



# Newsletter

Edition 2 | 2023

## Service operation vessels (SOVs)

Investing in new generation SOVs  
for the next generation



# The situation

**The rapid growth in offshore wind installation and subsequent operations and maintenance has put huge strains on personnel and vessel availability. Offshore wind farms are growing in size and being built further offshore to take advantage of larger turbines and better wind conditions subsequently increasing the demands on operations and maintenance (O&M) strategies.**

To safely, efficiently and cost-effectively support the installation and maintenance of offshore wind farms around the world, SOVs are increasingly in high demand.

The number of SOVs required to support O&M campaigns of planned global offshore wind projects is predicted to be between 150 and 250 vessels by 2030. Currently, the supply of existing Construction SOVs (CSOVs), SOVs and new-builds is estimated to be 55 vessels - the majority of which are either already committed to long-term charters (+10 years) to service existing wind farms or are being contracted whilst still in build.

## What are SOVs? .....

**SOVs enable efficient servicing and maintenance of offshore wind farms by providing safe access to turbines and accommodating personnel and equipment, at sea, for extended periods of time.**



## SOVs aren't built in a day

The expansion of offshore wind and being able to hit ambitious targets set by governments worldwide relies heavily on the personnel and equipment available to service offshore wind infrastructure. At present, there simply aren't enough specialised vessels available to support offshore wind construction and extensive O&M strategies.

The significant demand for SOVs has resulted in global competition for new build slots across all shipping sectors, whilst traditional ship owners are pursuing more lucrative oil and gas contracts.

Limited slot availability at yards and a lack of standardised design creates issues for wind farm operators trying to economically contract an SOV for which demand in Europe is set to triple by the end of the decade. (1, 2, 3)

There are many challenges for the industry to navigate when it comes to building more SOVs:

- Restricted slots at shipyards as well as a two-year construction period constrain supply
- Lack of standardised design leading to longer construction times as each build is made as a "unique" design
- Conversion of oil and gas vessels no longer sufficient to meet high customer requirements, as the demand outweighs the number of vessels that can be converted
- Resurgent demand for service vessels in a buoyant oil and gas market is reducing the available fleet
- Existing vessels are unable to accommodate future fuel requirements
- Majority of tier 1 vessels are locked into long-term charters, further limiting supply



## Fit for purpose? Not currently.

For offshore wind to deliver its long-term objectives, there is a need to have a robust supply chain that is fit for purpose. Currently, the provision of vessels for the O&M phase does not achieve that.

As wind farms are growing in capacity, size and moving further from shore, there is an increasing requirement for vessels to be able to accommodate a larger number of specialist personnel and equipment. As a result, for the larger and deeper offshore wind farms (fixed and floating), the industry is experiencing a shift from crew transfer vessels (CTVs) to SOVs.

## SOVs vs CTVs

The average distance from wind farm to shore has been increasing and will further increase by the end of the decade. CTVs become uneconomical anything further than 50km offshore (4) and are inefficient because a significant amount of working time is spent on the vessel travelling. This is posing a real challenge to keep project costs down.

When using CTVs for larger wind farms, a significant part of the technician's shift will be spent in transit. The actual working time on a turbine during a 12-hour shift is just seven hours, compared to ten hours when using a SOV. SOV-based operations allow a wind farm owner to perform almost double the amount of work as with CTV-based maintenance.

When comparing the work ability between CTVs and SOVs, the year-round workability of a CTV-based O&M strategy is around 60%, limited by 1.5m wave height. SOVs can transfer personnel in up to wave heights of 2.5m, resulting in a workability around 80%.

Therefore, it makes financial sense to create a new design of vessel, fit to complete the work required at offshore wind farms, at a low-price base.



# Addressing the challenge



## Modularising SOVs to reduce LCoE

In June 2022, [James Fisher announced a new pioneering ULSTEIN TWIN X-STERN™ SOV design concept](#).

The transformative concept addresses the supply chain chasm threatening to prevent offshore wind progress with a scalable, modular solution that can be achieved through high volume series construction to meet developer time and budgetary constraints.

The latest generation of SOVs are a modular design meaning they can be built in volume, significantly reducing build costs and helping to create superior value for customers, leading to reducing the levelised cost of energy through improved operating efficiencies.

The modular design boasts improved operating efficiencies, helped by:

- Quicker transfers to turbines
- Digital support system optimising routing
- Effective manoeuvring and access to turbines

As a top performing vessel operator with strong safety and environmental standards, James Fisher has been facilitating the UK's energy system transition through innovation in vessel design, technology and propulsion systems throughout its 175-year history. Ideally placed to support the global offshore wind journey, James Fisher is helping to address the challenges and operational requirements of developers.

## Designed to deliver

In order to transfer the personnel safely from SOV to turbine, the gangway must be designed to provide the best safety solution possible. [As such, James Fisher has signed a memorandum of understanding with Uptime International](#), the global leader in safe motion compensated logistics solutions for the offshore wind industry, to partner for the use of motion compensated gangways in the development of the pioneering ULSTEIN SX221 Diamond SOV. Innovative developments like these improve safety of the workforce, which is paramount to all operations.

Designed with best-in-class operability, the SOV provides operational efficiency, energy consumption and with future-proofing for zero emission operations in mind. Its features include:

- Achieves material fuel savings whilst increasing operability weather resistance
- High quality accommodation and leisure facilities for up to 120 personnel
- On-board software provides real-time feedback to optimise vessel positioning, reducing need for reorientation and lowering fuel costs
- Dedicated deck area for up to two daughter craft, providing efficiencies for long-term O&M contracts
- Step-free access to the vessel ensures safe embarking and disembarking during operations
- Potential to amend design, and crane/crane foundation to provide CSOV capabilities with minimal capex required
- Centrally positioned gangway system to improve stability

## Local content is key

Not only do SOVs play a role in offshore wind construction and O&M but they also provide an opportunity to support local communities through local content employment programmes. In each country James Fisher operates, it utilises local logistics and supply chain businesses, trains local technicians and collaborates with key strategic partners in-country.

Providing a robust supply chain structure in each region, and drawing on location expertise, is at the heart of operational excellence.

## Reducing the environmental impact

There is a significant desire for SOVs within the industry to reduce carbon emissions associated with construction and O&M phases of offshore wind farms. The [TWIN X-STERN™ SOV](#) design will be package protected for future fuels.

With a significantly reduced energy consumption and increased manoeuvrability, the vessel will also help developers' lower scope 3 emissions in the construction of offshore wind farms.

The design will be protected to enable for reconfiguration to use with alternative fuels in the future. The first generation of James Fisher collaboration SOV will include a hybrid power configuration that allows carbon-neutral operations in the future, delivering a reduction of up to 43% in fuel consumption translating into £1,000 per day of fuel cost saving.

# SOVs around the world

James Fisher's current regional offices include United Kingdom, France, Norway, Taiwan and USA.

## UK

"The fleet of James Fisher SOVs provide a significant opportunity to boost investment in local communities and the wider UK economy. We estimate that over its 30-year life, each SOV will spend an estimated £3m per annum necessary to support the running of the vessel, the training and development of the crew of mariners and their replacements. It provides a unique opportunity for continuous on-going investment in a British workforce and offers a generation of young people the opportunity of sustainable careers in offshore wind."

- **Jim Hey**, Group Business Development Director at James Fisher

## US

"The offshore wind sector in the US is growing exponentially, creating long-term demand for Jones Act-compliant SOVs. Over the past 12 months, we've made some fantastic headway in expanding footprint on the ground in the US and our current US-based projects are the first steps in our journey to ensure the success of the local offshore renewables industry."

- **Barry Craig**, Vice President Renewables – North America at James Fisher Renewables

## Norway

"The demand for SOVs in Norway is expected to boom towards the end of the decade. Our extensive experience in offshore wind around the world puts us in a good position to embrace the anticipated market demand and reach the region's ambitious renewable targets."

- **Kenneth Øverlie**, Business Development Manager at James Fisher Fornybar

## APAC

"For the offshore wind industry in Taiwan, as well as other APAC countries, there are regulations and laws to protect local vessel suppliers and crew members, which create barriers to entry for foreign suppliers. For instance, the demand for SOVs by the local wind industry is growing exponentially but, in most cases, the vessels need be Taiwan-flagged to work in Taiwan waters."

To reflag a vessel, it would take approximately two months to complete. Moreover, due to the strong wind during winter in the Taiwan Strait, most works will be put on pause for a few months, meaning little revenue will be generated and extra berthing costs which leads to high prices for the customers to bear. Experience and expertise for vessel operating and utilisation will be the key to success."

- **James Wu**, Taiwan Country Manager at James Fisher Renewables



## Want to know more?



[Video: We are James Fisher Renewables](#)



**Read our latest SOV press releases:**

[James Fisher and Graig launch the innovative ULSTEIN TWIN X-STERN™ SOV concept](#)

[James Fisher and Uptime ink MoU for ULSTEIN SX221 Diamond SOV gangway](#)



[James Fisher Renewables track record](#)



[Read our SOV thought-leadership](#)

---

## Get in touch



[Our email](#)



[Our website](#)



[LinkedIn](#)



[Sign up to receive our news](#)

## References

1. PA Consulting report
2. BVG Associates report
3. Haglands Shipping A
4. [Supporting local prosperity with the UK's next generation of SOVs](#)

## Coming up...

In the next edition, we'll be exploring offshore wind in the US.



[jfrenewables@james-fisher.com](mailto:jfrenewables@james-fisher.com)  
[jamesfisherrenewables.com](http://jamesfisherrenewables.com)

**James Fisher**  
**Renewables**

