

Top innovations

The wind industry's supply chain continues to innovate in response to the twin demands of growing turbine sizes and cost pressures, both onshore and offshore

GOLD

Wallaby Boats catamaran-type crew transfer vessel

Wallaby Boats' catamaran-type crew transfer vessel (CTV) offers a clever energy efficient alternative to "common" equivalents with motion-compensated walking bridges, which typically require 250-400kW in active mode.

Innovative features include an upper main deck structure and separate twin hulls interlinked via an active hydraulic suspension-dampening system with accumulators for intermediate energy storage.

Wallaby's initial 18-metre crew transfer vessel claims several distinct benefits, including comparable performance to "conventional" 26-metre catamaran-CTVs at similar 30 knots sailing speed. Second, active systems interaction in balancing wave-induced motions reduces the acceleration forces on humans by up to 30%. Third, standard 18-metre catamaran-CTVs typically operate at maximum significant wave heights of 1.2 metres, versus 1.75 metres or possibly even 2.1 metres for an equivalent Wallaby-type vessel. Finally, the mainly passive system offers favourable energy input requirements during all operational modes.

Pressurising the system for 5 to 10-minutes before sailing starts requires around 6kW. During sailing, active mode (2-3kW) is only engaged during turns, whereby Wallaby's hull leans over to reduce sea sickness.

Semi-automated bow-height control mode (10-15kW) is engaged during turbine approach and personnel transfer. The deck is then kept horizontal and stable (no heave, roll or pitch) with a fully-automated deck altitude control system (DACS), additionally deployed for crane-hoisting and recovery operations. This mode sometimes requires full systems power (31kW), or less depending on sea state.

German utility EnBW has chartered the prototype vessel from May 2022 for a two-year period.



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Model	Product	Innovations	Status
Wallaby Boats 18-metre catamaran-type CTV (Germany)	Ground-breaking crew catamaran transfer vessel (CTV) for offshore use	Active hydraulic suspension and deck stabilising during transfer	18-metre prototype CTV due to be ready in May 2022 and chartered by utility EnBW
Eagle-Access offshore personnel transfer system (Netherlands)	Fully motion compensated people and cargo transfer system for offshore	Electrically powered (~75kW), transfers people in a cabin	Successful full-scale sea trials of Eagle-Access system at Horns Rev 2 completed
Liftra LT1500 turbine installation crane (Denmark)	Self-climbing crane with 120-tonne hoisting capacity, current focus on onshore	Concept uses extra outer tower flanges for crane attachment	Model presented at WindEurope 2021; full-scale prototype due in 2022; commercial launch planned for 2024
Enercon LCC140 self-climbing crane (Germany)	Second-generation self-climbing crane for full EP3 and EP5 installation	Remotely controlled; installation at space-constrained sites;	Deployed with E-136 EP5 turbines atop modular steel towers (MSTs)
Spanset novel, simple product design for single-blade hoisting (Spain)	Single-blade hoisting device and centre-of-gravity blade marking solution	Expandable horizontal beam with downward facing blade slings	Deployed by Nordex for N163/5.X prototype blade installation