 177 of the **market study**) to the period 2022-2027 as well, given that this substantial short term growth is not considered to be fully justified in the **market study**.

1.85 The impact that these simple amendments to growth rates have on forecast imported and exports units in Humber is profound, showing how sensitive the **market study**'s growth projections are to a number of non-transparent assumptions. **Figure 5.2** and **Figure 5.3** replicate Figures 8-13 and 8-14 of the **market study**, but only show all units rather than split out by type of freight (which is provided in **Table 5.2** instead).

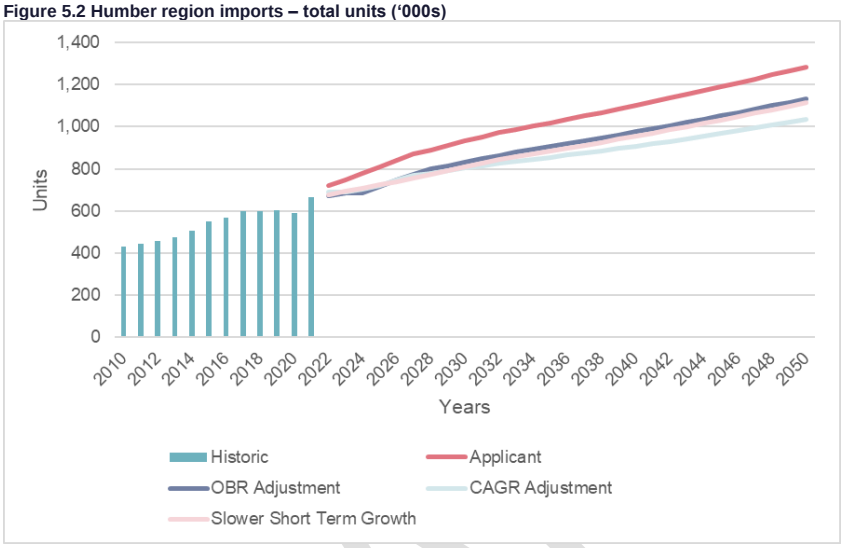
1.86 It should be noted that the Applicant's forecast figures outlined in Table 3.2 likely do not match perfectly with the figures produced by the Applicant in the **market study** themselves. The figures presented here represent our best attempt to replicate the Applicant's forecasts as closely as possible, noting that exact year on year forecast unit numbers in the Humber have not been provided to the best of our knowledge.

[10] GDP – data tables - Office for National Statistics (ons.gov.uk)

[11] forecomp_Aug1.pdf (publishing.service.gov.uk)

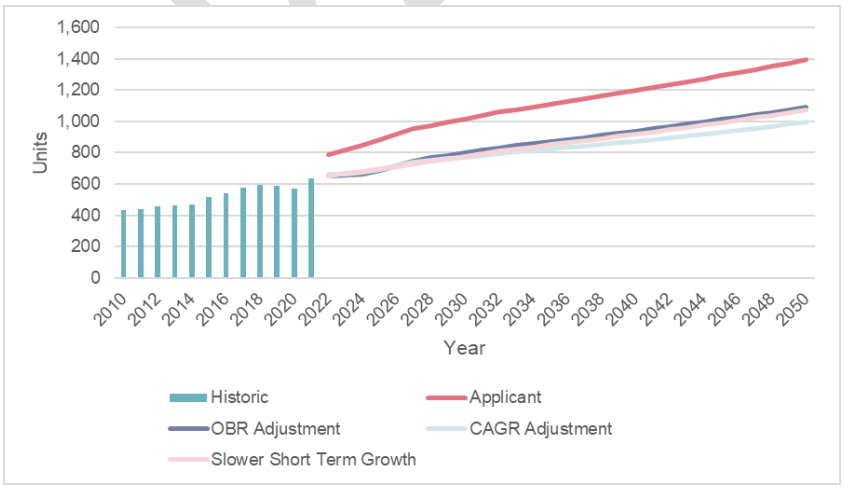
[12] Data - Office for Budget Responsibility (obr.uk)

Figure 5.2 Humber region imports – total units ('000s)



*Source: Volterra calculations 2023, based on amendments to the forecasts presented in the **market study**.*

Figure 5.3 Humber region exports – total units ('000s)



*Source: Volterra calculations 2023, based on amendments to the forecasts presented in the **market study**.*

Table 5.2 Adjusted Humber freight forecasts by year and type of unit ('000s)

	Applicant	OBR Adjustment	CAGR Adjustment	Slower Short Term Growth
Accompanied Ro-Ro				
2050 imports	102	95	89	95
Shortfall with Applicant scenario	N/A	6 (6%)	13 (13%)	6 (6%)
2050 exports	225	98	91	98
Shortfall with Applicant scenario	N/A	127 (56%)	134 (59%)	127 (56%)
Unaccompanied Ro-Ro				
2050 imports	775	677	615	650
Shortfall with Applicant scenario	N/A	99 (13%)	160 (21%)	125 (16%)
2050 exports	806	655	595	629
Shortfall with Applicant scenario	N/A	151 (19%)	211 (26%)	177 (22%)
Lo-Lo				
2050 imports	407	361	332	369
Shortfall with Applicant scenario	N/A	46 (11%)	75 (18%)	38 (9%)
2050 exports	363	337	309	344
Shortfall with Applicant scenario	N/A	26 (7%)	54 (15%)	19 (5%)
Total				
2050 imports	1,284	1,133	1,036	1,115
Shortfall with Applicant scenario	N/A	151 (12%)	248 (19%)	169 (13%)
2050 exports	1,394	1,089	995	1,071
Shortfall with Applicant scenario	N/A	305 (22%)	398 (29%)	322 (23%)

*Source: Volterra calculations 2023, based on amendments to the forecasts presented in the **market study**. Figures rounded to the nearest 1,000 units.*

Commented [LT19]: All - is this too much detail to present? Want to try and be transparent given we criticise Applicant for not being, but also don't want to inundate the Inspectors with numbers.

To note I think Ellie's preference is likely to be to remove it, albeit we're happy to go with Pinsents/Client preference.

Resilience and economic efficiency

Key challenges:

- The Applicant's assertion that there is no spare berth capacity at Killingholme is incorrect. There is sufficient berth capacity at Killingholme to accommodate existing and future demand, as well as provide resilience. Displacing the use of two berths (Stena's services) at Killingholme to the Proposed Development is not economically efficient, given that it would leave up to four spare berths at the existing port.

1.87 To date this report has focused primarily on storage capacity landside at the Humber ports and expected future demand for freight. Another factor that plays into whether the Humber ports are able to be both resilient and accommodate additional demand is whether there is capacity for more or larger ships to be docked at the existing berths within the Humber. The **market study** (paragraph 93) states that Killingholme has six in river berths and currently accommodates the largest Ro-Ro vessels operating out of the Humber estuary, a statement which is correct. What CLdN consider to be incorrect, is the assertion in paragraph 4.3.70 in **ES Volume 1 Chapter 4 Needs and Alternatives** that:

"From available information, it is understood that five of the six available berths at Killingholme are currently actively used, and that one berth is currently unused - but assumed to be able to be brought into active use relatively easily… The analysis indicates that effectively three berths (increasing to four on occasion) at the facility are needed to ensure that the current Ro-Ro services operating from the facility can maintain their sailing schedules. In addition, the facility also accommodates vehicle carrier vessels around these Ro-Ro vessel sailings. The nature of the vehicle import trade is such that vessel arrivals are more ad hoc and less predictable than the tightly scheduled nature of Ro-Ro services. The available evidence, therefore, suggests that the active berths at the facility are extensively used with apparent limited ability for substantial additional use."

1.88 This assertion that Killingholme is at full capacity in terms of its berth usage is then contradicted to an extent in another section of the **market study**, where paragraph 120 suggests that "the amount of throughput over each berth is much higher in Immingham than in Killingholme". CLdN have provided information on the actual berth use at Killingholme, the detail for which is set out in the main written representations. Essentially, there are six berths at Killingholme, with berth 6 not dredged at present because demand does not require it (although consents are in place). There are ambitions and possibilities to extend some of the berths in the future to accommodate more larger vessels and respond to market demand growth. Typically, a maximum of four berths have been in use for regular sailings: two for CLdN (Rotterdam and Zeebrugge) and two for Stena (Hoek and Europoort). If Stena were to move to the Proposed Development, then there would be up to four spare berths at Killingholme available for use. Clearly this is a significant amount of space capacity, and it could be argued that having this number of spare berths at an existing port development whilst the use of two existing berths moves to the Proposed Development is not economically efficient, with the Proposed Development accommodating the displaced services from Killingholme.

1.89 Yet paragraph 41 of the **market study** then goes on to caveat that "berthing windows for preferred timeslots at preferred facilities are limited. Operators have a strong preference for having a dedicated berth or berths to make sure they can offer the right service levels to remain competitive." This suggests that the notion that there is an economic need to provide more berths and accommodate additional demand that would not be able to brought landside on the Humber otherwise is being conflated with the commercial preference of an operator, Stena. Whilst Stena's commercial preference would clearly be to move to the Proposed

Development, in terms of being economically efficient Killingholme does clearly have the existing berth capacity to accommodate Stena's existing two Humber services, CLdN's services and additional services that may be brought on to meet demand in the future.

1.90 Spare berthing capacity provides for resilience, and spare berthing capacity can be used. Capacity is not determined based solely on available berths, but also the nature of visiting vessels. Vessels move around all but one berth at the Port of Killingholme, depending on vessel type. Spare capacity enables both future expansion and ongoing resilience, which is also enabled by the availability of additional operational land at the terminal. Killingholme's spare berthing capacity goes up when considering the number of hours that berths are in use, and the types of vessels that use them. Information provided by CLdN suggests that vessel utilisation can vary between 50% on quieter off peak sailings to up to 80% on peak time sailings. Vessels are utilising the berths at Killingholme for around 10 hours a day, suggesting there are up to 14 hours a day when berths are not in use and additional services could potentially be brought on. It could be argued that it would be economically efficient to accommodate larger or more frequent vessels to meet demand at an existing port than it would to bring an additional port into use on the Humber.

6. Conclusions

Is there a need for more capacity to accommodate demand?

The need for more capacity generally

Key challenges:

- Comparing the amended storage capacity scenarios to the Applicant's demand forecasts for unaccompanied Ro-Ro shows that in the worst case capacity is breached much later than the stated 2026 in the **market study** (2038-2044), whilst in the most likely scenario of existing storage capacity, capacity is in fact not breached at all in the period to 2050.
- The need for additional storage capacity to meet future demand is even less certain when considering lower scenarios of forecast unaccompanied Ro-Ro demand, based on illustrative adjustments presented earlier in this report.

1.91 The previous sections of this report have cast doubt on whether it can be stated with certainty that there is a pressing need for more freight capacity on the Humber. Not only has it been demonstrated that both storage and berth capacity are likely substantially higher than what is suggested in the **market study**, some simple adjustments to the Applicant's demand forecasts suggest that whilst the underlying expectation of future growth in not wrong in principle, these forecasts are sensitive to underlying assumptions and potentially slightly bullish.

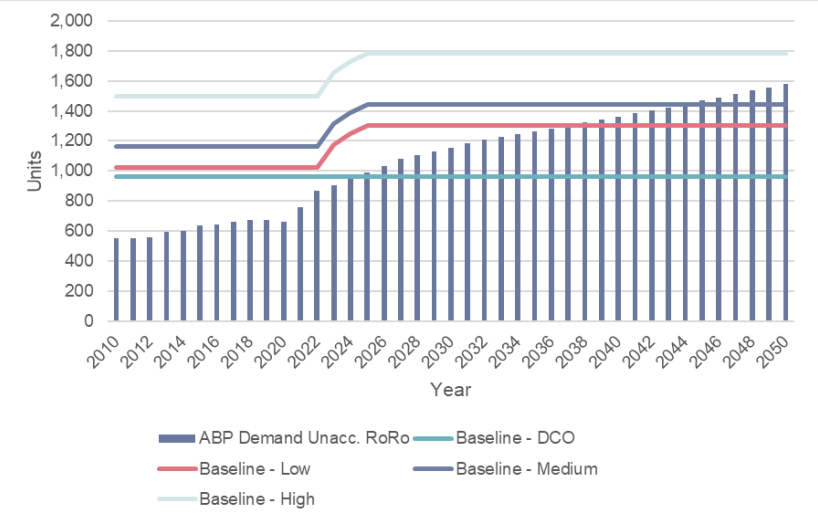
1.92 The **market study** (page 94) concludes on the basis that there is a clear growth expected in the unaccompanied Ro-Ro segment within the Humber region to 2050. The concluding box then goes on to state that "the existing estimated storage capacity for unaccompanied Ro-Ro trailers is expected to be exceeded in 2026 using an industry average benchmark for dwell times". This dwell time has been shown in this report to be far too high for both the existing and proposed freight operations in the Humber. CLdN monitor their own dwell time and it is in fact much lower at around 1.2 to 1.45 days, whilst calculations on storage capacity at the Proposed Development demonstrated earlier showed that they would need to achieve a dwell time of around 0.9 days to be able to accommodate their targeted unaccompanied Ro-Ro units per year.

1.93 The **market study** confidently states that "in all scenarios analysed, additional Ro-Ro storage capacity would be required in the next five years". This creates that illusion that there is a clear and irrefutable economic need to provide more capacity in the Humber. This is in fact not the case. The figure below compares the Applicant's own demand forecast with the adjusted storage capacity scenarios that are presented in **Existing capacity and short term planned growth**.

1.94 This figure below shows that when considering more realistic scenarios of storage capacity in the Humber, there will not be an economic need in the short term, and in fact there may not be one at all in the period to 2050. Whilst the Applicant asserts that storage capacity is expected to be exceeded in 2026, the graph

below shows that even in the very conservative estimates of storage capacity that capacity is not breached until much later in the do nothing scenario, at around 2038 to 2044. In the most realistic scenario of estimated capacity, where shorter dwell times are assumed at all Humber ports (1.2 to 1.5 days), capacity is never breached in the period to 2050. A small commercial commitment from operators to these types of dwell times could increase the speed with which freight is moved through existing ports and accommodate all of the Applicant's forecast growth in unaccompanied Ro-Ro.

Figure 6.1 Unaccompanied Ro-Ro demand supply balance – Applicant demand against baseline (do nothing) capacity, units ('000s)

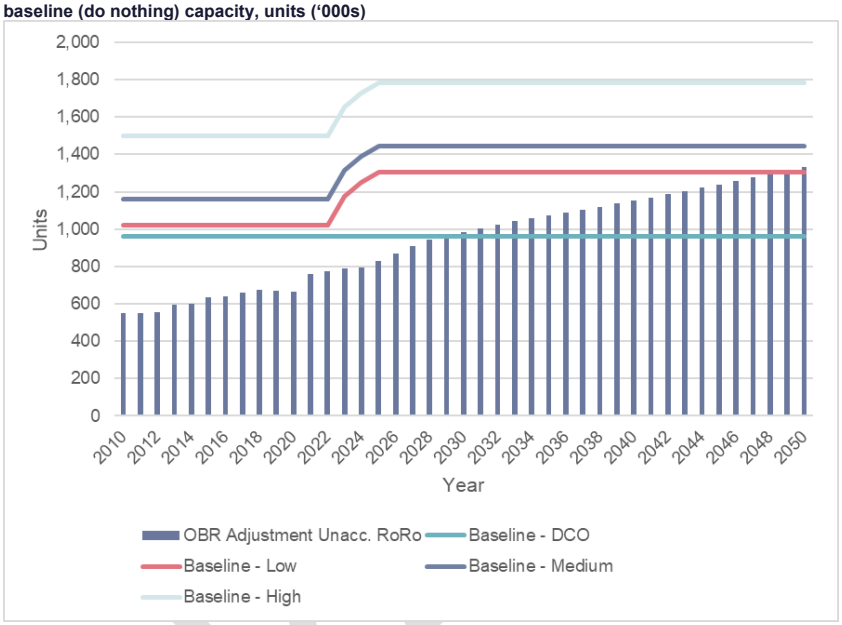


Source: Volterra calculations, 2023. Including a replication of the Applicant's unaccompanied Ro-Ro forecasts for the Humber.

1.95 This report also tested some illustrative adjustments to the Applicant's demand forecasts (refer to **Future market demand and throughput**). Whilst three illustrative scenarios were tested, the scenario forecasting the highest growth in freight was the OBR Adjustment scenario and hence is conservatively used here to test against baseline (do nothing) storage capacity.

1.96 **Figure 6.2** presents this adjusted demand scenario against baseline (do nothing) storage capacity. It shows that even under the Applicant's assumptions, storage capacity would not be breached until 2030. When comparing to the more realistic storage capacity scenarios, capacity would only be breached in the lowest existing capacity scenario and even then not until 2049. This again casts significant doubt on whether there is a need for additional freight capacity on the Humber to accommodate growth in future demand.

Figure 6.2 Unaccompanied Ro-Ro demand supply balance – OBR Adjustment demand against baseline (do nothing) capacity, units ('000s)



Source: Volterra calculations, 2023.

The need for more capacity through the Proposed Development specifically

Key challenges:

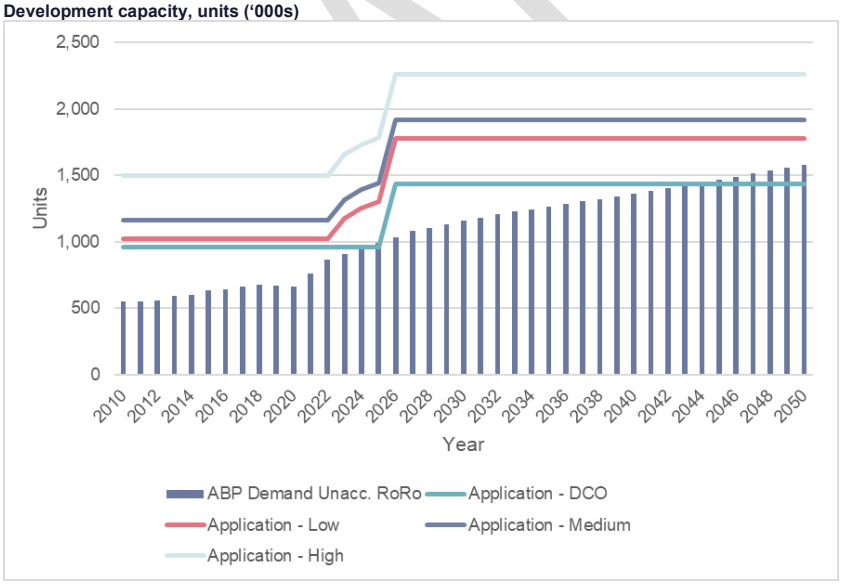
- When comparing the adjusted storage capacity on the Humber following the build out of the Proposed Development with demand scenarios, it is clear that there is likely to be significant spare storage capacity in the Humber in future years. This is not economically efficient, and casts doubt on whether the Proposed Development does in fact constitute "sustainable port development that caters for long term growth in volumes of imports and exports by sea with a competitive and efficient port industry capable of meeting the needs of importers and exporters cost effectively and in a timely manner" (paragraph 3.3.1 on the NPSP), or if in fact it just serves to displace freight from Killingholme and create idle capacity.

- It is likely more efficient to "cater for long-term forecast growth in volumes of imports and exports" (paragraph 3.5.1 of the NPSP) by incrementally increasing storage capacity on the expansion land available at Killingholme, allowing for a more responsive reaction to future levels of market demand, which are currently uncertain.

1.97 The estimated storage capacity at the Proposed Development is established in **Capacity at the Proposed Development**. **Table 4.4** estimates that the capacity could vary from 195,000 unaccompanied Ro-Ro units to approximately 475,000 unaccompanied Ro-Ro units per year at the Proposed Development, dependent on the chosen average dwell time of Stena (0.9 days or 2.25 days). The maximum capacity at the Proposed Development is added to the baseline capacity estimates and compared to the Applicant's forecast future growth in unaccompanied Ro-Ro units in the figure below.

1.98 This figure shows that whilst there could be a very temporary breach in capacity around 2025/26 if taking the Applicant's estimate of storage capacity at existing facilities, there would then be spare capacity until around 2044, when then in this scenario even the Proposed Development would be unable to accommodate the 'identified need' that it states it is addressing. Contrastingly, under more realistic assumptions of existing storage capacity, the below figure shows that when adding the Proposed Development there would be significant spare storage capacity, questioning whether providing this additional capacity represents an economically efficient use of land, with much of it expected to be sat idle.

Figure 6.3 Unaccompanied Ro-Ro demand supply balance – Applicant demand against Proposed Development capacity, units ('000s)

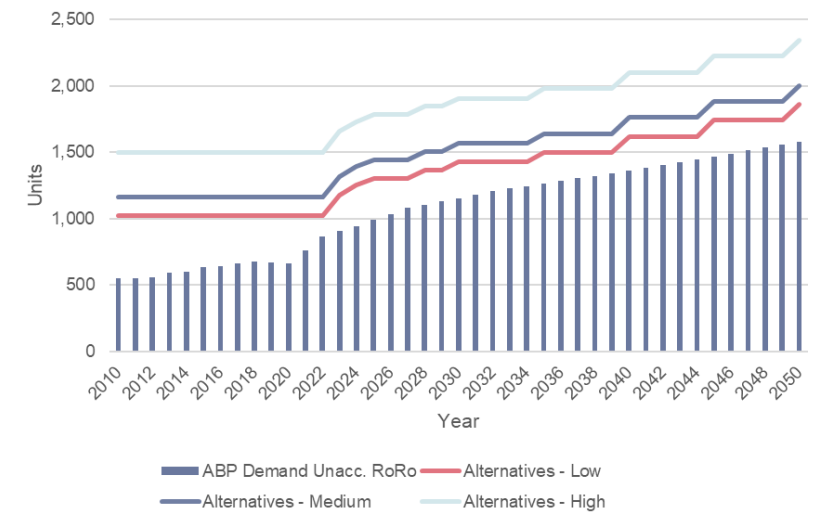


Source: Volterra calculations, 2023. Including a replication of the Applicant's unaccompanied Ro-Ro forecasts for the Humber.

1.99 Given that the above graph demonstrates that an additional influx of storage capacity from the Proposed Development in 2026 would not be economically efficient, it is important to consider the earlier alternative scenarios for expansion at Killingholme (refer to **Alternatives for future capacity and longer term growth**) instead.

1.100 **Figure 6.4** demonstrates how storage capacity at Killingholme could be incrementally built up over time to meet the Applicant's forecast demand for unaccompanied Ro-Ro in the Humber. Given Killingholme is an existing facility with the ability to bring forward expansion land as and when market demand dictates, it is likely more efficient to "cater for long-term forecast growth in volumes of imports and exports" (paragraph 3.5.1 of the NPSP) by incrementally increasing storage capacity on the expansion land available at Killingholme, allowing for a more responsive reaction to future levels of market demand, which are currently uncertain.

Figure 6.4 Unaccompanied Ro-Ro demand supply balance – Applicant demand against illustrative Killingholme expansion capacity, units ('000s)



Source: Volterra calculations, 2023. Including a replication of the Applicant's unaccompanied Ro-Ro forecasts for the Humber.

Competition – preference against need

1.101 The shortsea sector is highly competitive with multiple shipping lines and port operators serving broadly the same shipping routes. There are two types of competition that occur in this market:

- Competition between port owners, such as CLdN (Killingholme) and ABP (Hull and Immingham).
- Competition between shipping lines (operators), such as Stena, DFDS, Cobelfret (linked to CLdN), P&O and Finnlines.

1.102 Stena are the proposed occupier and operator of the Proposed Development. Stena have proposed that there is an urgent need to relocate their existing services to the Proposed Development. However, there is a

difference between the commercial preference of Stena relocating to a port that they solely occupy and operate and the overall economic 'need' to do so. Given the analysis presented throughout this report detailing the existing capacity at Killingholme and across the Humber, the case for the development appears to rest upon the commercial preference of Stena, rather than the need to meet an overall demand which could supposedly not be accommodated elsewhere. In fact, there is storage capacity in the Humber. as stated in **paragraph 1.45,** dwell times are a commercial decision, rather than the result of economic need.

1.103 There appears to be substantially less competition between the port owners on the Humber than shipping lines, given that port ownership is competition between two parties – CLdN and ABP – compared to a larger number of shipping lines operators being present in the region. As a competing port owner (and owner of 2 out of 3 existing ports), ABP already controls the majority of freight throughput in the Humber. The Proposed Development will likely result in ABP controlling a greater majority of the market share on the Humber estuary.

1.104 As noted in ABP's **Environmental Statement Volume 1 Chapter 4: Needs and Alternatives** the NPSP makes clear that the need for port infrastructure relies upon 'the need to ensure effective competition and resilience in port operations'. This is important because 'competition drives efficiency and lowers costs for industry and consumers, so contributing to the competitiveness of the UK economy'.[13] Yet there is little reference to the restriction of competition from a port ownership and operation basis, rather than competition between shipping lines. ABP's expansion to control a larger market share on the Humber estuary as a result of the Proposed Development arguably contradicts with the stated importance of competition within the freight industry.

Other socio-economic effects

1.105 CLdN previously commented on the socio-economic effects of the Proposed Development that "there is potential displacement between port areas and employment and economic multipliers, in relation to consideration and assessment on neighbouring port uses e.g., C.RO.", referring to paragraph 16.8.5 onwards of **ES Volume 1 Chapter 16 Socio-Economics.** The Applicant's response was that "the assessment includes an allowance for the displacement of employment and wider multiplier effects – see paragraph 16.8.5 onwards of this ES chapter".

1.106 Volterra has been asked to provide comment on these assumptions on behalf of CLdN. It is noted that the HCA Additionality Guide is used to justify assumptions on displacement, leakage and multipliers. Whilst this guidance has now been withdrawn and replaced by DLUHC's Appraisal Guide, we still consider it reasonable to use the HCA Additionality Guide in places given that it provides more detail on specific assumptions that the DLUHC Guide.

1.107 Broadly, the Applicant argues the following assumptions for both stages of the Proposed Development:

- **Leakage:** A factor of 25% leakage is applied to the Grimsby Travel to Work Area ("TTWA") using a suggested assumption in the HCA Additionality Guide. Whilst a more accurate way of assessing leakage would be to analyse Census commuting patterns data, 25% is considered reasonable given the aim of TTWAs is to define areas where "of the resident economically active population, at least 75% actually work in the area".
- **Multiplier:** A medium multiplier (1.5) is applied to a sub-regional geography (Grimsby TTWA) for both phases of the Proposed Development. Broadly this is considered reasonable and in line with industry standard practice.
- **Displacement:** The Applicant applies a low level of displacement (25%) during both the construction and operational phase employment assessments. This is considered bullish (i.e., not particularly conservative).

[13] Department for Transport, 2012. National policy statement for ports

- Construction – the UK construction workforce is currently constrained, meaning that workers utilised for this project might have otherwise been utilised elsewhere. When considering this alongside the fact that workers might be displaced from potential expansion opportunities at Killingholme to the Proposed Development (if permitted), the displacement factor used by the Applicant is likely on the low side.
- Operation – similarly, this report has shown that if the Proposed Development is permitted, it is likely that a lot of throughput at the Proposed Development would be accounted for by Stena's existing two services that have historically been located at Killingholme. There is no acknowledgement of the likelihood that jobs could be displaced from existing port operations in the Humber and relocate to the Proposed Development within the socio-economics chapter. Displacement is likely to be higher in scenarios where forecast additional demand for freight (and the economic activity / employment that is supported alongside this) is more bullish. The scenarios presented in this report demonstrate that displacement could potentially be higher in reality, particularly if the bullish levels of forecast growth in freight on the Humber are not realised.

1.108 Whilst we consider the Applicant's displacement assumptions to be relatively bullish, particularly in the operational phase, they broadly align with industry practice and we would not expect any minor adjustment to these assumptions to fundamentally alter the employment estimates in the socio-economics assessment presented by the Applicant. What is much more questionable, however, is the high magnitude of impact placed on operational phase employment increases at the Grimsby TTWA geography. First, paragraph 16.8.92 appears to still refer to construction phase employment impacts when concluding on the operational phase employment effect. It is also states that the creation of 176 net additional jobs created in the Grimsby TTWA would have a high magnitude of impact (and hence moderate beneficial and significant effect). For context, the Grimsby TTWA currently supports 82,000 jobs,[14] meaning that these 176 jobs would be equivalent to an uplift of 0.2%. This is clearly not a high magnitude of impact, and as a result it is a stretch to say that this operational employment effect is significant.

1.109 The more pressing issue for the inspectors to consider is whether there is an overall economic need for additional freight capacity in the Humber, which is a more important consideration than the relatively low level of additional jobs created by the Proposed Development.

Conclusions on project need

The findings presented in this report cast substantial doubt on whether there is in fact an identified economic (not commercial preference) need to deliver more capacity for freight in the Humber region. The Applicant's assertion of economic need is based on flawed assumptions when calculating storage capacity, such as dwell times that are too long for existing operations. Together these errors result in current capacity at Killingholme being underestimated by the Applicant by between 70% and 170%. Once combined with capacity at the other Humber ports, this results in an underestimate of existing capacity of between 35% and 85%. This is a very significant limitation of the Applicant's evidence, undermining the need for the proposed development.

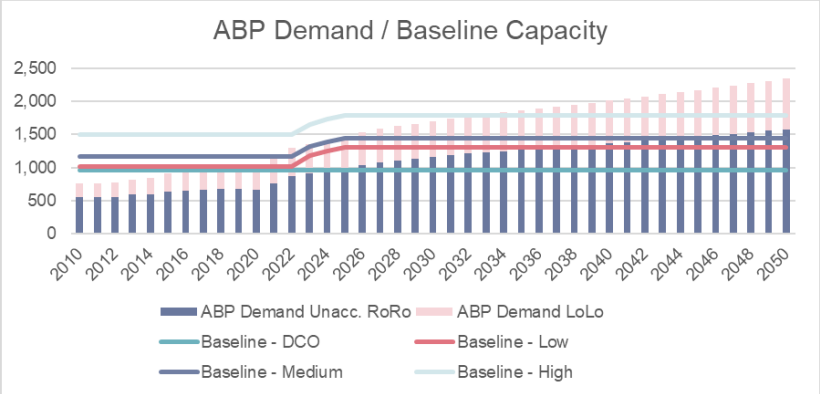
[14] ONS, 2022. Business Register and Employment Survey 2021.

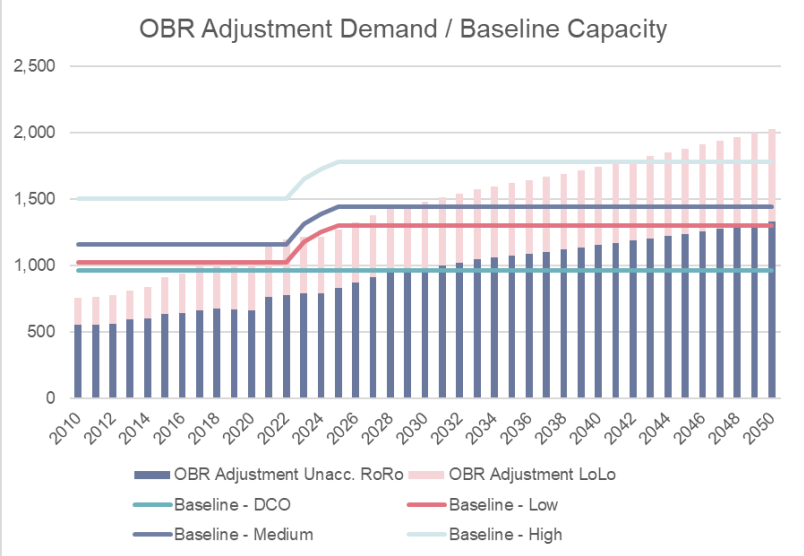
Furthermore, the overly bullish GDP growth forecasts likely lead to demand scenarios in the Humber that may not be realised in the future; simple sensitivity scenarios demonstrate how it is not certain that this level of demand will be achieved. Analysis presented in this report shows that Humber freight forecasts might be overstated in the region of around 20% over the longer term.

In this sense, it is questionable whether the Proposed Development does in fact constitute 'sustainable port development' that meets the requirements of the NPSP. It has been shown that in line with the AFPF regulations, it may be in fact be more economically efficient to allow existing port infrastructure (through expansion land, a reduction in dwell times and/or increased berth utilisation) to respond to changes in future market demand and continue to facilitate the efficient and economic transport of goods through the Humber region.

7. Appendix (internal use only)

Including Lo-Lo in the capacity versus demand assessment

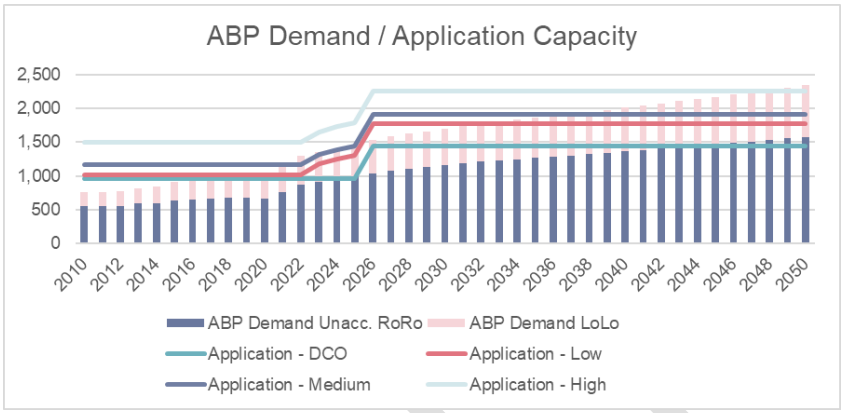


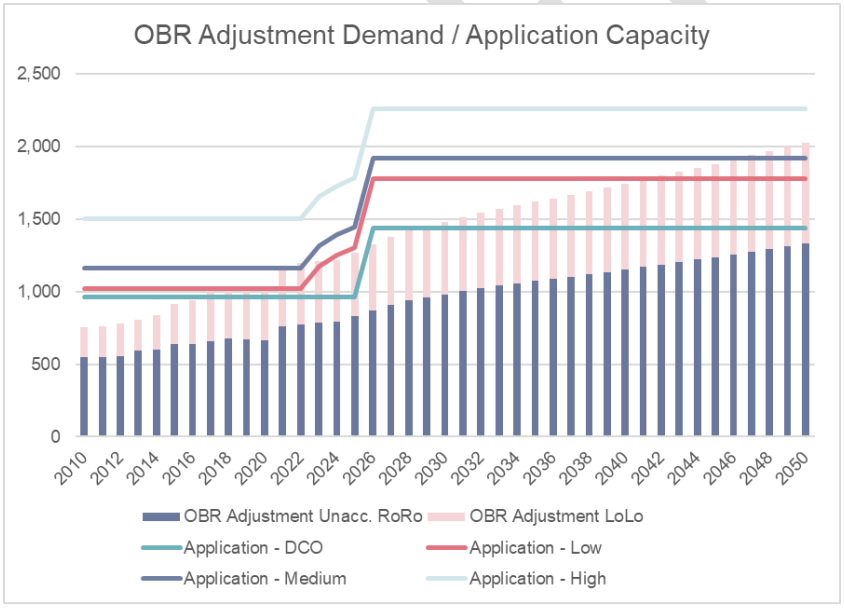


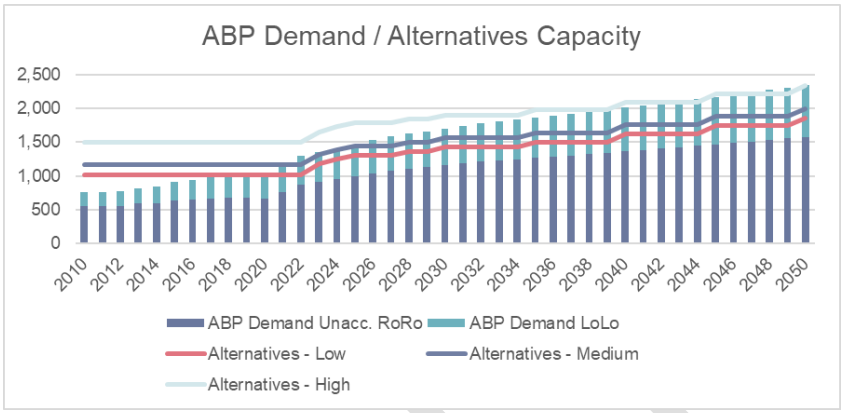
Commented [LT20]: For all to note (Bridget, Pinsents, Client): We think the market study has made quite a big error in their assessment by not including forecast Lo-Lo demand in the estimates when comparing to storage capacity, yet they do include ground container slots in the storage capacity calculations (seems inconsistent).

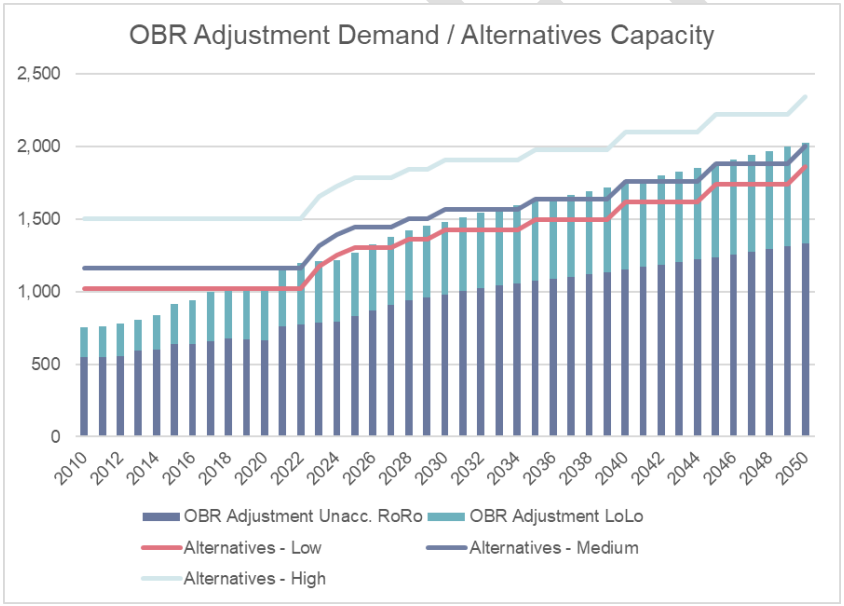
I wanted to flag that there is a risk the Applicant realises this and corrects it in their response, which would likely weaken our case (as you can see in the graphs here).

Wanted you to be aware so have included some examples in this draft, but will naturally remove from the final report that is submitted to avoid gifting them a rebuttal.


ABP Demand / Application Capacity
2,500
2,000
1,500
1,000
500
0
2010 2012 2014 2016 2018 2020 2022 2024 2026 2028 2030 2032 2034 2036 2038 2040 2042 2044 2046 2048 2050
ABP Demand Unacc. RoRo
ABP Demand LoLo
Application - DCO
Application - Low
Application - Medium
Application - High


OBR Adjustment Demand / Application Capacity
2,500
2,000
1,500
1,000
500
0
2010 2012 2014 2016 2018 2020 2022 2024 2026 2028 2030 2032 2034 2036 2038 2040 2042 2044 2046 2048 2050
OBR Adjustment Unacc. RoRo
OBR Adjustment LoLo
Application - DCO
Application - Low
Application - Medium
Application - High


ABP Demand / Alternatives Capacity
2,500
2,000
1,500
1,000
500
0
2010
2012
2014
2016
2018
2020
2022
2024
2026
2028
2030
2032
2034
2036
2038
2040
2042
2044
2046
2048
2050
ABP Demand Unacc. RoRo
ABP Demand LoLo
Alternatives - Low
Alternatives - Medium
Alternatives - High


OBR Adjustment Demand / Alternatives Capacity
2,500
2,000
1,500
1,000
500
0
2010
2012
2014
2016
2018
2020
2022
2024
2026
2028
2030
2032
2034
2036
2038
2040
2042
2044
2046
2048
2050
OBR Adjustment Unacc. RoRo
OBR Adjustment LoLo
Alternatives - Low
Alternatives - Medium
Alternatives - High

Volterra

Commented [LT21]: Nigel / Ben: Happy with us using this image or shall we just remove and leave the back page blank?

Commented [LT22R21]: Taken from your website for reference, so would need your permission to use it.

Contact Us

volterra.co.uk

info@volterra.co.uk

020 4529 1736

Chester House
1-3 Brixton Road
London
SW9 6DE