

# Offshore Wind Farm Support Vessel

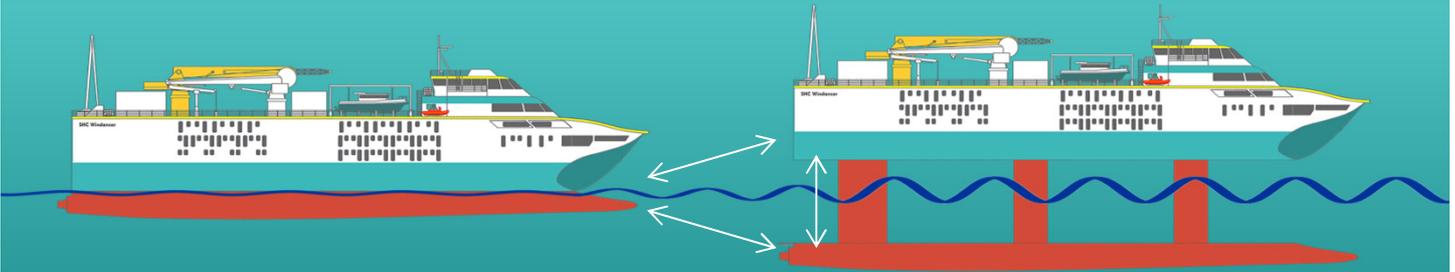
The Submersible Hull Catamaran

## A Transforming Vessel

“Designed to work in 5 metre seas!”

From THIS...

...To THIS!



High speed (40k+) wave piercing catamaran, providing reduced transit times in stabilised comfort even in poor weather conditions.

A Semi-Submersible capable of working in up to five metre seas while safely transferring personnel to and from wind tower structures. Can also conduct surveys and operate ROVs in the same conditions.

### General Particulars

Designer	OSSeas Consulting	
Length overall	118.30	m
Length hull	115.00	m
Length waterline	101.50	m
Beam moulded	35.00	m
Beam of hulls	6.60	m
Draft	5.24	m
Max deadweight	1000	tonnes (Est)
Deck loading	500	tonnes (Est)
Deck area (usable)	1527	Sq m
Maintenance workshops	537	Sq m
Maintenance stores area	457	Sq m
Contractor office area	473	Sq m
Cranes	1x 50T	heave comp'd
	1x 100m	telescopic
Accommodation	77	(max 120)

### Operations and Manoeuvring

Hull-up	4 x stern vectored hydrothrust Dual bow vectored hydrothrust
Hull-down	4 x stern vectored hydrothrust 4 x hull-top vectored hydrothrust
Manoeuvring	DP 3 and manual joystick
Speed hull-up	40 knots +
Speed hull-down	8 knots
Sea state	Max 6m, workable 5m (force 7)
Duration	30 days (nominal on DP).
Range	1000 NM at 35 knots 4000 NM (av speed 20 knots)
Trim	Dynamic stabilisers fore and aft
Jacking	2 x 20m hydraulic rams per tower 4 x hydraulic locks per tower
Ballast	Dynamic integrated system
Lift deck	Cantilevered stern lifting area

### Manning

Total PoB = 77	
Marine Crew = 31	
Captain, 1st Officer, 2nd Officer, 4 DPOs	= 6
Chief Engineer, 2nd Engineer, 2 Shift Engineers	= 4
Chief Electrician, 2nd Electrician	= 2
Bosun, 6 AB's/Crane Operators	= 7
Chief Cook, 2 Cooks, 2 Galley Hands	= 5
Chief Steward, 4 Stewards	= 5
Medic	= 1

Project Crew = 46	
Offshore Manager, Client Rep	= 2
Snr Project Engineer, Project Engineer	= 2
ROV Supervisor, 5 Pilot Technicians	= 6
Lead Surveyor, Survey Engr, 2 Online Surveyors	= 4
4 Boat Coxn's, 4 Boat AB/Engrs	= 8
Wind tower maintenance engineers	= 24
(Space is available, for up to 40 additional internal single cabins for additional maintenance engineers for larger wind farms. The facilities will support this increase.)	

## Specialist Equipment

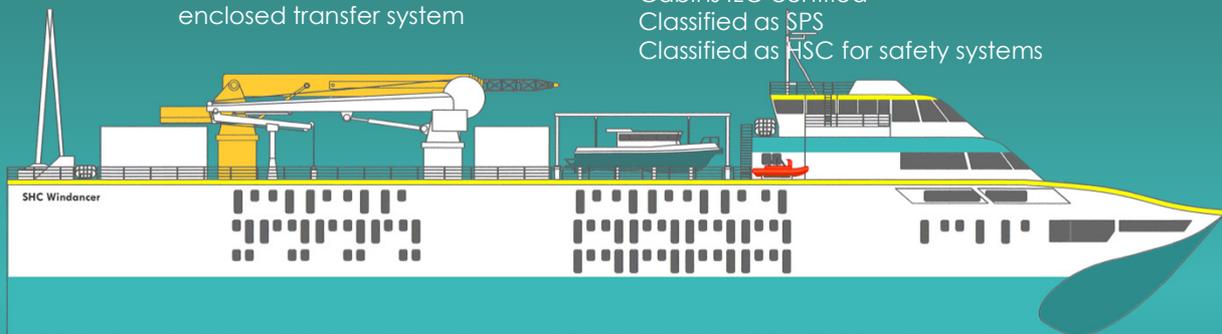
Positioning	Integrated dGPS Nav
Survey	2 x Swathe Multibeam 2 x Sub-Bottom Profilers 2 x Fwd Scanning Sonars
ROV	1 x WROV 1 x Observation ROV
Service vessels	4, 14.8 m catamarans
Personnel transfers	Dynamically stabilised fully enclosed transfer system

## Safety & Evacuation

Emergency muster station aft of bridge  
10 x 25 man life rafts, 6 fwd, 4 aft.  
2 x FRC and launching davits  
Firefighting monitors on top of each after tower

## Class & Notation

Meets SOLAS Requirements.  
Cabins ILO certified  
Classified as SPS  
Classified as MSC for safety systems



## Operational Envelope

In Hull-up mode	High speed (40k+) up to sea state 4-5, above 5, 10 knots transit.
In Hull-down mode	Maintains station with less than 1.5m of pitch or heave in up to 5m seas (force 7) and 40 knots of wind on the bow or stern, or 25 knots on the beam.
Transition	Fully integrated and computer controlled jacking and ballast system .

## Specialist Facilities

### Dynamic Transfer System:

Dynamically stabilised spatially referenced transfer system that remains aligned with the platform deck if the vessel beneath moves. Maximum reach of 28m enabling transfer cycles of about 4-6 minutes for up to six persons.

### ROV Launch and Recovery:

On centreline aft, 5 deck through 2 deck. Under superstructure opening 3m x 5m minimum with 4m landing area each side. Doors under superstructure base close to make a smooth surface. Extendable launch and recovery gantry fixed to the deckhead of 2 deck enables operations in 3-4m seas by controlling the descent of the TMS/ROV through the wave zone. ROV control room on 5 Deck beside the launch space.

### Small Boat Rough Weather Recovery System:

Normal launch and recovery using davits. For rough weather a recovery system under the superstructure provides a drive in dock which lifts the boats out of the water. The boats then transfer to a lift to take them back to the upper deck.

### Cantilevered Stern Deck for Lifting:

On the wind tower maintenance deck a 20 m x 10 m deck cantilevers 10m out past the stern to enable the lifting of larger parts or systems from the maintenance deck. Faulty units are also lowered to this deck.

### 100 Metre Extendable Boom Crane:

Specially designed to lift large components up to the turbine nacelle.

## Turbine Transfers

Muster room for personnel changes with access to an upper deck reception room via a lift. Enabling dry and safe transfers via the upper deck personnel transfer system.

Gantry style boat launching for 4 x 14.8m catamaran work boats (fair weather operations).

## Design

### Hulls

Slender wave piercing hull form containing main propulsion and manoeuvring systems, fluids and ballasting, joined by a bridging structure which fits into the underside of the superstructure in hull-up mode.

Each hull is divided into 10 compartments with full water tight integrity. Each hull has eight longitudinal bulk flood ballast tanks, four each side plus two trim tanks fore and aft.

Six vertical ovoid 16m towers rigidly connected to the hulls extend up as a structural lattice, fully encased and watertight. Two, 17m hydraulic rams in each tower for lifting the superstructure. Each tower has four locking pin systems, two at the base of the superstructure and two at the top.

Materials - Primarily aluminium but may contain some steel.

### Superstructure

The first 2.8m from the separation point is a structural base providing lateral strength and absorbing torsional forces. This includes the centre 'V' hull form up to the bow. Contained in this are tank spaces, primarily along the vessel centreline.

On the structural base rests the main superstructure containing accommodation, recreation, offices, stores and working spaces. This part of the superstructure is interchangeable with other superstructures for different purposes.

Materials - Superstructure Base primarily aluminium but may contain some steel. Upper Superstructure primarily composite materials.