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## Mission: Impossible?

**Deep divisions on political principles has so far prevented the International Maritime Organization (IMO) from delivering any binding instruments to control carbon emissions from the global shipping industry.**

Shipping's response to global warming was high on the agenda when the IMO's 59th Marine Environment Protection Committee (MEPC 59) met in late July 2009. The MEPC was expected to deliver a

'roadmap' to take forward to the United Nations Framework Convention on Climate Change (UNFCCC) conference in Copenhagen in December.

The December conference will discuss a successor instrument to

the Kyoto Protocol to cut global carbon dioxide (CO<sub>2</sub>) emissions. There is strong political pressure to ensure that shipping and aviation are included in a new global agreement, and the European Union has already signalled that

failure by the IMO to deliver satisfying proposals could lead to unilateral action.

Despite growing political pressures and the spectre of unilateral action, mandatory measures and market based instruments to reduce greenhouse gases (GHGs) from shipping were still some way off after the week-long MEPC meeting.

### Clash of principles

The IMO always strives for regulations that are global and equally applicable to all ships, regardless of flag state. Deviating from this principle could create an uneven playing field and could see unscrupulous owners shift to flag states with more lenient regulations.

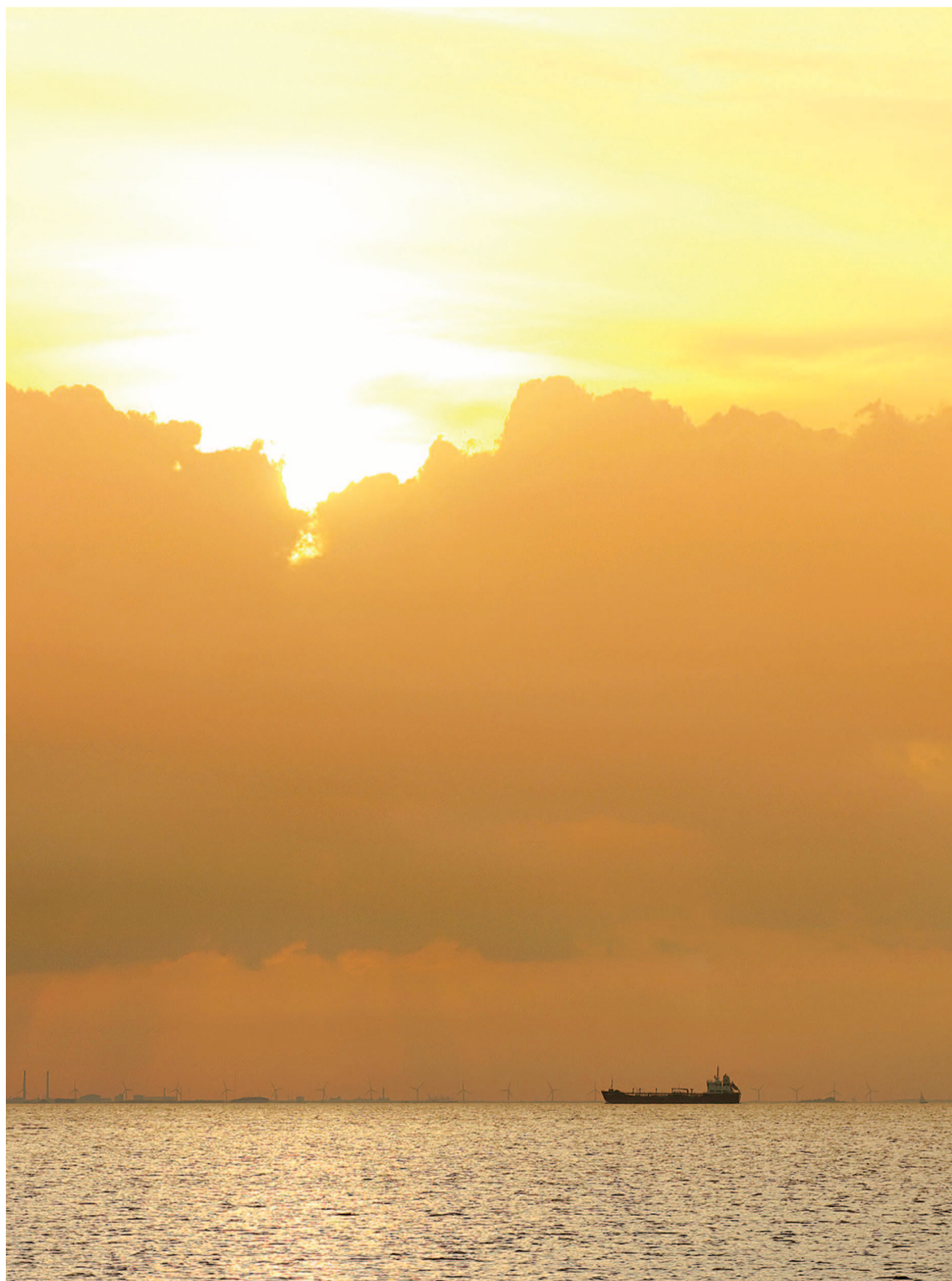
But throughout the GHG debate at the IMO, it has become clear that many countries will not accept any mandatory GHG instruments unless another principle is taken into account: the UNFCCC's 'common but differentiated responsibilities' for developed and developing nations. This principle recognises that developing countries have been responsible for the largest share of GHG emissions. As the per capita emissions in developing countries are still relatively low, their share of global emissions will grow to meet social and development needs.

Several MEPC delegations were unwilling to commit to a universally applicable GHG convention at the IMO for fear it would set a precedent for other UN instruments. It would therefore be impossible for the IMO to agree on mandatory GHG measures for global shipping prior to the UNFCCC conference in Copenhagen in December, according to sources close to the negotiations.

### Voluntary measures

At the end of the session, the MEPC 59 "agreed to circulate a package of interim and voluntary technical

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*Market-based measures still in the distance for shipping.*

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and operational measures to reduce greenhouse gases (GHGs) from international shipping."

The voluntary measures agreed are intended to be used for trial purposes until the Committee's sixtieth session (MEPC 60) in March 2010, when they will be "refined, as necessary, with a view to facilitating decisions on their scope of application and enactment," the IMO said.

The voluntary measures include interim guidelines on the Energy Efficiency Design Index for new ships, guidance on the development of a Ship Energy Efficiency Management Plan for new and existing ships, as well as guidelines for voluntary use of the Ship Energy Efficiency Operational Indicator for new and existing ships, which enables operators to measure the fuel efficiency of a ship.

Prior to MEPC 59 in July, the IMO said it expected to "hold an in-depth debate on possible mar-

ket-based instruments" to cut shipping's carbon emissions.

"Such measures would have two main purposes: to offset growing emissions in other sectors; and to serve as an incentive for the industry to invest in more fuel-efficient technologies. The two market-based instruments that will be discussed at the MEPC are a maritime emission trading scheme and an international contribution fund for GHG Emissions from ships, based on a global contribution on marine bunkers," the IMO said.

But the report from the working group on GHG emissions presented to the MEPC plenary at the end of the week made no reference to market-based instruments. Its main focus was the Energy Efficiency Design Index for new ships and other technical and operational measures.

The MEPC agreed, however, that market-based instruments will come under "further consid-

eration" at its next session, in March 2010. By that time, it will also be able to take into account relevant outcomes of the climate change conference that the United Nations will convene in Copenhagen in December 2009.

### Future GHGs

The MEPC was assisted in its deliberations by the outcome of the Second IMO GHG Study on greenhouse gas emissions from ships, 2009. The study estimated that ships engaged in international trade in 2007 contributed about 2.7% of global carbon dioxide (CO<sub>2</sub>) emissions.

The study identified a significant potential for reduction of GHGs through technical and operational measures, as well as through market-based instruments. Without global emissions reduction policies for shipping, the study suggests that the sector's CO<sub>2</sub> output could increase by 150-250% by 2050 due to the

expected continued growth in international seaborne trade.

The IMO's decision process is consensus-driven. Objections from just one country can halt progress on new binding instruments. This has played a big part in its slow progress on the GHG issue.

But the IMO has proven that it can deliver. The revision of the IMO's air pollution regulation, MARPOL Annex VI, was mired in controversy and for a long time it looked like it would be impossible. Yet an agreement was eventually reached that went far beyond what most had thought would be possible.

The outcome of MEPC 59 on GHG emissions from ships will be reported to the December UNFCCC conference in Copenhagen. It remains to be seen if it will be enough to satisfy negotiators there and allow the IMO to continue its work toward binding instruments to control GHGs from shipping. ■

Unni Einemo

# Emissions and the IMO

**As the international community moves to put in place tougher restrictions on greenhouse gas (GHG) emissions, particularly carbon dioxide (CO<sub>2</sub>), to limit the effects of human activity on the global climate, shipping's contribution to global emissions has come under increasing scrutiny.**

**M**EP C 59 was under intense pressure to make real progress on measures to reduce shipping's carbon footprint, and deliver a 'roadmap' to take forward to the United Nations Framework Convention on Climate Change (UNFCCC) conference in Copenhagen in December.

Considering the urgency of the GHG issue, the outcome of the week-long meeting was underwhelming. No mandatory measures were agreed and discussions of market-based instruments were referred to the next MEPC meeting in March 2010.

While only limited progress was made on shipping's response to global warming, several aspects of the IMO's air pollution regulation, MARPOL Annex VI, were clarified and a major new emission control area (ECA) approved in principle.

### Annex VI

When the revision of MARPOL Annex VI and the NO<sub>x</sub> Technical Code was formally adopted by MEPC 58 in October last year, it was hailed by MEPC chairman Andreas Chrysostomou as a "magnificent and monumental adoption".

But the MEPC still has work to do on the revised MARPOL Annex VI, which is expected to enter into force on July 1, 2010. It sets global limits for emissions of sulphur oxides (SO<sub>x</sub>) and nitrogen oxides (NO<sub>x</sub>). It also allows for specially designated emission control areas (ECAs) to set even tighter limits on SO<sub>x</sub>, NO<sub>x</sub> and particulate matter (PM).

The global marine fuel sulphur cap will be reduced to 3.50% in January 2012, with a long-term global target of just 0.50% in 2020 or 2025, subject to a review by 2018. In ECAs, sulphur limits are set to drop to 1.00% in July 2010 and to 0.10% in January 2015.

The regulation also allows for exhaust gas cleaning systems (EGCS) and other alternative technologies or fuels to achieve the relevant emission reductions.

Implementation of this global regulation gives rise to a number of practical questions addressed by the MEPC.

### Fuel quality

In April 2008, the IMO requested the International Organization for Standardization (ISO) committee that overlooks the revision of the ISO 8217 marine fuel standard to develop a marine fuel oil

specification that meet the needs of MARPOL Annex VI. According to the IMO's brief, it should address air quality, ship safety, engine performance and crew health.

The quality parameter limit recommendations suggested by the ISO to MEPC 59 caused several points of concern to be raised. A proposed hydrogen sulphide (H<sub>2</sub>S) limit of 2 parts per million (ppm) was one point of contention. The ISO has suggested such a limit for practical reasons, but it does not guarantee that H<sub>2</sub>S gas will not be released during onboard transport, storage and handling of the fuel.

ISO proposed to use CCAI (Calculated Carbon Aromaticity Index) to measure ignition quality. This was also questioned. Marine fuel testing agencies have said that CCAI doesn't always work as fuel blends have become more complex. A 'normal' CCAI rating can sometimes mask a fuel that proves to have poor combustion.

In light of concerns raised, it was deemed 'too early' for the MEPC to endorse the parameters and limits proposed by the ISO, and the ISO was asked to go back to the drawing board.

### IMO fuel standard?

The reason the ISO has been asked to help the IMO identify suitable marine fuel parameters is calls from some quarters for the IMO to produce its own marine fuel standard. This was reiterated by the tanker owner association INTERTANKO at MEPC 59.

The revised MARPOL Annex VI lays down limits for sulphur content in marine fuels and has provisions for how to deal with non-compliance on sulphur limits. But fuel tests sometimes indicate chemical waste and inorganic acids contamination, which would mean the fuels are not compliant with regulation 18 of MARPOL Annex VI.

"That information is provided by laboratories which perform tests on commercial fuel samples. No authority is involved in this type of monitoring," a technical group report from MEPC 59 noted.

INTERTANKO stressed that there is currently no enforcement mechanism for ISO 8217 and the provisions of regulation 18 under MARPOL Annex VI.

The ISO told MEPC 59 that the ISO 8217 standard will be revised by July 2010 as per the IMO's request. How to the link

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## MEPC REPORT



A North American ECA including the US West Coast was approved.

the commercially applied ISO 8217 standard and the IMO's MARPOL Annex VI regulation has yet to be resolved. Some say that pressure for mandatory fuel quality standards will grow if deteriorating fuel quality leads to more instances of engine damage, with potentially disastrous consequences.

### Scrubber debate

Guidelines for exhaust gas cleaning systems (EGCS) were adopted at MEPC 59, including washwater criteria, but with the provision that there will be a review sometime after 2010.

EGCS, also referred to as scrubbers, have been widely publicised as a cost-effective alternative to low-sulphur fuels to cut emissions of SO<sub>x</sub> and PM from ships. A number of systems are under development, some already installed on ships.

The IMO committee considered interim criteria for discharge of washwater based on input received by the Joint Group of Experts on the Scientific Aspects of Marine Environment Protection (GESAMP). Concerns about the environmental effect of washwater discharges from such systems were reiterated during discussions at MEPC 59. A lack of clarity on this point has been seen as one of the biggest obstacles to gaining acceptance for exhaust gas scrubber systems among shipowners.

The issue was the subject of an impassioned debate between those seeing problematic issues raised by the GESAMP report, and those warning that the report should not be used as "a tool to halt scrubber development", especially as there are concerns about sufficient low-sulphur fuel availability to meet future regulatory limits.

The technical group dealing with MAR-

POL Annex VI issues said in its report at the end of the week: "The washwater discharge criteria are intended to act as initial guidance for implementing EGC system designs. The data should be revised in the future as more data becomes available on the contents of the discharge and its effects, taking into account any advice given by GESAMP."

It leaves concerns about future washwater criteria, especially for operations inside ports and estuaries that are deemed particularly vulnerable. One solution might be systems that can operate on a 'closed loop' that emit no washwater during port operations, or ensure washwater meets all criteria both now and in the future.

### New ECA approved

One of the major developments at MEPC 59 was that the joint US/Canada ECA proposal was approved in principle, and will be put forward for formal adoption at the next MEPC meeting in March 2010. The proposal calls for an ECA reaching 200 nautical miles (nm) off the Atlantic and Pacific shores of the two countries.

A number of questions and potential problems were raised during the proposal's first airing. Several countries expressed concern about its geographical extent. China said it could not support a proposal for such a large area, citing fears that it could set a precedent for new ECA applications and eventually lead to "most shipping areas becoming ECAs." Many also raised concerns about sufficient availability of low-sulphur fuel, and that the provision of low-sulphur fuel would cause an increase in GHG emissions.

The issues raised during Monday's plenary were all addressed by the Technical Group on MARPOL Annex VI issues in

the following days. It was agreed that the proposal had satisfied the application criteria, and clarifications were given on several elements that had caused concern. It was made clear, for example, that the 200 nm size was not linked in any way to the extent of the US and Canada's exclusive economic zones (EEZs), and that the ECA dimensions "are not to be viewed as a precedent" for future applications. It was also agreed that the increase in GHG emissions resulting from refineries producing more low-sulphur fuels was "small compared with the benefits of the ECA," according to the Technical Group's report.

Mexico also hinted that it may join the North American ECA, though it was not clear when. "We expect very soon Mexico will be part of this area," a spokesperson for the Mexican delegation said.

### Sulphur monitoring

The global average sulphur content of residual fuel oils for use on ships fell for the third consecutive year in 2008, according to a paper prepared for MEPC 59. The average sulphur content in residual bunker fuel fell by 0.05% to 2.37% in 2008.

The IMO has been monitoring annual average sulphur content in residual fuel oil for ships since 1999, when the global average was 2.70%. The global sulphur average has dropped since 2006, when the first ever Sulphur Emission Control Area (SECA) came into force in the Baltic.

The 2008 result involved 106,925 bunker fuel samples, but the IMO noted that the calculation method may give a false global average sulphur value. The average sulphur content is calculated on the basis of the number of samples tested, and does not take into account the quantity per bunkering. Ships tend to take small-

er parcels of low sulphur fuel oil (LSFO) than regular high sulphur bunker fuels, and may also be testing LSFO samples more frequently to secure compliance.

One of the three data suppliers to the IMO monitoring programme said that based on actual quantity, the 2008 sulphur average was 2.64% as opposed to the 2.37% figure based on the number of samples. This discrepancy may be addressed, as the IMO is planning to expand the scope of its sulphur monitoring programme to all marine fuels, and will discuss whether to take into account the quantity of each bunker delivery when calculating a global sulphur average.

### Sampling guidelines

Revised guidelines for "the sampling of fuel oil for determination of compliance with the revised MARPOL Annex VI" were adopted at MEPC 59. These were in essence the same as current IMO guidelines on how to collect the MARPOL sample, which is meant only for use by port state control authorities.

The IMO Guidelines specify the sampling methods and the sampling location. They state that a sample of the fuel delivered to the ship "should be obtained at the receiving ship's inlet bunker manifold and should be drawn continuously throughout the bunker delivery period."

This point has met resistance in the bunker industry, which usually provides commercial samples to ships taken at the barge manifold. The draft MEPC resolution says the IMO "invites Governments to apply the Guidelines, as amended by this resolution," when the revised MARPOL Annex VI enters into force.

Guidelines from the IMO are meant to encourage uniform enforcement of its regulations around the world, but in practice they cannot dictate national legislation. In Singapore, for example, local regulations are in line with the IMO sampling guidelines, but the UK recently adopted laws that leaves it up to the bunker supplier and receiving ship to decide where the sample is drawn.

### Review

The refining and shipping industries are concerned about sufficient supply of low sulphur fuel in 2015, when the sulphur limit for fuels used in ECAs drops to just 0.10%. There is even greater concern about the long-term 0.50% sulphur limit globally, which is why the timing of that limit (2020 or 2025) will be decided by a 2018 review.

Abatement technology aside, the 0.50% global limit means ships will have to switch from the residual fuel oil dominating marine fuel consumption today to middle distillate fuels. Industry groups warned shipping will be competing with other sectors for growing global demand for middle distillates, and urged MEPC 59 to set up a correspondence group now.

The MEPC was split almost evenly for and against, but decided, on balance, that it was premature to set up this correspondence group just yet. The issue will be revisited at future MEPC meetings, the first of which, MEPC 60, is scheduled for March 2010. ■

Unni Einemo