Global ship emission standards adopted

New global limits on emissions of sulphur and nitrogen oxides from international shipping have been adopted by the International Maritime Organization.

The need for measures to reduce air pollutant emissions from international shipping has been on the agenda since the late 1980s. After years of negotiation, a first agreement – the Annex VI[1] to the IMO's MARPOL Convention – was adopted in 1997. But even at the time of adoption it was widely recognized as being insufficient.

Today, the maximum permissible sulphur content of marine fuels is 4.5 per cent, and the global average has been estimated to be between 2.5 and 3 per cent. The revised Annex VI adopted on 9 October by the IMO's Marine Environment Protection Committee (MEPC) meeting in London, means that the maximum limit will fall in stages to 3.5 per cent in 2012 and finally to 0.5 per cent in 2020.[2]

Marine fuels with a sulphur content of 0.5 per cent or lower are currently not widely available and the agreement calls for a 2018 review to check their availability. Depending on its findings, the 2020 target could be postponed to 2025. Moreover, if a ship can demonstrate that compliant fuel is not available to it, it may be granted an exemption from the new limits.

According to the agreement, exhaust gas cleaning systems, such as scrubbers and other alternative technologies or fuels may also be used to achieve the relevant emission reductions. For this purpose an IMO working group has produced draft revised guidelines for exhaust gas cleaning systems and interim washwater criteria for such systems – standards that are necessary to allow the use of scrubbers as an alternative to low-sulphur fuels.

Special low-sulphur zones, called Emission Control Areas (ECAs), where the sulphur limit is now 1.5 per cent, will face a stricter limit of 1.0 per cent in 2010 and 0.1 per cent in 2015. Currently the only Emission Control Areas are the Baltic Sea and the North Sea.

The new regulations will allow ECAs to be designated for sulphur and particulate matter, or nitrogen oxides (NO_x), or all three types of emissions, subject to a proposal from an IMO member country. The proposal would be considered for adoption by the IMO if supported by a demonstrated need to prevent, reduce and control one or all three of those emissions from ships.

A joint submission from France and Germany sought to relax the procedural requirements for ECA applications, and to remove the current 12-month delay between official ECA designation and the emission limits coming into force. But as there was no majority support for such changes, the criteria remain unchanged.

Bill Hemmings from Transport & Environment (T&E) said, "Despite the welcome global cap of 0.5 per cent sulphur, global shipping fuels will still be 500 times more polluting than road fuels. That's not good enough for Europe, with its bad air quality and dense population. We expect Europe to make the best use of the new ECA provisions, and apply the strictest fuel limits in all its sea areas."

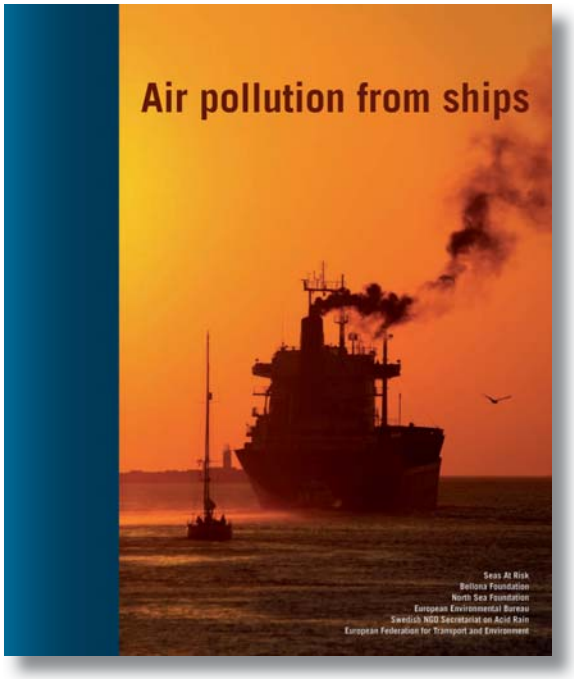
The revised Annex VI also sets new emission standards for nitrogen oxides (NO_x) from new ship engines in two steps. In the first step, emissions would be cut by between 16 and 22 per cent by 2011 relative to 2000, and in the second step by 80 per cent by 2016. The longer-term limit would only apply in specially designated areas, however.

As regards existing ship engines, no significant reductions are expected. It was only agreed that some of the largest existing engines from the period 1990–1999 should be – subject to availability and costs – fitted with an emission-reducing "kit" that is expected to be able to reduce NO_x emissions from those engines by 10–20 per cent.

While environmental organizations welcomed the new sulphur standards, they concluded that IMO yet again failed to agree on any meaningful NO_x reductions from the existing global fleet of over 90,000 ships. As a consequence, total NO_x emissions from shipping are expected to continue rising for at least the next several decades. In a joint press statement, environmentalists urged coastal states to take action on their own to reduce this type of shipping pollution on a national and regional basis.

On the other hand, the World Shipping Council, representing over 90 per cent of the global shipping capacity, expressed its full support for the issuance, ratification and implementation of the IMO's new international ship air emissions standards.

In the United States, the Environmental Protection Agency will submit an application to the IMO to designate US coastal areas as sulphur Emission Control Areas, according to a statement by the agency. The EPA says more than 40 of the ports are in metropolitan areas that do not meet federal air quality standards.



The EU must act!

Reaching agreement within IMO is not enough – there are good grounds for EU countries to go further. The pamphlet *Air Pollution from Ships* provides background facts and a series of recommendations, including the introduction of market-based instruments to speed up the adoption of low-sulphur fuels and reduce emissions of nitrogen oxides and particles.

The pamphlet was produced in collaboration between the Secretariat and five other organizations and is available at www.airclim.org/publications

"Massive reductions in air pollution from these large ships will help 87 million Americans living in areas around ports that don't meet air quality standards breathe cleaner air," said Margo Oge, director of the EPA Office of Transportation and Air Quality.

On 9 October the United States of America became the 53rd state to ratify Annex VI of the MARPOL Convention.

In sharp contrast to the progress on sulphur, the IMO stalled on efforts to control greenhouse gas emissions (GHG) from ships. The session had been expected to build on work at a meeting last June in Oslo convened especially to address the issue (see AN 3/08, pp. 19–20). But the discussions in London quickly became bogged down in political questions with developing countries in particular saying they will not accept any action by IMO on climate change that does not respect the principle of "common but differentiated responsibilities". IMO activities are built around the principle of equal treatment for all ships.

As it became evident that the GHG debate would not be able to move forward, it was agreed that another so-called intersessional meeting will be held on 9–13 March 2009. The aim is still to adopt a binding instrument regarding GHG emissions from ships during session 59 of the MEPC, to be held in July 2009.

Christer Ågren

[1] Annex VI "Regulations for the prevention of air pollution from ships" of the IMO's MARPOL Convention was adopted in 1997 and entered into force in 2005. It has so far been ratified by 53 countries representing about 82 per cent of the gross tonnage of the world's merchant shipping fleet. Annex VI sets a global cap of 4.5 per cent on the sulphur content of fuel oil, and contains provisions allowing for special "SOx Emission Control Areas" (SECAs) to be established with more stringent control on sulphur emissions. In these areas, the sulphur content of fuel used onboard ships must not exceed 1.5 per cent. Alternatively, ships must fit an exhaust gas cleaning system or use other methods to limit SO2 emissions. The Baltic Sea was the first SECA to come into effect in May 2006, followed by the North Sea in November 2007. Annex VI also sets limits on the emissions of NOx from new ship engines as from 1 January 2000, but these standards are so weak that in practice they do not have any appreciable effect.

[2] The revised Annex VI, as adopted on 9 October 2008, will enter into force on 1 July 2010 under the tacit acceptance amendment procedure. This means that the amendments enter into force six months after the deemed acceptance date, 1 January 2010, unless within the acceptance period an objection is communicated to the IMO by not less than one third of the Parties or by Parties whose combined merchant fleets constitute no less than 50 per cent of the gross tonnage of the world's merchant fleet.

Sea-Cargo orders ferries powered by LNG

Sea-Cargo AS in Norway has placed an order for two multi-purpose ro-ro ferries powered by liquefied natural gas (LNG) rather than bunker fuel. Designed in close cooperation between Sea-Cargo, Seatrans and Rolls-Royce, they will be built in India and are believed to be the first of their kind.

In a statement the Bergen-based firm explained: "With focus on reducing exhaust emissions from short sea and coastal vessels, we identified LNG as the future fuel of choice." The vessels are due for delivery in 2009 and 2010 and will operate on a weekly service between the west coast of Norway, UK and mainland Europe.

The ships are 133 metres long and have a deadweight tonnage (dwt), a measure of the weight of cargo a ship can safely carry, of around 5,600 tonnes. Compared to a similar ship using liquid fuel, CO_2 emissions will be reduced by about 20 per cent, NOx by about 90 per cent, particulates will be negligible and sulphur dioxide emissions will be zero.

Source: www.sea-cargo.no/news09_08.asp

New dual-fuel engine

Finnish engine maker Wärtsilä says its new 50DF dual-fuel engine can run on either liquefied natural gas (LNG), marine diesel oil (MDO) or on heavy fuel oil (HFO), and that the engine can smoothly switch between fuels while running and is designed to give the same output regardless of the fuel used.

A joint venture between Wärtsilä and Hyundai Heavy Industries in South Korea has received an order from Flex LNG for four ships that will be equipped with dual fuel engines. The order calls for a total of 16 Wärtsilä 50DF engines to be installed on four Floating Production Storage Offloading (FPSO) vessels to be built by Samsung Heavy Industries. The first engine for the FPSO order will be delivered in February 2010.

Source: www.wartsila.com

New publication: Shipping impacts on climate: A source with solutions (2008)
Ships emit more carbon dioxide worldwide than most individual countries. Yet these ship emissions are entirely unregulated. Among the recommended short-term solutions in this report are speed reductions and a switch to cleaner fuels. Published by Oceana, USA. Available at www.oceana.org/fileadmin/oceana/uploads/Climate_Change/Oceana_Shipping_Report.pdf