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Argus White Paper:

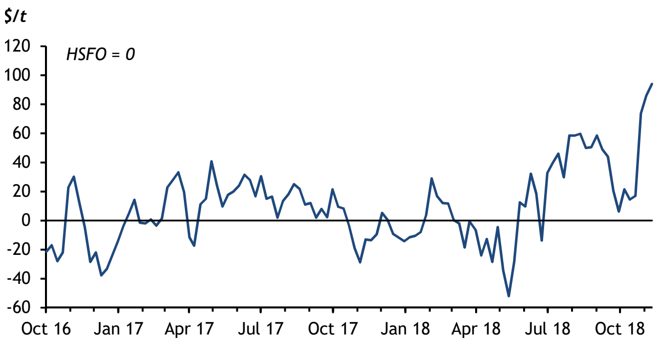
The future of bitumen pricing in Europe and Africa

IMO 2020 is accelerating the decoupling of the link between bitumen and fuel oil — new pricing tools are needed for a changing market.

Summary

The introduction of the International Maritime Organisation's (IMO) 0.5pc sulphur cap for marine fuels in 2020 (IMO 2020) is creating uncertain times for the bitumen industry as the historical link between bitumen and fuel oil prices is eroding. Traditionally, bitumen cargo prices have been discussed and assessed as a differential to high-sulphur fuel oil (HSFO), ranging from a discount of around $40/t to a premium of $60/t in the last two years, for Rotterdam.

Figure 1: Bitumen domestic Rotterdam differential to HSFO



But the IMO 2020 directive will slash demand for HSFO. Vessels fitted with scrubbers will be able to continue to use HSFO, although these are expected to represent a small minority of the global fleet — less than 5pc. The vast majority of vessels will need to switch to cleaner alternative fuels.

Following extensive consultation with the industry, Argus has changed its methodology for seaborne bitumen cargoes in Europe and Africa to focus on outright pricing. In the past, price reporting agencies typically assessed the bitumen differential to HSFO and then determined outright prices by adding that to the HSFO value. But the impact of IMO 2020 will decrease the future relevance of HSFO to the bitumen price, which will be influenced by completely different fundamentals and short-term factors.

From November 2018, Argus has widened the basis for assessing bitumen prices in Europe and Africa by also considering outright bitumen prices and differentials to crude for inclusion in the assessment. Differentials to HSFO are still taken into account, but are no longer necessarily the dominant input.

The result of this methodology change is to focus on the value of bitumen in its own right.

Fuel oil fundamentals are shifting

In October 2017, members of the IMO agreed at the 70th session of the Marine Environment Protection Committee to impose a significant cut to the maximum sulphur content for any fuel used by a shipping vessel from 2020, reducing the cap to 0.5pc from 3.5pc.

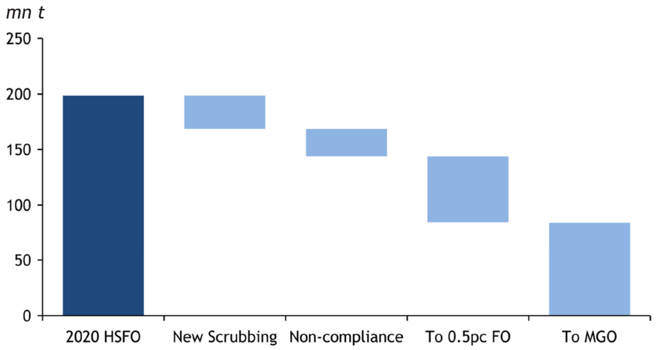
Vessels will still be able to use 3.5pc sulphur HSFO, but they will need to install exhaust scrubbers to reduce emissions to the equivalent of those generated by using 0.5pc sulphur fuel oil. Argus Consulting Services, a separate division of Argus, focusing on bespoke and multiclient studies for customers, estimates that only about 1,200 ships will be fitted with scrubbers by 2020, compared with a fleet of 45,000 vessels that currently use HSFO.

Given that only 3pc of the fleet will be able to carry on using HSFO, the vast majority of other vessels will have to switch from HSFO to cleaner fuels, at least in the initial phase.

Consumers and producers of HSFO will both be affected significantly by this change. Argus Consulting Services forecasts that IMO 2020 could slash consumption of HSFO by as much as 140mn t/yr, which is almost half the entire global output of the product.

Some refiners have already taken action to reduce their HSFO production by investing in cokers, crackers and deasphalters.

Figure 2: HSFO bunkers to be switched — 2020



But this will not be sufficient to match the expected fall in demand. This is likely to put significant downward pressure on HSFO prices.

The outlook for fuel oil and implications for bitumen

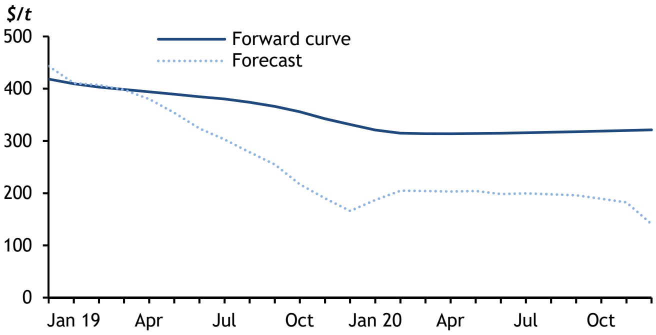
The historical connection between HSFO and bitumen prices is likely to disconnect as a result of IMO 2020.

Many refiners, especially those with simpler configurations, direct their residues to fuel oil or bitumen production, optimising between the two. This meant it made sense historically to price bitumen as a differential to HSFO.

Once the new sulphur cap comes into effect in January 2020, excess supplies of HSFO will need to find alternative buyers, It is probable that HSFO will have to compete with gas and coal for fuel burn in industrial and power markets. Even there, opportunities will be limited, given tight emissions controls. A dramatic drop in HSFO prices is likely to occur in relation to bitumen and the rest of the energy complex.

The HSFO forward curve — based on the swaps derivatives market — is around $100/t lower for January 2020 than December 2018 at around $320/t. But analysing fuel oil supply and demand going into 2020, Argus Consulting Services forecasts that HSFO prices will fall by considerably more than this, to around $190/t.

Figure 3: NWE HSFO price outlook



Bitumen by contrast is expected to be more than $300/t higher than this. The premium for bitumen to HSFO was only $20t in northwest Europe in November 2018.

Prospects for bitumen demand

Bitumen market dynamics are not the same as for the fuel oil market. The bitumen demand outlook is considerably more positive than for HSFO, with demand growing in most parts of the world as infrastructure spending recovers following the global financial crisis.

On the supply side, the future is less clear. Some market participants expect the IMO 2020 changes to lead to more bitumen being produced, as complex refiners opt to maximise the production of bitumen from residue at the expense of HSFO output, as fuel oil prices fall.

Others argue that the raft of modernisations — and closures of bitumen plants — could lead to less bitumen being produced and supply tightening, particularly during the peak paving season. A considerable number of European bitumen plants have closed in the past three years including Kuwait Petroleum at Europoort, Rotterdam; Total's La Mede in southern France; Colas' Dunkirk plant in northern France; and ExxonMobil and Total bitumen units in Antwerp. These closures account for a total of more than 1mn t/yr of bitumen production capacity.

In addition, BP's decision to end its European bitumen sales operation and close its only remaining bitumen-producing unit, at the 265,000 b/d Gelsenkirchen refinery in northwest Germany, by the end of 2018, has taken many by surprise. The move will further tighten availability in France, the Benelux countries and northern Germany, where severe product shortages occurred in June and July this year.

But bitumen economics look positive overall, especially compared with those for HSFO. So it is difficult to envisage that a falling fuel oil price could be an appropriate or useful reference for bitumen.

The need for certainty

Road paving tenders often involve several years of price exposure. Given the expected collapse in the HSFO price, some suppliers are already refusing to price bitumen as a differential to HSFO from 2020 and beyond. This will make it difficult for market participants to price asphalt in multi-year road pavement projects.

Hedging bitumen prices against HSFO, as is the historical norm, is likely to prove increasingly unpopular as the relationship between the two markets breaks down. Conditions in the HSFO market are also likely to be chaotic as the excess fuel oil supply struggles to find new outlets, creating an unstable environment for bitumen consumers and producers that are looking to offset risk.

Looking at the global picture for bitumen, the future looks likely to bring more trading opportunities within and between regions. The US Atlantic coast is regionally short and demand for bitumen in west Africa is increasing. But a volatile and falling fuel oil price will make the pricing of bitumen export cargoes against HSFO much more risky.

Bitumen pricing outlook

Bitumen markets are already changing and the pace will accelerate in the context of developments in HSFO demand. In Europe, there are already signs of more flexible terms and more regular price adjustments. From a relatively slow-moving market with monthly price changes that relate to moves in HSFO pricing, many suppliers and traders are now offering prices adjusted on a weekly basis. The relationship with HSFO is starting to dislocate and bitumen is increasingly becoming a commodity traded in its own right.

Argus' methodology reflects the new market dynamics in the lead-up to IMO 2020. By taking into account outright price discussions, differentials against Ice Brent crude, as well as talk and trade against HSFO, *Argus* prices represent the real fundamentals of the market.

METHODOLOGY

The Argus methodology for European and African waterborne cargoes focuses on outright bitumen pricing. It uses a diverse set of references against which bitumen prices are assessed and published in the light of forthcoming changes to marine fuels sulphur limits and the expected effect on the high-sulphur fuel oil market.

Argus considers for inclusion in its waterborne cargo assessments bitumen priced as a differential to fuel oil, as a differential to Brent crude or as an outright price. In addition to publishing the outright bitumen price, Argus also publishes the differentials to fuel oil and crude.

Fuel oil differentials are published against the midpoint of the low-high range of published Argus high-sulphur fuel oil assessments in the week of publication. Crude differentials are published against the midpoint of the low-high range of published Ice Brent one-minute marker prices in the week of publication.

Prices are assessed in \$/t and \$/bl. The conversion factors used for tonnes to barrels are 6.17 for bitumen and 7.53 for Ice Brent crude.

For further information, please contact the editor of Argus Bitumen, Jonathan Weston, at bitumen@argusmedia.com, telephone +44 (0)20 7199 5779