

ECOSPRAY TECHNOLOGIES: together along a journey of environmental transformation

The entire shipping industry is undergoing deep change – an environmental transformation.

The recently-enacted 2020 Global Sulphur Cap regulation is expected to have a momentous impact on maritime business. However, it represents just one step toward the ambitious goal of achieving a 50% cut in carbon emission by 2050 and the industry's overall vision for decarbonisation.

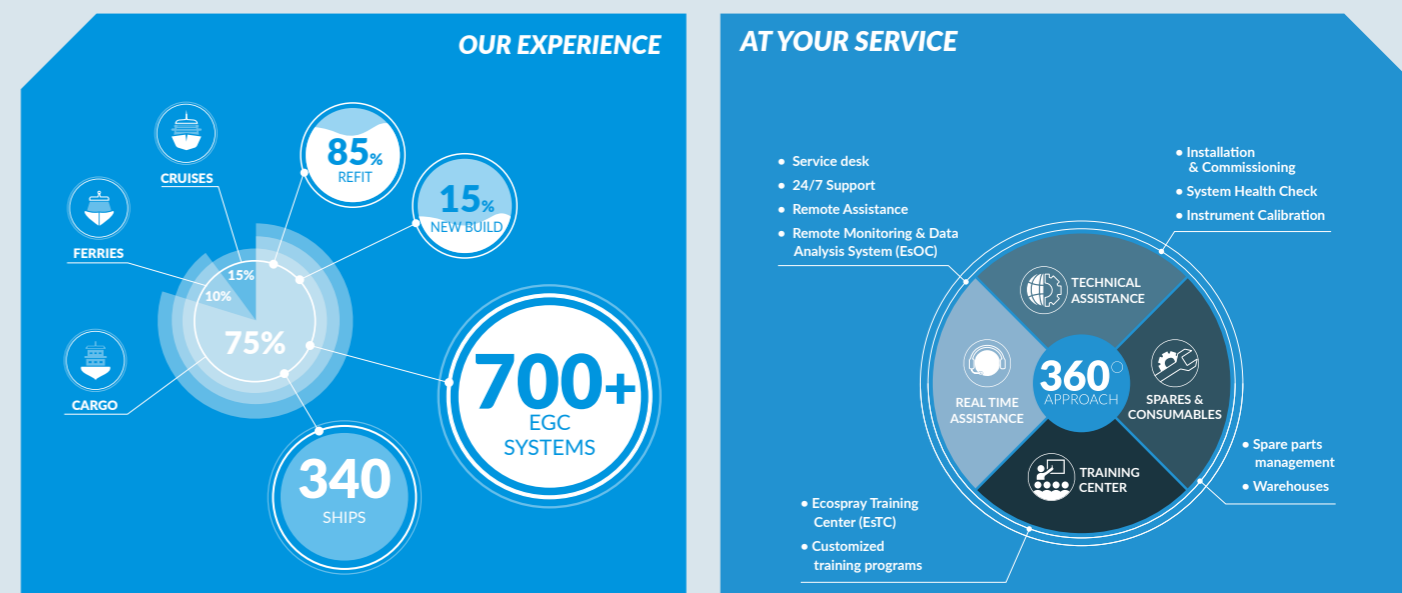
Nevertheless, additional opportunities for performance enhancement and sustainable growth must be found along this journey – overall, shipowners need tools and resources to become active drivers for environmental change.

Ecospray Technologies' commitment to developing effective environmental solutions dates back to 2005. Since that time, Ecospray has accompanied clients in managing their environmental footprint effectively, with a focus on efficient engineering and reliable performance.

Ecospray Technologies has successfully partnered with shipowners, aiding them in achieving their shared goal of upgrading fleets to make their businesses more sustainable.

Abiding by its "Clean Air, Clean Water" commitment, since 2010 Ecospray has developed one of the industry's leading solutions for the DeSOx treatment of marine exhaust gas. Having completed its first full-scale Exhaust Gas Cleaning System (EGCS) in 2012, Ecospray has since delivered hundreds of systems to a wide range of clients in the cruise, cargo and ferries segments of the shipping industry. Its product portfolio includes open-loop (inline and u-type), hybrid and closed-loop systems.

With a strong focus on ease-of-operation and performance, Ecospray's EGCS are a preferred choice for



operators looking to meet sulphur cap regulations with reliable, proven technology. Boasting hundreds of thousands of hours in operation, Ecospray's impressive experience provides clients with the confidence to meet and exceed global limitations (0.5%), including the strictest local requirements (0.1%).

Ecospray's EGCS are suitable for both new-build and retrofit applications. They feature one of the most compact and energy-efficient designs in the industry, making them ideally suited for circumstances where space is a constraint and system design and installation engineering need to proceed in close co-ordination to minimise installation cost and time.

PERFORMANCE: MUCH MORE THAN A COMPLIANT SYSTEM

Thanks to continuous monitoring and data analysis capabilities, Ecospray is able to ensure constant improvement of its EGCS solutions even after commissioning, with a strong focus on achieving the highest system availability and system usage rates.

These results are achieved through dedicated attention to system design, choice of components and, most importantly, emphasis on training activities. Ecospray's training programmes include a wide range of regulatory, technical and EGCS management topics and have provided mission-critical information to hundreds of attendees. In October

2019, through partnership with the Philippine Center for Advanced Maritime Simulation and Training (Philcamsat), Ecospray also began offering training programmes in Manila, Philippines on a continuous basis.

Ecospray was an early believer in the value of data to ensure compliance and drive performance: Ecospray's Fleet Monitoring solutions provide a reliable fact-based foundation for business analysis and decision-making. Real-time data collection and communication with the ship alarm system, analysis dashboards, reporting features – with trend visualisation, KPI, trouble-shooting and predictive maintenance – are all key advantages of choosing an experienced partner who is much more than a mere equipment supplier.

R&D SOLUTIONS FOR FUTURE-PROOF SYSTEMS

Substantial investment on in-house R&D allows Ecospray to develop solutions for wider treatment of gas and water emissions. Through partnership with major ship operators, Ecospray directs R&D investment to the most relevant environmental topics, capitalising on a large installed basis for real-life testing. New products and solutions are introduced with a bolt-on approach: this means that Ecospray offers solutions that can be used in conjunction with its widely-adopted EGCS, without requiring clients to write-off unamortised investment.

In addition, shipowners with large fleets are now looking at a range of options for sustainable fuels for their new-build ships. For those considering LNG as marine fuel, Ecospray can offer services along the entire supply chain.

Thanks to its recent R&D investments in the field of renewable energy, Ecospray can provide advanced systems for biogas upgrading and bio-methane liquefaction (BIO-LNG). The technology developed is efficient, suitable for micro application (1 ton/day), but scalable for larger-scale production (50 tons/day and above) with minimal-emissions and a zero-carbon footprint.

Moreover, the liquefaction technology for BIO-LNG generates liquid clean fuel for land and sea transport, representing a true example of circular economy: transforming waste into a viable resource.

Proven experience, system reliability and a strong commitment to R&D, all play an essential role in making Ecospray Technologies the ideal partner to accompany shipowners on their challenging journey towards 2050s.

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