

# Where is emission legislation going?

**New rules for ship emissions and fuel standards will have a major impact on the bunker industry. Bunkerworld asked Robin Meech from Marine and Energy Consulting Limited to look at what lies ahead.**

There is already a formidable array of regulations besetting ship operators to curb their emissions to air. Everybody has now been convinced that the marine industry must, in line with practically all other sectors, clean up its act.

At the moment there are three protagonists imposing, or about to impose, regulations that will increase the scope and stringency of these regulations.

The International Maritime Organization (IMO) was the initial promoter of cleaner air above the seas. After nearly 20 years of debate, the United Nations agency has established a global cap on sulphur levels of 4.5%, which is practically irrelevant, and introduced two SOx Emission Control Areas (SECAs). These include some of the most impacted and sensitive areas, but the reduction in SOx emissions may so far not have lived up to full expectation because enforcement and hence compliance has been patchy. With respect to NOx emissions, it has been realised that the original regulations only resulted in a modest reduction, that paled when compared with the increase resulting from higher traffic volumes, and valiant efforts are now under way to rectify this.

The IMO, through Annex VI of MARPOL 73/78, is also mandating to reduce ozone depleting substances, although HCFCs can be used on new ships until 2020, and to reduce volatile organic compounds and emissions from shipboard incineration. There have been few reports on the success of these initiatives.

The tardiness and lack of environmental impact of the IMO regulations spurred the UN agency to instigate a study. This was, to some extent, constrained by a limited remit, insufficient time and budget, and most of the individuals in the team appointed to undertake the study had a vested interest.

In spite of this, the final report submitted to the IMO's Bulk Liquids and Gases (BLG) sub-committee, charged with defining a set of regulations to be agreed through the IMO process, provides a very useful basis for the quantification of the potential environmental impact of a range of options defined beforehand. Quantification of data in the bunker sector is fraught with difficulties. For example, nobody actually knows how much bunkers are consumed, by whom or where. The report nevertheless provides a practical basis for debate which is accepted by most parties, something new and valuable.

It is highly questionable, based on past performance, whether the political exponents of the IMO debating processes can emerge with useful regulations that are practical, equitable, cost effective and, most important, enforceable. However, there is a new attitude emerging and expectation that a reasonable set of regulations will emerge. It will be a very encouraging surprise if the IMO produces the goods in a reasonable time frame. The BLG debate

commenced on February 4, 2008. The earliest any new regulations could be enforced is during the first quarter of 2010.

## Examining the options

The recent IMO instigated report demonstrated some of the practicalities of the various proposed options to reduce sulphur deposition on sensitive or critical areas. This analysis of where emission are deposited is extremely complex, but insight is forthcoming from analysis, much of which is undertaken in Norway, under the auspices of the Cooperative Programme for Monitoring and Evaluation of the Long-range Transmission of Air Pollutants in Europe (EMEP). This analysis suggests that reducing emissions in coastal waters is by



Heated debates at the IMO.

far the most cost effective initiative. Reducing the global sulphur cap in marine fuels may be less effective.

The proposal to switch all bunkers to distillate fuels has some very obvious environmental and operational benefits, but would double bunker costs to all operators. Unfortunately it is impractical for at least another ten years by whence the supplier will probably have the capacity to provide the required distillate bunkers while destroying and finding alternative markets for over 300 million tonnes of residual product each year. Introduction of an all distillate option, if it proved to be the most cost effective means of cleaning up the environment, and this is by no means proven to date, could not be implemented much before 2020.

With respect to SOx, IMO is likely to continue with the existing structure of SECAs and a global cap. The size and number of SECAs will increase and the maximum sulphur level permitted for use in the SECA will be rapidly decreased. The United States is suggesting 0.1%, while the European Union, the shipping organisation BIMCO and Norway are proposing 0.5% as the maximum. It is interesting that neither the US nor Norway have instigated any reduction in the current global cap of 4.5%, perhaps in recognition that reduc-

ing it would not be cost effective. BIMCO, and others prescribe to a potential lowering of the global cap to 3.0% within four years. This proposal is unlikely to result in a supply crisis for lower sulphur fuel.

There is debate as to whether SOx emissions actually reduce global warming since they increase cloud cover, while Swedish academics have reported that the absorption of SOx into the world's oceans release CO<sub>2</sub>. The CO<sub>2</sub> issue, which must eventually be addressed by the marine sector, emerges in the debate on SOx control. Reducing the sulphur contents of bunkers and converting fuel oil to distillates in the refinery generates far more CO<sub>2</sub> than reductions in CO<sub>2</sub> emissions that can be achieved by switching the global fleet away from fuel oil bunkers to distillate fuels.

## Other issues

There are two other issues that may benefit from review by the IMO committees at this stage. Firstly, the process for justifying a SECA which is defined in Appendix III of Annex VI. This was drafted before the importance of Particulate Matter (PM) emissions from shipping was well recognised and prior to the development of detailed modelling techniques that increase confidence in the estimates of long-range transboundary pollution disbursement. Appendix III could therefore benefit from a reassessment.

Secondly, the enforcement issue and the resulting compliance have not perhaps been addressed in sufficient depth. Although IMO, as a UN agency, cannot specify how each member state enforces Annex VI or what level of penalties are imposed, more constructive guidelines and legal explanation would benefit the planet through the resulting increased compliance. The enforcement procedures for air pollution legislation outside a nation's territorial waters remain under debate. Interpretations of the United Nations Convention on the Law of the Sea (UNCLOS) suggest that a nation state has little jurisdiction over a foreign flag vessel outside its territorial waters with respect to air emissions. It can report an offending foreign flag vessel, for example, for using bunkers with a sulphur content greater than 1.5% in an existing SECA, but outside its territorial waters, to the vessel's flag state authority. It is solely at the discretion of that state as to whether any action is taken. No doubt some flag states will be more responsive than others.

## What if the IMO fails to deliver?

There is little doubt that debates within the IMO have been heated and possibly drawn out, which does not bode well when they are restricted to one week of discussions.

What happens if IMO does not produce an acceptable set of proposals during 2008 to

reduce SOx deposition on critical areas, on land and at sea? There is little doubt that Europe, through Brussels, and the US, through the office of the Environmental Protection Agency (EPA) and possibly in conjunction with its neighbours, Canada and Mexico, will instigate their own regulations.

In September 2007 the European Parliament, as the second protagonist in the emissions debate, set out its "strategy" on reducing marine emissions which included:

- Reducing sulphur levels in SECA and for passenger vessels to 0.5%;
- Designating the Mediterranean Sea as a SECA;
- Promoting shore side electricity for vessels while in port (cold ironing);
- Considering taxes on SOx and NOx emissions;
- Discounting port/fairway dues for low emission ships;
- Establishing NOx emission standards;
- Seeking the lowest cost solution balancing land and marine emission.

The EPA, as the third protagonist, has indicated, through its proposals to the IMO that it would prefer a SECA around the whole of North America, stretching some 200 nautical miles from the coast, with a maximum sulphur level of 0.1%. This in practice is an all-diesel option in a large area of ocean. The jurisdiction of the North American governments on emissions from foreign flag vessels outside their territorial waters remains contentious. The benefits of extending the SECA to 100 miles, let alone 200 miles will, no doubt, also be the subject of subsequent debate.

Even if IMO defines a reasonable set of regulations this year, the rules still have to be included in each member state's own domestic legislation to become enforceable. Let us hope we can avoid a situation where there is a whole host of unilateral regulations that are only being partially enforced, and hence complied with. This will lead to even higher costs to professionally operated vessels who comply, putting them at even greater disadvantage with the less professional ship owner. Also, such a situation will not be optimum for reducing the growing harmful emissions from the marine sector.

There is no doubt that the discussions within IMO in the immediate future are critical and it can only be hoped that the participants are cognisant of the potential benefits to mankind, particularly those living in coastal areas, and adopt a global view rather than the rather parochial attitude often displayed in previous debate. ■

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