Ban on open-loop scrubber discharge

SULPHUR CAP Several countries have announced a ban on using open-loop scrubbers in their ports and inland waters, among them Belgium, Ireland and parts of the United States. Most recently, Singapore and China joined that list.

The 0.5% sulphur cap as legislated by the International Maritime Organization (IMO) will enter into force on January 1st 2020. To comply with the regulations, owners have different options: switching to low-sulphur fuels, burning distillates, using LNG or installing an exhaust gas cleaning system (EGCS) – or scrubber – on board their vessels.

However, it is still being widely discussed whether the latter represent an environmentally sound option. So far, open-loop systems have proved more popular than closed units since they are cheaper and need less space on board, but whether a scrubber merely moves the pollution from air to sea is currently a hot debate.

According to the classification society DNV GL, out of the currently 2,696 systems on order 2,130 are open-loop systems [1].

Singapore and China prohibit discharge

Several countries have already banned open-loop systems in their waters. Recently, the Maritime and Port Authority (MPA) of Singapore as well as the Ministry of Transport in Beijing, China, have prohibited vessels from discharging wash water in their port and emission control areas.

While in the Port of Singapore, vessels fitted with hybrid scrubber types are being advised to switch to closed-loop operation. As for vessels fitted with open-loop scrubbers, they would need to switch over to compliant fuel instead.

The MPA recommends operators to carry out the switch to either closed-loop mode or to compliant fuel well in advance of the vessel’s arrival in port waters, so that any operational issues can be identified and dealt with before the ship starts manoeuvring in heavy traffic.

From January 1st, the Ministry of Transport in Beijing has also banned the

 existing and upcoming areas in which the discharge of wash water is banned

Source: International Chamber of Shipping
technology from the country’s emission control areas (ECAs), which as of this year now cover most of China’s coastline.

The latest ship emission regulation document released by the Ministry has banned ships from discharging wastewater and burning residue from open-loop scrubbers across the country’s coastal and river ECAs, while ships are required to record the details of waste water and residue disposal.

**Objections by the EGCSA**

The Exhaust Gas Cleaning Systems Association (EGCSA) sees the harm of discharging the wash water from a scrubber as a common misconception. After the announcement by the MPA, it published a statement according to which the MPA provided neither scientific evidence for its decision nor was the industry invited for consultation.

“If there had been discussion, the Singapore MPA might have realised the high risks to human health resulting from the high toxicity of low sulphur fuels and more toxic distillates if no exhaust gas cleaning systems are used.”

According to the association, the recent announcement by the outgoing CEO of the MPA banning the discharge of process water from open-loop scrubbers for vessels visiting Singapore came without prior notice or discussion with the IMO despite the fact that the Singapore MPA is a signatory to MARPOL Annex VI.

Low-sulphur fuels are also expected to have less complete combustion and this will also contribute to higher particulate matter discharge and poorer air quality in Singapore, it added.

The Association was established in 2008 to help create a sustainable operating environment within the marine and energy industry sectors for exhaust gas cleaning system technologies, providing clarity and a rational voice for those companies interested in reducing marine exhaust gas emissions.

In its statement it refers to a paper from the German University of Rostock [2], which identifies low-sulphur fuel oils using 0.1% sulphur distillate as having a significantly higher toxic impact than heavy fuel oils (HFO).

In order to address black carbon and other harmful ultrafine particles, the use of exhaust gas after-treatment should become ubiquitous as long as liquid fossil fuels are the mainstay of a ship’s energy, the Association said. Investing in these technology developments would be hampered by administrations if they act as unreliable stakeholders.

This opinion is backed by Ralf Jürgens, senior engineer at Germany’s Primarine GmbH, a company that has engineered what it calls a tri-loop scrubber. In addition to working in open and closed modes, Primarine’s system has an open clean loop, in which the wash water is cleaned before being discharged into the sea.

“Singapore’s and China’s decision to ban open-loop operation of scrubbers is rather a political than a scientific-based decision and definitely a disadvantage for people living close to the shore of these areas. The emissions of sulphur oxides and particular matter can be reduced by roughly 90% even with open-loop scrubbers and by this the air quality for the people can be significantly increased. Both the environment as well as the health of human beings would benefit from the scrubbing of vessel exhaust gases even in open-loop operation,” Jürgens said.

Alfa Laval’s spokesperson for Exhaust Gas Cleaning, Erik Haveman, sees clear environmental benefits from closed-loop scrubber operation. The company’s new open-loop systems are thus designed as hybrid-ready so that customers can upgrade easily if circumstances change, he said.

Despite the current discussion, Finnish Langh Tech and STX Offshore & Shipbuilding has signed a deal concerning open-loop scrubber retrofits on seven vessels in the Polaris fleet

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**References**