



**ULSTEIN®**



# AvK® HYBRID MARINE

## Case history

Marine alternators for new-build offshore wind  
Construction Service Operation Vessels (CSOVs)

**Where:**  
Ulsteinvik, Norway

**Specified:**  
6 x AvK® DSG 99 alternators across two  
5.15 MW CSOVs

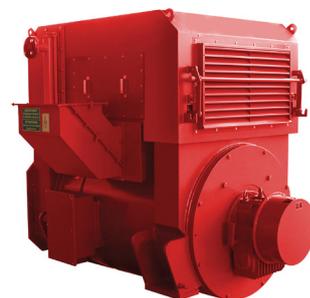
**Purpose:**  
Hybrid-electric propulsion reserve  
power, with future methanol and battery  
capabilities

When Ulstein Verft, a leading shipbuilding company headquartered in Ulsteinvik in Norway, required specialist marine alternators for a consignment of new offshore wind Construction Service Operation Vessels (CSOVs) it was building, it looked to STAMFORD | AvK to deliver what was needed.

STAMFORD | AvK met the challenge: supplying the robustly engineered alternators needed for the hybrid-powered CSOVs, which Ulstein was constructing for Olympic Subsea, a Norway-based owner and operator of offshore support vessels.

Part of the wider Ulstein Group, a leading global supplier of specialist marine vessels, Ulstein Verft was contracted by Olympic Subsea AS to build two CSOVs, with the option of a further two, for its fleet of "Walk-To-Work" vessels for offshore wind installations. Having previously ordered six ships from Ulstein, Olympic knew that the shipbuilder, and its design arm, Ulstein Design & Solutions, would supply what was needed on time and to world-class standards.

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AvK DSG 99

**“Ulstein has used STAMFORD | AvK alternators in our designs previously, and have been impressed by their durability, and the company’s responsiveness and speed of replies”**



Ulstein constructed both CSOVs using its innovative Ulstein SX222 with twin X-Stern design, which provides vessels with two sterns and main propeller units at both ends. The design improves manoeuvrability and reduces energy consumption by enabling ships to stay in position at offshore wind turbines.

#### **Advanced hybrid power**

Each CSOV uses an advanced hybrid system of diesel-electric propulsion combined with substantial battery energy storage. The system is also designed to use methanol fuel to enable zero emissions, and is complemented by extra available space for any additional battery capacity needed in the future.

As part of each CSOV reserve power system, Ulstein asked STAMFORD | AvK to supply the specialist marine alternators for the generator drive engines. The alternator manufacturer had featured on Ulstein’s approved supplier roster for several years, and its alternators had been specified for its vessels in the past by 3rd-party OEMs, so Ulstein was confident that STAMFORD | AvK would respond quickly to its requirements and fulfil its short lead times. It also knew that it could depend on the quality and reliability of STAMFORD | AvK products and the company’s global 24/7 service network.

#### **Robust and rapid solutions**

For all these reasons, Ulstein placed an order directly with STAMFORD | AvK for the first time. STAMFORD | AvK delivered what was needed: supplying three AvK DSG 99 M1/4W alternators for each CSOV, delivering 5.15 MW per vessel, with each sized and customised to meet Ulstein’s requirements. Specifically designed for tough applications like marine vessels, the 60Hz, 690V AC alternators feature Marine Class F ratings with a 45°C ambient engine room temperature and 38°C coolant temperature to operate between 900 and 1800rpm. Each alternator also offers water-cooling, sleeve bearings and variable running speeds.

The alternators were fitted by a third-party equipment provider according to the agreed schedule, marking just 26 weeks from Ulstein’s commissioning to final installation. STAMFORD | AvK also provided Ulstein with the option of commissioning support.

Pon Power Norway has delivered 3 x 3512E variable speed engines driving the AvK DSG 99’s installed on their GenFlex baseframe system.

The project marked just 26 weeks from Ulstein’s commissioning to final installation. Part of this timeline included the alternators fitting by a third-party equipment provider, Pon Power Norway, who specialise in distribution and servicing of industrial engines and power systems for the marine sector.

“We have had a very good experience with AvK alternators over many years and look forward to extending this experience also with variable speed operation” said Pon Power of their experience with STAMFORD | AvK. Pon Power integrated the 3 x CAT 3512E variable speed engines with the AvK DSG 99’s, stating “the focus from the owner has been efficiency, and we offer unrivalled efficiency with our combined package across the full generator set operating range.”



**Pon Power Integration**



We are here to support your future decarbonisation goals, through our end-to-end expertise in versatile solutions. Backed by the reassurance of our world-renowned brands recognised for reliability and complete peace of mind, we are with you on your journey towards sustainability.

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