

DRILL DOWN

Outer Continental Shelf National Center of Expertise

27 Jan 2021

Issue: 16-OSV

PQS: OI



Offshore Wind Support Vessels

Introduction

Renewable energy, such as offshore wind, is a viable offshore energy resource for providing electricity to coastal communities worldwide and, more recently, in the United States.

Harnessing offshore wind energy requires the installation and maintenance of offshore wind facilities. Like the facilities that support offshore minerals, they require specially designed and built vessels to install and maintain them.



"Liftboat"; Image Source: Global Falcon

What is an OSV?

An OSV is defined in 46 CFR § 125.160 as a vessel that:

- Is propelled by machinery other than steam,
- Is not a passenger vessel,
- Is more than 15 gross tons and,
- Regularly carries goods, supplies, individuals in addition to the crew, or equipment in support of exploration, exploitation, or production of offshore mineral *or energy resources*.



A "Supply Vessel"; Image Source: Edison Chouest Offshore

Offshore wind energy is considered an "offshore energy resource" specified in the regulatory definition of an OSV.

Although the vessels have differences in their designs and operations, they can be inspected under the same regulatory schemes as vessels serving the oil and gas industry. Depending on specific criteria, they may be inspected under Subchapter I, L or, T in Title 46 of the CFR.

Questions/Requests: OCSNCOE@uscg.mil

What does a Wind Farm Support Vessel look like and do?

The offshore wind energy industry brings new terminology, designs and special purpose-built vessels.

Common terms and examples of Offshore Wind Support Vessels include:

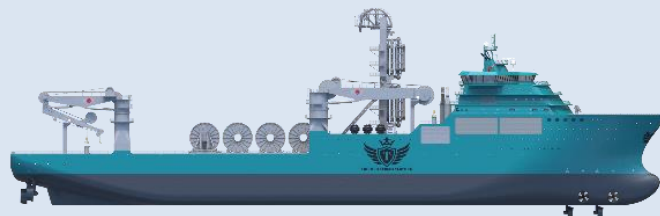
Service Operation Vessels (SOVs) support the operation and maintenance of multiple or more extensive offshore wind fields.

Installation Vessels perform the actual installation of the offshore wind turbines.

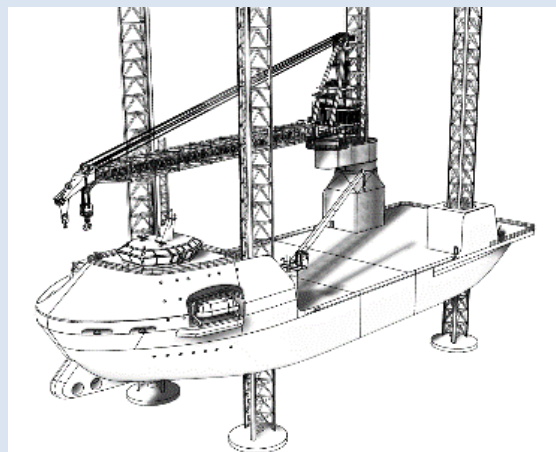
Field Development Vessels (FDVs) lay the inter-array cables and position electrical cables between the structures and shore.

Feeder Support Vessels carry parts and equipment to the installation vessels.

Crew Transfer Vessels (CTVs) which transport workers and technicians to and from these offshore facilities.



A "FDV"; Image Source: Triumph Subsea Services



A "Feeder Vessel"; Image Source: 2nd Wind Marine

What are some commonalities of service and systems used in both offshore wind energy OSVs and Offshore Mineral Energy OSVs?

Some of the same services that OSVs have been providing to the offshore mineral industry are also needed to support the offshore wind energy industry. A prime example of this is the carriage of offshore workers (or passengers) and light equipment to the offshore energy facilities.

Click [HERE](#) for additional issues of the *Drill Down*

Any images not given source credit were utilized from internal Coast Guard sources.



A "Crew Transfer Vessel"

The industry terms and the designs of crewboats used in the oil & gas industry, and CTVs are very different. However, due to the similarity of operations, they can utilize a common regulatory framework, inspected either as a small passenger vessel or offshore supply vessel.



An "Offshore Crewboat" Image Source: Marine Traffic.com

Liftboats are self-elevating vessels with unique jacking systems that provide accommodations for workers and have been used as platforms for construction, maintenance and repair in both offshore energy sectors.



A "Liftboat" Image Source: Montco Offshore

Some vessels provide surface and sub-sea construction services while maintaining position using dynamic positioning (DP) systems.

Examples include commercial dive vessels, remote operated underwater vehicle (ROV) vessels, sub-sea construction vessels and vessels equipped with heave compensated cranes.



"Sub-sea Construction"; Image Source: Oceaneering

Accommodation vessels are another class of ships that possess DP systems and heave compensated gangways that allow walk-to-work capabilities from the ship to the facility.



"Accommodations Vessel"; Image Source: Hornbeck Offshore

Conclusion

Offshore wind energy is relatively new to the U.S., and vessels that support the industry may be unique in design and purpose. However, equipment installations onboard such as, cranes, gangways, lifting (jacking) systems, ROVs, DP systems, vital system automation, Heli-decks, etc., have been used safely in the oil & gas industry for decades with existing policy and regulation.

Though individual vessels supporting the offshore wind will have different capabilities and equipment, regarding regulatory applicability and compliance, the ships are not substantially different from the current domestic OSVs operating in the U.S., meaning they may be inspected and certificated under current OSV regulations and policies.