Wind Farm Service Vessels Report Sample
An Analysis of Supply and Demand
Table of Contents

1 Introduction 6
2 Operations and Maintenance Strategies 7
   2.1 Crew Transfer Vessels (CTVs) 8
   2.2 Helicopters 8
   2.3 Platforms and Accommodation platforms 10
   2.4 Service Operations Vessels (SOVs) 10
   2.5 Oil and Gas Vessels 11
   2.6 New builds targeting offshore wind 11
   2.7 Conversions 13
   2.8 Current SOV Supply 13
   2.9 Strategy Choices to Date 15
3 CTV Operator Focus 17
   3.1 Windcat Workboats 17
   3.2 Turbine Transfers 18
   3.3 Northern Offshore Services 19
   3.4 CWind 19
   3.5 A2SEA 20
   3.6 Tidal Transit 20
4 CTV Operator Fleet Profiles 22
5 CTV Pipeline and Churn 24
6 Review of CTV Demand 2013-2015 25
   6.1 Seasonality 25
   6.2 Geography 26
   6.3 Project Status: Construction and Operations 27
7 CTV Operator Analysis 28
   7.1 Total Demand 2013-2015 28
   7.2 The Top 10 Operators 28
   7.3 Analysis of Construction v Operations and Maintenance 31
8 CTV Utilisation 33
9 Vessel Regulations and Classed Vessels 34
   9.1 Passenger Ships 34
   9.2 IMO Special Purpose Ships (SPS) Code 34
   9.3 IMO High-Speed Craft (HSC) Code 34
   9.4 Solutions to the absence of a suitable code - IMO, UK and Germany 34
10 More than 12 passengers? 35
Analysing Typical Vessel Contract Lengths

Current Status of the European Market

11.1 Installed Capacity: Past and Future

Pipeline: United Kingdom

13.1 Latest Development: DONG Commit to Innovative Record-Size Project (Q1 2016)

Pipeline: Germany

14.1 Latest Development: Proposed Tendering System (Q3 2015)

Pipeline: Belgium

15.1 Latest Development: Next Project Wave Gears Up for Belgium (Q4 2015)

Pipeline: France

16.1 Latest Development: ADEME Invite Developers to Floating Tender (Q3 2015)

Pipeline: Netherlands

17.1 Latest Development: Borssele Almost Ready to Tender (Q4 2015)

Pipeline: Denmark

18.1 Latest Development: Danish Energy Agency Award 50MW Pilot Winner (Q1 2016)

Vessel Demand Assumptions

19.1 Determining the Strategy

19.2 CTV Demand during Construction

19.3 CTV Demand during Operations

19.4 Decommissioning Activities

Forecasting Demand: Results

20.1 Installed Capacity and Turbines

20.2 CTV Demand 2016-2025

20.3 SOV Demand 2016-2025

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Table of Figures

<table>
<thead>
<tr>
<th>Figure</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>The theoretical optimum level of investment in operations and maintenance activities</td>
<td>7</td>
</tr>
<tr>
<td>2</td>
<td>OPEX for a number of UK offshore wind projects</td>
<td>7</td>
</tr>
<tr>
<td>3</td>
<td>Effective working time increases gained through use of an SOV over a CTV</td>
<td>11</td>
</tr>
<tr>
<td>4</td>
<td>Newbuild ESVAGT FARADAY</td>
<td>12</td>
</tr>
<tr>
<td>5</td>
<td>Seismic conversion WIND INNOVATION</td>
<td>12</td>
</tr>
<tr>
<td>6</td>
<td>Newbuild Acta Orion</td>
<td>12</td>
</tr>
<tr>
<td>7</td>
<td>O&amp;G conversion OCC Cheetah</td>
<td>12</td>
</tr>
<tr>
<td>8</td>
<td>Cumulative number of SOVs targeting offshore wind (new build and O&amp;G/conversions) during the period 2010-2017</td>
<td>14</td>
</tr>
<tr>
<td>9</td>
<td>Comparison of different crew transfer methods</td>
<td>16</td>
</tr>
<tr>
<td>10</td>
<td>Personnel transfer strategy during the operations phase for all significant European projects</td>
<td>16</td>
</tr>
<tr>
<td>11</td>
<td>Examples of operations bases which coordinate multiple projects</td>
<td>17</td>
</tr>
<tr>
<td>12</td>
<td>Windcat's Windgrip system improves turbine accessibility</td>
<td>18</td>
</tr>
<tr>
<td>13</td>
<td>Turbine Transfer's Porth Dafarch sporting a novel ladder solution at Westermeerwind</td>
<td>18</td>
</tr>
<tr>
<td>14</td>
<td>M/V Developer, one of four 'D-Class' vessels</td>
<td>19</td>
</tr>
<tr>
<td>15</td>
<td>Surface Effect Ship, Umoe Firmus</td>
<td>21</td>
</tr>
<tr>
<td>16</td>
<td>LOA by year of CTV market entry, with trend line</td>
<td>22</td>
</tr>
<tr>
<td>17</td>
<td>Fleet profiles for the top 10 operators: differences in number of vessels, length composition and age of fleet</td>
<td>23</td>
</tr>
<tr>
<td>18</td>
<td>CTV additions and removals by year and hull type (left), CTV additions and removals by year and LOA (m)</td>
<td>24</td>
</tr>
<tr>
<td>19</td>
<td>Age of CTVs by hull type</td>
<td>24</td>
</tr>
<tr>
<td>20</td>
<td>Difference in the number of CTV days between the summer peak and winter trough 2013-2015</td>
<td>25</td>
</tr>
<tr>
<td>21</td>
<td>CTV demand expressed as CTV days per month for the period 2013-2015 by country and change in demand</td>
<td>25</td>
</tr>
<tr>
<td>22</td>
<td>Analysis of the shift in the number of CTV days as projects near the end of their construction</td>
<td>26</td>
</tr>
<tr>
<td>23</td>
<td>Number of CTVs used during construction, UK and Germany</td>
<td>27</td>
</tr>
<tr>
<td>24</td>
<td>Number of CTVs used during operations, UK and Germany</td>
<td>27</td>
</tr>
<tr>
<td>25</td>
<td>Turbines per CTV during construction and operations, UK v Germany</td>
<td>27</td>
</tr>
<tr>
<td>26</td>
<td>Turbines per CTV during operations for UK, Germany and Denmark</td>
<td>27</td>
</tr>
<tr>
<td>27</td>
<td>Vessel days by leading operator and vessel days for all operators (second vertical axis)</td>
<td>28</td>
</tr>
<tr>
<td>28</td>
<td>Market share of vessel days by operator, 2015</td>
<td>29</td>
</tr>
<tr>
<td>29</td>
<td>Change in market share 2014-2015 for top 15 vessel operators</td>
<td>29</td>
</tr>
<tr>
<td>30</td>
<td>Monthly market share for the top five operators, 2013-2015</td>
<td>30</td>
</tr>
<tr>
<td>31</td>
<td>CTV days in 2015 by top-10 operator and country</td>
<td>31</td>
</tr>
<tr>
<td>32</td>
<td>CTV days in 2015 by LOA and country</td>
<td>31</td>
</tr>
<tr>
<td>33</td>
<td>CTV days by LOA and operator</td>
<td>31</td>
</tr>
</tbody>
</table>
1 Introduction

Welcome to the 2016 issue of 4C Offshore’s Wind Farm Service Vessel (WFSV) market report for offshore wind. At the end of 2015 we solicited feedback as to what our customers would like to see in the report and we are pleased to have been able to meet many of these requirements. In particular we have taken a more detailed look at SOVs and helicopters; reviewed all current and future O&M strategies; provided a round-up of some leading CTV operators; scrutinised the CTVs more closely to ensure any that have been inactive for over two years are excluded; provided more insight into the new build pipeline; analysed more deeply the trends in CTV demand across countries, project status and vessel lengths; provided some indication of contract lengths being experienced and summarised the current use of vessels carrying more than 12 persons, including applicable regulations.

Concerning the projected demand for WFSVs, we have considered the influence of decommissioning; refreshed and improved the robustness of the demand models based on knowledge gained from 2015 vessel contract data; increased the transparency of our methodology; and updated the project pipelines and contextual narrative. Finally, we have made significant efforts to improve the presentation and aesthetics in this edition to provide you with an easier reading experience.

2015 sees the top CTV operators retain their placings, even gaining market share. Further down the table there are some changes – 2015 has seen a also decreased towards the end of 2015 but has seen significant increase in demand for CTVs during O&M.

An analysis of where operators win work shows that most fleets have a split between construction and operations related activities, reflecting the distribution of days available in 2015. However, we see three operators who have had success in bucking the trend, and in at least one case this is reflected in their fleet LOA profile.

2016 sees the UK introduce a Code for carrying more than 12 passengers and the report takes a look at what work is typically performed by these ‘higher-pax’ CTV vessels and how many of them are currently in the build pipeline.

Offshore wind is currently in an age of relative certainty compared to only three years ago. 2015 saw Europe’s most successful period for full commissioning of new projects, and this impressive rate of installation and commissioning is expected to continue until primarily due to government investment in subsidies, but also due to developer and supply chain commitments which have brought about recent and rapid reductions in the cost of offshore wind energy. By the end of 2025 we estimate a total of of installed European capacity, with annual additions. Centrally planned Germany is more predictable – we estimate around per annum. The Netherlands will add in some years, as the tender programme is built out. France will contribute significantly from 2018.

Our analysis expects construction demand for CTVs to be particularly high during 2016 as projects in the UK race to meet the Renewables Obligation deadlines. By 2025 almost annually over the period whereas O&M demand will at a similar rate. By 2020 of CTV days will be accredited to O&M. Decommissioning activities may add demand for a further . Numerically we see sufficient supply of CTVs until , although depending on detailed timings of demand and vessel suitability, supply may be constrained earlier.

By 2025, analysis suggests that will be required to fulfill long-term O&M charters handed out by developers and turbine manufacturers. There are currently also targeting the offshore wind market, a mixture of dedicated new builds and conversions. Over the next years, it is expected that, based on a preference for new build SOVs for long term O&M, an additional new builds specifically designed to a project’s characteristics will be required.
4 CTV Pipeline and Churn

While vessel numbers are still increasing, the rate at which crewboats are entering the market has been slowing continually since 2012 (Figure 2) with additions expected in 2016-17 having declined. Despite the introduction of new SWATH and trimaran hull designs, the aluminium catamaran is by far the preferred choice for vessel operators, although both CWind, Offshore Turbine Services and Tidal Transit have a GRP oriented strategy using vessels produced from the yards of CTruk, Mercurio Group and Umoe Mandal. The trend for longer vessels is evident also in Figure 3 where the proportion of 24m+ vessels in the annual cohort has increased year on year and during 2016 only one vessel below 20m is expected.

Due to the ability of operators to swap vessels in an out of adjacent offshore markets in response to available opportunities, it is not always clear exactly how many vessels have been withdrawn. For the purposes of this analysis a vessel is considered withdrawn if it has been inactive for two years. The shorter, monohull vessels comprise a significant part of the withdrawals, along with aluminium catamarans. Removals for 2015 will likely be higher than shown, and possibly high during 2016 given the recent drop in demand and the number of vessels not on charter at the start of the year. See later sections of this report for a detailed analysis of demand moving through 2016 and beyond. At the end of 2015 a total of vessels were operating in the European offshore wind personnel transfer vessel market with a further vessels scheduled for delivery during 2016 (Figure 4).
6.2 Geography

Since January 2013 growth has been driven by both the UK and Germany until mid-2015, when UK demand declined rapidly as construction activity tailed off. This demand was then partly offset by growth driven from construction activity in the Netherlands at the Westermeerwind and Gemini projects. Growth in Germany has remained positive over the three year period despite the 2015 winter slowdown.

The UK’s dramatic drop in CTV requirements is in large part due to four projects ( ) all finishing construction during mid to end 2015 and entering commercial operations (Figure 5). CTV requirements are generally lower during the operations phase than when a windfarm is being built, when multiple construction contractors can be on site requiring crew transfer services in addition to the commissioning activities of the turbine suppliers. At the end of 2015 there was no offshore construction activity in the UK, although this did not last long - E.ON’s Rampion kicked off foundation installation in January 2016 following completion of site preparation during Q4 2015, and further projects will be entering construction during 2016.

Figure 5 shows there was a net decrease in demand of CTV days between January and December 2015 on UK projects which translated into less CTVs being required. CTVs were on employed at the start of 2015 compared with by the end - a decrease of %.

On Gwynt-Y-Môr turbine commissioning, array cable terminations and export cable remedial burial were underway during the first half of 2015 with foundation and turbine installation having completed during 2014. The project was officially inaugurated on June 18th. E.ON’s Humber Gateway project was also fully commissioned in June following completion of turbine and cable installation plus substation commissioning during Q1-Q2. Following start of commercial operations further work continued including filter bag protection of array cable ends and replacement of a gearbox on one of the MHI Vestas V-112 turbines. Turbine installation, array cable intervention (repair and reburial) and commissioning activities were underway on Westermost Rough in early 2015 until full commissioning at the end of May. On all three of these projects CTV requirements started to drop in advance of full commissioning as construction activity decreased over a period of two to four months beforehand and continued to decline, at a lower rate for the following five months.

In Germany, a construction slow-down is also evident (Figure 6), with capacity under build and approaching commercial operations decreasing from almost to at the end of 2015. Sandbank and Gode Wind are the two projects currently under way and will continue to provide construction demand during 2016, although the latter is expected to finish in Q3. Meanwhile, other
projects are gearing up to enter construction during Q1-Q3 2016 in Germany including Wikinger, Nordergründe, Veja Mate and Merkur Offshore.

**Taking a break**
Number of CTVs used during construction, UK and Germany

**Germany online**
Total number of CTVs used during operations, UK and Germany

6.3 Project Status: Construction and Operations

The number of turbines per CTV during the construction phase can be seen to be higher in Germany than the UK (Figure 8). This reduced requirement for CTVs (a CTV can service more of the park) is a consequence of alternative transfer strategies being employed on the far shore projects including accommodation vessels and Service Operations Vessels (SOVs) which can accommodate over 40 personnel for several weeks on end in the field. These floating bases which are much closer to the wind farm than the port reduce the overall transit distance and therefore time spent transferring personnel, in turn reducing the total number of CTVs required. The use of helicopters to provide transfers during construction has also been employed (for example A2SEA had a helicopter pad installed on the SEA INSTALLER for personnel transfer on the Borkum Riffgrund project) further reducing the CTV requirement in Germany compared to the UK.

**Construction is CTV intensive**
Turbines per CTV during construction and operations in UK and Germany

**Country variation in CTV intensity**
Turbines per CTV during operations, UK, Denmark and Germany

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Figure 6. Number of CTVs used during construction, UK and Germany

Figure 7. Number of CTVs used during operations, UK and Germany

Figure 8. Turbines per CTV during construction and operations, UK v Germany

Figure 9. Turbines per CTV during operations for UK, Germany and Denmark