

Sulphur limits bring results

A report prepared for the International Maritime Organization (IMO) says the sulphur limits agreed for existing sulphur emission control areas (SECAs) are leading to large emission reductions. And bunker suppliers operating in the Baltic are convinced there is good compliance among ships operators.

There have been mixed industry opinions about compliance with the two European SECAs, in particular since it was expanded from the Baltic to the North Sea and English Channel in 2007.

The SECAs, introduced under the IMO's MARPOL Annex VI regulation, are aimed at reducing harmful emissions from ships. The IMO report says the global limit of 4.50% sulphur currently in force under MARPOL Annex VI is "widely acknowledged" to not practically reduce global sulphur emissions since marine fuels rarely exceed this limit.

"However, the SECAs do have a significant impact," according to the comprehensive IMO study on emissions from shipping.

The 'Second IMO GHG Study 2009' has been prepared in time to assist the July meeting of the IMO's Marine Environment Protection Committee (MEPC) in July, where the UN-body will try to extend its regulatory framework for shipping emissions to include carbon dioxide (CO₂).

42% reduction

The study estimated that the 1.50% sulphur limit in force in the Baltic Sea and

North Sea SECAs led to a 42% reduction in sulphur dioxide (SO₂) from shipping in these areas during 2008.

Globally, that equated to a 3.4% reduction in SO₂ from shipping compared to the hypothetical unregulated scenario without any SECA sulphur limits in place.

2008 was used as the base year for the estimate "since this is the first year in which both of the sulphur emission control areas (SECAs) have been fully in force," the report said.

The numbers are based on a set of assumptions, such as the amount of fuel used in the SECAs compared to global consumption, the average sulphur content of the fuel used within the SECAs, and the probable sulphur content in the fuel in the absence of the MARPOL Annex VI limit.

It assumed that the average sulphur content of heavy fuel oil (HFO) used within the SECAs averaged 1.5% versus a 'non-SECA' average of 2.7%. For marine diesel oil (MDO), the study assumed a 0.5% sulphur average both inside and outside SECAs. The study estimated that fuel consumption within the SECAs accounted for 8% of global fuel consumption. It pegged HFO consumption in the existing SECAs at 27 million metric tonnes (mt) in 2008.

On that basis, the study concluded that the 1.50% sulphur limit has reduced SECA SO₂ emissions to 0.7 million mt in 2008 compared to 1.2 million mt under a non-regulated scenario, a 42% reduction. Globally, the 0.5 million mt reduction in SO₂ emissions due to the SECAs represented a 3.4% drop to 14.4 million mt, according to the study.

Good compliance

Judging by the volume of low-sulphur fuel oil (LSFO) compared to high-sulphur fuel oil (HSFO) sales in many North European ports, compliance with the Baltic SECA appeared to be quite good from the start. On the evidence of LSFO demand and what they hear in the market, suppliers operating the region tell Bunkerworld they still think this is the case.

"I think compliance is very high actually, but we only see those vessels that take bunkers," commented Patrik Pettersson, Executive Vice President of leading Swedish bunker supplier Stena Oil AB. The company is a physical supplier the ports and coastal waters of Sweden, Denmark, Norway and the Baltic part of Germany.

O.W. Bunker, which supplies in a similar range and in some Baltic states, expressed a similar view. "From O.W. Bunker's perspective, compliance with SECA levels by operators seems to be good, and we have not heard of anything to the contrary," said Henrik Johnsen, Sales Manager, Scandinavia and The Baltic.

"I am convinced that the operators in the SECA area are complying to the rules," said Carl Johan von Sydow, Project Manager Sales and Logistics at Swedish supplier Topoil AB.

"Getting caught burning HSFO in a SECA area is not worth the risk compared to the loss in confidence from the market. Environment is in great focus on all levels."

Fuel sales grow

Initially, most LSFO stems were quite small compared to HSFO stems as the fuel was only needed for sailing in the Baltic SECA.

Theoretically, owners should need more LSFO since the SECA was expanded to the North Sea and English channel in 2007.

There are mixed reports from suppliers



Sales of LSFO in the region have increased.

in the Baltic about whether stem-sizes have increased and overall sales of LSFO versus HSFO have increased.

"Sales have increased over the past year, and we now sell a rough split of 50/50 in terms of LSFO versus HSFO," said Johnsen from O.W. Bunker.

"Clearly the implementation of the [second] SECA has influenced the increase in demand for LSFO product," he observed, adding that the company believes typical LSFO stem sizes have doubled to around 300 metric tonnes (mt).

"Yes, I would say that the stem-sizes have increased, I believe that vessels now buy fuel to last both ways, both into and out of the area, if the price is right," von Sydow concurred. He said Topoil sells approximately 75% LSFO and 25% HSFO.

Stena Oil also thinks individual stems of LSFO have "increased somewhat" - maybe by 25-30% - since the expansion of the SECA.

"I think we are not a model to get any general conclusions from, though, as our market share for HSFO has increased in the local market. Our sales volume have increased by about 100,000 mt year-on-year," Pettersson told Bunkerworld. He said the company has a 60/40 split in favour of HSFO in terms of fuel oil sales.

But he observed that on the distillate side, Stena has experienced a strong decline in sales of 1% sulphur marine diesel oil (MDO) sales in favour of 0.1% sulphur marine gas oil (MGO) due to EU regulations.

A supplier in Tallinn, Estonia, mean-

while, has not seen any discernable change in stem sizes or share of HSFO versus LSFO sales since last year. NT Marine's sales in 2008 were dominated by LSFO sales at 76.8% while 23.2% of sales where HSFO, a senior trader with the company told Bunkerworld.

Russian bunker suppliers operating in the Baltic are also selling more LSFO than HSFO. Gazpromneft Marine Bunker, the bunkering arm of Russian oil company Gazprom Neft, has been focusing on LSFO sales since it first began bunkering operations in the port of St. Petersburg in December 2007. "Our sales are something like 85% LSFO 15% HSFO," a trader with the company told Bunkerworld. The company has expanded its Baltic operations from St. Petersburg to Primorsk, Kaliningrad and Ust Luga, and sells mostly LSFO in all these areas.

Outside the Baltic, there have been reports of growing sales of LSFO in the Amsterdam-Rotterdam-Antwerp (ARA) bunkering hub, and a leap in bunkering calls to pick up LSFO in the UK port of Falmouth, which lies right at the southern edge of the SECA. Despite that, there continues to be skepticism about SECA compliance, especially outside the Baltic, until enforcement of the sulphur limit becomes more rigorous.

Lower limits

The coming into force of the revised MARPOL Annex VI and the NOx Technical Code (Annex VI) on July 1, 2010, means two things for the European SECAs.

First of all, the current 1.50% sulphur limit will drop to 1.00%. But according to Johnsen at O.W. Bunker, the company does not foresee any issues with supply and demand for LSFO when the sulphur limit drops to 1.00% next year.

"One of the biggest concerns in the industry has been whether the supply of LSFO can meet demand. However, O.W. Bunker has always maintained that this would not be an issue, which has subsequently been proven, and we foresee no issues going forward as demand continues to increase," Johnsen said.

Fuel sulphur content is the only specified limit in current SECAs and future ECAs. But under the revised MARPOL Annex VI, the term Sulphur Emission Control Area, or SECA, is being replaced with Emission Control Area, or ECA.

This will allow for ECAs to specify limits not just for sulphur oxides (SOx), but also for particulate matter (PM), nitrogen oxides (NOx), or all three types of emissions from ships.

Radical changes

The second change is more dramatic, though, and will take place in 2015. "Future (sulphur) emission control areas ((S)ECAs) will limit the maximum sulphur content of the fuels that are used within these areas to 0.1%. This is a radical improvement from the present-day average of 2.7% of sulphur in residual fuel, although it will still be 100-times higher than the levels of sulphur in automotive diesel fuels (10 ppm, 0.001%),"

the IMO GHG study noted.

It said significant reductions in emissions can be achieved by extending ECA coverage.

Long term reductions in emissions in the revised MARPOL Annex VI will lead to a 96% drop in SO2 within ECAs and a 80% reduction globally, the study estimated.

The supply side has warned that the 2015 ECA sulphur limit, which would require a change to distillates for vessels operating within them, will be challenging. This is especially true if there is a proliferation of such control zones. Already, the US and Canada have submitted a joint application the IMO for their coastal waters to be designated as an ECA.

The revised MARPOL Annex VI also calls for the global sulphur limit in marine fuels to be capped at 0.50% from 2020 or 2025, depending on the outcome of a review in 2018. Again, the supply side has warned that sufficient supply of low sulphur fuel in time for these target dates is unfeasible.

Assuming all regulations go ahead as planned, the IMO study predicted a long term 73% global reduction of particulate matter (PM) emissions, or 83% within ECAs. Nitrogen oxide (NOx) emissions could fall 15-20% globally or by 80% within ECAs under the regulatory regime compared to an unregulated scenario. ■

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