Challenges and opportunities for oil and gas shipowners in transitioning to renewables

Renewable energy production has been expanding across the globe for decades, and with this expansion comes a rapid growth in the shipping fleet required to build, operate and service the infrastructure. For Members who currently work in the oil and gas industry, there are clear parallels with renewables work. However, whilst redeploying assets across sectors, or acquiring new assets and technology can present opportunities in the current market, both scenarios also present unique challenges.

In 2010, less than 20% of global power generation came from renewables, whereas in 2021 the figure had risen to 28.7%. Events of the last year have further highlighted the benefits to countries in producing local, clean energy, as opposed to relying on the procurement of fossil fuels. International climate pledges to reduce carbon emissions to net zero by 2050 will require renewables' share of power to reach 90%. The IEA advise this will require annual capacity additions in the wind and solar industries that are five?times higher than that seen by 2021.

Aligned with this, industry commentators predict demand for specialist vessels, especially those designed to work in the offshore wind environment, to outstrip supply for decades to come.

We provide cover to vessels covering the whole spectrum of operations in the windfarm sector.

The growth in the number of vessels operating in these renewables sectors is generating a new composition of claims, with new specific insurance requirements. The regulatory environment and the customers are distinct, and the contracts in use, whilst possessing some similarities, have novel and sometimes nascent formats and clauses. The Club is available to advise Members on these matters from the underwriting, claims and loss prevention sides, but in this latest article from our technology in shipping series, we have invited a leading global energy and marine consultant, ABL, to explain what opportunities and challenges they are seeing emerge on the ground.

Transportation troubles

There is no doubt that the market for marine transport of offshore wind farm components will continue to grow, requiring even greater numbers of suitable vessels to cover the associated heavy lift requirements. Traditional heavy lift operators that currently service the Oil & Gas (O&G) market have an opportunity to transition here and meet the demands of renewables projects.

However, the use of certain Heavy Lift Vessels (HLV) will be restricted by the dimensions of the Offshore Wind Farm (OWF) components that they would be expected to transport. While perfectly suitable for O&G cargo, when transporting turbine blades and other components, existing vessels could struggle with the distance between cranes, insufficient deck space, and a lack of specialist transportation racks. Indeed, such is the deficit of the latter that there is now a surge underway in purpose-built turbine blade transportation vessels.

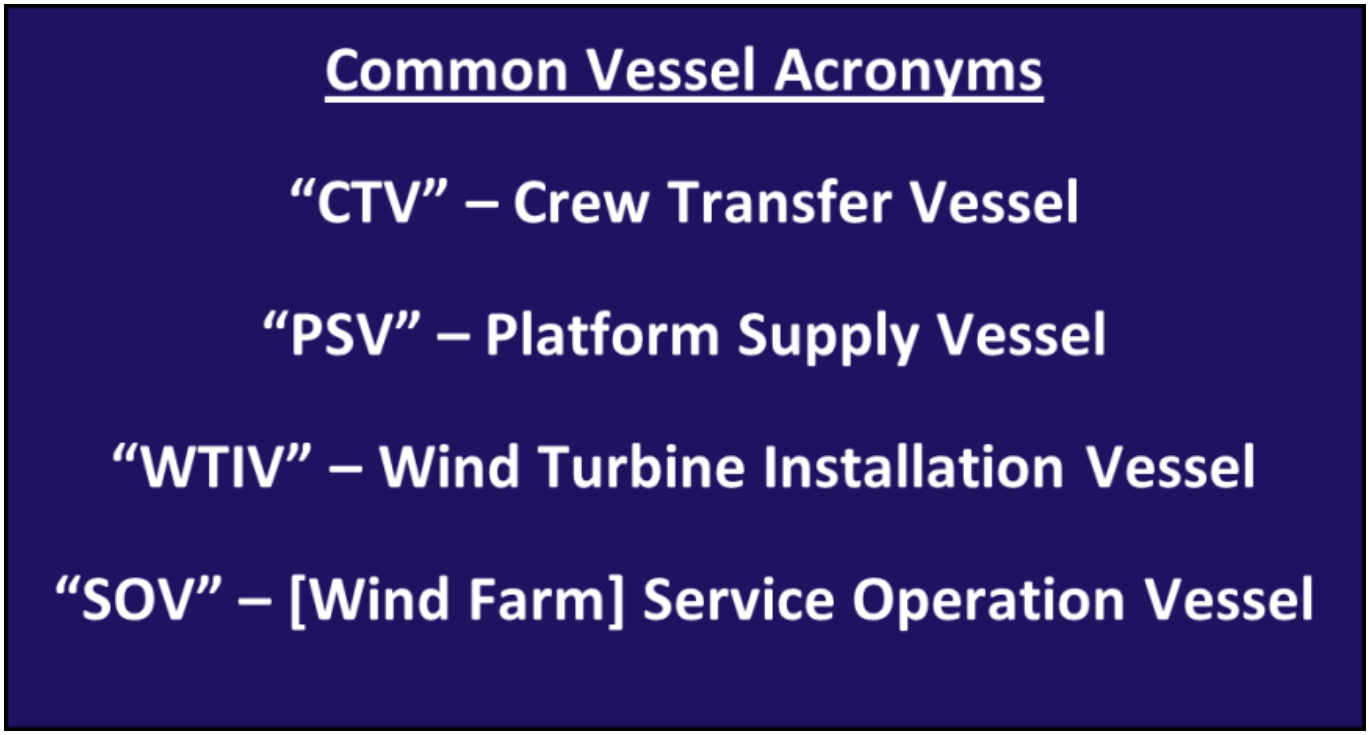
Installation in demand

Vessel suitability challenges extend into the installation stage of a project lifecycle. Traditional O&G mono-hull or semi-sub installation vessels are not necessarily appropriate for OWF installations - at least not for mono pile and turbine installs - due to vessel platform motions and inadequate crane tip heights. For these units, the preferred installation vessels are jack-ups.

This is not to say that some assets originally designed for O&G installations are not able to be utilised in the OWF arena. There is wider use of conventional offshore heavy lift vessels in the installation of jacket type foundation structures which are used on some wind farm developments. There has been further development of some novel slip-joint systems for tower installations and there have been assets (such as pipelay vessels) converted specifically to install turbine foundations. But, all of these ventures do require significant investment from the vessel owners.

Another crucial factor for O&G vessel operators entering the renewables market is vessel day-rates. The underlying financials of the projects do not afford the same CapEx expenditures as in

O&G, and this filters down into a much lower rate environment. Several high-profile installation contractors from the O&G industry have tried to enter the renewables space and bring their current operating vessel assets to bare (particularly during the oil price downturn). Many of them suffered significant revenue losses on entry to this new market and many subsequently withdrew from the offshore wind market, due to an inability to bring the cost of operating their O&G fleets down sufficiently enough to make the operations economically viable, whilst at the same time seeing the prospects in the O&G sector improve again. Now day-rates are starting to improve in offshore wind, due to a tightening market, as demonstrated by Eneti's announcement of securing a charter from 2025 for its new NG16000X WTIVs for around € 265,000 per day (net of project costs).



As mentioned above, jack-up vessels are the preferred installation method for most fixed OWF. A key consideration in this regard is the number of jack-up operations needed on an average project. In O&G, a typical shallow water (50-100m) development may require 10 or so jack-up operations, but in an OWF project this number could rise to several hundred. The greater the number of jack-up operations required, the higher the additional risk, and associated costs in terms of risk assessments and assurance measures. This risk is played out when projects are evaluating the experience of suppliers, we are seeing companies with experienced teams being contracted earlier than previously and this will continue as the market tightens.

The emergence of floating wind projects has provided towage and anchor handling owners with a potentially significant opportunity. If these projects reach commercial scale, there is a potential need for such vessels during the installation phase, which could require the installation of over 100 floaters and mooring spreads (approximately 400-600 lines – depending on the number of units) per single campaign. Currently, in any given O&G project for a large floating unit, there would be approximately 20 mooring lines installed, which represents a significant magnitude difference. In these circumstances, large fleets of anchor handling vessels would be required to meet the installation of both floaters and mooring lines within sensible time frames. Towage and anchor handling owners looking to capitalise should be prepared for this situation.

Similarly, within the floating industry, there is potential opportunity for cable riser installations. Current cable installation vessels and methodologies utilised in the OWF market are primarily focused on cable lay and pull-in to fixed structures. Attention will now likely be turning to operations more akin to flowline and umbilical riser installations in O&G projects to floating production units. Subsequently, the specific vessel types (OIVs and ISVs) may be increasingly in demand here, and there will be a greater need for heightened level dynamic positioning systems on these vessels, which are often more readily found in O&G.

Further, the growing interconnector market and the need for fewer damage claims in OWF cable installations, will likely continue to drive cable technology development, warranting more common use of sophisticated lay systems like on large O&G flowline and umbilical lay projects. Additionally, the further offshore that farms are positioned, the longer the cables and the larger the capacity of carousels that will be needed. Therefore, ultimately, any vessel that can safely lay cables - particularly if already fitted with large internal carousels will be much sought after.

The rise of alternative fuels

When it comes to Operation & Maintenance (O&M) vessels, there is a clear need for services here – both in an O&G and renewables context - but these are generally either at the light crew transfer end of the market or at the highly designed specialist Service Operation Vessels (SOVs). It is possible that the traditional PSV operators from O&G would want to enter

the renewables space in this arena, but SOVs are high-spec vessels developed to stay offshore for a longer period of time than a traditional PSV. Furthermore, as the industry looks to become ‘greener’, it is also likely that we will see a move towards specifically built alternatively fueled, battery or hybrid powered vessels, as opposed to traditionally powered tonnage. Thus, if the O&G service vessel operators wish to enter this space it will likely be via new-build fleets rather than re-purposing of their current assets.

Conclusions

It is clear there is a lot of potential opportunity for O&G shipowners to transition operations into the renewables space, but a successful repositioning will depend on thorough planning and feasibility testing, as well as risk assessments to compete with the new-build vessel boom emerging in the offshore wind space.

For an industry looking to become greener, there is an argument that repurposing existing vessels would be a more environmentally friendly means of meeting demands, however with OWF component transportation and installation requiring specific vessel attributes and capabilities that may not be present in most O&G service vessels, shipowners must be realistic as to whether vessel conversion is a sensible route to go down and must look for novel solutions for existing assets, or themselves join the new-build boom. The greatest opportunity currently exists for jacket type foundation installations and there is a very large potential; demand for both anchor handling vessels (for mooring installations) and DP capable cable riser installation vessels in the emerging floating wind market - both vessel types are readily available in the current O&G market.

One thing is certain, shipowners interested in exploring transition opportunities should look to the future now, to ensure they are prepared for the challenges ahead.

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