Technical Appendix 19.1: Economic Impact of Proposed Redevelopment at Falmouth Docks

ECONOMIC IMPACT OF PROPOSED REDEVELOPMENT AT FALMOUTH DOCKS

REPORT PREPARED FOR A&P FALMOUTH (FALMOUTH DOCKS AND ENGINEERING COMPANY)

FINAL

MARCH 2022

ROTHWELL POINT IN ASSOCIATION WITH MOOR ECONOMICS LTD

ROTHWELL
STRATEGY • IMPACT • DEVELOPMENT

Dr. Sandra Rothwell, Managing Director

e. sandra@rothwellpoint.com
t. (0) 7580 710937
w. www.rothwellpoint.com

MOOR economics
economics : evaluation : appraisal : strategy

Cedarcroft,
Willey Lane,
Sticklepath,
Okehampton
Devon
EX20 2NG

07854 062407
shanevallance@btinternet.com

Report Structure

Introduction

This report provides the assessment of the potential local economic impact of the proposed redevelopments at Falmouth Docks. The report has been provided to A&P Falmouth and the Falmouth Docks and Engineering Company (hereafter referred to FDEC). The report estimates the current local economic impact of A&P Falmouth and FDEC through its existing operations at Falmouth. The report then estimates the potential local economic impact that the proposed redevelopments could enable over time. This focuses on three principal market opportunities that the redevelopments at the Docks could unlock.

These relate to growth opportunities in supporting additional volume in the cruise market, the capacity for additional cargo traffic, and the ability to exploit emerging opportunities in the Floating Offshore Wind Market (FLOW). In addition, the role of the redevelopment in maintaining and safeguarding the existing core business of both A&P Falmouth and FDEC are also considered. These elements are considered separately and on an aggregated basis.

It is important to note that the economic estimates contained for each of the market opportunities reflect slightly different channels through which regional economic impact may be supported. These are briefly described below:

i. Cruise market – principally through the additional passenger and crew expenditure associated with the projected additional volume, alongside the additional local supply chain requirements of A&P/FDEC associated with greater cruise volumes
ii. FLOW – the potential role that the redeveloped Falmouth facility could play in supporting a greater share of FLOW activities based within Cornwall i.e. representing the impact of the facility rather than impact on A&P/FDEC per se
iii. Cargo – principally through the additional local supply chain requirements of A&P/FDEC associated with greater cargo volumes

It should be noted that – as with all estimates of future potential wider economic impact – there are associated uncertainties and dependencies. The estimates provided in this work need to be interpreted in that context. Where appropriate, a range of estimates are used to reflect the inherent uncertainty.

However, the estimates provided have been based on the best available current information and in conjunction with the client. The broad assumptions that underpin the estimates of wider economic benefit are based on a similar set of assumptions developed by A&P for internal business case purposes.

Study Scope

This work represents a relatively focused piece of analysis. It should be noted that there have been previous studies that have estimated the economic impact of activities at the Falmouth Port and Docks. For example, an Economic Impact Study of the Port of Falmouth was undertaken on behalf of Cornwall Council in 2008[1]. Similarly, an Economic Impact of Masterplan Options was undertaken in 2011[2]. Finally, a further study was undertaken in 2015, commissioned by Cornwall Development Company and focusing on further Masterplan options[3]. All of these previous studies were extensive exercises, often involving considerable primary research.

The scope of this study had a more focused remit, primarily using publicly available information or information directly provided by A&P Falmouth/FDEC. For example, it does not replicate the survey of supply chain businesses that informed the 2015 study.

This updated economic impact assessment focuses on the key areas:

- An assessment of the current *direct* turnover, Gross Value Added (GVA) and jobs supported through A&P Falmouth/FDEC
- An assessment of the current *indirect* and *induced* impact – utilising supply chain information from both business operations. Again, this is represented in terms of GVA and jobs
- Based on the proposed infrastructure redevelopment by A&P Falmouth/FDEC over the near-term (0-5 years), we estimate the potential future direct and indirect impact of enhanced facilities at Falmouth and associated activities. These associated activities are expected to include:

1. Floating Offshore Wind (FLOW)
2. An expansion of cruise ship activity
3. An expansion of cargo activity

It should be noted that the proposed redevelopment at Falmouth will also have a positive impact on other areas of A&P Falmouth/FDEC operations. However, for the purposes of this analysis we have focused on the three growth opportunities noted above. The analysis does include consideration of the *safeguarding* element of the proposed redevelopment. That is, that the enhanced/increased facilities at Falmouth will play a key role in safeguarding existing A&P Falmouth and FDEC activities over many years. This is an important consideration of the estimated regional economic impacts of the proposed redevelopment.

This latter part of the analysis follows on from the estimate of the current local economic impact of A&P Falmouth/FDEC activities – discussed in the next section.

[1] 'Economic Impact Study and Assessment of Falmouth' – Ove Arup & Partners - 2008
[2] 'Port of Falmouth Masterplan: Economic impact assessment of Masterplan options and the Masterplan' Roger Tym & Partners - 2011
[3] 'Port of Falmouth and Penryn River Economic Analysis, Supply Chain and Demand Assessment' - 2015

Current Operations

Direct Impact

The current activities of A&P Falmouth and Falmouth Engineering and Docks Company are extensive and support a considerable number of jobs in the local economy – both directly and indirectly. It is a major employer within the local Falmouth economy and has had an established presence for many years.

This section sets out the estimated direct, indirect and induced impact of current activities at Falmouth Docks, providing a baseline for this analysis.

1. Direct impacts — Output, Gross Value Added (GVA) and jobs created as a direct result of A&P Falmouth/FDEC activities
2. Indirect impacts — Output, GVA and jobs created within businesses that supply goods and services to A&P Falmouth/FDEC within the wider economy; and,
3. Induced impacts — Output, GVA and jobs created as a result of the re-spending of wages by those employed in the direct and indirect phases.

A&P Falmouth:

Given the benefits provided by one of the world's largest natural deep-water harbours, A&P's Falmouth facility is the largest ship-repair complex in the UK. It provides three graving docks and extensive alongside deep-water berthing – providing capacity for vessels up to 100,000 tonnes.

A&P Falmouth's annual turnover for the latest full financial year (year end March 21) was c£51.9mn. The four-year average revenue equates to c£46.5mn (partially reflecting lower revenues in 2019/2020). Table 1 sets out the key financial information taken from its financial accounts. Table 1 also illustrates that A&P activities support c300 jobs at Falmouth.

Table 1: A&P Falmouth Financial Information

Year End	Mar-21	Mar-20	Mar-19	Mar-18	Average
Revenue	£ 51.9m	£ 26.9m	£ 58.1m	£ 48.9m	**£ 46.5m**
Average number of persons employed	300	267	300	286	**288**

Source: (A&P Falmouth Audited Accounts)

Based on the information contained in the audited accounts we can estimate the direct Gross Value Added produced by activities A&P Falmouth[4] – as shown in Table 2. Based on the average number of employees during the respective financial year we estimate the typical GVA per job sustained at A&P Falmouth.

Table 2: A&P Falmouth - Direct Gross Value Added

Year End	Mar-21	Mar-20	Mar-19	Mar-18	Average
Gross Value Added - direct	£ 16.3m	£ 11.9m	£ 16.1m	£ 14.1m	**£ 14.6m**

Source: (Information based on A&P Falmouth Audited Accounts)

A&P Falmouth have also provided information showing the typical patterns of employment supported by activities. This reflects employment in the two latest complete financial year 2019-

[4] This is based on the sum of Operating Profit, Staff Costs (inc. wages and NI contributions) and depreciation

2020 and 2020-2021 and includes the total number of hours worked. Based on this information we estimate that A&P Falmouth employed the equivalent of 122 FTE jobs during 2019-2020 and 159 FTE jobs during 2020-2021.

Based on this information, we are able to estimate the 'GVA per job' and 'GVA per FTE job' supported at A&P Falmouth – shown in Table 3 for the two most recent financial years. This effectively shows the average labour productivity amongst A&P Falmouth staff for these financial years. We feel that it is important to place this in context against local comparators. Table 3 includes the 'GVA per job' for the wider Cornwall Local Enterprise Partnership area. It should be noted that the latest published data relates to 2019. Therefore the figures are not directly comparable due to differences in pricing. The published data However, Table 3 clearly shows that the average labour productivity at A&P Falmouth is significantly higher than found in the wider Cornwall economy – reflecting the high value jobs that are sustained at Falmouth.

Table 3: A&P Falmouth average labour productivity (per job)

Year End	Mar-21	Mar-20	Average
GVA per job – A&P Falmouth	£54,200	£44,550	£49,370
GVA per FTE job – A&P Falmouth	£102,560	£97,524	£100,042
GVA per job – Cornwall & Isles of Scilly	£41,984[5],[6]		

This picture is also found when considered on a 'per hour basis' – as shown in Table 4. Again, this highlights a considerable positive productivity differential when compared to the wider Cornwall area – although again noting the slight pricing differential. The estimates included here related to the latest two financial years, given that the total number of hours worked has been provided for those years only.

Table 4: A&P Falmouth average labour productivity (per hour)

Year End	Mar-21	Mar-20	Average
GVA per hour – A&P Falmouth	£53.30	£50.69	£52.00
GVA per job – Cornwall & Isles of Scilly	£27.20[7]		

This analysis is then shown for FDEC, based on the same structure.

Falmouth Docks and Engineering Company (FDEC):

FDEC's annual turnover for the latest full financial year (year end March 21) was c£4.6mn. The four-year average revenue equates to c£4.9mn. Table 5 shows that annual revenues have been broadly steady. It sets out the key financial information taken from its financial accounts. Table 5 also illustrates that FDEC activities directly support c35-40 jobs at Falmouth.

Table 5: FDEC Financial Information

Year End	**Mar-21**	**Mar-20**	**Mar-19**	**Mar-18**	**Average**
Revenue	£ 4.6m	£ 4.5m	£ 5.0m	£ 5.3m	**£ 4.9m**
Average number of persons employed	39	37	35	35	**37**

Source: (FDEC Audited Accounts)

[5] ONS Subregional Productivity – July 2021

[6] It should be noted that published data is not available on a per FTE job basis, although this is often estimated in local evidence documents

[7] ONS Subregional Productivity – July 2021

Based on the information contained in the audited accounts we can estimate the direct Gross Value Added produced by activities FDEC[8] – as shown in Table 6. Based on the average number of employees during the respective financial year we estimate the typical GVA per job sustained at FDEC.

Table 6: FDEC - Direct Gross Value Added

Year End	Mar-21	Mar-20	Mar-19	Mar-18	**Average**
Gross Value Added - direct	£ 1.8m	£ 2.4m	£ 2.7m	£ 3.0m	**£ 2.5m**

Source: (FDEC Falmouth Audited Accounts)

Again, we are able to estimate the 'GVA per job' and 'GVA per FTE job' supported at FDEC – shown in Table 7 for the two most recent financial years. The comparison to the Cornwall average needs to take account of the difference in pricing as previously noted. However, Table 7 clearly illustrates the high value activities supported by FDEC, particularly if considered on an FTE job basis.

Table 7: FDEC average labour productivity (per job)

Year End	Mar-21	Mar-20	Average
GVA per job – FDEC	£47,232	£65,404	£56,318
GVA per FTE job – FDEC	£119,285	£152,559	£135,922
GVA per job – Cornwall & Isles of Scilly	£41,984[9]		

This picture is also found when considered on a 'per hour basis' – as shown in Table 4. Again, this highlights a considerable positive productivity differential when compared to the wider Cornwall area – although again noting the slight pricing differential.

Table 8: FDEC average labour productivity (per hour)

Year End	Mar-21	Mar-20	Average
GVA per hour – FDEC	£62.00	£79.29	£70.60
GVA per job – Cornwall & Isles of Scilly	£27.20[10]		

A&P Falmouth and FDEC combined:

The above tables and charts are set out combining A&P Falmouth and FDEC activities, and utilising the information provided by both parts of the business.

Table 9: A&P Falmouth and FDEC Financial Information

Year End	**Mar-21**	**Mar-20**	**Mar-19**	**Mar-18**	**Average**
Revenue	£56.5m	£31.4m	£63.2m	£54.3m	**£51.3m**
Average number of persons employed	339	304	335	321	**325**

Source: (A&P Falmouth and FDEC Audited Accounts)

Table 10: A&P Falmouth and FDEC - Direct Gross Value Added

Year End	Mar-21	Mar-20	Mar-19	Mar-18	**Average**
Gross Value Added - direct	£18.1m	£14.3m	£18.9m	£17.1m	**£17.1m**

Source: (Information based on A&P Falmouth and FDEC Audited Accounts)

Table 11: A&P Falmouth and FDEC average labour productivity (per job)

Year End	Mar-21	Mar-20	Average
GVA per job	£53,398	£47,089	£52,509
GVA per FTE job	£104,045	£103,858	£103,951

[8] Based on the same approach previously noted
[9] ONS Subregional Productivity – July 2021
[10] ONS Subregional Productivity – July 2021

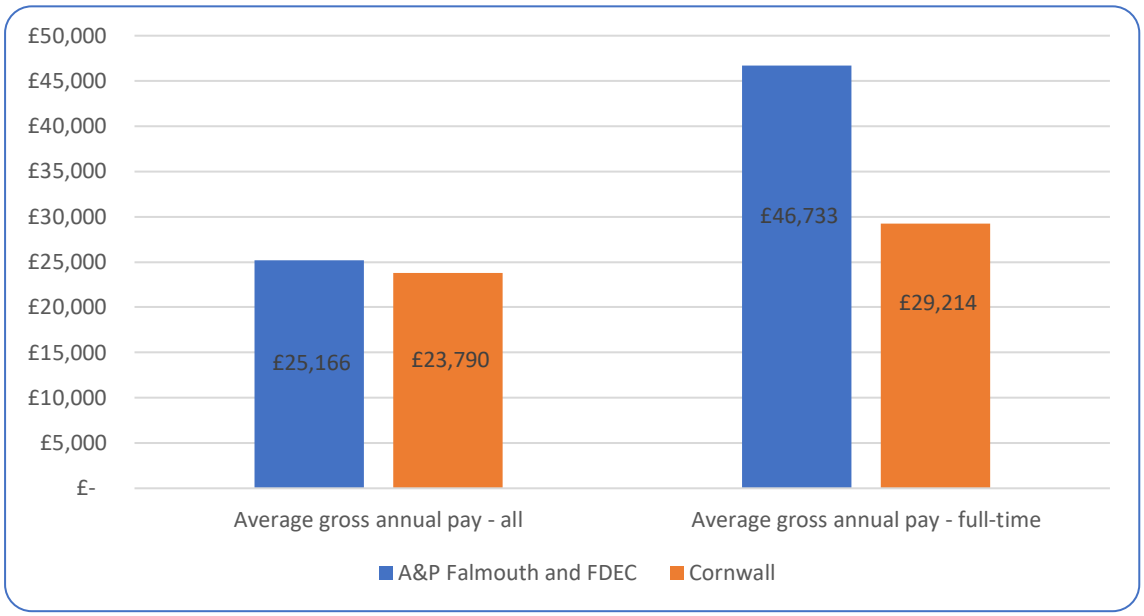
GVA per job – Cornwall & Isles of Scilly	£41,984

Table 12: A&P Falmouth and FDEC average labour productivity (per hour)

Year End	Mar-21	Mar-20	Average
GVA per hour	£54.08	£53.98	£54.03
GVA per job – Cornwall & Isles of Scilly	£27.20[11]		

Finally, there is also a positive picture in terms of the typical wages supported at A&P Falmouth/FDEC. A&P Falmouth/FDEC support jobs which are typically higher paid than the average found across the wider local Cornwall economy, particularly when considered on a full-time basis – as shown in Chart 1.

Chart 1: A&P Falmouth FDEC average wages versus Cornwall (2020-2021)



Source: (A&P Falmouth and FDEC Staff information and ONS Annual Survey Hours and Earnings)

Indirect and Induced Impact

As well as being a significant employer, A&P Falmouth and FDEC also play an important role in terms of their supply chain linkages into the local economy. This analysis has benefited from A&P Falmouth/FDEC supplying their supply chain expenditure for the last four financial years. This empirical data has allowed us to accurately estimate the scale of supply chain expenditure and the subsequent indirect economic activity that is supported by A&P Falmouth/FDEC's activity.

This analysis has encapsulated expenditure on c3,525 suppliers over a 4-year period – an average of 881 suppliers per year. The following broad steps were followed to estimate the indirect economic impact of A&P Falmouth/FDEC's activities:

1. Working alongside A&P Falmouth/FDEC, the suppliers were defined in terms of their geographical location i.e. within Cornwall or elsewhere. Cornwall activity captured those

[11] ONS Subregional Productivity – July 2021

businesses that had their main site in Cornwall, as well as those businesses that may be headquartered elsewhere but had a presence in Cornwall.

2. Given the scale of suppliers, this exercise was done for those suppliers with annual expenditure >£100,000 on a given year. On average this accounted for 81% of the total supply chain expenditure.
3. We excluded supply chain expenditure that was internal within the A&P/Peel Holdings Group.
4. We then estimated the proportion that was represented the supply chain expenditure within Cornwall of this total 'geographically specified' amount. We then used that proportion to allocate local-based supply chain spend to the unspecified amount i.e. the other 19% of the total supply chain spend. In effect, this final step assumed that a similar proportion of supply chain spend was with Cornwall-based businesses as evidenced by the specified spend.

The results of this exercise are set out Table 13. This shows that we estimate that on average A&P Falmouth/FDEC have spent c£19.6m with local Cornwall suppliers per year.

Table 13: A&P Falmouth/FDEC supply chain expenditure

	Average (2017/18 to 2020/21)
Total supply chain expenditure	c£44.2m
Supply chain expenditure within Cornwall	c£19.6m
Proportion of supply chain expenditure within Cornwall	c44%

It is useful to compare to the previous studies. The 2015 Masterplan study (which encompassed other businesses based at the Port of Falmouth) estimated that c46% of total supply chain spend was within the Cornwall economy[12]. Therefore, this is broadly comparable to the estimates of local supply chain spend in this analysis.

To then estimate the indirect impact in terms of Gross Value Added and employment, we then followed the broad steps:

1. For each Cornwall-based business within the A&P Falmouth/FDEC supply chain we accessed their details on Companies House to understand their main activity, as defined through the Standard Industrial Classification (SIC) code.
2. We then accessed published ONS data[13] to estimate both the turnover: a[14]GVA ratio for that given industry, as well as typical 'job supported per turnover[15]' figure for that industry.
3. This was then mapped onto each Cornwall-based business to estimate the equivalent indirect GVA and supported indirect job per business. This was then aggregated across all supply chain businesses.

[12] This excluded an element of local spend in the Falmouth economy to ensure that double-counting did not occur with those businesses based at Falmouth Port and already captured through the direct impact

[13] Annual Business Survey (ABS) – 2019 – ONS. We utilised the UK level results given greater confidence in that data

[14] The ABS illustrates the 'Approximate' Gross Value Added

[15] This was derived by dividing the Total Turnover of the specific sector with the Average Employment during the year

The advantage of this approach was that the specific attribute of each supply chain business within Cornwall was reflected. The approach was relatively granular but provided confidence in the scale of indirect impact that current activities at A&P Falmouth/FDEC is having in the local economy. This is set out in Table 14.

Table 14: A&P Falmouth/FDEC – indirect impact (Cornwall)

	Supply chain expenditure (£m)	Gross Value Added - indirect	Jobs – indirect (rounded)
2017/18	£18.6m	£8.0m	128
2018/19	£26.1m	£11.0m	176
2019/20	£14.3m	£6.4m	97
2020/21	£19.2m	£9.0m	139
Average	**£19.6m**	**£8.6m**	**136**

This can then be combined by the direct impact of A&P Falmouth/FDEC activities as previously estimated to provide a combined direct and indirect impact within the Cornwall economy – as illustrated in Table 15.

Table 15: A&P Falmouth/FDEC – direct and indirect impact (Cornwall)

	Gross Value Added – direct and indirect	Jobs – direct and indirect (rounded)
2017/18	£25.1m	451
2018/19	£29.9m	511
2019/20	£20.7m	401
2020/21	£27.1m	478
Average	**£25.7m**	**460**

The final step in estimating the impact of A&P Falmouth/FDEC activities within the Cornwall economy is to consider the induced impact. This represents the further wage spending in the economy. This element is difficult to evidence using any empirical information. Therefore, we have applied a typical benchmark multiplier (known as a Type II multiplier) to estimate these further effects. We adopt a further Type II multiplier of 0.3 and apply this to both output (GVA) and employment[16].

The total direct, indirect and induced impact of A&P Falmouth/FDEC activities are set out in Table 16. This is set out as an average over the 4-year period. It shows that the activities at Falmouth support an average of 582 jobs in the Cornwall economy, and also supports c£33.0m GVA on an annual basis.

Table 16: A&P Falmouth/FDEC – total (direct, indirect and induced) impact (Cornwall)

	Gross Value Added – total (direct, indirect and induced)	Jobs – direct, indirect and induced (rounded)
Average – 17/18-20/21	**£33.0m**	**582**

[16] Taken from Scottish Enterprise Input-Output tables and derived multipliers (1998-2018)

This total estimated impact effectively represents a multiplier effect of c2x of direct activities at A&P Falmouth/FDEC (specifically a compositive output multiplier of 1.9 and a composite employment multiplier of 1.8). It is useful to compare the estimate of the indirect multiplier with the previous studies – as referenced previously. For example, the 2011 report prepared by Ove Arup used a composite multiplier of 1.6 at a regional (Cornwall) level, whereas the 2015 report prepared by URS used a regional multiplier of 1.4 at a regional (Cornwall level). Therefore, through the approach adopted in this report – based on supply chain information provided by A&P Falmouth/FDEC – we estimate a higher indirect impact of A&P Falmouth/FDEC activities[17].

However, it is also useful to note that a previous study commissioned by Maritime UK[18] estimated much stronger wider impacts, particularly in terms of employment. This work estimated that the composite turnover multiplier was 2.3 for the whole maritime sector – including the ports industry. For GVA the composite multiplier was estimated to be c2.6. In comparison, the employment composite multiplier was estimated to be much higher – c5.2. Analysis of this Maritime UK work shows that this was principally due to the significant indirect employment impact of the shipping industry, with the indirect impact of the ports industry being much lower.

However, it is also useful to note that the estimates of indirect impact through the Maritime UK work encapsulates impact at a UK-wide economy level. In comparison, the work in this report focuses on the local (Cornwall) impact. If we include all supply chain spend and assume it largely takes place in the UK, then the composite multiplier from A&P Falmouth/FDEC supply chain increases to 2.7 for output and 2.5 for employment. Therefore, in terms of output this then becomes comparable to the Maritime UK study, although remaining lower for employment.

Ratios – subsequent analysis

In effect, our approach has estimated that c£76,035 of supply chain spend by A&P Falmouth/FDEC results in supporting a further job within the Cornwall economy (or c£57,630 when considered on a wider UK basis). This is either indirectly through the supply chain businesses and including the wider induced effects.

[17] It is also useful to note that these studies were effectively forward looking i.e. estimating the potential economic impact of proposed developments at the Port of Falmouth. Therefore this included some consideration of the 'additionality' of those proposed redevelopments, and also factored in adjustments such as leakage, deadweight, displacement etc. This had the effect of 'muting' the composite multiplier.

[18] 'The economic contribution of the UK ports industry' – Cebr (2017)

We set out some 'ratios/assumptions' that have been derived through this baseline analysis which we utilise in the subsequent analysis of the potential impact of the proposed redevelopment.

Table 17: A&P Falmouth/FDEC – derived ratios/assumptions – baseline impact

	Ratio/assumption	Comment
Total supply chain - £ per revenue (UK)	£0.86	Derived from A&P Financial accounts (revenue) and supply chain expenditure information (4-year average)
Total supply chain - £ per revenue (Cornwall)	£0.38	Derived from A&P Financial accounts (revenue) and supply chain expenditure information (4-year average)
Supply chain spend per wider (indirect and induced) job supported	£114,176	Derived from supply chain expenditure analysis (4-year average)

Market Projections

This section considers some high-level analysis of evidence around the three growth opportunities that have been identified by A&P Falmouth/FDEC. In that respect, this relates to 'demand side' considerations. This section primarily focuses on published data and specific evidence that helps frame the overall demand-side context.

It is important to note that the analysis tends to focus on 2019 as a baseline for these market forecasts. Both the cruise and freight cargo markets were significantly affected by the pandemic during 2020-2021, therefore 2019 is seen as a better representation of 'steady state'.

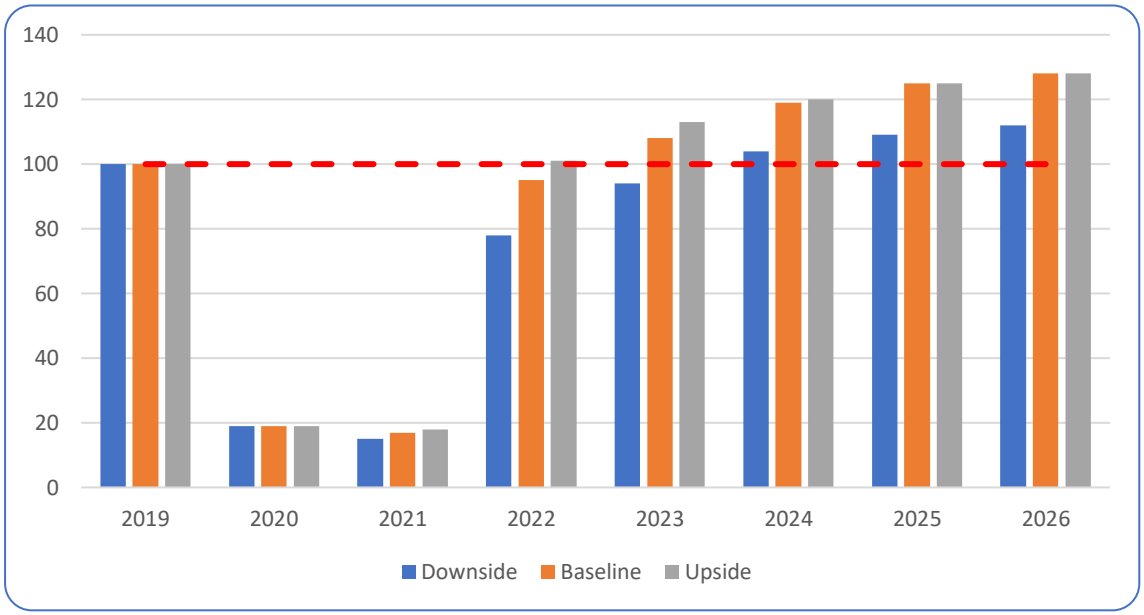
Outlook for the cruise market

Since the restart of cruise activities in July 2020 the capacity within the sector has gradually grown. In the latest industry update it is projected that just short of 100% of CLIA ocean-going capacity is projected to be operational by the end of July 2022[19].

From a passenger perspective, nearly 80% of travellers who have cruised before say they will cruise again – the same proportion as before the pandemic.

In the baseline forecast, passenger volume is expected to recover and surpass 2019 levels by the end of 2023. In the upside forecast, passenger volume is expected to recover to 101% of 2019 levels a year earlier, by the end of 2022. In all three scenarios, passenger volume is projected to recover in excess of 12% above 2019 levels by the end of 2026 – as shown by below chart.

Chart 2: Projected global cruise passenger volume (2019=100)



Source: (CLIA Tourism Economics)

Western Europe represents c21% of the global cruise market, with North America remaining the dominant market – holding 51% market share.

[19] '2022 State of the Cruise Industry Outlook' – Cruise Line International Association

The cruise sector has made some strong commitments to reduce the environmental impact. The industry has an ambition to pursue net carbon neutrality by 2050 and are doing this through a range of measures including:

1. Advanced recycling protocols
2. Waste to energy initiatives
3. Energy efficient ship design
4. Supply chain sustainability programmes
5. Reverse osmosis water filtration systems
6. Pursuit of alternative fuels

Consequently, there will be further investments in ships powered by Liquefied Natural Gas (LNG), with members of the Cruise Line International Association (CLIA) bringing 26 LNG-powered cruise ships into operation by 2027 (representing 16% of global capacity). In addition, 231 cruise ships will be fitted with Advanced Wastewater Treatment Systems (81% of global capacity). 174 cruise ships will be fitted with shoreside power connectivity by 2027 (66% of global capacity) – allowing them to link into renewable sources onshore, and a further 176 ships will by fitted with Exhaust Gas Cleaning Systems (81% of global capacity not powered by LNG). Therefore, there is a shift to cleaner and greener cruise fleet[20].

UK and European Cruise Market

The UK cruise market is significant and represents the second largest potential market in Europe (after Germany which is the most significant market by a margin). In 2019 (pre-pandemic), c2.0m passengers originated from the UK (2.6mn in Germany). The UK represented 19% of the total European market (Germany 39%)[21].

The evidence suggests that the UK market is characterised by a typically older demographic of cruise passengers, and that they tend to go for a longer length of time. In 2020, the average age of UK cruise passengers was 60 years (Europe - 50 years), and the average cruise duration was 12.5 days (Europe - 9.3 days).

The most attractive destination for UK cruise passengers was Central and Western Mediterranean region– representing 25% of cruise passenger volumes (2019). Northern Europe itself represented just 23.5% of the overall destination market – 468,000 UK cruise passengers. This broadly matches the profile for the German market – with 24% of German cruise passengers also choosing Northern Europe as their destination (620,000 German cruise passengers).

Overall, the northern European market (for European passengers) equated to 1,416,000 cruise passengers in the pre-pandemic 2019 market. However, it is important to note that this does not include non-European passengers. Further analysis of the CLIA evidence suggests that the non-European market is not that significant – as shown in the below table. The table also shows the total Northern Europe market equated to 1,708,000 cruise passengers in 2019. The table illustrates that the largest proportion of passengers originated from Europe itself (83%), with the remainder originating from elsewhere – predominantly North America.

[20] Op Cit
[21] '2020 Europe Market Report' – CLIA

It is important to note that the UK cruise destination market will only represent a proportion of this total European market[22].

Table 18: Northern European cruise market by market (cruise passenger origin)

Region (passenger origin)	Passenger Volume (2019)	Proportion
Europe	1,416,000	83%
North America	204,000	12%
South Central America	11,000	0.6%
Asia	22,000	1.2%
Other	55,000	3.2%
Global (total)	**1,708,000**	**100%**

Source: (Cruise Lines International Association)

In terms of further information on the UK cruise market, Southampton is the dominant port for (dis)embarkation – as shown in the below table. It is important to note that these numbers differ from the above in that they capture both embarkation and disembarkation passenger movements. It is important to note that 'all other ports' combined equated to c240,000 passenger movements in 2019.

Table 19: All long sea journey passengers including cruise[23] (2019)

Port	Cruise passenger movements
Southampton	1,807,000
Dover	124,000
Other ports	240,000
All cruise passengers	**2,171,000**

Source: (Department for Transport – sea passenger statistics)

Outlook for the Floating Offshore Wind Market

Independent research commissioned by the A&P Group and undertaken by the Offshore Renewable Energy (ORE) Catapult highlights the strong opportunities in relation to floating wind market, particularly with the anticipated amount of project development activity in the Celtic Sea and the creation of the Celtic Sea Developers Alliance. This opportunity has been stimulated by a combination of several factors:

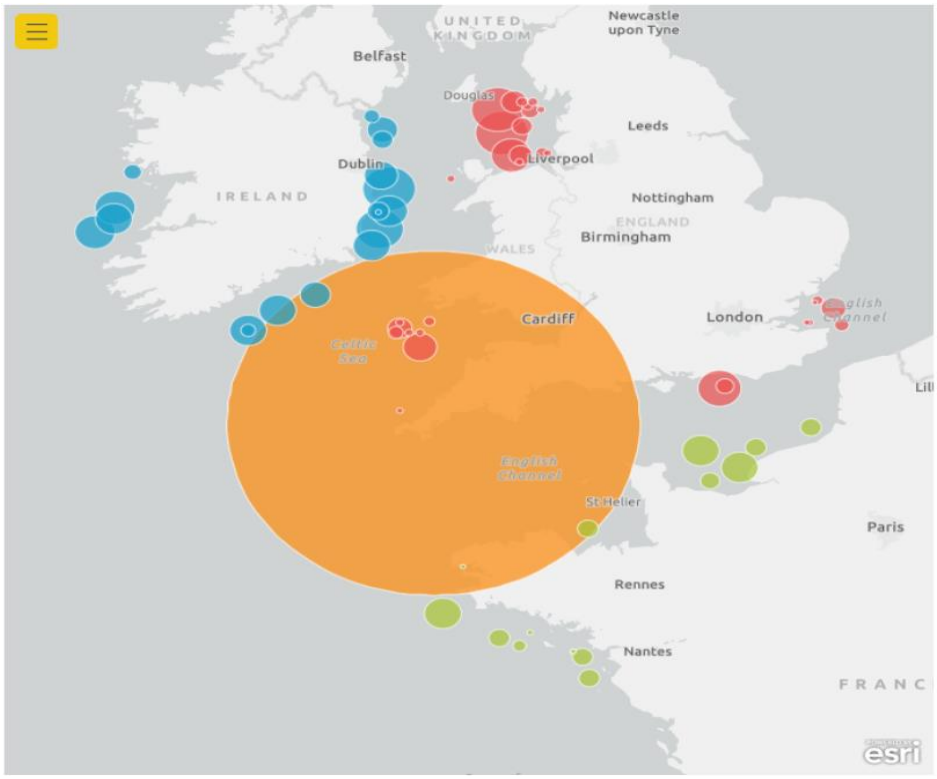
1. in 2020 the UK Government increased the 2030 offshore wind target of 30GW set by the Offshore Wind Sector Deal to 40GW in 2030, with at least 1GW coming from floating wind
2. by the UK Governments commitment in 2021 to provide a Contracts for Difference energy generation subsidy for floating wind in the present Allocation Round 4
3. an announcement in October 21 for a grant call to provide £160mn of funding to Scottish and Celtic Sea ports
4. the Crown Estate launching (November 21) outline Celtic Sea leasing round plans to unlock 4GW of capacity by 2035

[22] UK specific evidence was not identified for this analysis – certainly not from the CLIA

[23] Cruise passengers are included at both departure and arrival if their journey begins and ends at a UK seaport

5. the recent completion of the national grid Offshore Transmission Network Review and the establishment of the Celtic Sea Cluster

ORE Catapults recent market overview highlighted the UK offshore wind market forecasts from now till 2050 with low, medium and high case scenarios showing offshore wind development of 75, 100 and 150 GW of installed capacity from today's 8GW deployed. These Celtic Sea leasing opportunities are set at a pace and scale that sets a challenge for supply chain and (port) infrastructure development in Wales and the South West. This is shown graphically in the below map – taken from the ORE Catapult analysis work undertaken for A&P. This shows the 150km radius from A&P Falmouth showing all wind farms within a 500km radius, coloured by country and sized capacity.



Source: (ORE Catapult/4C Offshore)

Beyond 2030, deployment is expected to continue to support net zero targets and increased electrification of energy demand in the UK. Forecasts for 2050 range from 75 GW at the low end to 150 GW+ at the high end. To achieve ambitions for increased deployment, floating wind will be required. There are fewer site limits on floating wind (compared to bottom-fixed wind sites), with 500GW+ of potential identified in the UK.

With these opportunities for growth, the UK supply chain does not currently have the capacity within ports for the fabrication, assembly, and installation of offshore wind to meet 2050 net zero targets. From a ship building/maintenance perspective floating wind engineering is repeatable so fast learning and relatively straightforward (compared to other markets) with potential large volumes. There are also export opportunities if capabilities are quickly developed.

Previous work undertaken by the ORE Catapult that focused on the potential benefits of FLOW to the regional economy noted that in terms of ports and logistics, suitable and well-located facilities are important to all areas of assembly, installation and operations. A port looking to take on the final assembly and staging of floating wind projects will need access to a large laydown area to store nacelles, blades, towers, mooring and anchor systems before deployment at site. Mooring lines and anchors require a large space with nearby access to water but do not need particularly high lifting capability.

This initial work concluded that A&P Falmouth could be well placed to act as a final assembly port for substructures, given its in-house capability to manufacture secondary steel and potentially having sufficient space to store anchors, mooring lines and cables, as well as turbine components during construction.

This work contained a set of recommendations, including the requirement for public investment in port infrastructure. It notes *'whilst it is unlikely that wind turbine components will be manufactured within the (South West) region there is an opportunity to develop existing port infrastructure to provide the capability required to perform this task… the sector would greatly benefit from significant public investment and may make sense for a series of projects in both the Celtic and Irish Seas'.*

This work placed a value of potential regional spend that could be supported based on the four FLOW scenarios (based on installed capacity). It should be noted that – given the scope of the report – this also included Wales alongside the South West.

Source: (Benefits of Floating Offshore Wind to Wales and the South West – ORE Catapult - 2021)

The work undertaken by the ORE Catapult assessed the strengths of A&P facilities against a pre-set list of offshore wind opportunities. This included A&P Falmouth. The outcome of each facilities strengths was based on interviews with key members of the A&P leadership team at each site, technical information provided by each site and ORE Catapult's pre-set quantitative assessment of minimum and optimum requirements for entering each area of offshore wind.

The assessment in relation to Falmouth is set out below, identifying the strongest areas of investment. It differentiates between the existing facilities and the proposed development.

Port	Strongest Areas for Investment
Falmouth (Existing Facilities)	Anchor fabrication; Anchor and mooring line storage; Secondary steel fabrication; O&M base; SOV/CTV repair
Falmouth (Proposed Development)	Anchor fabrication; Anchor and mooring line storage; Secondary steel fabrication; O&M base; SOV/CTV repair and Major FOW O&M

Source: (ORE Catapult)

This was assessed in a different way – detailing what sub-markets are feasible, possible and unlikely given the characteristics of the assets and facilities within Falmouth.

Feasible	Anchor fabrication; Anchor and mooring line storage; Secondary steel fabrication; O&M base; SOV/CTV repair and Major FOW O&M
Possible	WTG marshalling and assembly; Offshore substation fabrication; CTV Builds
Unlikely	WTG fabrication; Bottom-fixed foundation fabrication; Floating substructure assembly and fabrication; SOVs vessel fabrication

Source: (ORE Catapult)

The definition of the FLOW related activities within the 'feasible' and 'possible' classifications above are contained in Appendix 1.

Based on the outcomes of the ORE Catapult's A&P port assessment, opportunities were investigated for the collaboration between the ports to maximise their potential to prospective offshore wind developers. FLOW substructures could be assembled and fabricated at Cammell Laird, before being towed down to Falmouth. This would look to capitalise on the unique selling point for Falmouth which is its close proximity to the Celtic Sea project sites and wet storage in Carrick Road and the strengths in a Cammell Laird and Falmouth joint offer of relatively low-cost slipway launch from Cammell Laird and fit out at Falmouth. The proposed upgrades to Falmouth make it attractive for a marshalling and assembly port as well as large scale O&M activities.

Market potential:

To assess the total addressable market for A&P Falmouth, ORE Catapult used data from 4C Offshore which provides locations for installed and prospective wind farms, along with estimates of start dates. The work did not make judgements about which wind farms are most likely to be consented and commissioned.

Potential capabilities were assessed based on the distance from projects. For O&M, a radius of 150km was used. For marshalling & assembly, a limit of 250 km was set, and 500km for fabrication. Fabrication and other activities occur prior to wind farm operation. It was assumed that fabrication "capacity" is split evenly for the three years prior to and including the commissioning year of each wind farm, whilst marshalling & assembly occurs in the year of commissioning and one year prior.

The key potential requirements for some of the identified Celtic Sea deployment sites are set out below – illustrating the scale of requirements.

Key Metrics		**Wave Hub**	**Pembrokeshire Demonstration Zone**	**300MW site**	**500MW site**
Tonnes of steel	*tonnes*	9,926	24,089	78,767	126,044
Metres of array cables	*Tonnes*	4,400	135,900	60,118	79,355
Mooring chain mass	*tonnes*	3,842	10,210	22,994	30,352
Anchor mass	*tonnes*	252	540	1,463	1,931
Crane capacity required	*tonnes*	550	700	700	700

Port-side assembly time	*Days*	12	15	45	63

Source: (ORE Catapult – Benefits of Floating Offshore Wind to Wales and the South West)

The potential market in terms of installed capacity is set out in the below charts – focusing on those activities where the ORE Catapult has identified an opportunity for A&P Falmouth. The charts show the potential market value for the relevant UK market – primarily the opportunities presented by the Celtic Sea. Alongside this it also sets out a potential role in export markets such as floating projects in northern France. This independent assessment sets out the significant opportunities over the next 25-year period. It is important to note that this analysis has only been based on those projects which have been captured by 4C Offshore[24]. Therefore this does not yet fully reflect the total 4GW Celtic Sea opportunity.

Based on the above data, for example, the UK floating wind market in the region requires approximately £350 million of anchors and moorings in the next ten years. There is also potential for providing major repairs for turbines towed back to port. This is valued at over £20 million a year in the 2030s and 2040s

The following series of charts show the potential market sizes of the sub-markets – noting that the scale of each of the charts differ (needing to take care of comparing across each sub-market) as well as the time periods covered.

[24] https://www.4coffshore.com/

Charts 3-10: capacity requiring services which could be catered at A&P Falmouth

Chart 3- Wet Storage

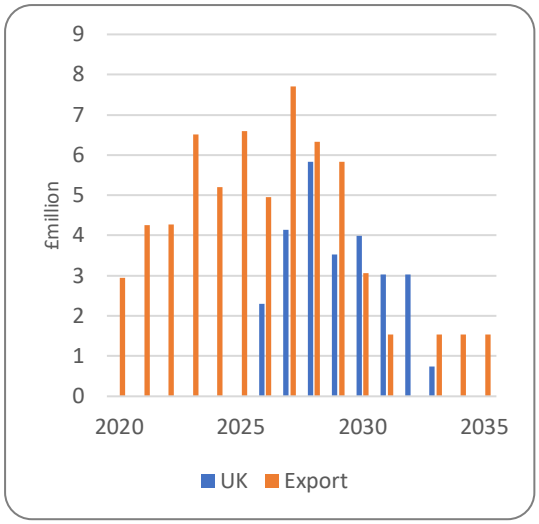


Chart 4 - Marshalling & Assembly

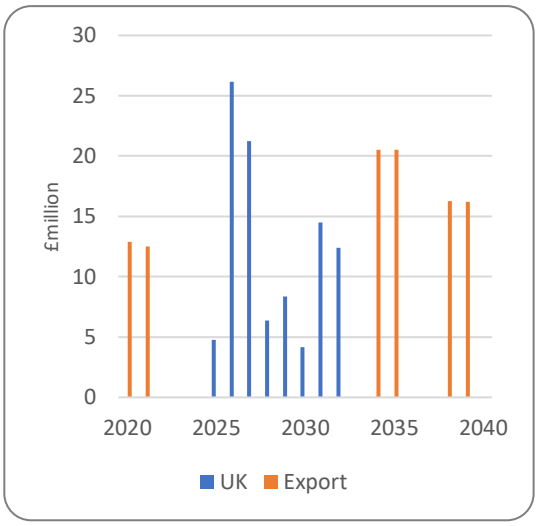


Chart 5 - Anchors (fabrication & storage)

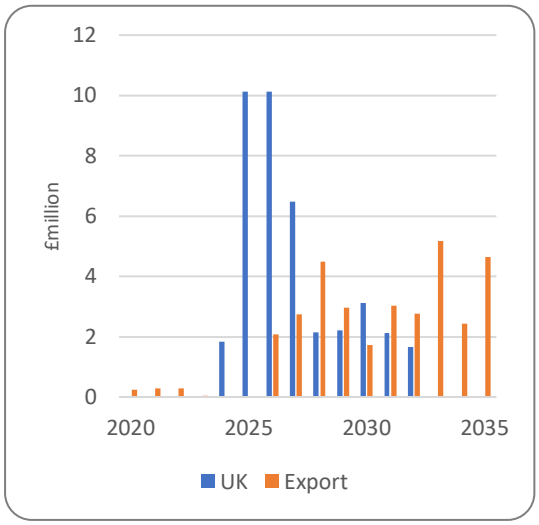


Chart 6 - Moorings (fabrication & storage)

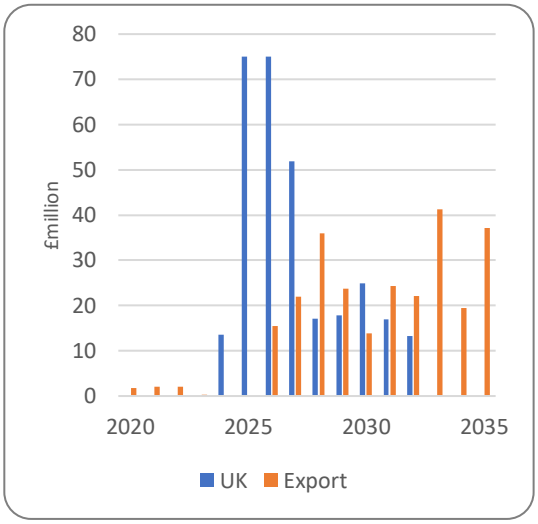


Chart 7 - Offshore substations

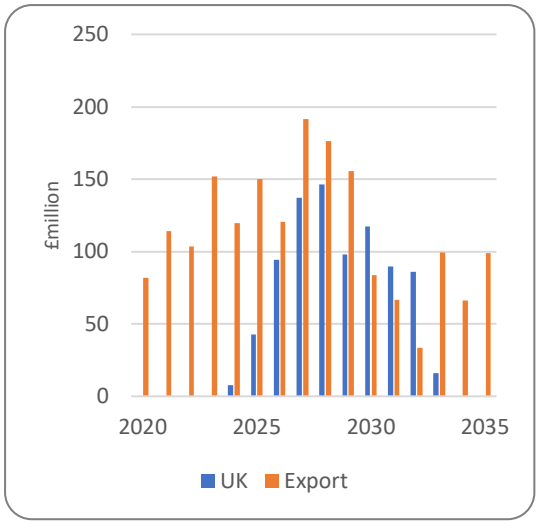


Chart 8 - Secondary Steel

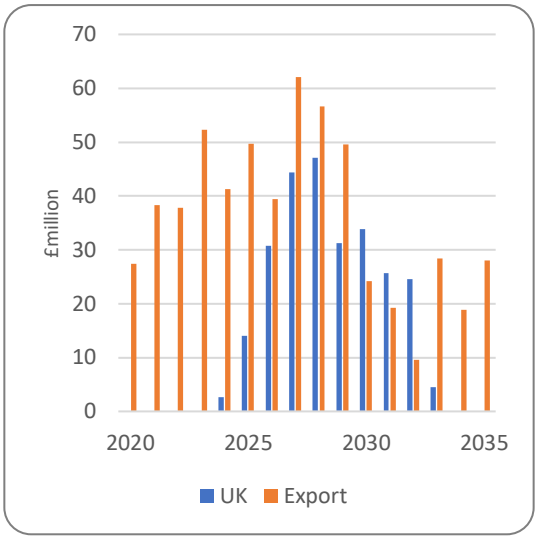


Chart 9 - O&M base

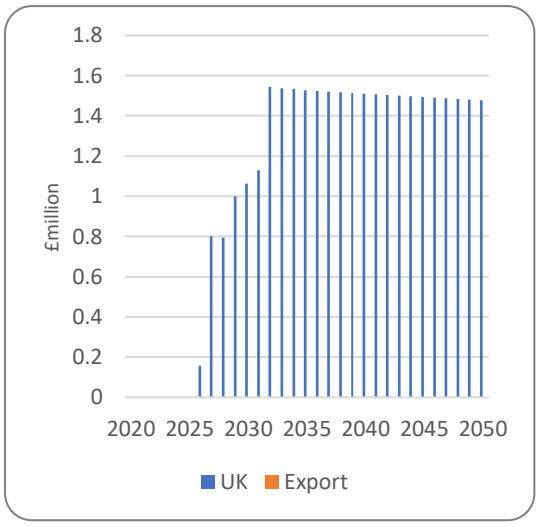
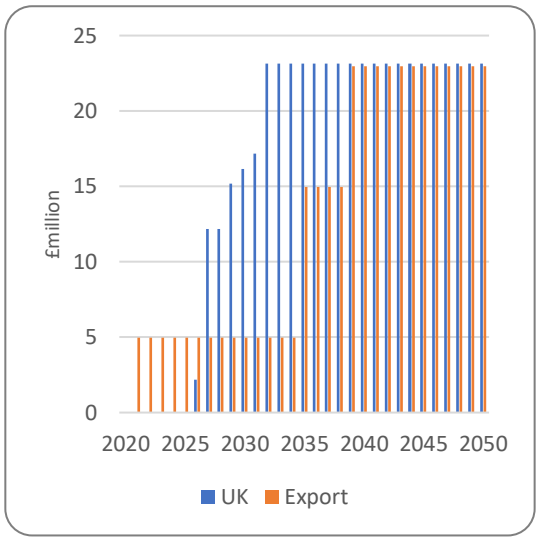


Chart 10 - Major wind turbine repair (tow to port)



In total the aggregated addressable market for each of these sub-markets which have been identified by ORE Catapult as A&P Falmouth being well placed to play an important role equates to c£2bn in terms of the UK market, with a further potential market opportunity of c3.8mn in other export markets. This is shown in aggregated terms over a 25-year period – noting that these figures have not been discounted.

Table 20: Total addressable market – A&P Falmouth

	UK (£m)	Export (£m)
Wet storage	26.6	63.8
Anchors (fabrication & storage)	39.8	56.0
Moorings (fabrication & storage)	305.5	445.9
Offshore Substations	834.3	2,173.3
Secondary steel	258.9	684.1
O&M base	26.2	-
Major wind turbine repair (tow to port)	399.2	290.0
Marshalling & Assembly	97.9	98.9
TOTAL	**1,988.5**	**3,811.9**

Source: (ORE Catapult)

These figures of aggregated market opportunity are used later in this report in terms of the potential role that A&P Falmouth could play in supporting the 'realisation' of this significant potential local economic benefit.

There ORE Catapult have identified that other ports in north west Europe are being developed to also exploit the emerging offshore wind opportunities. This represents potential competition across the sub-markets such as fabrication, marshalling & assembly O&M etc. Other port facilities include Fene shipyard in Navantia Spain, Sif Maasvlakte 2 in the Netherlands, Port of Brest in France (which is currently developing a 40ha port terminal with the purpose of supporting offshore wind) and Port of Bilbao in Spain.

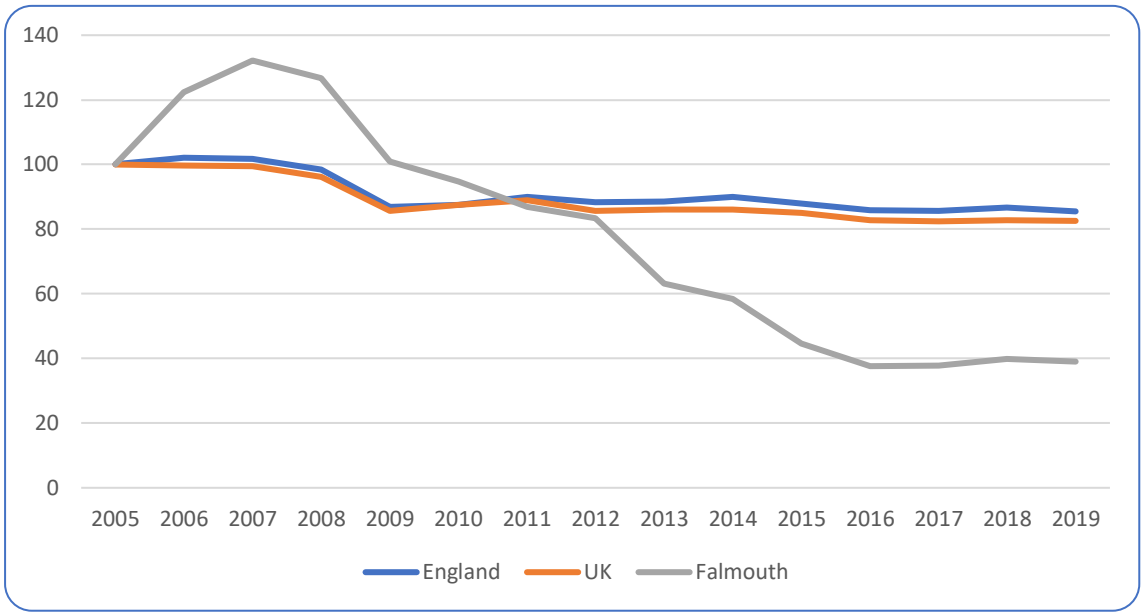
As previously stated, the ORE Catapult analysis independently concludes that Falmouth is well situated to supply Irish and UK Celtic Sea projects, as well as floating projects elsewhere in northern Europe.

With the development scenario at A&P Falmouth, the site could support the marshalling and assemble of projects up to 400MW. With A&P Falmouth being well placed support FLOW sites in the Celtic Sea, it is a logical location for marshalling and assembly. With the existing site expertise, A&P Falmouth could become an O&M site for FLOW sites with the quay space and rely on the dry docks to maintain the SOVs sailing from base. With the port already being used as a marshalling and assembly facility, it would be well placed to carry out large scale O&M activities with turbines and substructures being towed back to port.

Outlook for the freight cargo market

According to published statistics, the volume of freight traffic has fallen over the past 15 years when measured by tonnage [25]. The latest data shows that c438mn tonnes of freight traffic flowed through UK ports in 2019[26]. The below chart shows that freight volumes are approximately 86% of 2005 levels. However, the chart also shows that in relative terms that freight volume has fallen more significantly through Falmouth (39% of 2005 levels), with a particular fall from 2010 onwards.

Chart 11: Freight tonnage traffic (both directions) (2005=100)



Source: (Major and minor port freight statistics – Department for Transport)

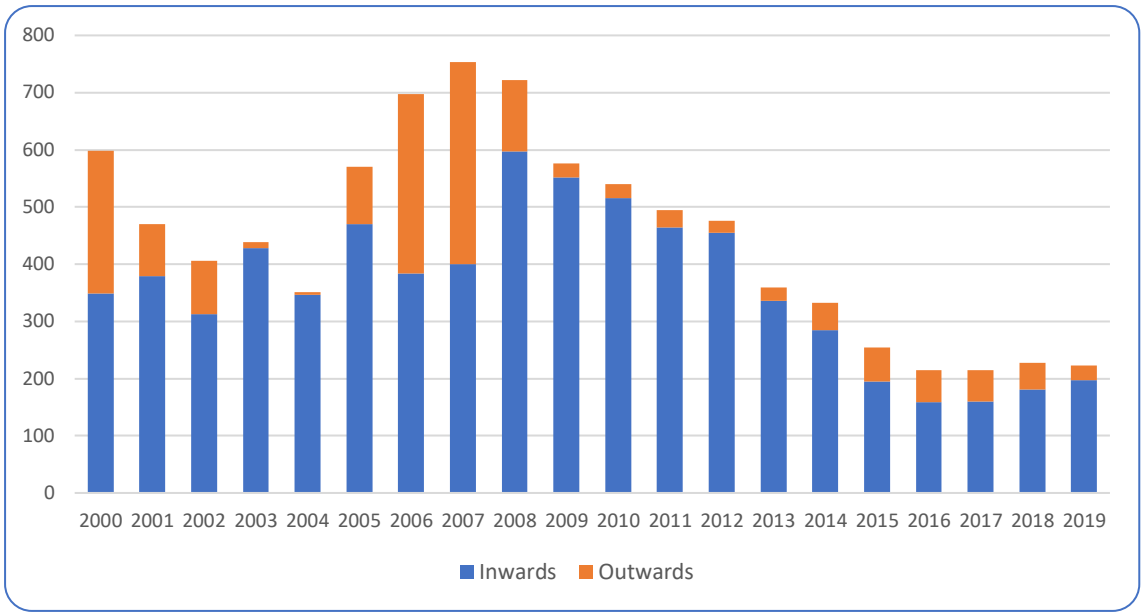
In 2019, 152,000 freight tonnage flowed through Falmouth (both directions), down from a high of 753,000 tonnes in 2007. However, it is important to note that the peak values seen in 2006-2008 also reflect a considerable amount of 'bunkering' e.g. of oil and other products, that was using the facilities at Falmouth Harbour at that time. This scale of this bunkering dropped off and partly (but not wholly) explains the overall drop in cargo volumes seen over the last decade.

Falmouth represents only a small proportion of the overall UK freight market – less than 0.1% of freight volume flowed through Falmouth in 2019. The market tends to be dominated by the major ports such as London Gateway, Grimsby & Immingham, Southampton, Felixstowe etc. The below chart shows that Falmouth traffic tends to be dominated by inward traffic movement.

[25] All UK major and minor port freight tonnage traffic – Department for Transport statistics

[26] Again we take 2019 as the reference/'steady state' year given the impact of the pandemic on freight volumes

Chart 12: Freight tonnage traffic – Falmouth (both directions) (000 tonnes)



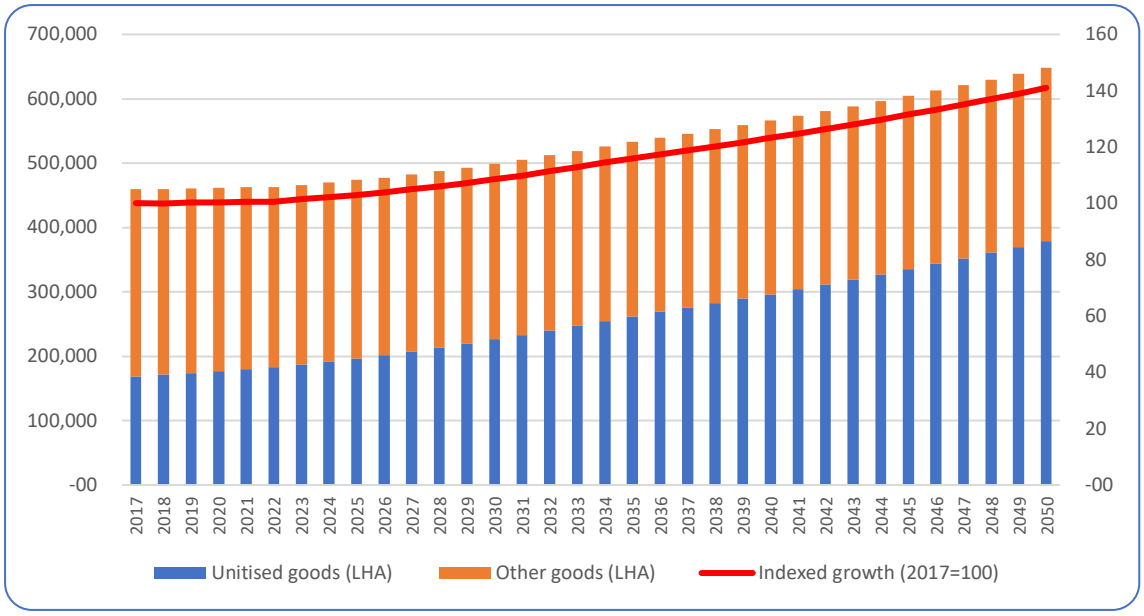
Source: (Major and minor port freight statistics – Department for Transport)

This reflects volumes across the whole of Falmouth Harbour – and does not relate specifically to volumes through FDEC facilities, although discussions have indicated that a similar profile of volumes has been experienced.

It is important to note in relation to the above fall in cargo volumes at Falmouth over time that this does relate to the requirement to redevelop the facilities. Feedback from A&P Falmouth/FDEC is that the constrained capacity at Falmouth did contribute to the loss of some key cargo customers over this period, with dockside berths being used for other purposes e.g. ship repair. Therefore, the increased berthing capacity being proposed through the redevelopment could allow Falmouth to be better placed to satisfy some of the future local cargo requirements.

The latest freight forecasts (2019 based) show that freight volumes are expected to grow consistently over the next 20-30 years, obviously dependent on many variables – not least economic conditions (domestic and global). Freight volumes are forecast to be c140% of 2017 levels by 2050. This represents steady growth. The chart shows freight projections split by unitised goods (largely tending to represent container movements) and other types of freight cargo e.g. liquid bulks, dry bulk and general cargo. The below chart represents a ‘central scenario’ in the forecasts.

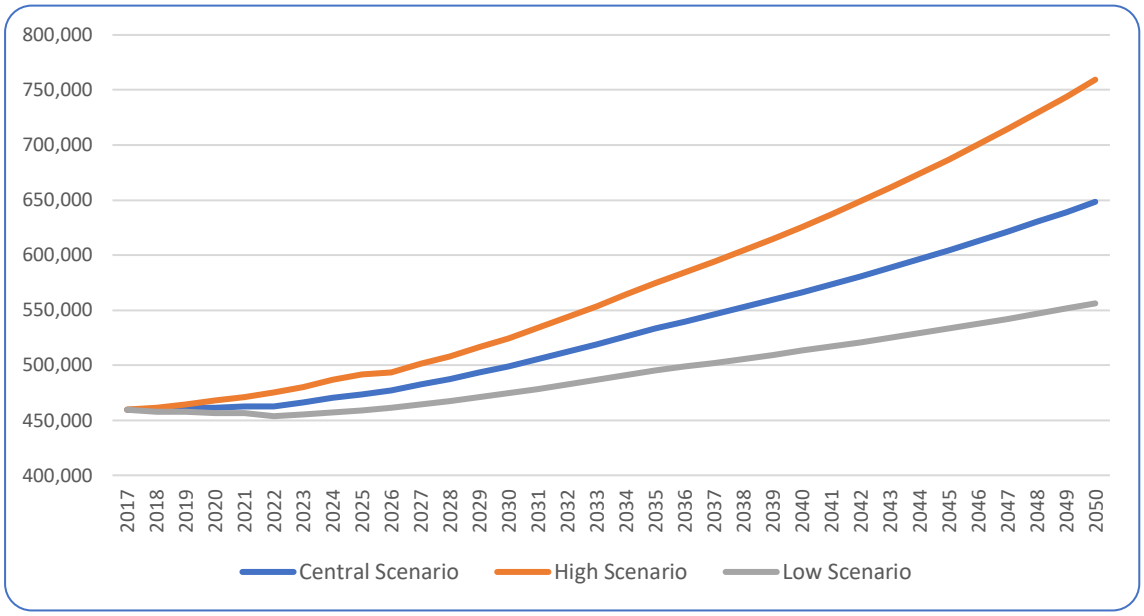
Chart 13: UK Port Freight traffic forecasts (2019 – central scenario) (000 tonnes)



Source: (UK Port Freight Traffic Forecasts 2019 – Department for Transport)

Chart 14 also sets out the low and high scenario forecasts. These are influenced around expectations around economic (GDP) growth, population growth, relative energy prices etc.

Chart 14: UK Port Freight traffic forecasts (2019 – low, central, high scenarios) (000 tonnes)



Source: (UK Port Freight Traffic Forecasts 2019 – Department for Transport)

Proposed redevelopment – additional economic impact

Having established the baseline of the current activities supported through A&P Falmouth and FDEC's presence and role within the Cornwall economy. The next stage of this analysis is to estimate the potential impact on the local economy of the proposed redevelopment at Falmouth, and the ability for the business to grow its own revenues, as well as accommodate wider use of the facilities.

As discussed previously, this analysis focuses on the three growth opportunities that have been identified by the business:

1. An expansion of cruise ship activity
2. Floating Offshore Wind (FLOW)
3. An expansion of cargo activity

In addition, given the scale of the proposed redevelopment there is the potential for the *construction activity to provide a considerable short-term stimulus to the local economy*. The scale of this impact will be dependent on the capacity and capability of the local construction sector to provide the services to meet the construction requirement, some of which will be specific to the shoreline location of the redevelopment.

The facilities at Falmouth Docks are currently designated as part of the Cornwall Marine Enterprise Zone. Enterprise Zones potentially provide additional economic benefit to the local economy through the retained business rates on offer to the managing authority, and its ability to reinvest those retained business rates in other economic development initiatives.

Given the proposed redevelopment will provide potentially greater available land area which could constitute a larger Enterprise Zone, *the impact on the scale of retained business rates is also set out*. However, it is important to recognise that the inclusion of a larger site at Falmouth within the Cornwall Marine Enterprise Zone has not been confirmed at this stage.

These are considered in turn.

Construction impact

The proposed redevelopment represents a potentially significant construction project phased over several years. For the purposes of this analysis, the potential wider benefits generated by this construction impact are considered at a high level. At this stage, important details such as the phasing of the redevelopment and potential suppliers have not been fully determined. Therefore, this analysis has been based on estimated indicative total construction costs. It does not attempt to consider the localised impact, given the difficulty of estimating the use of local suppliers at this stage.

Phase		**Base Cost**
1A + 1B	Extension of Queen's Jetty by 30m Northern Infill and dredging of Queen's Jetty	£20,525,574
1C + 1D	Removal of Northern Arm New Western Wharf and Berth Pocket	£25,781,778

1E + 2A + 2B	Approach and Basin Dredging Demolish Duchy Wharf, complete New Wharf, dredging, part construction New Wharf	£104,257,944
Total		**£150,565,296**

Based on this indicative total cost – and using underlying assumptions from ONS' UK Annual Business Survey for the construction sector[27], this scale of construction spend could be equivalent to direct generation of c£56.0mn Gross Value Added. It could also directly support 794 employment years of construction activity – noting that these should not be considered permanent jobs.

There would be further indirect and induced benefits – as set out in the below table.

	Cost	**Assumption**	**GVA**	**Assumption**	**Employment years**
Direct Impact	£150.5mn	Turnover: GVA ratio (construction sector) – 37.2%[28]	£56.0mn	Turnover: average employment (construction sector) - £189,750[29]	794
Direct, Indirect and Induced Impact		Type II GVA multiplier (construction sector) – 1.9[30]	£106.4mn	Type II Employment multiplier (construction sector) – 1.8	1,429

Again, it is important to reiterate that given no annual breakdown of construction activity has been provided and costs have been provided in indicative terms then these estimates should purely be considered as illustrative at this stage. Further analysis would be required if more detail were provided – covering the type of spend, the profile of expenditure and any expectations around use of local suppliers. These benefit (and cost) estimates would also need to be discounted to reflect time preference. The figures in the above table should therefore not be considered as estimates of potential local short-term impact of the proposed construction activity.

An expansion of cruise ship activity

As part of the proposed development at Falmouth Docks there will be additional capacity to accommodate the growing UK cruise market. Falmouth – and the wider Cornwall area – are attractive potential destinations for cruise port calls.

The passenger volume currently accommodated at Falmouth has tended to be in the range of 16,000-19,000 passengers over the last few years[31]. For the purposes of this analysis, a mid-point of this range acts as the baseline ('do nothing') scenario.

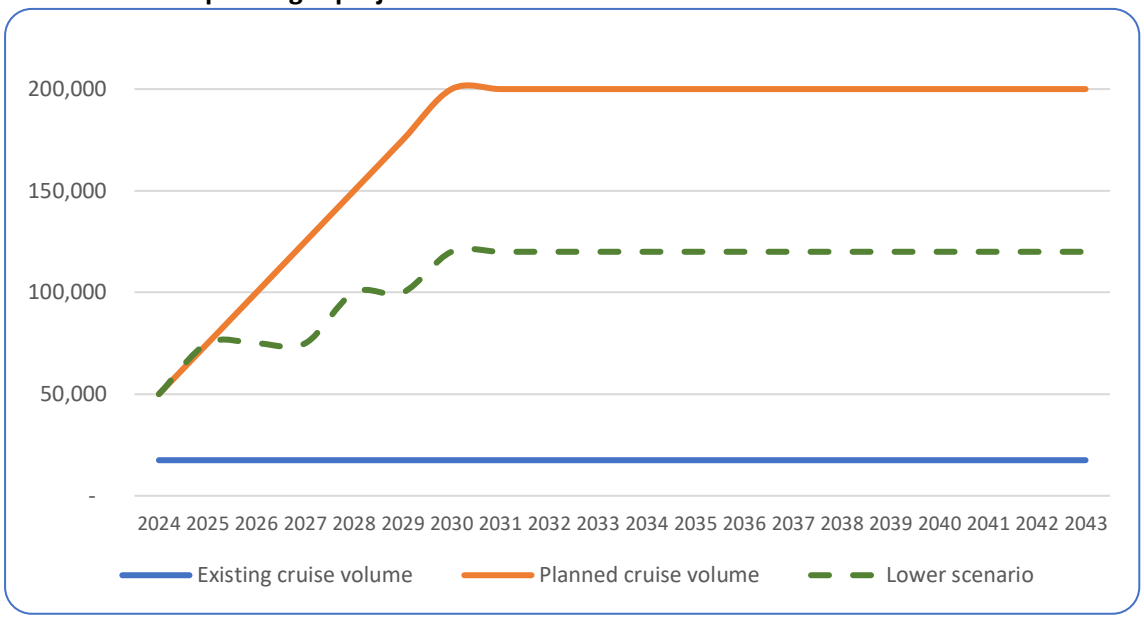
The objective is to grow this significantly over the next 20 years, starting with the short-term aim to increase the number of cruise passengers to 50,000 by 2024. The objective is to grow passenger

[27] UK Annual Business Survey 2019 - ONS
[28] Taken as a 3-year average (2017-19)
[29] Taken as a 3-year average (2017-19)
[30] Multipliers taken from Scottish Enterprise Input-Output tables (2018)
[31] The market has been disrupted by Covid since 2020

volume to 200,000 per year by 2030 – as shown below. The potential to achieve this growth in passenger volume is dependent on the redevelopment plans at Falmouth.

It is recognised that these growth projections are relatively ambitious/stretching. A lower set of projections (steady state of 120,000 passengers) is considered in the sensitivity analysis.

Chart 15: Cruise passenger projections - Falmouth



Source: (A&P Falmouth)

Additional port call passenger volume provides the potential of significant additional tourism spend in the local Cornwall economy. Previous research has provided estimates of cruise-related tourism expenditure in local economies. This relates both to the passengers themselves – as the disembark on port calls – as well as crew members. As expected, expenditure tends to be higher if the port acts as the (dis)embarkation port[32]. However, the short-term expectations are that Falmouth will continue to act as part of a UK based cruise itinerary – one of the destinations.

This analysis has drawn tourism expenditure data from a report commissioned in 2018[33]. The average expenditure levels associated with cruise passengers and crew are shown in the below table. The original estimates in EUR have been converted to Sterling using the current exchange rate. The average expenditure figures were expressed in 2017 prices within the research. This has been uplifted using historical inflation rates[34].

[32] A previous Economic Impact Assessment undertaken by Arup in 2005 used a higher typical spend per passenger of £65 (2015 prices). However, this included the potential for (dis)embarking passengers, where average spend tends to be higher.
[33] Contribution of Cruise Tourism to the Economies of Europe 2017 – CLIA Cruise Lines
[34] ONS annual CPI rates

Table 21: Cruise passenger spend - assumptions

	2017 (EUR)	2017 (£)[35]	2021 (£)
Including airfares, embarking passengers average spend	€ 294.00	£ 245.00	£ 270.07
Excluding airfares, cruise passengers average spend at embarkation port cities	€ 81.86	£ 68.22	£ 75.20
Average cruise passenger spend at each port of visit	€ 64.37	£ 53.64	£ 59.13
Average crew spending at each port of visit	€ 24.50	£ 20.42	£ 22.51

Source: (Contribution of Cruise Tourism to the Economies of Europe 2017)

As stated, given the assumption that Falmouth will primarily serve as an itinerary (port call) destination, we utilise the lower spend per passenger figure.

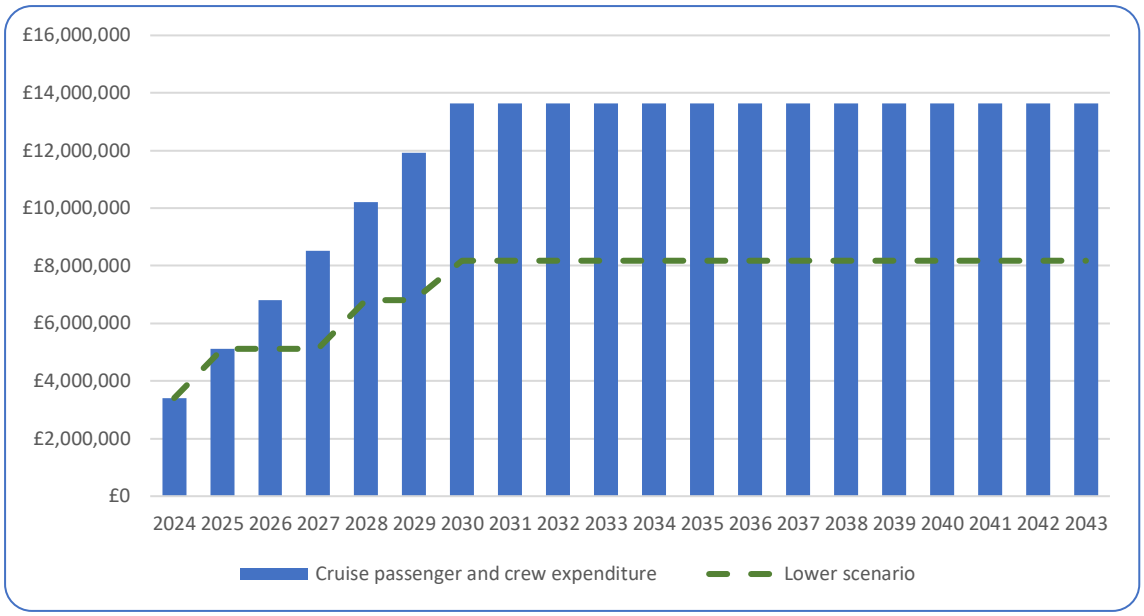
In terms of the number of crew that could be expected to be associated with the projected passenger volume, we have utilised an average of 0.4 crew members per passenger[36]. If 200,000 passengers are achieved, this could mean that c80,000 crew members could also visit on an annual basis.

Based on the typical 'per passenger' and 'per crew' volumes, we are able to estimate the gross tourism expenditure related to these projected volumes. In terms of passenger-related expenditure this would grow from c£2.98mn per year in 2024 to a peak of c£11.8mn by 2030 (2021 prices). In addition, crew related expenditure would increase from c£450,000 to c£1.8mn per annum by 2030. Therefore, total expenditure associated with a 'steady state' passenger volume of 200,000 would be associated with gross expenditure of c£13.6mn per annum in the local economy. Again, the lower passenger growth scenario (120,000) is also shown.

[35] Converted to Sterling using an exchange rate of £/EUR 1.2 (4th Jan)

[36] Taken as a mid-point and reflective of possible UK market - https://www.cruisewatch.com/cruise-guide/rankings/ships-passenger-crew-ratio

Chart 16: Passenger and crew related expenditure per annum (gross) - Falmouth



However, it is important to recognise that this should be regarded as a *gross* impact and does not account for existing passengers. If we utilise the same typical expenditure levels for the baseline passenger volume we are in the position to estimate the additional cruise-related passenger spend. This is shown below – at a steady state post 2030 this effectively represents a net additional impact of c92%. This is equivalent to an additional c£12.4mn of cruise-related expenditure per year flowing into the local Cornwall economy[37]. The lower passenger growth scenario (120,000) is also shown.

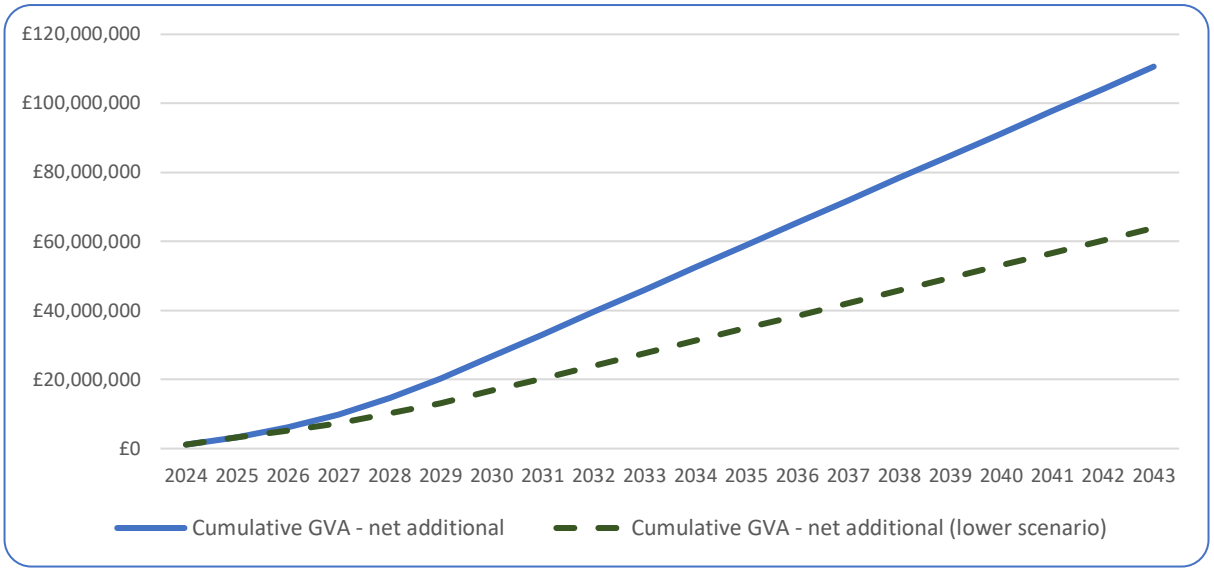
Chart 17: Passenger and crew related expenditure per annum (net additional) - Falmouth

[37] For the purposes of this study we assume that excursions from Falmouth will primarily occur within Cornwall itself. Our understanding is that preliminary discussions have already been held with key tourist destinations with regards to accommodating a greater volume of cruise passengers in future years.

This level of annual expenditure is associated with an equivalent impact when measured by Gross Value Added (GVA) of c£6.5mn per annum at steady state (2030 onwards). This is based on taking a typical turnover: GVA ratio of c52% for the accommodation and food services sector – the sector closely associated with tourism[38].

When considered on a cumulative basis, the additional GVA within the local economy associated with cruise-related expenditure could reach c£110mn over a 20-year period from 2024 onwards.

Chart 18: Cumulative net additional GVA



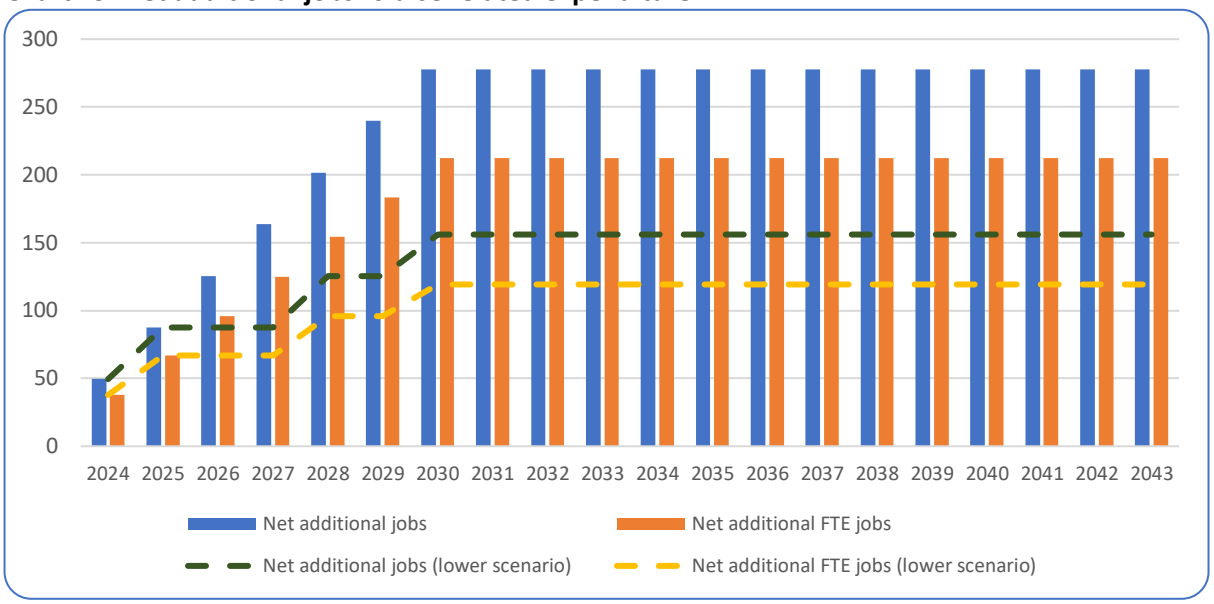
In terms of the potential impact on jobs, this has been estimated using two sources of published data. In broad terms both have corresponded, therefore providing confidence over the scale of employment that could be associated with this tourism-related expenditure. We have accessed estimates from the ONS Annual Business Survey, which shows that c£44,000 of turnover[39] in the accommodation and food services sector supports one job (2019 prices).

Similarly, we have also utilised data from the UK Tourism Satellite Accounts. This shows that tourism-related expenditure is spread across many sectors, and tourism expenditure of c44,700 supports one job (2021 prices). However, it also highlights that many jobs in tourism-related sectors tend to be part-time. When estimated on a Full-Time Equivalent (FTE) basis, it shows that expenditure of c£58,500 supports one FTE job.

Based on this data, we estimate that the additional tourism expenditure associated with the projected cruise volumes could support c278 jobs (212 FTEs) at steady state (2030) within the local economy.

[38] Taken from ONS' Annual Business Survey – UK (2019)
[39] We assume that turnover acts as a proxy for expenditure

Chart 19: Net additional jobs- cruise related expenditure



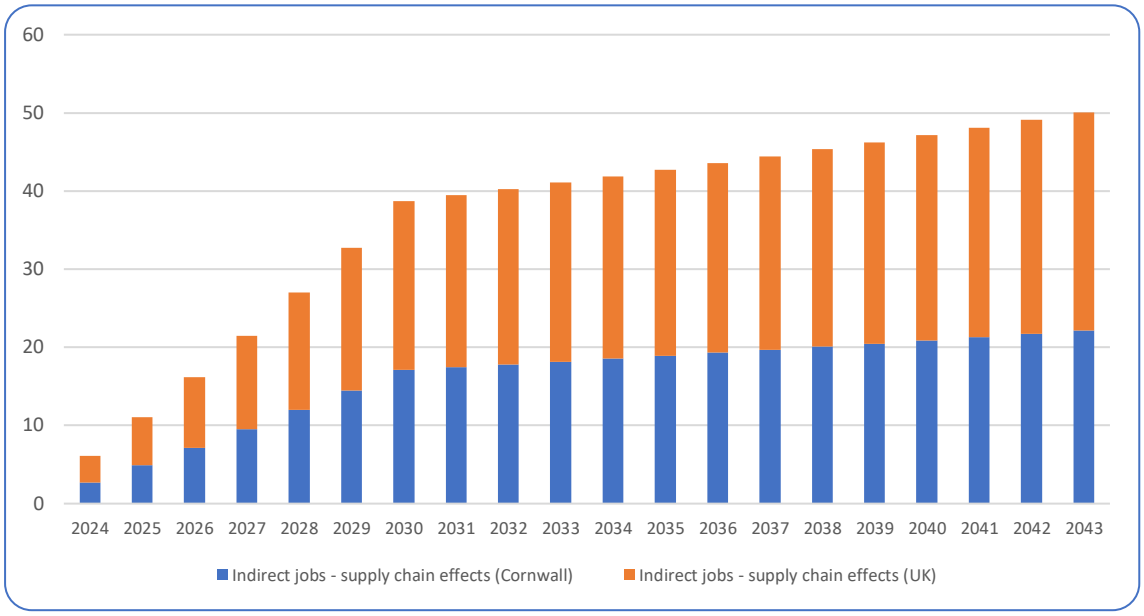
Supply chain impacts

In addition to the economic benefit provided by the expenditure associated with additional passenger volume in the Cornwall economy, there will also be potential benefits delivered through the additional revenue for A&P Falmouth/FDEC and the associated supply chain spend within the local Cornwall economy to support that additional activity.

Our estimates of this impact are informed by the analysis in the assessment of impact through current activities – as previously discussed. Based on the net additional revenue projections and the potential scale of supply chain expenditure, we estimate that a further c90 jobs could be supported in the wider Cornwall supply chain as a result of additional cruise-related activity at A&P Falmouth/FDEC. In addition, further jobs will be supported in the wider UK supply chain.

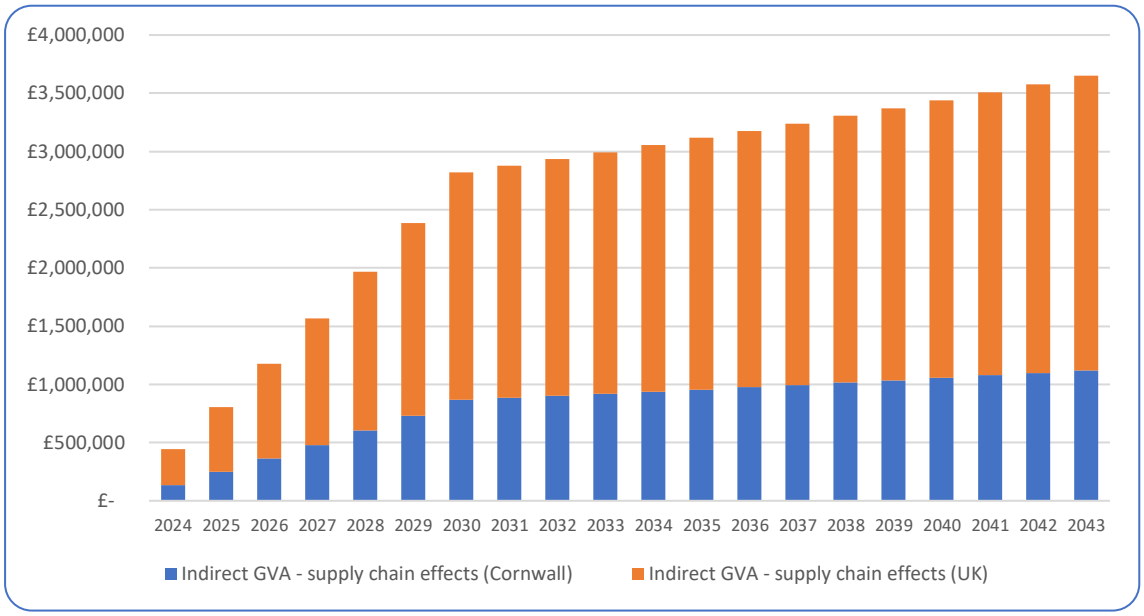
Chart 20 shows the scale of indirect jobs that could be created through the additional cruise-related revenues for A&P Falmouth/FDEC based on the above projections. These have taken into account the baseline cruise volume and are based on the additional revenue projections. To reiterate, these impacts would be associated with supply-chain expenditure and should be viewed as in addition to the passenger-spend estimates outlined previously in this section. Again, this also illustrates the profiled impact of the lower scenario of passenger volumes (120,000 per annum).

Chart 20: Indirect jobs supported through additional A&P Falmouth/FDEC cruise-related supply chain expenditure



The indirect GVA supported through the supply chain is also set out below, reaching c£3.7mn at steady state.

Chart 21: Indirect GVA supported through additional A&P Falmouth/FDEC cruise-related supply chain expenditure

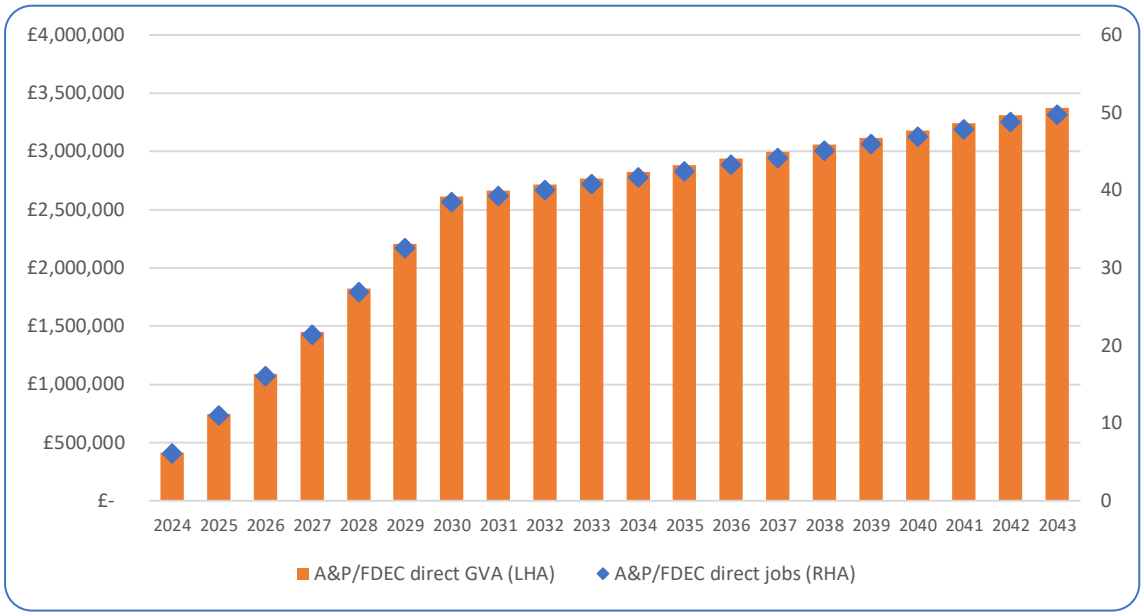


Direct impact

The additional cruise volumes and the related projected additional revenue would also support additional jobs at A&P Falmouth/FDEC, as well as supporting further value added. Based on the relationship between revenues, supported jobs and GVA that was discussed in the baseline section.

Based on these relationships, the additional cruise-related revenues could support an additional c50 jobs by 2043 (40 jobs by 2032). We also estimate that it could directly support an additional c£3.4m GVA per year by 2043 – as shown below.

Chart 22: Direct GVA and jobs supported through additional A&P Falmouth/FDEC cruise-related revenues



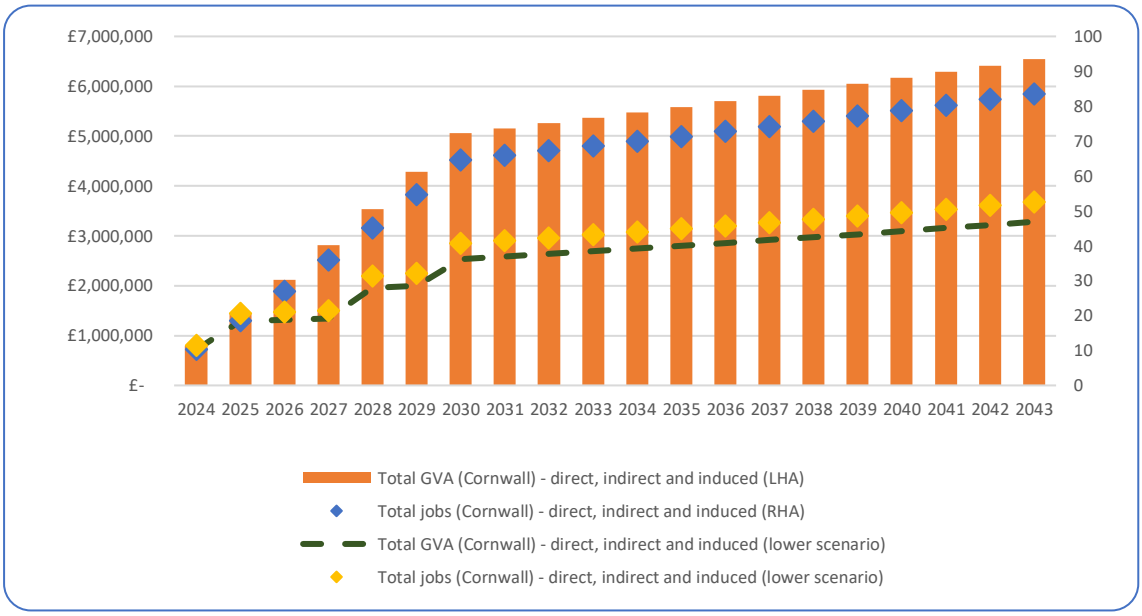
Total direct and indirect impact – additional revenue and supply chain expenditure – additional cruise volumes

As defined in the approach within the baseline section, it is also important to recognise that there will be further 'wage effects' (induced) from those direct and indirect jobs that have been estimated to be supported through the additional cruise-related revenues. By adopting the same 'induced multiplier' we can estimate the total additional impact that could be delivered through the additional cruise related activity at A&P Falmouth/FDEC. Again, these should be considered in addition to the passenger-related spend noted previously.

This is set out in the below chart – again showing the job and GVA impact within the Cornwall economy only – therefore the localise impact. This encapsulates the direct, indirect and induced impact. This shows that within 10-15 years – if the additional cruise-passenger projections are met – then this could support an additional c90 jobs and c£6mn GVA in the wider Cornwall economy. This is in addition to the additional activity supported through the onshore spend by the passengers themselves.

This final chart also shows the estimated total impact if based on a lower projected growth in passenger volumes (120,000 passengers p.a. at steady state).

Chart 23: Total (direct, indirect and induced) GVA and jobs supported (Cornwall) – additional cruise-related revenues and supply chain expenditure



Floating offshore wind

As noted in the introduction to this report, the focus on estimating the potential economic impact of the proposed redevelopment at Falmouth with regards to FLOW focuses primarily on the role of the overall Falmouth facilities rather than the impact on A&P Falmouth/FDEC operations specifically. This has been influenced by two factors:

i. Having suitable and well-located port facilities are highly important to many FLOW activities - including assembly, installation and O&M. It is important for launches to be able to take place within a reasonable proximity to the site. For example, final assembly to attach the turbine and tower to the substructure will likely be undertaken by ports in the region. Therefore, having appropriate port facilities will be highly important for capturing a greater share of the projected spend associated with Celtic Sea installation over the coming years.
ii. The FLOW supply chain requirements will be met by a myriad of providers covering all aspects of supply chain activity. This includes potential opportunities for A&P Falmouth/FDEC itself. However, it will also encapsulate other 3rd party providers who will need to use port facilities. Therefore, estimating the proportion of the relevant sub-markets that could be captured specifically by A&P Falmouth/FDEC is uncertain at this stage.

Consequently, it is less problematic to identify the potential scale of the relevant FLOW sub-markets to the local economy associated with the wider facility, than identifying the potential impact that could be associated with A&P Falmouth/FDEC specifically capturing a share of those markets. This corresponds to the approach adopted by ORE Catapult report cited earlier – which focused on the role of the Falmouth facilities in those sub-markets.

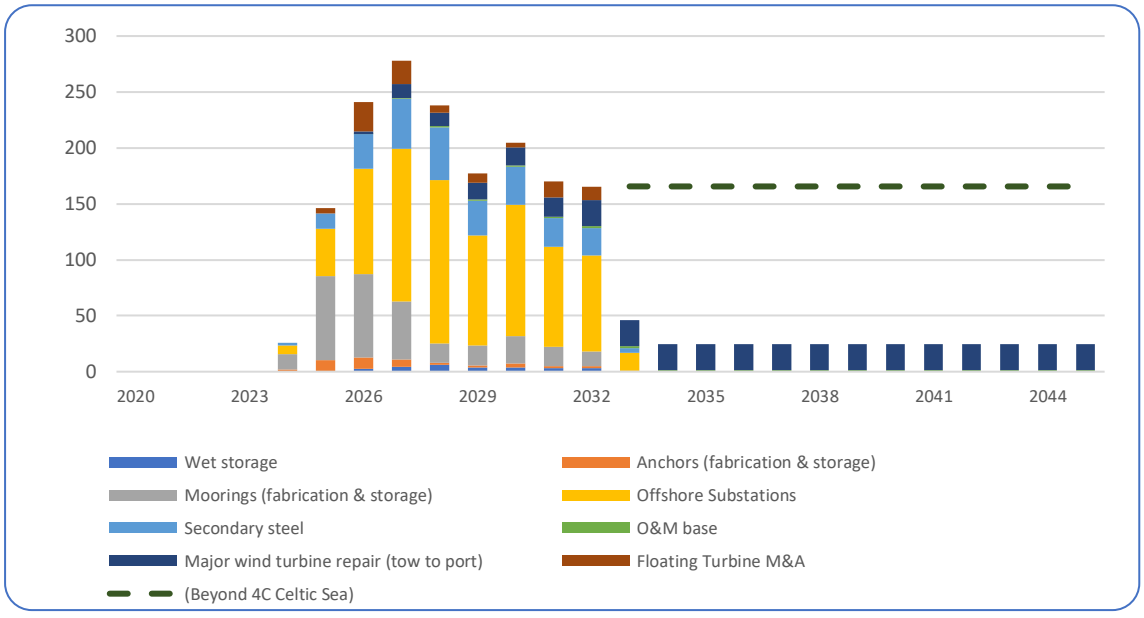
Revisiting the analysis undertaken by ORE Catapult, it is possible to build an aggregated picture of the potential scale of the planned Celtic Sea FLOW developments – with a focus on those sub-markets which have been identified as A&P Falmouth playing a key role. However, it is important to reiterate that the ORE Catapult analysis was focused on those proposed Celtic Sea projects captured by 4C Offshore. It does not fully encapsulate the whole opportunity presented by the 4GW intentions across the whole of the Celtic Sea.

This is set out below in Chart 24 – effectively aggregating Charts 3-10. It shows that spend could reach c£280mn by 2027 – reiterating the point that this does not include all activity, only those sub-markets where it has been identified that A&P Falmouth (either directly or via 3rd party use of port facilities) could play a role.

Over the 25-year period it is estimated that these sub-markets where it has been defined 'possible' or 'feasible' that Falmouth will play a key role could be worth c£2bn. It is important to note that this does not represent the full value of all the potential market opportunities that may arise from the Celtic Sea development. For example, it has been estimated that the market opportunities that may arise from Twin Hub (Wave Hub), EREBUS and the 500MW installation could equate to £3.2bn alone. If the full 4GW intentions are met, then obviously the full extent of market opportunities will be greater still.

We have represented this in the following charts with a basic assumption that the level of spend (and subsequent economic benefits) would be broadly maintained at the levels as shown in 2031-32 – but they would be extended out to the period of 2045. We recognise that the time profile will differ from that represented. However, the line in the below charts is meant to be indicative, and to ensure that the full extent of opportunity is not understated if only focusing on those projects reflected in the ORE Catapult analysis.

Chart 24 – Projected spend requirements on key UK FLOW sub-markets (2020-2045)



Source: ORE Catapult

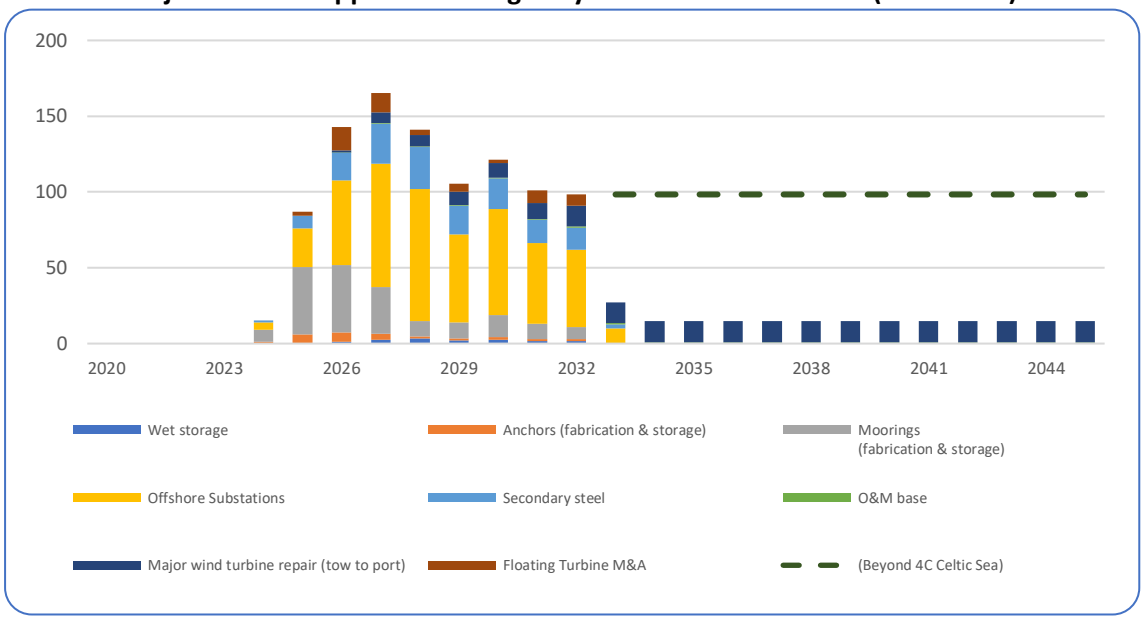
The ORE Catapult analysis on behalf of A&P Falmouth did not consider the impact in terms of GVA and/or employment. For the purposes of this analysis we have accessed other FLOW-related work to

develop assumptions around the equivalent GVA and jobs impact. Primarily we accessed assumptions that underpinned a bid that was developed for UKRI's Strength in Places programme – focusing on developing regional capability to exploit the opportunities arising from Celtic Sea[40]. This work looked at the potential economic benefits that would flow from the proposed Twin Hub (Wave Hub), EREBUS and a 500MW projects in the Celtic Sea.

This effectively assumes that for every £1 of expenditure over the project lifecycle, would equate to c59% GVA. It also assumes that c£93,600 of GVA would support one job in a given year[41]. In effect, this assumes that c£162,000 of FLOW related expenditure will directly support one job. This does not include further indirect and/or induced impacts. This allows us to estimate the potential GVA and jobs impacted if Falmouth were able to play an integral role in ensuring that this activity is sustained within the regional economy over the stated time period. Again, it is important to reiterate that having a port with sufficient capacity will be key to unlocking much of these potential economic benefits.

Charts 25 and 26 show the same profile as that shown in the expenditure profile (Chart 23). This reflects that we have adopted a fixed relationship between these measures i.e. we have not assumed that they change over time. As shown in Chart 25, the GVA impact of those sub-markets most closely dependent on having sufficient port facilities (with A&P Falmouth identified as playing a key role) could equate to c£165m GVA in 2027. Over the period 2020-2045 this could be equivalent to c£1.2bn. Again, to reiterate, having the right port infrastructure in place will be fundamental in unlocking the local content of this projected benefit.

Chart 25: Projected GVA supported through key UK FLOW sub-markets (2020-2045)



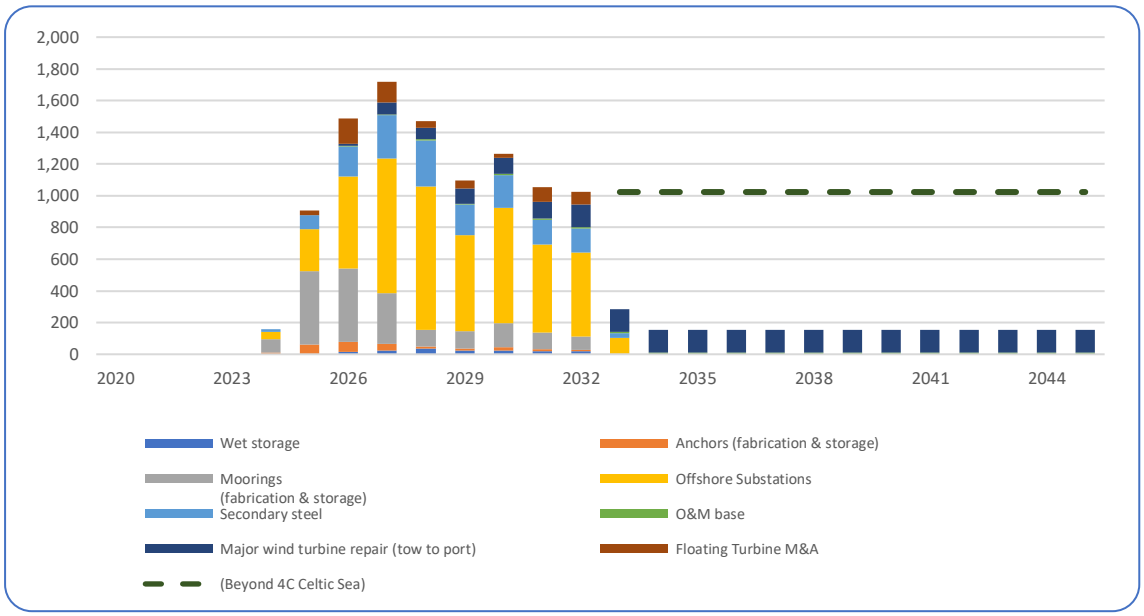
In terms of employment, these sub-markets could support c1,700 jobs at the projected peak of activity in 2027. Over the 25-year period, the total number of employment years supported could

[40] 'Summary Economic Analysis of South West FLOW Accelerator' – Celtic Sea Power

[41] It's important to note that the calculation of GVA is expressed in Present Value terms i.e. discounted over time

equate to c12,300. Again, the proportion of these which will be located in the local economy will be heavily influenced by port infrastructure.

Chart 26 – Projected jobs supported through key UK FLOW sub-markets (2020-2045)



Source: ORE Catapult

It is also useful to reiterate these estimates do not represent the total economic opportunity presented by the Celtic Sea. Instead, they specifically relate to the economic opportunity that may arise from those sub-markets most closely associated with having appropriate local (within an appropriate radius of the proposed FLOW sites) port infrastructure in place. It is also important to note that these estimates do not include the subsequent indirect and/or induced impacts. It is not clear whether the total expenditure figures provided as part of the ORE catapult analysis would already reflect some supply chain (indirect) impacts. Therefore, it is appropriate to guard against any double counting.

It is also useful to highlight that within this analysis, we only focus on the UK (Celtic Sea) market opportunities. There are obviously wider export opportunities (principally northern Europe) which will develop over the next 20-25 years, and which Falmouth may play an increasing role. It is felt to focus specifically on the UK market in this analysis – given the pathway that has now been set out relating to the Celtic Sea. However, the potential export opportunities are also potentially significant.

Freight cargo

As part of the proposed development at Falmouth Docks there will be additional capacity to accommodate additional cargo traffic. As shown in Section 4 the volume of freight traffic has fallen over the last 10-20 years. The feedback we have received is that this has partly been associated with the constrained capacity at Falmouth to accommodate cargo traffic alongside other A&P/FDEC activities which have required the available berths.

Section 4 also illustrates that Falmouth captures a very small share of the UK freight market, with volumes being dominated by the larger ports. The proposed development would provide better facilities for cargo freight traffic, allowing larger vessels to dock.

A&P projections are that there is the potential to increase the volume of freight traffic, although those projections are still capped at relatively low levels. Currently c12 freight vessels are accommodated at Falmouth per year and this is modelled to increase to 24 vessel movements per year by 2027. Therefore, the assessment of the economic impact is based on the additional vessel movements and associated revenue.

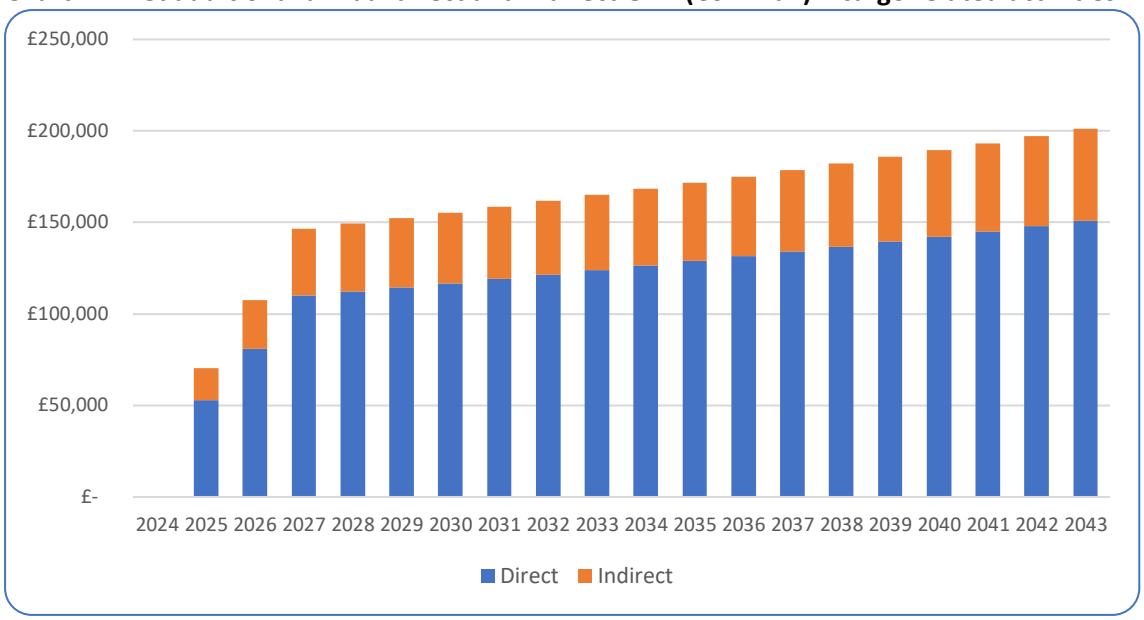
Again, there will also be potential benefits delivered through the additional revenue for A&P Falmouth/FDEC and the associated supply chain spend within the local Cornwall economy to support that additional cargo activity. However, it is important to recognise that given the projections are for relatively muted growth (vessel and revenue) in cargo, the local supply chain impacts are also relatively small.

Based on a similar approach of analysis of the baseline, we have modelled an additional GVA impact of c£50,000 per annum within the Cornwall economy. This would support 1 additional indirect job at market maturity (2027 onwards). It would support c2.5 jobs in the wider UK economy.

In terms of direct job creation, based on the cargo-related revenue projections we estimate that this could support c2 additional jobs at Falmouth. Therefore - based on the current revenue projections – the employment impact of the projected cargo growth are small when compared to the potential benefits of FLOW and cruise.

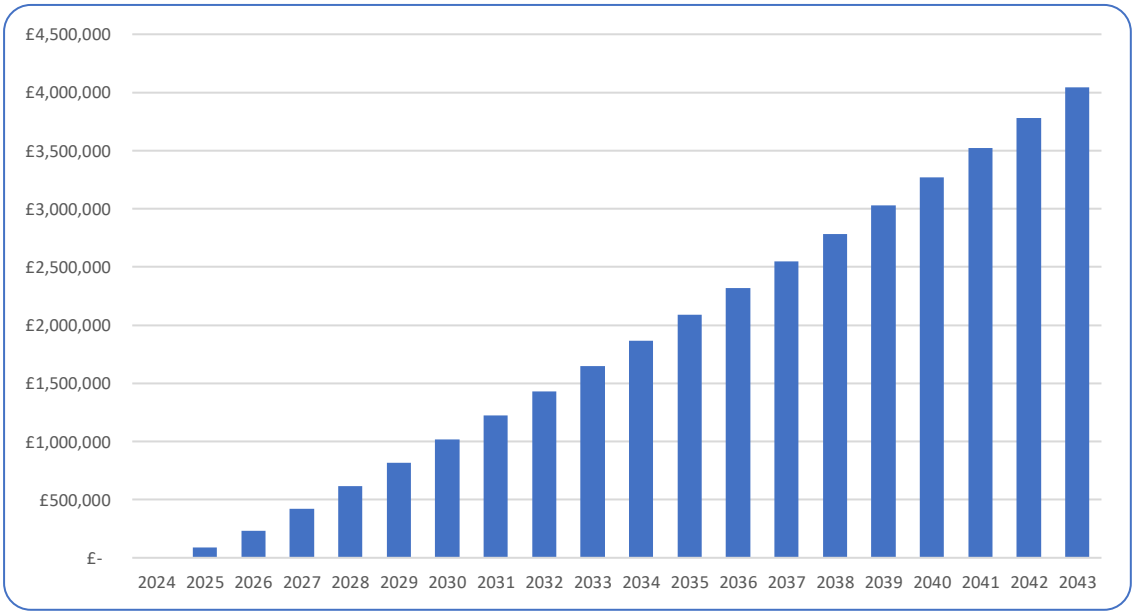
Chart 27 shows the scale of direct and indirect GVA that could be created through the additional cargo-related revenues for A&P Falmouth/FDEC based on the cargo projections. These have taken into account the baseline cargo volume and are based on the additional revenue projections.

Chart 27: Net additional annual direct and indirect GVA (Cornwall) – cargo related activities



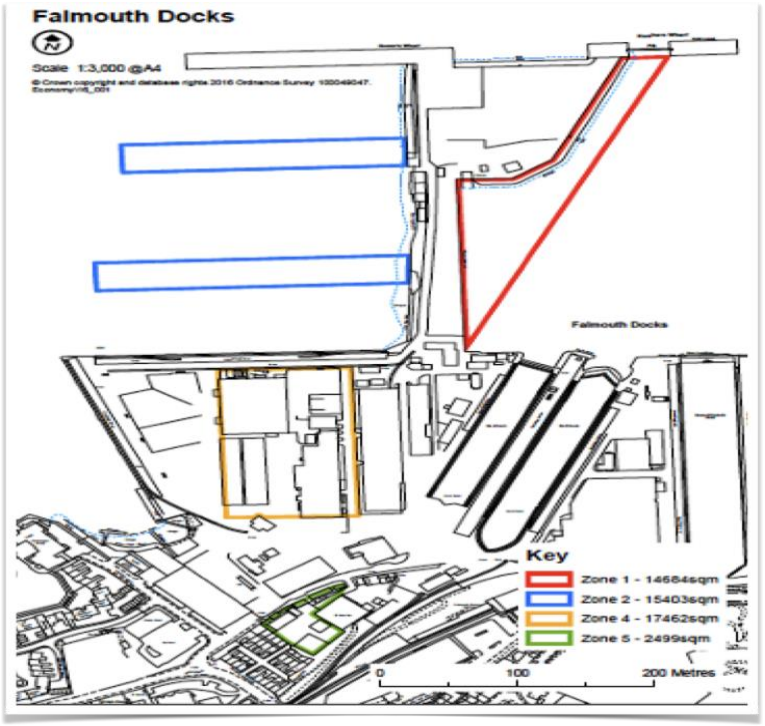
Taking into account further induced impacts associated with the direct and indirect GVA, the benefits to the Cornwall economic build steadily over time, reaching £4mn by 2043. These benefits have not been discounted.

Chart 28: Net additional cumulative GVA (Cornwall) – cargo related activities



Enterprise Zone

As previously stated, areas within Falmouth Docks form part of the Cornwall Marine Enterprise Zone. The Enterprise Zone initiative allows the managing authority (in this case Cornwall Council) to retain business rates for the eligible area, with the intention of reinvesting in other local economic development initiatives. Given the proposed redevelopment at Falmouth could increase the eligible area, there is the potential for additional benefits in the form of retained business rates. Again, it is important to reiterate that the inclusion of this wider area has not been agreed at this stage. Therefore, this exercise should purely be viewed as indicative.



The current position in terms of the Marine Enterprise Zone at Falmouth is that it covers 19,961 m^2 (shown as zones 4 and 5 in the above image). The proposed new land area that could be created through the proposed redevelopment in the current Enterprise Zone could equate to 30,087 m^2 (shown as zones 1 and 2). This could mean that the total new area within the Enterprise Zone could equate to 50,048 m^2 (zones 1 -5). In addition to this further building enhancements in zones 4 and 5 could equate to approximately 10,000 m^2.

Therefore business rates growth assuming 40,087m^2 (30,087m^2 + 10,000m^2) based on a blended Rateable Value (RV) of £20 per m^2[42] could equate to £801,740. At 0.512 multiplier (2021 large business multiplier) equates to rates growth of circa £410,491 p.a.

In addition to this if additional land were created that is not in the current Enterprise Zone area then rates growth could be higher. For example, if there were infill incorporating Duchy, Kings and Empire

[42] This RV in the growth areas considers a blended rate between land and building enhancements and is after a deduction of current rates paid

wharfs (estimated here to be 24,281m^2) then the total area could equate to c74,329m^2 within a revised Enterprise Zone. Again, if the same assumptions are used as above (blended rateable value of 20m2 and a large business multiplier of 0.512) this could equate to rates growth of c£659,128 per annum.

As an illustration, over a 15-year period business rates growth within the current Enterprise Zone area could equate to c£6.16mn (non-discounted) or based on a revised position growth of c£9.89mn. To reiterate, this should be viewed as an illustrative exercise. The above approach does not take account of the proposed redevelopment being phased, and hence rates growth would reflect that phased development.

Sensitivity analysis

The estimates contained in Section 5 are subject to some elements of uncertainty at this stage of the proposed plan to redevelop the facilities at Falmouth. This has been noted in the analysis. This may encapsulate the projected growth in volumes associated with each of the three primary growth opportunities, as well as some of the implicit uncertainty in some of the assumptions used.

Therefore it is appropriate to undertake some sensitivity analysis on the estimates to illustrate the impact on those projected economic benefits. This focuses on the three growth opportunities only. The sensitivity assumptions used also only focus on the 'downside'. That is, we have reduced key inputs/assumptions to understand the impact on the estimated economic benefits. Therefore we produce a 'central' and 'low' scenario only.

The sensitivity assumptions used for each of the three growth opportunities are set out below.

i. Cruise – a reduction in projected cruise passengers by 40% i.e. reaching a peak of 120,000[43] annual passengers rather than 200,000 passengers
ii. FLOW – a reduction of projected FLOW related spend in the key sub-markets by 30%
iii. Cargo – a reduction in projected cargo volumes by 30%

The results of this focused sensitivity analysis are set out below. The tables are represented in different ways due to the different channels through which the wider economic benefits are generated.

Cruise – sensitivity analysis				
	Central Scenario (200,000 passengers)		**Low Scenario (120,000 passengers)**	
	Net additional GVA per annum – steady state	**Net additional jobs supported per annum – steady state**	**Net additional GVA – steady state per annum**	**Net additional jobs supported – steady state per annum**
Passenger and crew related spend	£6.5m	278 jobs	£3.6m	156 jobs
Supply chain impact	£5.5m	90 jobs	£2.5m	53 jobs
TOTAL				

[43] This has been informed by discussion with A&P Falmouth

FLOW – sensitivity analysis				
	Central Scenario (projected spend in key FLOW sub-markets)		Low Scenario (-30% in projected spend in key FLOW sub-markets)	
	GVA equivalent – per annum	Jobs supported – peak year	GVA equivalent – per annum	Jobs supported – peak year
FLOW sub-markets – projected spend where Falmouth been identified as playing key role	£45.4m	2,071	£31.8m	1,449 jobs

Cargo – sensitivity analysis				
	Central Scenario (projected supply chain impact through additional FDEC revenues)		Low Scenario (projected supply chain impact through additional FDEC revenues)	
	Net additional GVA per annum – steady state	Net additional jobs supported per annum – steady state	Net additional GVA – steady state per annum	Net additional jobs supported – steady state per annum
FLOW sub-markets – projected spend where Falmouth been identified as playing key role	£261k	4.5	£105k[44]	1.7

[44] The downward adjustment in the net additional impact is greater than *0.7 because it is set against the baseline which is not adjusted. The combination of which makes the sensitivity adjustment greater.

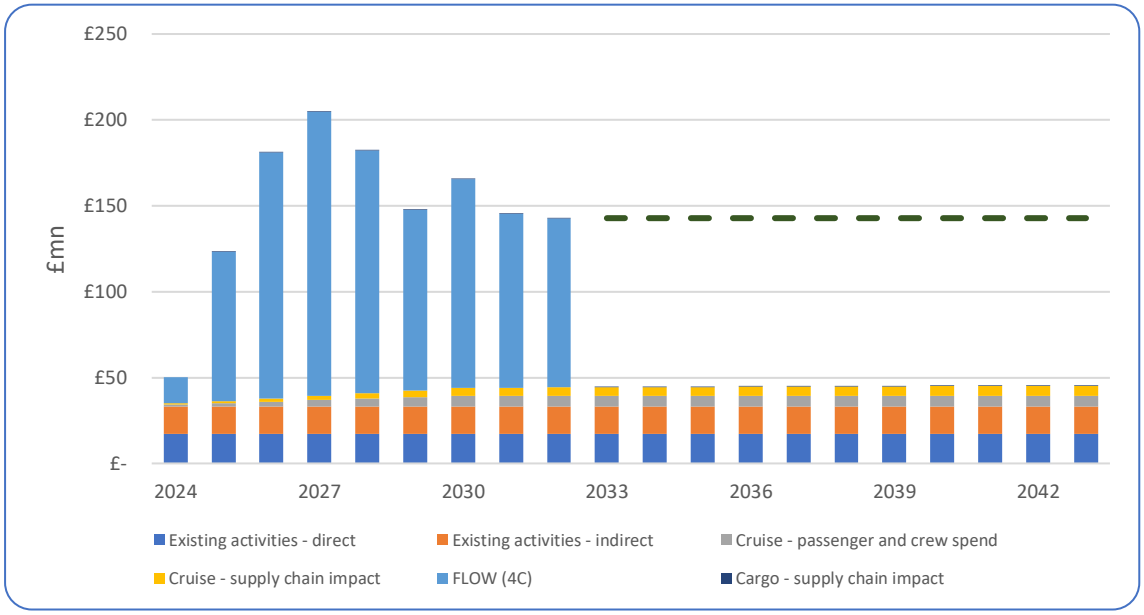
Overall impact – overview of estimates

The overall impact of the potential economic benefits being supported through the proposed redevelopment at Falmouth are brought together in this final section. This is shown in the below chart which summarises the potential impact of the combined activities.

It is to note some key factors when interpreting this chart:

- Chart 29 shows the potential impact in terms of Gross Value Added.
- To reiterate the point made several times through this report. The impact across each of the growth opportunities should not be directly compared. They each have different mechanisms/channels through on the estimates have been based. The chart shows that the largest potential impact could be related to those FLOW related activities. However, this reflects the potential scale of those FLOW sub-markets which Falmouth has been identified as potentially playing a key role. This stops short of stating that Falmouth will realise all of these potential benefits (although having a local port with sufficient capacity and capability is key to unlocking these for local benefits).
- The estimates related to cruise reflect both the potential impact of additional passenger and crew spend, as well as the additional supply chain impact. For cargo, it primarily focuses on the additional supply chain impact.
- The chart also includes the direct and indirect impact of the current A&P Falmouth/FDEC activities – as estimated in Section 3. Given the proposed redevelopment will help safeguard those activities it is appropriate to reflect.
- The benefits are shown as non-discounted.
- Again, the dashed line is included to illustrate the principle that the FLOW estimates have been based on those projects contained within the ORE catapult analysis on behalf of A&P Falmouth. This in turn focused on those Celtic Sea projects that have been captured in 4C Offshore, and not the whole 4GW opportunity. The dashed line represents the continuation of a similar scale of activity, although recognising the time profile over the longer-term is uncertain at this stage.

Chart 29: Estimated GVA impact of proposed Falmouth redevelopment (2024-2043) (£mn)



Appendix 1 – Description of FLOW related activities

Feasible	Anchor fabrication; Anchor and mooring line storage; Secondary steel fabrication; O&M base; SOV/CTV repair and Major FOW O&M
Possible	WTG marshalling and assembly; Offshore substation fabrication; CTV Builds
Unlikely	WTG fabrication; Bottom-fixed foundation fabrication; Floating substructure assembly and fabrication; SOVs vessel fabrication

Anchor fabrication: the fabrication of anchors used to secure mooring lines and substructures to the seabed. They are typically made from steel or concrete and can come in a number of different designs based on the seabed conditions with drag-embedded and suction anchors being the most common.

Anchor and mooring line storage: Mooring chains and anchors are stored on a quayside, until required. Except for steel plates covering the quayside, mooring chains do not need specialised storage, but can damage quay surfaces, so may require repairs to be done before that quay area can be used for other purposes. Whether mooring chain storage happens in parallel with wind turbine component lay down depends on the project developer. It is possible to install mooring systems at sea well in advance of turbine deployment.

Secondary steel fabrication: Ranging from small to large steel components required for the offshore wind farm.

O&M base: The O&M base is a port from which O&M activities for a set wind farm are carried out. The port would need to be close to the wind farm as well as having a suitable quayside birth and covered space for maintenance equipment and spares.

SOV/CTV repair: SOVs and CTVs are brought to port and or a dry dock where maintenance and repair activities are carried out.

Major FOW WTG repair: Current plans for major FOW repair if that was to be a gearbox or blade replacement is to tow substructures back to a port. This would allow for the repair to be carried out at the quayside by crane with the replacement items being stored at the port.

Marshalling and assembly: marshalling ports with large waterside sites with the acreage and weight-carrying capacity necessary to assemble, house and deploy wind turbines to offshore sites.

Offshore substation fabrication: Modular build of an offshore substation with all the associated equipment. These structures are in the region of 30*20*20 m but can vary widely depending on the size of wind farm, water depth it operates in and technology used (HVAC vs HVDC). This structure is required in order to bring all the energy produced by the wind farm and is converted to a high voltage transmission before being exported to land. They usually have a helideck as well as living and sleeping quarters but are not permanently manned assets.

CTV build: Building of Crew Transfer Vessels (CTVs), smaller of the two maintenance vessels, able to support wind farms closer to the shore. CTVs are in the 25 – 30 m length, able to transfer up to 24 technicians to and from a wind farm in one day with speeds of around 40 km/hr.