

ECOSPRAY: FACING THE CHALLENGES OF THE CHINESE MARKET

The maritime industry is now more globalised than ever, especially considering the growth of the Asian market, and in particular, of the Chinese shipbuilding industry.

The rapid evolution is accompanied by a tightening of global regulations to reduce emissions from shipping vessels. As a direct result, the demand for exhaust gas cleaning systems (EGCS), also known as scrubbers, has constantly risen, especially for new buildings.

The growing need for sustainable maritime solutions in Asia pushes European sector leaders to identify new ways to increase competitiveness in a market – like the Chinese one – which is increasingly characterised by price wars.

Scrubber solutions are just the first step in a great challenge

NEW COLLABORATION TO JOIN THE MARKET EVOLUTION

Under these conditions, Ecospray – the Italian company specialising in integrated solutions for the sustainable conversion of maritime and land-based industries – continues its long-lasting collaboration with one of leading dry bulk shipping companies for the reduction of emissions in its fleet. After equipping the entire fleet with its scrubbers and conducting several collaborative R&D projects, the company has signed an agreement with the Greek-based shipowner for five new ships under construction in a Chinese shipyard, which will be equipped with open loop EGCSs for main engine and auxiliaries.



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To increase competitiveness over local manufacturers, the supplies of Ecospray's EGCS for the new ships will see its collaboration with Chinese manufacturer Jiangsu Zhenhua Environmental Protection Technology Co, known on the market as Zept.

Ecospray will be in charge of the design and engineering and the supply of the sensitive components of the system (such as spraying nozzles, PLC and software, water and gas analysers), while the Chinese partner will manufacture and outsource on local markets the equipment and components based on the specifications and design provided by Ecospray.

PROVEN PERFORMANCE AND HIGH-QUALITY STANDARDS

The new collaboration will allow Ecospray to offer its well-proven and high-quality standard scrubbers, in terms of material, design and performance, at a competitive price for the Far East market. This will be possible thanks to Zept's strong equipment manufacturing capability based in China, along with a local and fast response to shipyards during installation and commissioning of the EGCS.

The collaboration with Zept boosts Ecospray's position in the Asian market by confirming the highest quality standards and the best performance for its EGCSs.

The company portfolio boasts a wide range of scrubbers to meet all needs: from an open loop or hybrid design to an inline or u-type configuration. The technologies are available in different sizes, from 1,800-5,000mm in diameter, and within a range of 5 to 80MW rated engine power.

EGCS: TAKING THE FIRST STEPS TOWARD DECARBONISATION

Scrubber solutions are just the first step in a great challenge. As we know, in recent years, the route towards 2050 pushes companies to invest in R&D to develop new technologies.

Scrubbers are today a prerequisite for vessels and a fundamental starting point for embracing a new technology:

onboard Carbon Capture. In fact, the presence of the EGCS as pre-treatment of the exhaust gas reduces the pollutants (such as sulphur oxides and particulate matter) and part of the uncombusted and hydrocarbons, so as not to affect the performance and lifetime of the carbon capture technology installed downstream.

In addition, carbon capture requires the temperature of the treated gases to be lowered, typically below 50°, and the presence of the scrubber facilitates this. Thus, having the scrubber on board has a double benefit in view of installing carbon capture technologies, avoiding the need for a cooling stage or exhaust gas scrubbing to bring the flue gas to conditions suitable for capture.

Having an EGCS means already being a step ahead in decarbonisation.

ONBOARD CARBON CAPTURE: A NEW HORIZON FOR SUSTAINABILITY

Ecospray has finished onboard testing of two carbon capture technologies, scrubbing with amines and calcium hydroxide, for the maritime sector. The tests proved the capability of the technology to capture up to 80% of the CO₂ emitted during ship operation in specific conditions.

In the meantime, the technology based on molten carbonate fuel cells is under continuous development and the industrialisation phase is expected by 2025. This solution is at the heart of the CapLab, the joint laboratory of Ecospray and University of Genoa.

Since decarbonisation is a crucial theme, Ecospray has decided to develop different solutions in order to be able to adapt them to different contexts, as factors such as the size of a ship, its type, its route and the space available on board strongly influence the choice of a solution.

Onboard carbon capture is one of the most interesting innovations for the shipping industry, but requires an acceleration of the regulatory framework.

Investments in this useful technology for the ecological transition will be possible only by the adoption of certain international regulations.



ABOUT ECOSPRAY

From research to development, Ecospray specialises in the creation of integrated solutions for the sustainable conversion of marine and land-based industries, as well as for the reduction of dependence on fossil fuels. Founded in 2005, Ecospray, market leader in exhaust gas cleaning systems for marine diesel engines, has been part of the Carnival Group since 2013.

The company operates globally, offering diverse technologies that range from air and gas cleaning and treatment systems (DeNO_x, DeSO_x, filtration, gas cooling and fogging) to the creation of biofuels and the generation of clean energy (biogas upgrading, CH₄ and CO₂ liquefaction and fuel cells).

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