WindServe Marine

Current U.S. Leases and Wind Areas

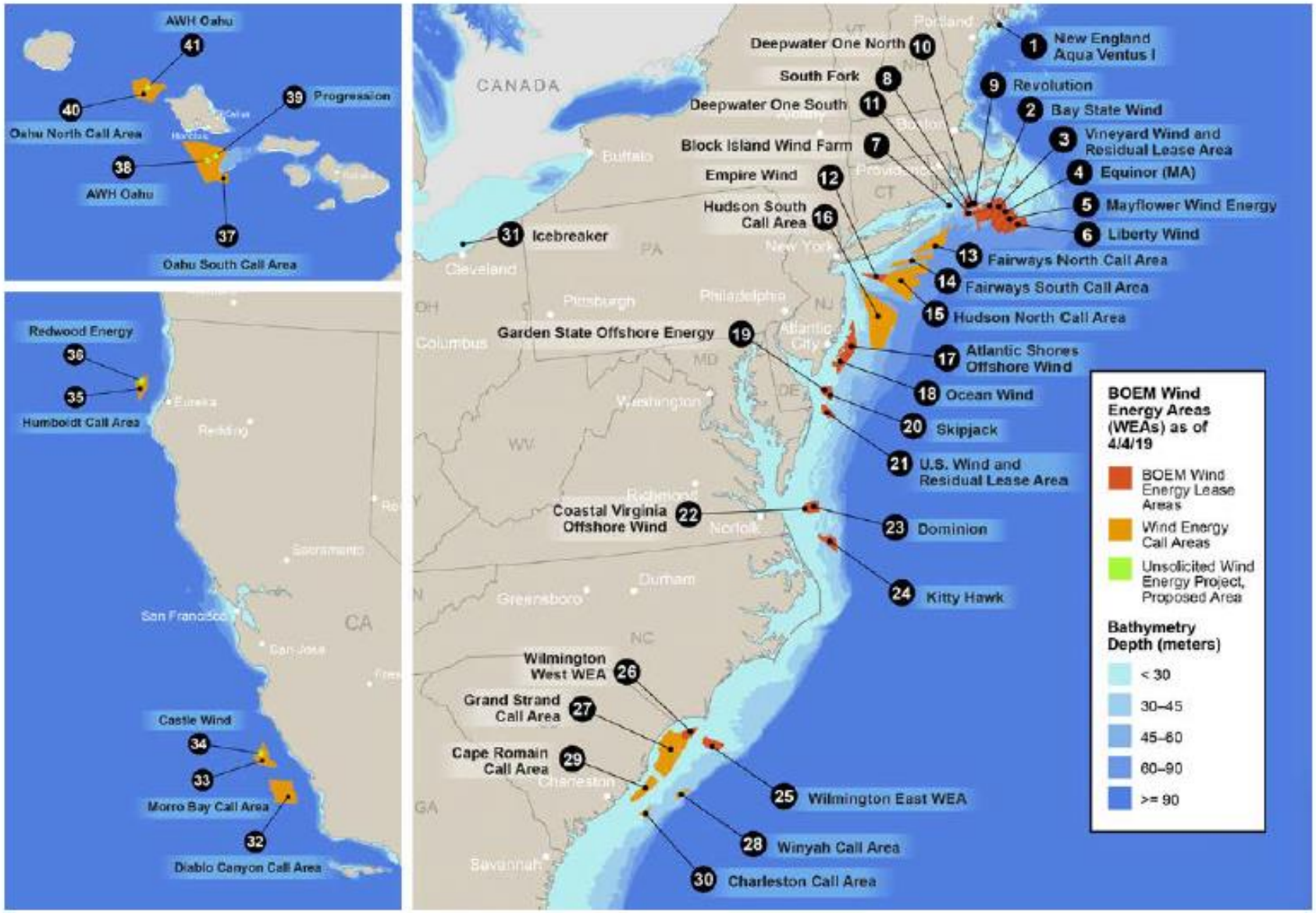
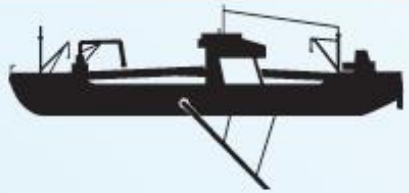


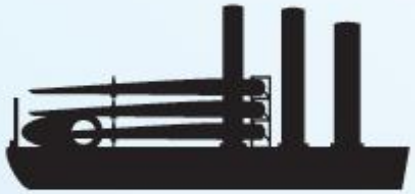
Figure ES-1. Locations of U.S. offshore wind pipeline activity and Call Areas as of March 2019. *Map provided by NREL*

OSW Project Stages	Vessels	Type	What activities will the vessel conduct?
Seabed Preparation		Trailing Suction Hopper Dredger	Removes boulders and levels seafloor to allow for jack-up vessel to jack up.
		Fall Pipe Vessel	Dumps rock at future monipile sites during seabed preparation.
Component Transfer: Manufacturing to Marshalling Port		Heavy Lift Vessel	Moves equipment from manufacturing facility to marshalling port.
		Feeder Vessel/Barges/Heavy Transport	Transports equipment.
Cable Laying		Export Cable Laying Vessel	Conducts cable lay activities which can be post-lay burial or simultaneous lay & burial. Post-lay burial requires two vessels to lay cable and to bury the cable. Simultaneous lay & burial requires one vessel with specialized equipment.

Graphic Courtesy of: **American Clean Power Association**

OSW Project Stages	Vessels	Type	What activities will the vessel conduct?
Cable Laying		Cable Support Vessels	Maneuvers cable barges to help reduce tension in cables, jointing/splicing cables, plugging cables into turbines, and bringing cables to shore.
		Array Cable Laying Vessel (CLV)	Lays cables between turbines and from turbines to offshore substation; not export cable.
		Guard Vessel	Carries out operational safety related to cable laying activities.
Development, Construction, & Commissioning		Floating Heavy Lift Foundation Vessel	Installs substations and foundations.
		Jack-Up Installation Vessel	Installs turbines and foundations. While foundations can be installed with either floating or jack-up, vessels, jack-up is more common. Historically turbines have only been installed with jack-ups.

Graphic Courtesy of: **American Clean Power Association**

OSW Project Stages	Vessels	Type	What activities will the vessel conduct?
Development, Construction, & Decommissioning		Feeder Vessels/Barges	Transfers components from U.S. ports to turbines when using foreign-flagged construction vessels.
		Accomodation Vessel/ Commissiong Support Vessel	Conducts wind turbine commissioning and houses crew.
		Jack-Up Vessel	Conducts offshore wind substation commissioning.
		Crew Transfer Vessel	Transfers personnel and light equipment in support of construction and operations.
		Safety Vessel	Carries out operational safety with ongoing traffic. Maintains a visual, radar, and communications watch to notify mariners of offshore wind vessel activity and safety zone boundaries. Marine mammal observers may be onboard.
		Noise Mitigation Vessel	Provides bubble curtain to mitigate noise from pile driving and protect marine mammals.

Graphic Courtesy of:
American Clean Power Association

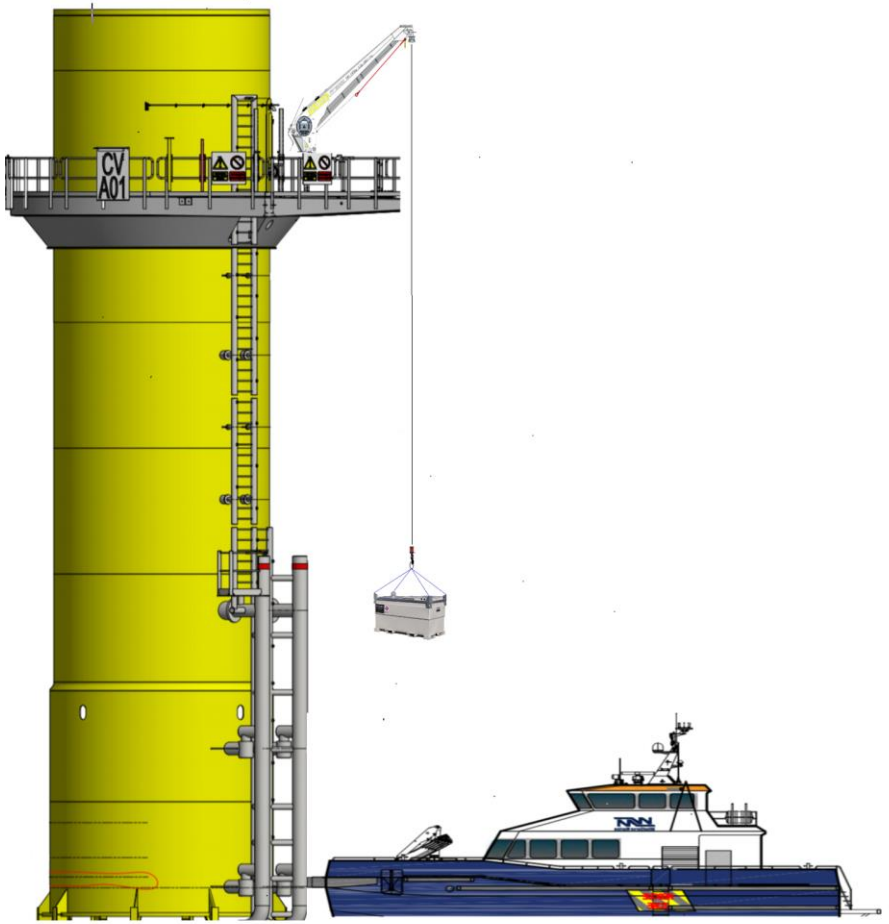
Vessel Types Currently Under Construction in the U.S.

Fall Pipe Vessel / Rock Installation Vessel

Photos Courtesy: Husiman & Great Lakes Dredge & Dock Co.

Vessel Types Currently Under Construction in the U.S.

Crew Transfer Vessel (CTV)



Photos Courtesy: WindServe Marine

Vessel Types Currently Under Construction in the U.S.

Service Operation Vessel (SOV)

Photos Courtesy: Louis Dreyfus Armateurs

Vessel Types Currently Under Construction in the U.S.

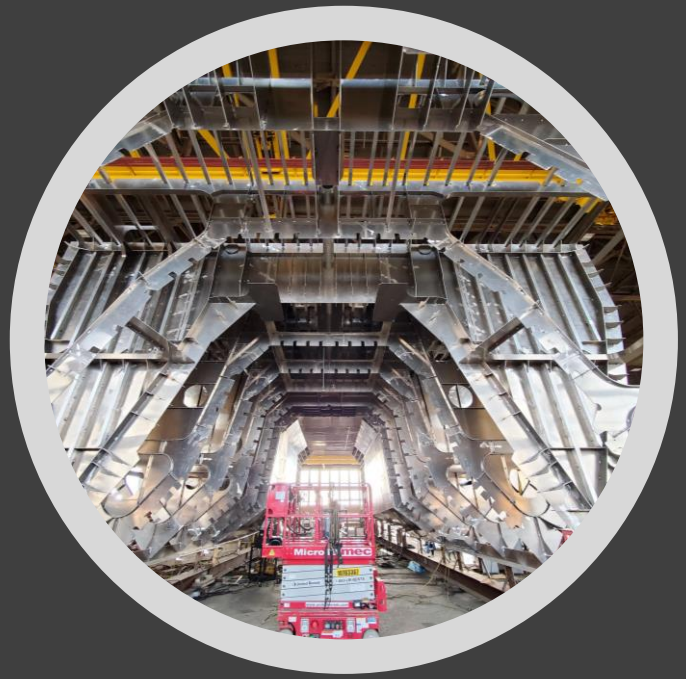
Wind Turbine Installation Vessel (WTIV)

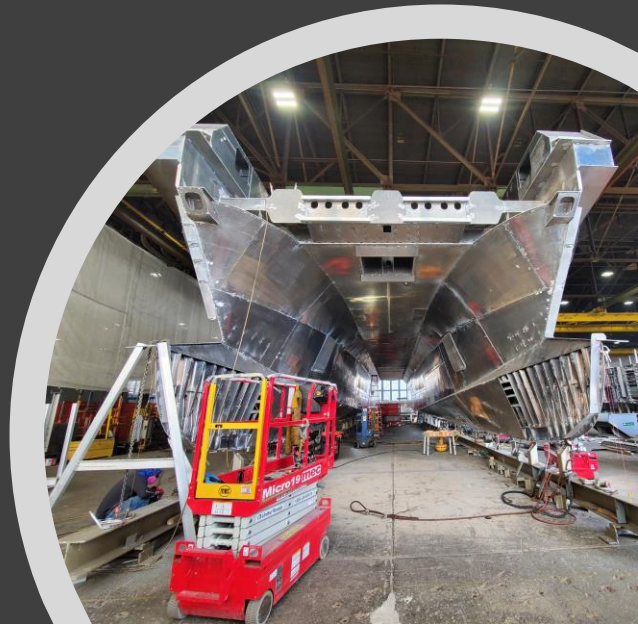
Photo Courtesy: Deepwater Wind

Vessel Types Currently Under Construction in the U.S.

Tugs & Barges

Photo Courtesy: Baird Maritime





CTV Construction

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Questions