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Base Oils **Outlook** 2020

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Following a year characterised by political tensions in the Middle-East, the US-China trade war and the UK's departure from the EU, coupled with a significant new base oils plant opening in Europe mid-2019, some uncertainty in the global base oils market continues into 2020.

New IMO regulations on fuel oil could shift the upstream supply balance in 2020, while tariffs on Group II material entering the EU and continued US sanctions on Iranian material look set to impact global trade flows.

Squeezed margins and sluggish demand weighed on the global markets during 2019. Expected growth in automotive demand for 2020 could boost base oils interest, though global supply looks likely to remain ample throughout the year.

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THE AMERICAS 2020

Balanced-to-snug supply outlook underpins US base oil increases in early 2020

Shifting supply and demand fundamentals in US base oil markets have underpinned January's round of price increases, as cost pressures have eased on a weakening crude complex.

By Amanda Hay

Rising costs and tighter supply weighed on US base oil markets to start 2020, pressuring posted price levels that had been steady since spring 2019.

By the end of January, most US posted prices had risen by 20-30 cents/gal across Groups I, II, II+ and III on the back of a firm trend in upstream prices and a balanced-to-snug supply outlook.

The bottom left graph below shows Motiva's increase, which was the first announced US posted-price increase on 13 January. While the crude complex significantly retreated by the end of January, easing cost pressures, supply concerns remained.

The length that had marked the second half of 2019 had largely disappeared, and US market players expected supply to tighten in February as Excel Paralubes would be on turnaround at its Group II facility in Westlake, Louisiana.

Supply appeared sufficient for contracted customer bases in January, but availability was tight for spot purchases, especially lighter grades.

Posted-price increases were steeper on lighter grades, which have been in greater demand—particularly for use in fuel blending.

The increases were steeper than some market participants would have expected given that the crude complex began to lose strength by mid-January.

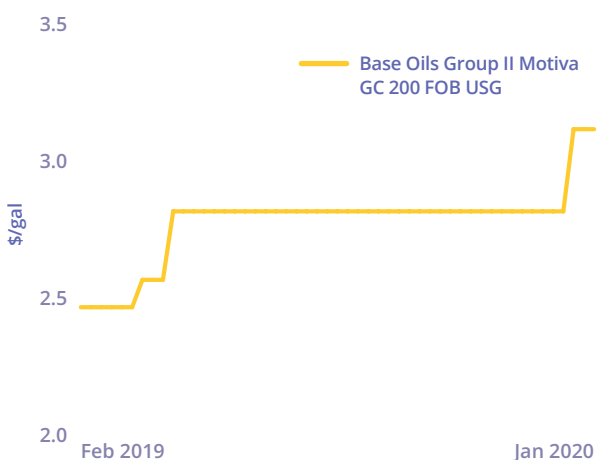
The bottom right graph below shows the weakening of West Texas Intermediate (WTI) and Light Louisiana Sweet (LLS), which closely tracks Brent, crude futures alongside VGO through the week ended 24 January.

Additionally, supply views were mixed with some market players not anticipating much tightening.

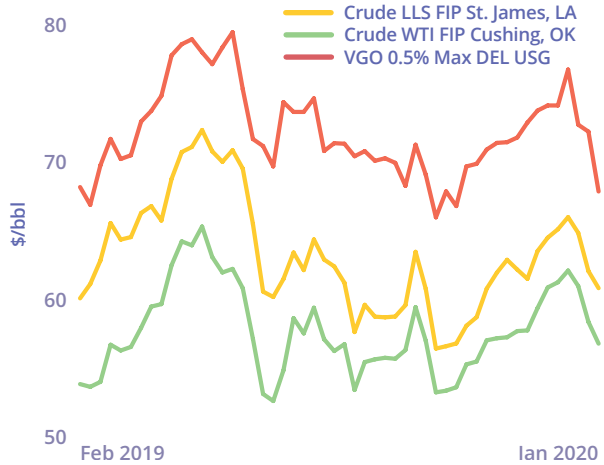
The January round of increases was likely to pull the typical peak demand season forward from the second quarter as buying interest is expected strong ahead of effective dates for finished lubricants price increases

Demand was expected to be strong ahead of effective dates for finished lubricants price increases in February and March.

US MOTIVA GROUP II GULF COAST 200N POSTED PRICE



US FEEDSTOCK PRICES



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FUNDAMENTALS SHIFT FROM LATE 2019

Early 2020 conditions were a shift from the back half of 2019, which was largely characterised by soft fundamentals offsetting volatile upstream prices.

Two separate posted-price increases prompted by temporary crude spikes—20 cents per gallon in July by Chevron and 12 cents per gallon in September by ExxonMobil—ultimately did not find support as crude futures quickly retreated.

Market players were looking for a more clear cost trend, and supply was readily available relative to steady-but-soft demand.

Most players started to anticipate a potential posted-price reduction by early October as West Texas Intermediate (WTI) crude futures had plunged to $52/bbl and Brent to $57/bbl.

A posted-price decrease had been typical in the past late in the year.

20-30

US posted prices had risen by 20-30 cents

Posted prices remained stable, however, on challenged margins and little change in either direction in crude prices through the fall.

Instead, domestic length was managed through temporary value allowances (TVAs) for some customers and through export markets, where prices were significantly pressured.

A feedstock cost uptrend started to emerge in early December, and US base oil supplies had begun to dwindle, with TVAs disappearing.

> "Feedstock cost uptrend started to emerge in early December last year, and US base oil supplies had begun to dwindle, with TVAs disappearing"

Crude and vacuum gas oil (VGO) maintained upside bias through the month and into 2020, especially as US-Iran tensions flared in early January and sent crude futures to their highest point since the attacks on Saudi Arabia oil infrastructure in September.

Firm costs and tightening supply underpinned the January price increase.

EU IMPORT QUOTA KICKS IN, WILL CHALLENGE US EXPORTS

Starting on 1 January, a quota for duty-free Group II base oils went into effect for imports into Europe, a key market for the US.

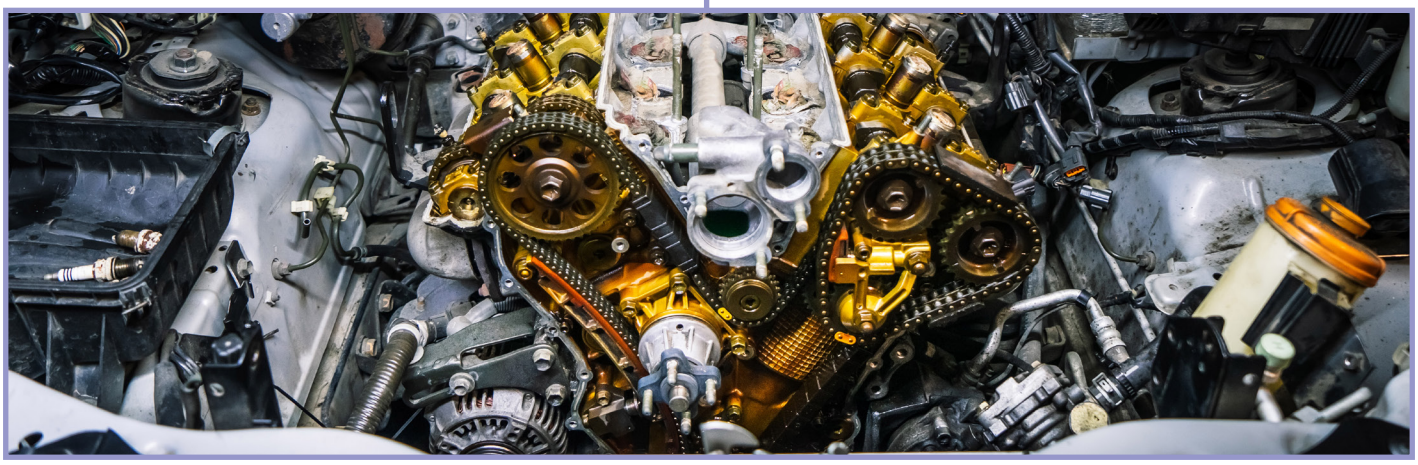
Under the quota, up to 200,000 tonnes of material per six months would be exempt from tariff and a 3.7% duty will be applied on volumes surpassing that limit. Material of a viscosity between 150N and 600N is included.

The challenge for US producers will lie in the fact that European demand for Group II material outpaces local supply sources, and many market players view the volume threshold as being too low.

Some market players expect the 200,000-tonne threshold to be surpassed fairly quickly in each six-month period.

Belgium, which accounts for the second-highest US export volumes behind Mexico at 13%, had already imported that amount by April in 2019, according to ICIS data.

If similar volume patterns apply this year, imports from April through June would be subject to the duty before the threshold resets in July. ■



ASIA 2020

Asia base oils to face reduced Group I & II supply

South Korea's SK Lubricants' 300,000 tonne/year Ulsan Group II unit has been idle since August 2019 due to poor margins.

South Korea's GS Caltex has cut the production at its 1.15m tonne/year Group II and 148,000 tonne/year Group III Yeosu units by 10-15% since August 2019 to switch to produce more gasoil because of better margins of the latter.

Taiwan's Formosa Petrochemical Corp (FPCC) has cut the operating rate for its Group II 150N base oils grade by 10-15% since early December 2019 for similar reasons. FPCC has a 600,000 tonne/year Group II unit in Mailiao which produces 70N, 150N and 500N grades.

Supply cuts in northeast Asia coupled with a 30% reduction at energy major ExxonMobil's Singapore-based Group II facility since July 2019 has offset the worsening overcapacity situation to some extent.

The following chart shows the spread between gasoil FOB Singapore prices and 150N FOB NE Asia spot prices. Refiners have much higher incentive to produce gasoil rather than base oils due to strengthening prices of the former.

One of the more prominent new start-ups in China in 2019 includes Hengli Petrochemical's (Dalian) 540,000 tonne/year Group II and III base oils units that came on-stream in April.

Asia's Group II spot import market is likely to find support in Q1 2020 from reduced spot availability from South Korea and Taiwan – the main exporters of Group II in northeast Asia – following production cuts since H2 2019.

By Matthew Chong

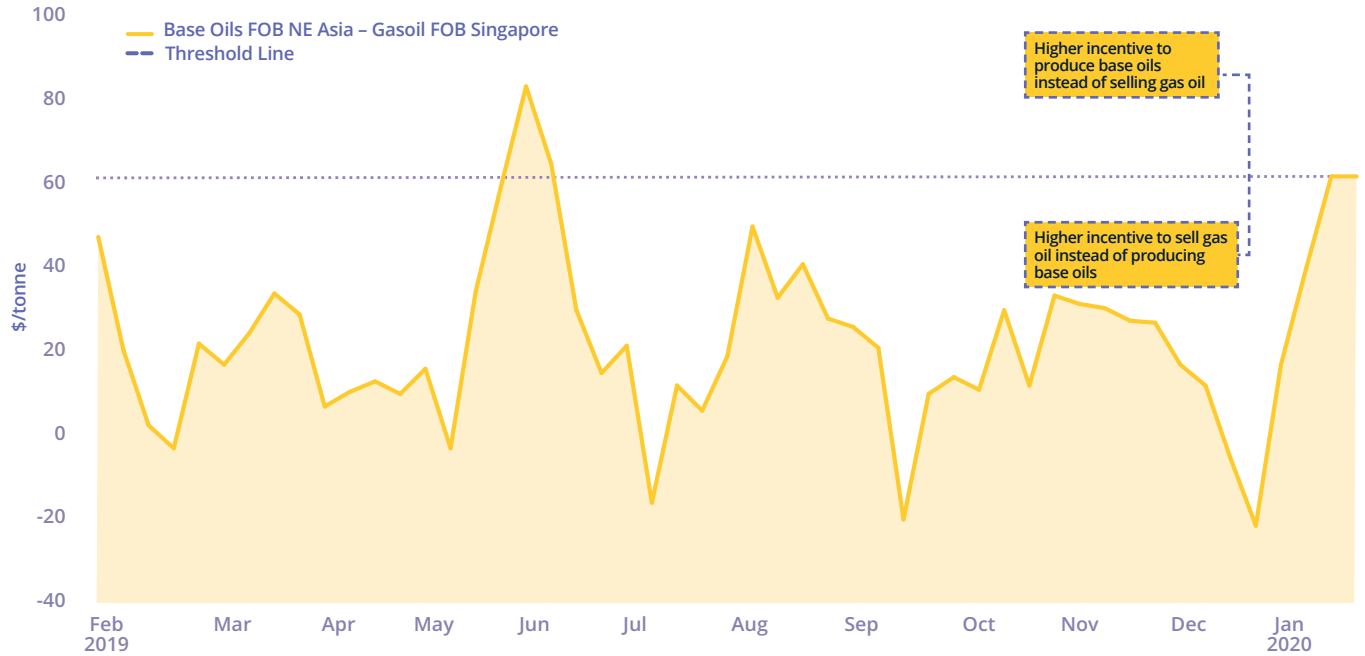
10-15%

South Korea's GS Caltex has cut the production at its 1.15m tonne/year Group II and 148,000 tonne/year Group III Yeosu units by 10-15% since August 2019 to switch to produce more gasoil because of better margins of the latter

As a result of these start-ups, northeast Asian suppliers outside China have been looking for alternative outlets for their GII cargoes as they found it more difficult to export to China.

Overcapacity in China is expected to aggravate further, with China's Hainan Handi Sunshine Petrochemical having further postponed the start-up of its massive 700,000 tonne/year Group II/III base oils unit in Hainan province to H1 2020 from end-2019 due to unfavourable market conditions.

FEEDSTOCK SPREAD – GASOIL AND GROUP II 150N ASIA



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Hainan Handi currently operates a 300,000 tonne/year Group II unit, which mainly produces Group II 70N, 150N and 500N grades.

As for Group I, supply of southeast Asia-origin cargoes is expected to tighten due to planned production cuts at a couple of Thai refiners' units in January 2020 because of poor production margins.

A major Japanese Group I refiner has recently cut base oils production at its refineries to produce more low sulphur fuel oil in preparation for International Maritime Organization (IMO) 2020, whereby ships will not be allowed to use fuel oil with sulphur content above 0.5% from 1 January 2020 onwards.

The actual impact of IMO 2020 on base oils prices is still unclear at the moment, with limited impact seen so far as of Q4 2019, other than that general shipping freights have begun to climb since October/November.

Group III, meanwhile, is expected to see an influx of lower-priced Middle Eastern cargoes into Asia including India, although original equipment manufacturer (OEM) approved material from South Korea still has a strong foothold in the more developed countries in northeast Asia, Europe and the US despite that they command a significant price premium.

South Korea's GS Caltex has cut the production at its 1.15m tonne/year Group II and 148,000 tonne/year Group III Yeosu units by 10-15% since August 2019 to switch to produce more gasoil because of better margins of the latter

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"In the Indian import market, competition for market share for Group I, II and III base oils group will likely intensify among refiners"

In the India import market, competition for market share for Group I, II and III base oils group will likely intensify among refiners from various regions including northeast Asia, southeast Asia, the Middle East, Europe and the US as sellers look for outlets for their cargoes amid long supply and a slowdown in overall demand growth for the key downstream automotive and industrial lubricants sector.

That said, market sentiment is expected to improve slightly following the US-China trade agreement on 15 December to suspend or lower the fourth round of tariffs that the two nations had planned to impose on each other on 15 December.

This is likely to be a positive development for the end-user automotive sector, although there is no direct impact on base oils or lubricants as its tariffs were already imposed in the earlier rounds. ■

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CHINA 2020

China base oils demand to remain weak; supply growth to slow

The global economic downturn, industrial structural issues and US-China trade conflicts have been exerting pressure on the Chinese economy.

Demand for Group I and Group II base oils from the industrial sector is likely to drop further in 2020.

While a phase 1 deal has been reached between the US and China on their trade war, which is now on its second year; political tensions between the two remain heightened.

Within China, increasing environmental inspections and the potential decline in economic growth may also drag down base oil demand.

China's economy is forecast to post a 2019 growth of 6.3%, down by 0.3 percentage points from 2018, according to the United Nations (UN) and the International Monetary Fund (IMF), and the pace of expansion could decelerate to 5.9% in 2020.

20.65m

China's vehicle sales fell by 9.7% to 20.65m units, while production declined 10.4% to 20.44m units

Demand for Group II and Group III base oils from the vehicle-use lubricant oil producers continued to dwindle in 2019 and may stay that way in 2020.

This was undermined by bearish vehicle sales and production which had witnessed 16 consecutive months of year-on-year decline from July 2018 to October 2019.

The declines reached over 10% in the first half of 2019 and did not ease until the third quarter. In the first 10 months of 2019, China's vehicle sales fell by 9.7% to 20.65m units, while production declined 10.4% to 20.44m units.

Within China, increasing environmental inspections and the potential decline in economic growth may also drag down base oil demand

China's base oils demand is expected to stay weak amid slowing economic growth in 2020, while fewer capacity addition, as well as reduced production and imports, would affect supply.

By Whitney Shi

"US and China on their trade war, which is now on its second year; political tensions between the two remain heightened"

An early switch to national standard GB-VI fuel in some regions in the country also weighed on domestic vehicle market in 2019.

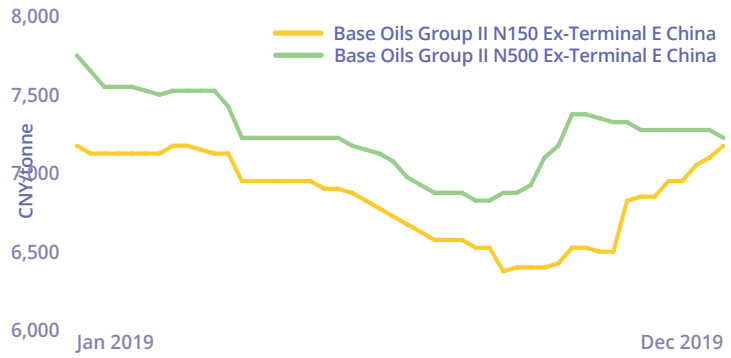
"Domestic vehicle sales will fall by at least 10% in 2020. It is an optimistic estimate that 22m units will be sold in 2020," said Lang Xuehong, deputy secretary of China Automobile Dealers Association.

Li Qiang, deputy director of manufacturing department of the Economic Advisory Centre under the State Information Centre, said that China's vehicle sales will fall by an average of 7.3% in 2019 and the weakness may persist into the next two to three years.

On 13 December, the average ex-terminal price of Group II 150N base oils in east China was assessed at CNY7,175/tonne, stable from 4 January 2019, with the lowest level during the period recorded in mid-August at CNY6,375/tonne, according to ICIS data.

Group II 500N base oil prices in east China averaged on 13 December at CNY7,225/tonne, down by CNY525/tonne over the same period. ■

EAST CHINA GROUP II BASE OILS 2019 EX-TERMINAL PRICES



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EUROPE 2020

Europe base oils brace for myriad effects of IMO 2020, looming EU tariff

Supply and demand are usually king for Europe's base oils market.

By Samantha Wright and Vicky Ellis

When it comes to 2020, international regulations for shipping and European trade rules are big factors at play, which could insert themselves into the more typical push and pull of the supply-demand balance.

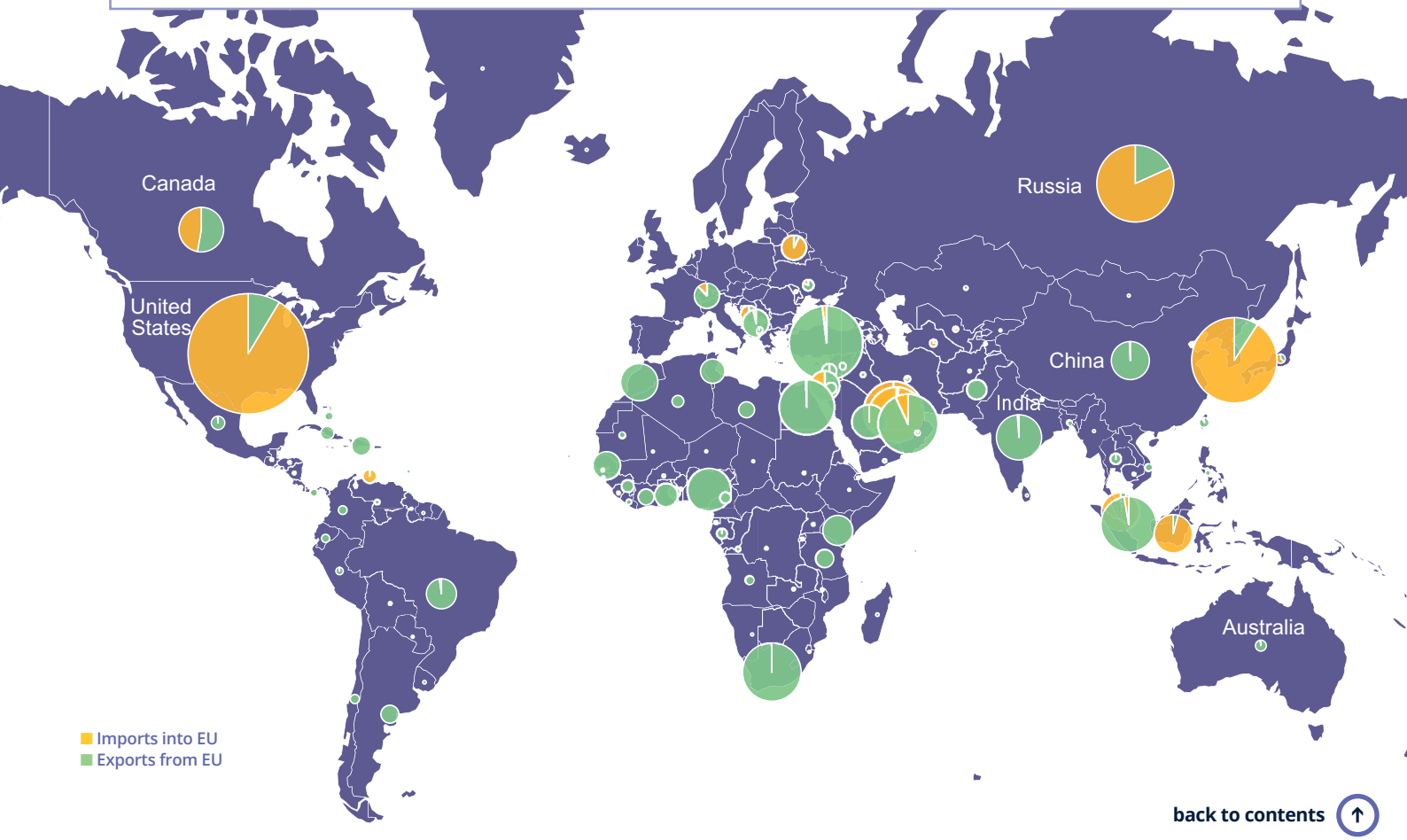
Players are steeling themselves for an uncertain year, be it the risk of rocky European economic performance or continued weak automotive demand (though forecasts are for a return to growth in 2020 for global automotive production), changes in refinery outputs or the impact of new global regulations and EU tariffs.

IMO LOW SULPHUR RULES INFILTRATE GROUP I

The major issue hanging over Group I in 2020 is the start of IMO (International Maritime Organization) rules governing low sulphur emissions for shipping from 1 January 2020.

Potential effects are numerous, including: access to feedstock vacuum gasoil (VGO); potential moves in price of that feedstock; the internal competition of the refinery; and changes in specifications in the downstream market for marine lubricants, which must alter to match the changing sulphur content of fuel oil.

EU BASE OILS TRADE FLOWS 2017



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What brings this even more sharply into focus is the wider dynamic in the base oils industry: doggedly low prices for Group I, especially lighter grades, are being prompted by an escalation in the shift towards Group II, III and poly alpha olefins (PAO) use for lubricants.

Margins remain pressured, with ongoing speculation about refineries cutting base oils output in favour of other products due to weak base oil values and comparatively high VGO prices. This may be compounded by preparation for IMO 2020 low sulphur fuel oil sales.

Speculation continues about the fortunes of Group I plants in Europe, and whether one could close after 2019's relentless pressure on margins. Purchasing activity from a refiner in late 2019, some rather unusual buying for light grades for the export market, confused some in the market. There is speculation there may be shorter supply of lighter grades as refiners favour fuel oil ahead of IMO.

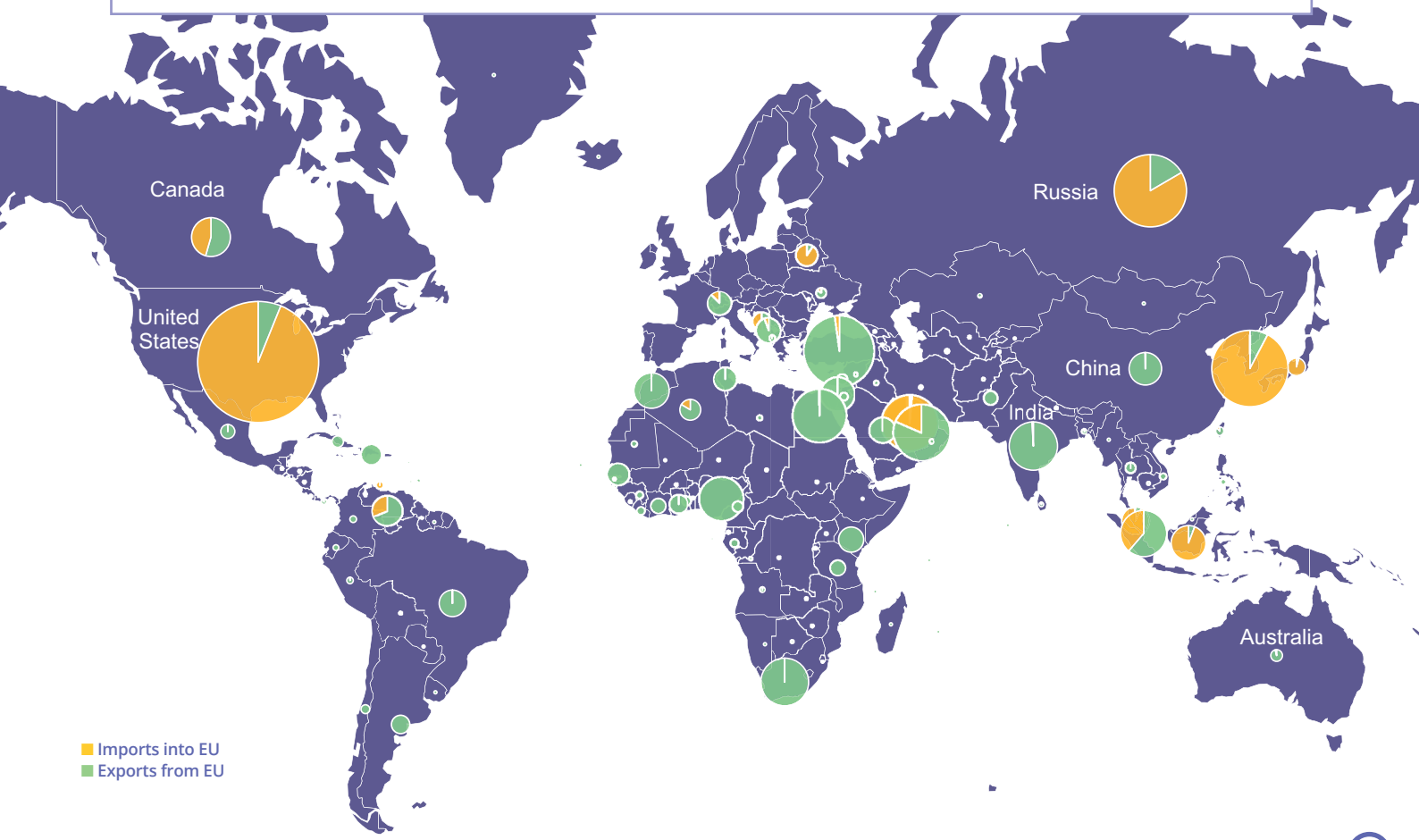
The confusion underlines uncertainty about the impact of IM0 2020 rules, with talk of different approaches emerging from refiners' sales strategies. Examples include - and this is not an exhaustive list - some reluctance to commit to contracts for the year due to uncertainty in the market, unless prices are fixed against VGO values, compared to a more aggressive attitude linked to protecting market share.

> "Margins remain pressured, with ongoing speculation about refineries cutting base oils output in favour of other products due to weak base oil values and comparatively high VGO prices"

Concern about Turkey's economy in 2020 is a factor watched by Black Sea market players. After 2019's "tough" year, with an "all time low" for sales in Turkey cited by one trading firm, "most companies in the petchems sector are forecasting 2020 [to] be worse," said the source.

While Europe's demand eases, export demand should prop up the Group I market to some extent, with African markets in particular likely to be dominated by Groupw I for the foreseeable future as outlined by speakers including ExxonMobil at the ICIS African Base Oils & Lubricants conference in November 2019.

EU BASE OILS TRADE FLOWS 2018



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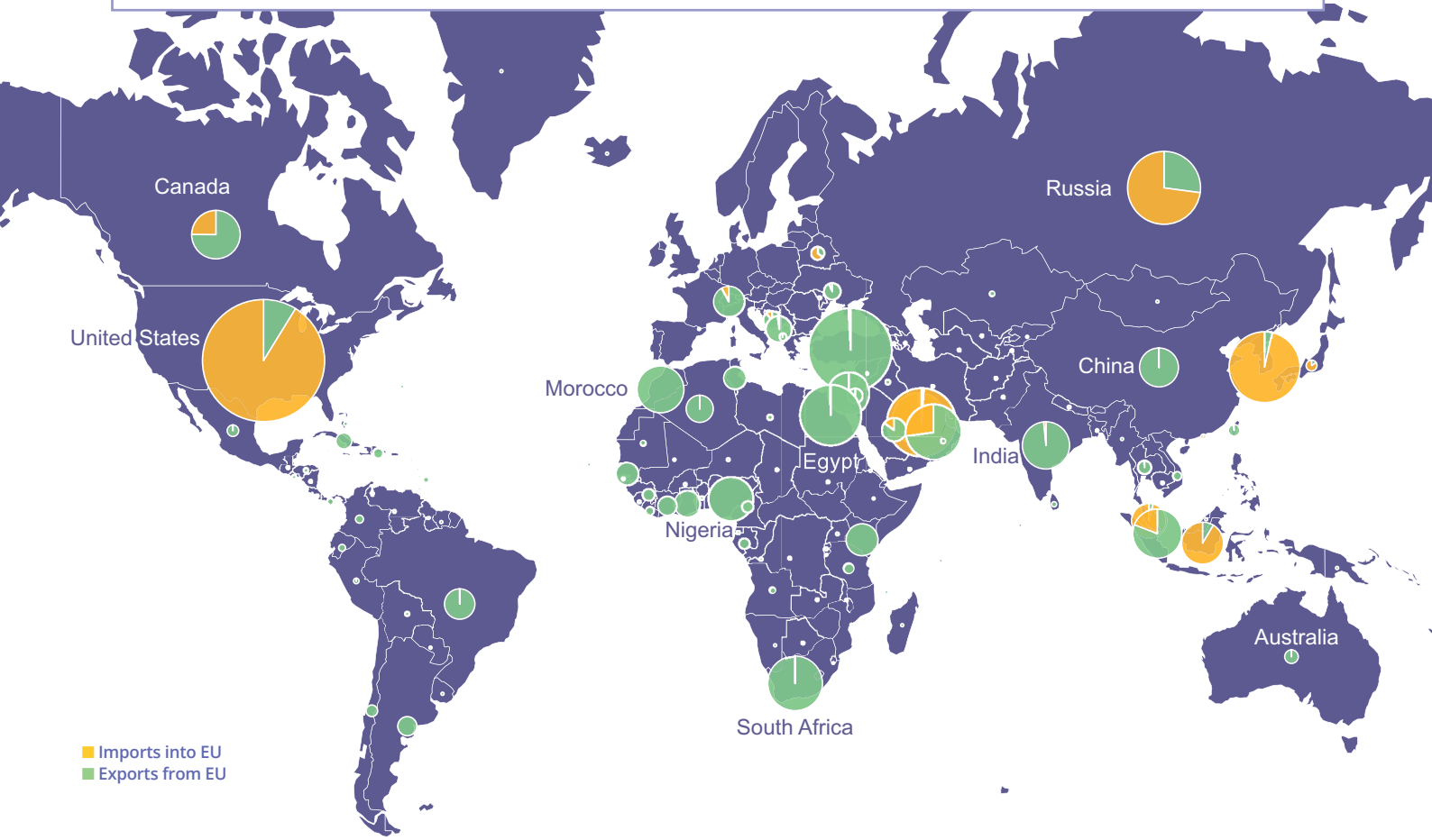
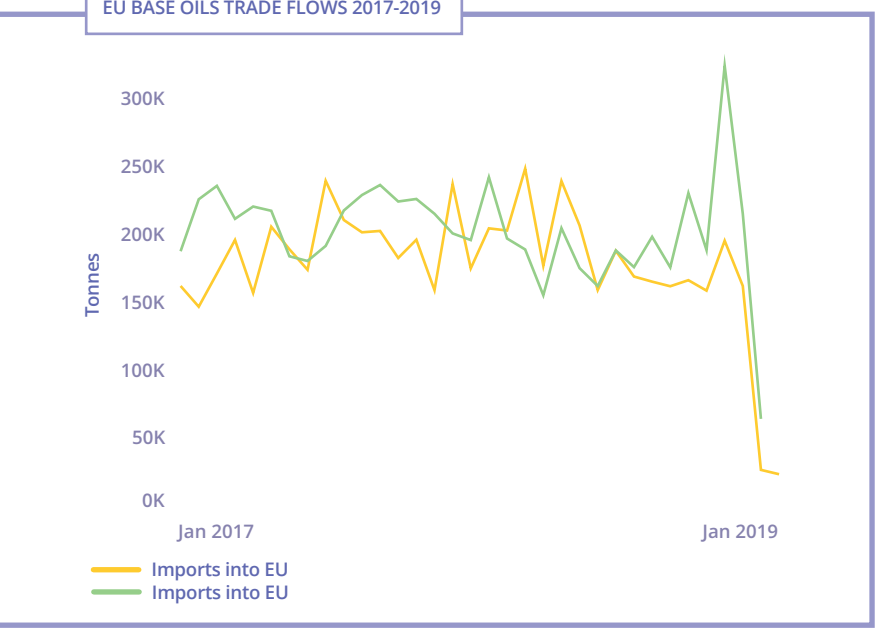
EU BASE OILS TRADE FLOWS 2019



This explains the ongoing importance placed on tenders for African material, such as Egypt's regular brightstock demand, in the eyes of northwest European and Mediterranean refiners.

Major African nations taking base oils in 2019 included Nigeria, South Africa, Egypt and Morocco (see maps).

EU BASE OILS TRADE FLOWS 2017-2019



As one trader said, "The African market, India, the Chinese market, [are] hungry for Group I. We're not able to cut our ties with Group I."

OUTLOOK FOR 2020 – ANALYST'S VIEW

by ICIS Senior Consultant Michael Connolly

2020 starts with the introduction of the new IMO regulations on very low sulphur (0.5%) fuel oil. This could be very disruptive to distillate, VGO and fuel oil markets, particularly early in the year. This will have the flow-on effect into base oil refineries in multiple ways.

Key effects may be variability in the value of feedstock for other uses, the price of co-products from base oil plants (distillates and extracts) and the overall effect on the refinery as a whole that could ultimately have a major effect on the base oil plant.

Generally, expectations are for Group I plants to experience more challenges from the change than Group II and III. As with most refining changes, the more complex refineries will tend to benefit and the least complex suffer, but with IMO, the local site and market specifics will result in a highly variable effect from plant to plant.

As the year progresses, the markets should stabilise, resulting in a clearer picture of who has fared best through this highly uncertain period. Continued drive towards higher specs in

automotive lubricant grades and the ongoing rise of electric vehicles, will continue to underpin long term change in the base oil market, albeit at a slower pace than IMO effects in 2020.

NEW EU TARIFFS LOOM LARGE FOR GROUP II

The European Group II market will be impacted in the main by recently proposed tariffs on material being imported into the EU.

Under new EU proposals, the current tariff waiver on Group II material would be lifted in favour of a quota on imports, expected to come into force next year.

Up to 200,000 tonnes per every six months would be tariff free, with duties of 3.7% applicable on any material above the quota.

Material of a viscosity between 150N and 600N will be counted in the quota. Market sources believe lighter Group II grades will still be fully exempt from tariffs.

400,000 tonnes

Up to 200,000 tonnes per every six months would be tariff free, with duties of 3.7% applicable on any material above the quota

"Most companies in the petchems sector are forecasting 2020 [to] be worse"

A final decision on the quota is pending. Players are anticipating some tightness in the market if the quota is enforced.

While a new plant started up in Rotterdam in February 2019, market participants expect that this material will not be able to cover current demand for Group II base oils. US market players are likely to be heavily impacted by the quota, as most Group II imports into the EU are from the US.

The Lubrizol fire at the end of the third quarter dampened base oils buying interest for use in lubricants production. Lubrizol produces additives which are used with base oils to manufacture finished lubricants.

While some Group II demand was hit as a result, a few players saw lubricants producers switch from Group I to Group II material when they could no longer get the necessary additives for Group I formulations.

There is no clear indication of when the lubricants market will return to normal, with demand for both Group II and Group III expected to be at lower levels for at least January.

In the Group III market, the length that has been seen at the end of the fourth quarter is set to continue into January.

Healthy production coupled with less demand from lubricants producers could see an oversupply in the market for at least the first quarter, particularly on 4cSt material.

There are some expectations of higher demand from the automotive industry in 2020, with players anticipating more switches from Group I material to Group III. ■

MIDDLE EAST 2020

Sluggish Middle East base oils market may persist while current market conditions remain

The sluggish conditions in the Middle East spot base oils market observed through 2019 is expected to broadly continue in the early months of 2020 while supply-demand fundamentals remain but some possible bright spots may yet appear through opportunistic trades.

By Izham Ahmad

In the Group I segment, base oils cargoes from Iran to the United Arab Emirates (UAE) has clearly taken some hits due to the ongoing US sanctions on the Islamic Republic.

Prices have also been under pressure. For example, Group I SN500 started 2019 at $595/tonne FOB (free on board) Iran. But by the end of November, SN500 prices were at $505/tonne FOB Iran, a decline of about 15%.

But cargoes are still moving albeit through more discreet channels, ICIS data showed.

According to the ICIS Supply & Demand Database, in the first four months of 2019, Iran's top base oil export market was Iraq, at just under 60,000 tonnes while exports to the UAE were less than half of that in the same period.

But most market participants agree that much of that material bound for Iraq were actually re-exported or diverted to other destinations.

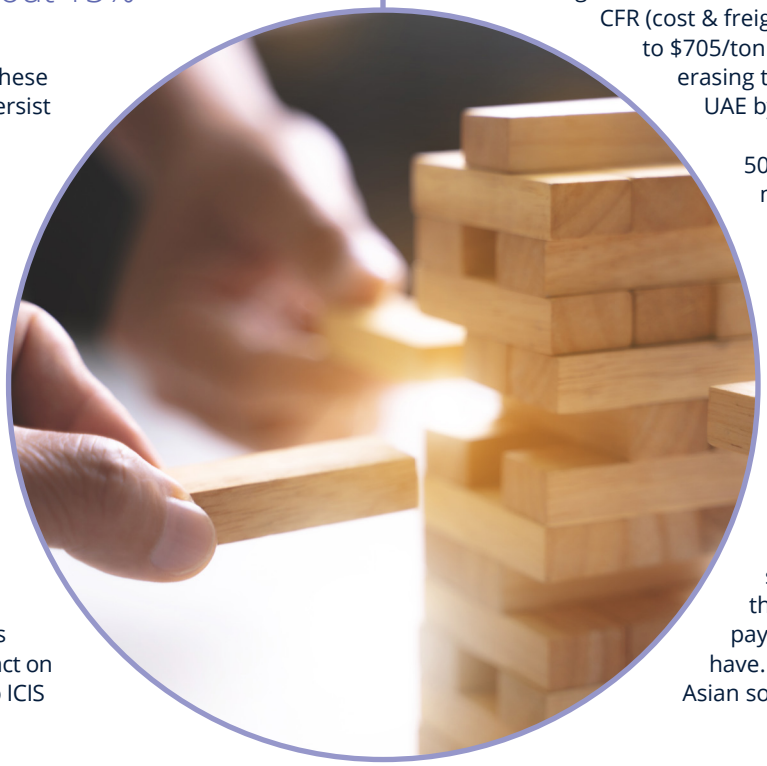
$505/tonne

By the end of November, SN500 prices were at $505/tonne FOB Iran, a decline of about 15%

While US sanctions continue, these trade flows are also likely to persist in 2020. Market players in the Middle East said there have been no major shortages of Iran-origin Group I since the sanctions took effect and no shortages are anticipated.

Elsewhere, Group I material is also expected to continue to trickle into the UAE from Europe or North Africa, keeping the segment well-supplied into the new year.

Additionally, the implementation of IMO 2020 rules regarding the use of low-sulphur fuels in shipping vessels are likely to have the most impact on Group I producers, according to ICIS analysis.



In 2020, if the current patterns persists, Middle East buyers are likely to either look to regional suppliers to meet their needs or consider other sources such as deep-sea origin product, despite some perception of quality differences

"This could be very disruptive to distillate, vacuum gasoil (VGO) and fuel oil markets, particularly early in the year," said ICIS Senior Consultant, Michael Connolly.

"Generally, expectations are for Group I plants to experience more challenges from the change than Group II and III."

The Group II market in the UAE however has witnessed an extremely sluggish environment through 2019 and this could persist in 2020 with many Asian refiners reluctant to have any discussions with buyers there at current pricing.

In the Group II import market, prices of Asian-origin 150N started the year around $660/tonne CFR (cost & freight) UAE and briefly increased to $705/tonne CFR UAE before completely erasing those gains to $635/tonne CFR UAE by end-November.

500N prices have also had moved in similar fashion, gaining to $720/tonne CFR UAE in the frist half of the year before deflating to $650/tonne CFR UAE.

Some refiners have drawn lines in the sand, telling buyers they will not sell anything below a certain price.

"The message we want to send is this is our price and this is the price they need to pay to get the quality that we have. Nothing lower," said one Asian source.

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$660-685

In October, Middle East-origin Group III 4/6/8cst prices were briefly reduced to $660-685, a move which triggered demand interest from buyers

This despite persistent demand for certain grades, such as 500/600N particularly in the latter half of the year.

"I am interested to take some volume of 500/600N but so far I am not able to get any heavy grade material," said one Middle Eastern source.

In 2020, if the current patterns persists, Middle East buyers are likely to either look to regional suppliers to meet their needs or consider other sources such as deep-sea origin product, despite some perception of quality differences.

Group III base oils however offers some potential sparks with Middle East-origin material having some regular buyers in the UAE, partly due to attractive pricing and faster delivery times.

In October, Middle East-origin Group III 4/6/8cst prices were briefly reduced to $660-685, a move which triggered demand interest from buyers who were unable or unwilling to buy similar-grade Group II product from Asia.

The available cargo soon sold out and prices were adjusted higher for two straight weeks subsequently. Additionally, Group III from the Middle East is also seeing growing acceptance in parts of Asia, including China, where one buyer recently told ICIS they were conducting viability tests on such material to assess whether such product could be suitable for regular imports into the Chinese market.

India also has been actively purchasing Group III material from the Middle East, although these shipments have not been consistent through the year.

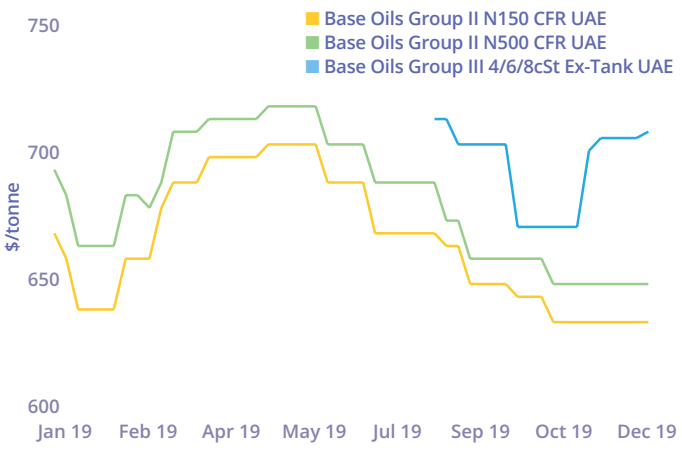
In August 2019, the latest available month for 2019, India imported 26,600 tonnes of base oils from the UAE, compared with 13,056 tonnes in July.

So, given the challenges posed by the continued US sanctions on Iran, the uncertainty over IMO2020 and while current supply-demand conditions remain the same, it seems likely that Middle East Group I and Group II base oils would likely continue to face challenging conditions in 2020. Elsewhere though there could be some potential for improvement in the Group III market.

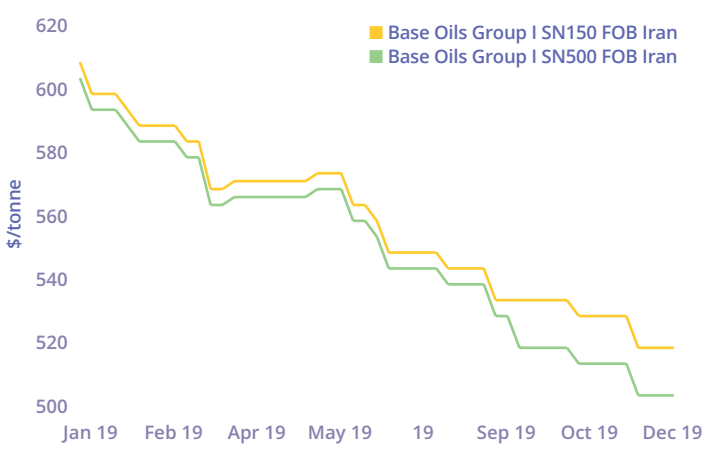
"As the year progresses, the markets should stabilise, resulting in a clearer picture of who has fared best through this highly uncertain period," noted ICIS's Connolly. ■

> "Generally, expectations are for Group I plants to experience more challenges from the change than Group II and III"

MIDDLE EAST BASE OILS GROUP II & III PRICE HISTORY



MIDDLE EAST BASE OILS GROUP I PRICE HISTORY



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