

# A new era for shipping in California

The introduction of California's Air Resources Board low-sulphur fuel regulation on July 1 has already had quite an impact on the state and shipping. Bunkerworld takes a look at the benefits and challenges of this new rule.

On July 1 the California Air Resources Board (ARB) introduced the low-sulphur fuel regulation, a move that may not have been welcomed with open arms by everyone in the industry but one that has had, and will continue to have, a dramatic impact on both shipping and air quality in California.

Under the ARB fuel regulation, oceangoing vessels (OGV) operating within 24 nautical miles of California's coastline will be required to use either marine gasoil (MGO), with a maximum of 1.50% sulphur, or marine diesel oil (MDO), with a maximum of 0.50% sulphur in their main engines, auxiliary engines and auxiliary boilers.

Beginning January 1, 2012, vessel operators will then be required to use MGO or MDO with a maximum 0.10% sulphur in their main and auxiliary engines and auxiliary boilers.

The environmental benefits of the new rule are both immediate and substantial, according to Paul Milkey, ARB's oceangoing vessel specialist. Milkey foresaw that the day after the ruling was introduced an immediate reduction in particulate matter

(PM) would be seen. The impact of fine particulate matter (PM2.5) and other ship emissions has been a problem in California for quite some time.

ARB studies at the ports of Los Angeles and Long Beach and in the West Oakland community found that of the port-related emissions, ships are responsible for over half of the increased population-weighted cancer risks in nearby communities. The Coalition for Clean Air add that every day that a ship sits at a port dock unloading its cargo, it releases a tonne of toxic, smog-forming pollutants. More than 4,000 tonnes of these pollutants, the equivalent of approximately 115,000 vehicles, are produced each year at the Ports of Los Angeles and Long Beach alone.

As a result, environmental teams at the ports have worked hard over the past couple of years on the regulation to try and reduce shipping's impact on the population of California, 80% of whom live along the coast.

## ECA link

The ARB hopes the new ruling will help

prepare shippers should the US/Canada proposal for an Emission Control Area (ECA) get given the green light.

"We see the regulation as a bridge to the proposed ECA just as the LA/Long Beach ports voluntary fuel incentive scheme acted as a bridge to the ARB regulation," ARB staff who worked on the fuel regulation said.

Under the proposed US and Canada submitted proposal, ships operating within ECAs are required to reduce the sulphur limit of the fuel used to 1.50% at present, and then down to 1.00% in July 2010, and to 0.10% from the start of 2015.

Staff at the ARB added that should the US ECA proposal get given the go ahead, the California fuel rule will then cease to operate.

"We are fully supportive of the US ECA proposal. There are additional benefits to be had from reducing emission out to 200 nautical miles, the ARB is fully supportive of this," said ARB staff.

## Challenges

The new rule has posed, and will continue to pose, challenges for both the ARB and shippers.

First there are the operational challenges involved with switching fuels. The ARB conducted extensive research working with manufacturers, operators and the US Coast Guard on the feasibility of using the cleaner marine distillate fuels, Paul Milkey told Sustainable Shipping.

As an added precaution, however, the Coast Guard released a marine advisory to shipowners and operators to apply caution when switching fuels to reduce potential risks and prevent propulsion losses.

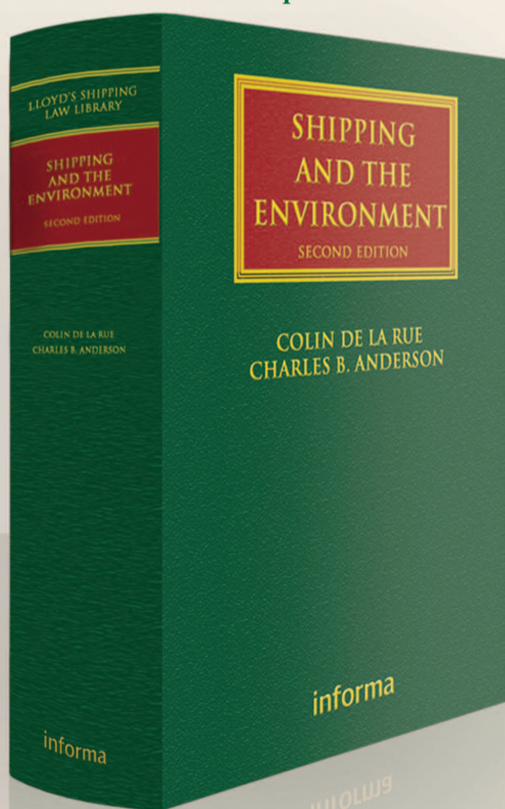
"Proper procedures, training, and maintenance are essential for vessels to safely switch between heavy/ intermediate fuel oils and marine distillates," the Coast Guard Marine Safety Notice cautioned.

The advisory warned that some ships have experienced propulsion losses linked to procedural errors or fuel oil incompatibility. It also alerted vessel owners, operators and engineers to a paper developed by the American Petroleum Institute (API), 'Technical Considerations of Fuel Switching Practices' which discusses precautionary measures to avert any problems.

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## SUSTAINABLE SHIPPING

### Fuel availability

The most challenging issue, however, and one that has sparked much debate when it comes to the new ruling, is meeting the demand of low-sulphur fuel. Milkey said that one of ARB's biggest challenges in creating the new rule was looking at the worldwide availability of the fuel.

"We've spent a couple of years working on this rule, conducting an extensive analysis looking at MGO and MDO availability," Milkey said.

He stated that in certain cases there may be an occasional issue with the availability of low-sulphur fuel, but emphasised that there were measures in place should that happen.

"The way we set up the regulation was to phase in the 0.10% sulphur limit in 2012 to allow for this," added Dan Donahue, another member of the ARB team who worked on the rule.

Although California appears to be well-positioned to deal with current fuel supply issues, it has once again sparked off debate over concerns of global availability. Over the past few years many shipowners and suppliers alike have said that as more ports follow California's lead and ECA's become the norm, availability will become a big problem.

The two existing ECAs in the Baltic Sea and the North Sea/English Channel account for 19% of global bunker fuel sales, according to a recent report by global shipping and commodity brokers Poten & Partners.

Should the US and Canada receive approval for an ECA, the three areas would account for 30%, around 1 million barrels per day (bpd), of global residual bunker sales.

"Assuming that vessel scrubbing technology is not commercialised for use by then, the anticipated 2012 jump in 1.00% low-sulphur fuel oil (LSFO) demand could eventually strengthen the cost of LSFO compared to the cost of crude oil," the report stated.

Poten went on to warn that this would lead to a diesel net shortage in Europe of roughly 1 million bpd and North America diesel net surplus of about 200,000 bpd in 2015.

"This could mean that beyond 2015, North America's estimated diesel surplus would meet US and Canada's marine diesel demand only halfway. In Europe, projected diesel net short position would further deepen with marine diesel demand increase," the report stated.

### Suppliers preparing

Chemoil is one global marine supplier who has recently spoken out saying they are well-positioned to meet increased demand for low-sulphur marine fuels generated by any regulatory changes in the United States and Canada.

"The US has proven that it is serious about accelerating its efforts to reduce shipping emissions and understandably this poses a challenge to all members of the shipping community. Collectively we must rise to this and find solutions that are both operationally and commercially sustainable," said Adrian Tolson, vice president, sales and marketing.

Chemoil has recently completed the expansion of its Carson Terminal in Los Angeles to provide additional storage for

cleaner products and continues with its plans to increase storage capacity to support this business at its Long Beach Marine Terminal, according to a company press release.

Chemoil is also taking proactive measures to explore solutions that will enable vessels to meet the more stringent requirements from 2015 onwards. Tolson said the company was "encouraging the industry to tackle the issue practically yet creatively," by fully investigating the feasibility of alternative fuel sources and abatement technologies. Adding that this could help reduce sulphur emissions "without resorting to a solitary switch to distillates" while also potentially being able to tackle incoming limitations on PM and NOx emissions.

### Opposition

Although the low sulphur fuel regulation became legally effective on June 28 and compliance for the Phase I fuel requirements began on July 1, opposition to the rule continues. A recent Sustainable Shipping website poll showed that an overwhelming majority of poll respondents, 62%, said that the ARB should wait for the US ECA.

Concerns have also been raised over whether the ARB has jurisdiction up to 24 nm. In April the Pacific Merchant Shipping Association (PMSA) filed a complaint against the ARB on the then pending low-sulphur fuel regulation. The complaint stated that "under the Submerged Lands Act, the State of California has no jurisdiction to regulate vessels in waters that are seaward from California's territorial boundary of three geographical miles from its coast line."

At the time of going to press the PMSA continue to seek "a permanent injunction against enforcement of the regulations more than three geographical miles seaward of California's coastal baseline and a declaratory judgment that they are unlawful and unconstitutional to the extent they regulate the conduct of ships outside California's territorial limits."

In response, the ARB responded said that the PMSA "believe what they believe," but that the regulation is critical to help California meet its emission reduction goals.

### Cleaner future?

As California takes the lead with the new distillate fuel regulation, they will undoubtedly be under the watchful eye of the industry.

Air quality in California will improve as a result of the new regulation. Statewide, the emissions of PM and SOx are expected to reduce significantly by over 40% and 50% respectively, thereby reducing the number of premature deaths in the state.

There still remains a lot of questions about how the increased use of MGO and MDO will impact ozone concentrations and CO2 as a result of what ARB calls the 'avoidance strategy' - ships sailing around the 24 nm zone to avoid having to switch fuels.

These questions will no doubt be answered by further research and experience as the regulation starts to be enforced in California waters. ■

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