



As companies consider the next stage in development past the use of scrubbing technology, *Clean Shipping International* talks to **Stefan Petersson, of Yara Marine Technologies** about the company's plans



Stefan Petersson
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A FUTURE-PROOF PORTFOLIO

Q As Yara Marine Technologies' emphasis shifts from being a scrubber provider to becoming a green technologies enabler, could you tell us more about the evolution of the company and its offering?

A Since day one, Yara Marine Technologies (YMT) has had a green focus and desire to help shipping be more sustainable. Our initial focus was to help operators comply with the IMO 2020 sulphur cap through the use of scrubbers, enabling them to comply with emission restrictions without needing to switch to expensive distillates. Over the past few years, the maritime sector and regulatory bodies have increased the focus on decarbonisation.

However, following the covid-19 pandemic and dovetailed with a weakening oil price, the appetite for scrubbers has weakened. Consequently, this has presented us with the opportunity to re-evaluate our portfolio to meet shifting customer demands.

Our commitment to helping fight climate change made the new path clear: to provide and scale up clean technologies that benefit

the shipping industry on its decarbonisation journey. Thus, our mission moved beyond scrubbers to "providing technologies to enable a greener maritime industry". We are glad to see that maritime sensibilities have matured and stakeholders agree on the need to decarbonise, allowing us to concentrate on getting the best solutions to our customers.

For decarbonisation to be sustainable, we believe that we must keep an open mind to all available options. We have taken this approach with our portfolio, which consists of a mixture of both existing and emerging solutions. Over the past year, we have embraced a wide range of clean technologies, including solutions to automatically reduce consumption of any fuel on a vessel (FuelOpt), collect and analyse fleet-wide data (Fleet Analytics) and eliminate emissions at berth using shore power solutions.

We are also very proud of our partnership with BAR Technologies to develop, produce, and commercialise WindWings – a wind-assisted propulsion solution.

Q There is still a lot of interest in scrubber solutions in the short term. Will Yara Marine continue offering scrubbers going forward? How do you think the scrubber business will evolve in the mid/long term?

A We believe in offering customers the right solution for their needs – and this includes emission abatement technologies such as scrubbers. In fact, we are constantly working on developing and improving both our in-line scrubbers (I-type and L-type) and packed bed scrubbers (U-type), with both open- and closed-loop options.

Our new scrubber installations include Yara Marine's ratio control system that prevents the YMT scrubber system from over-scrubbing and reduces operational costs by up to 60%. This efficiency gain is also possible for previously installed YMT scrubbers through a software upgrade.

While the industry will transition to alternative fuels in the long term, it is unsustainable to replace the existing fleet immediately, and retrofitting vessels to new fuels may not be technically or commercially feasible. This means that there will continue to be a market for vessels using conventional fuels, but these vessels need to comply with emission regulations. For these vessels that continue operating with heavy fuel oil (HFO) or a hybrid of very low sulphur fuel oil (VLSFO) and HFO, SO_x scrubbers are a suitable measure to improve their green profile.

Future fuels may also be suitable for scrubbing, so we are exploring all technological paths.



Q As the industry is closely following the fuel price increase, many ship operators are concerned about its financial impact and some are bringing back scrubbers into the discussion. What are your observations on this?

A The price of VLSFO (containing 0.5% sulphur) which is used by a majority of cargo ships is spiking, with news reports of a 55% year-on-year increase at the majority of bunkering ports. This has a huge impact on operating costs, especially in cases where fuel prices are fixed in charter parties and may prompt operators – particularly those who have been affected by the pandemic – to explore using less expensive fuel with higher sulphur content.

However, international regulations on emission levels are clear and non-compliance can have serious financial, operational, and reputational impacts. Scrubbers offer operators using HFO and hybrid fuels the flexibility to use whichever fuel matches their budget without risking vessel detention or onerous fines – and, most importantly, without compromising their commitment to protecting the planet.

Q Alternative fuel discussions are high up on the shipping's agenda. Which one do you think has the best chance of gaining the approval of the industry? What are the key challenges?

A Although some fuels, such as liquefied natural gas (LNG), methanol, hydrogen and ammonia, are seeing intensive research and heavy investment by vessel operators, there is no guarantee that the entire industry will settle on a single fuel. There are many factors that will affect the fuel used, such as bunkering infrastructure, funding to retrofit older ships or equip new technologies, government incentives and, of course, increasingly stringent – and ambitious – regulations.

I believe that shipping will use a mix of fuels in the mid- and long-term, with a fuel of choice in certain regions/across major routes. The eventual fuel landscape is dependent on a tipping point in favour of a chosen few fuels – or even one.

Q Considering that the large-scale use of alternative fuels will take time, what would your advice be to shipping companies for the short/mid-term emissions reduction?

A Our most important advice is for operators to act now. There are multiple emission reduction solutions available on the market and every minute and every drop of fuel counts. While some may worry about investing in technology that will become obsolete, we must remember that there is no single magic bullet to make shipping green forever.

Rather, progressively making vessels greener is the ideal way to save the planet and also meet regulatory requirements such as EEXI (Energy Efficiency Existing Ship Index) and CII (Carbon Intensity Indicator), which lay the foundations for continuous improvement of the global fleet.

The business case for going greener is also very apparent for vessel optimisation solutions, as reduced fuel consumption (irrespective of fuel type) limits both emissions and operating expenses. YMT customers using our vessel optimisation solutions – FuelOpt, Fleet Analytics, and Route Pilot AI – have confirmed the financial and operating benefits of closing the loop between the voyage planning, execution and post-voyage analysis stages.

Q Remembering the cold ironing debate for cruise ships and the issue of plugging into shore-side energy supplies, the challenge was that shore-based energy needed to be greener than energy from the ship's auxiliary engines, which very often was not the case. How is the situation in the industry today? What about the ship-to-shore power technologies? Are the other issues such as incompatible systems solved?

A Decarbonisation and sustainability conversations are happening around the globe in various industries. Not only are energy producers increasingly investing in renewables infrastructure, but there is also a greater degree of transparency about how green an energy source really is.



Shipping is one of many industries competing for access to cleaner energy, but I'm glad to say that we are already seeing ports, terminal operators, and shipowners factor energy sources into their decarbonisation equations

Furthermore, national, regional, and local regulatory bodies have already begun planning and implementing strict requirements for shore power, increasing the likelihood of this containing a higher percentage of clean energy in the mix.

Compatibility of systems across various ship types and ports is definitely an issue that must be considered carefully. In many cases, incompatibility is the result of operators combining various third-party systems that may not integrate well with each other.

At YMT, we address this by offering turnkey solutions that remove this risk in project-to-installation. Our

solutions are particularly cost- and time-efficient for large fleets, where compatibility in systems and equipment is critical to reduce the project management and administrative burden.

Furthermore, our worldwide after-sales and service is also able to manage customer needs (such as spare parts) for the lifetime of the product.

Q Does Yara Marine plan to expand its offering with other clean technologies?

A We believe that an open mind and collaborative approach are the ideal ways to build a greener future for maritime, which is why we are committed to adopting promising new technologies as they emerge. We feel strongly that our industry must be given all the tools it needs to transition to a decarbonised future.

Moreover, we wish to encourage and support the creation of new technologies, which is why we launched our three-month tailored start-up accelerator program, Yara Marine X.

The second edition Yara Marine X was launched in December 2021 and is targeted at start-ups focused on clean technologies for the maritime sector. We believe that our program gives newcomers a unique opportunity to gain direct access to our network and resources.

We are also keen to adopt and support existing technologies, which is why we welcome partnership opportunities. After all, working together will benefit everyone, not just from a business viewpoint, but also by helping to secure a greener tomorrow.