

Oil Market Report

15 November 2019

- Global oil demand in 3Q19 increased by 1.1 mb/d year-on-year (y-o-y), more than double the 435 kb/d seen in 2Q19. China's demand increased by 640 kb/d y-o-y in 3Q19, the biggest contributor to global growth. In 4Q19, we expect further acceleration in global growth to 1.9 mb/d, supported by a comparison with a weak 4Q18, lower y-o-y prices and robust US petrochemical demand. Our global growth forecasts for 2019 and 2020 are unchanged, at 1 mb/d and 1.2 mb/d, respectively.
- Global oil supply rose 1.5 mb/d in October as Saudi Arabian production returned to normal and on increases from Norway, Canada and the US. OPEC crude oil production was 29.9 mb/d. At 101 mb/d, world oil supply was 1.2 mb/d below year-ago levels with OPEC down 2.5 mb/d. Non-OPEC output growth is set to increase from 1.8 mb/d this year to 2.3 mb/d in 2020. The call on OPEC crude in 2020 is estimated at 28.9 mb/d, 1 mb/d below current production.
- Sluggish refining activity in the first three quarters of 2019 contributed to a 0.3 mb/d decline in crude oil demand y-o-y. For 2019 as whole, crude demand is likely to decline for the first time since 2009, albeit by only 90 kb/d. This partly explains the relative weakness of crude prices for most of 2019. Throughput growth is expected to resume in 4Q19 and continue through 2020.
- After increasing for five consecutive months, OECD commercial stocks drew 38.9 mb in September to 2 944 mb. They were 21.5 mb above the five-year average and covered 60.7 days of forward demand, one day below the average. Preliminary data for October showed total stocks falling in the US and Europe, while inventories gained in Japan. Floating storage of crude oil fell 6 mb in October to 64.1 mb. The number of Iranian VLCCs used for storage increased by 1 to 27.
- ICE Brent futures prices were boosted by positive news on the US-China trade talks and reached \$62/bbl in late October. Oil markets are showing increasing signs of transitioning to the new IMO regulations and HSFO cracks collapsed to ten-year lows. Record high freight rates supported the price of crudes with shorter delivery times to Asia.

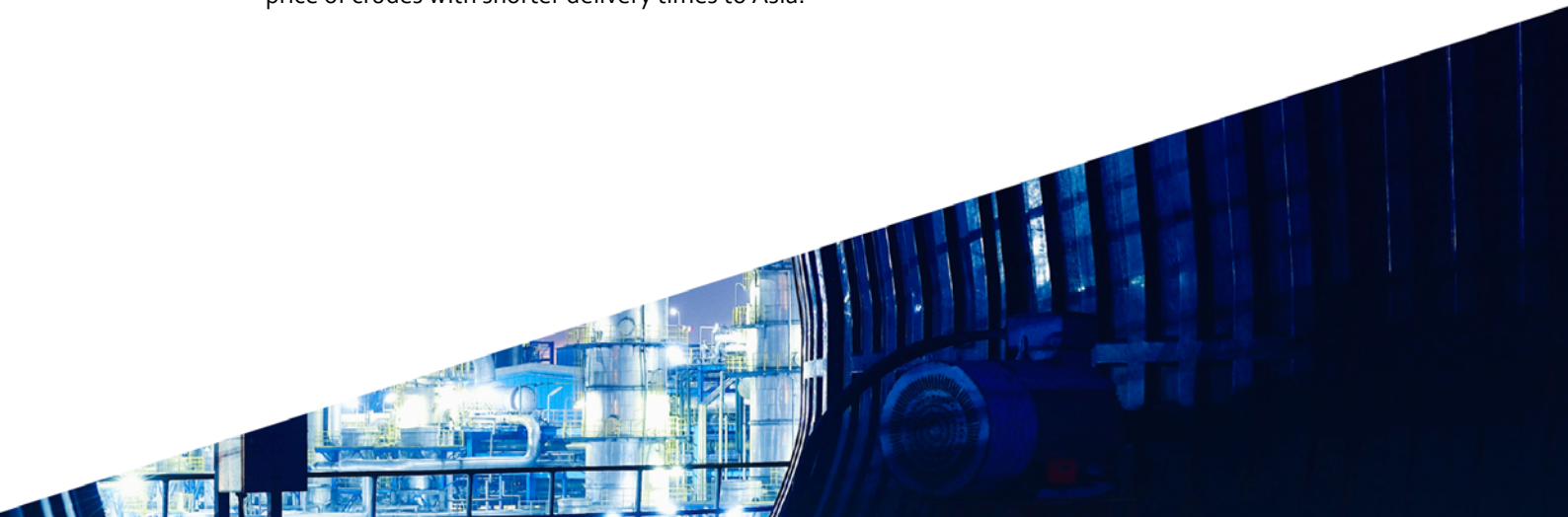


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Pausing to reflect

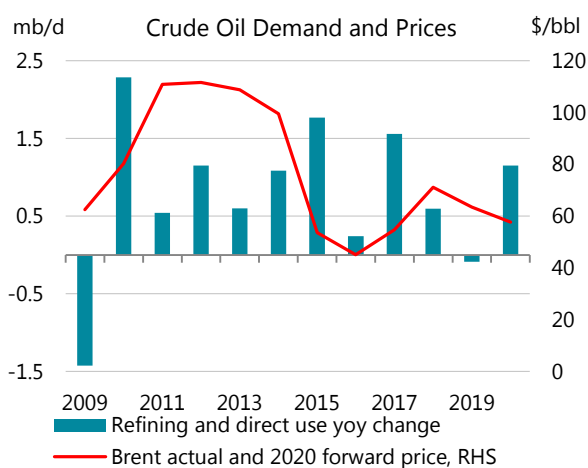
The IEA's *World Energy Outlook 2019* published this week highlights the increasing disparity between the calm oil market of today and heightened geopolitical tensions. The calmness is supported by a well-supplied market and high inventories. This may continue into 2020 because non-OPEC countries will grow their production by 2.3 mb/d. The US will lead the way but there will also be significant growth from Brazil, Norway and barrels from a new producer, Guyana.

Global refinery activity is expected to rebound sharply in 2020, after a pause in growth this year. While our oil demand growth estimate for 2019 is essentially unchanged at 1 mb/d, the volume of crude oil used by refiners and for direct burn in power generation declined by 300 kb/d through 3Q19. Even after a seasonal surge in refinery runs in 4Q19, crude oil demand for 2019 as a whole is still expected to decline by 90 kb/d, the first drop since 2009. This reflects the cyclical nature of refining that overproduces in some years and then slows down to clear product stock overhang.

A ramp up in refining activity in 2020 sets the stage for a hopefully smooth implementation in January of the International Maritime Organisation's new bunker fuel regulations. Ports, ship owners and refiners have stepped up their preparations. Major bunker hubs such as Fujairah, Rotterdam and Singapore are reported to have large volumes of compliant fuel available. In the case of Singapore, one of the world's two Ultra Large Crude Carriers is being used to store low sulphur fuel oil (LSFO) and marine gasoil offshore. Meanwhile, the price of high sulphur fuel oil (HSFO) is nose-diving with cracks in Rotterdam falling under -\$30/bbl, the lowest in over 10 years. The LSFO-HSFO spread in North West Europe blew out to almost \$30/bbl in late October from just under \$3/bbl last year. Nevertheless, compliant supplies may not be available in sufficient quantities in smaller ports and for smaller ships, perhaps creating some dislocations.

For 2020, our estimate for oil demand growth is unchanged at 1.2 mb/d, based partly on the International Monetary Fund's expectation of 3.4% GDP growth. However, the health of the global economy remains uncertain in spite of recent positive news about the US-China trade dispute. This year, we are seeing a big difference in demand growth in the two biggest oil markets. In the US, there has been almost no growth in the first three quarters of 2019, while China has grown by 0.6 mb/d on average. Moving into 2020, US growth is expected to pick up to 190 kb/d while China slows to 375 kb/d.

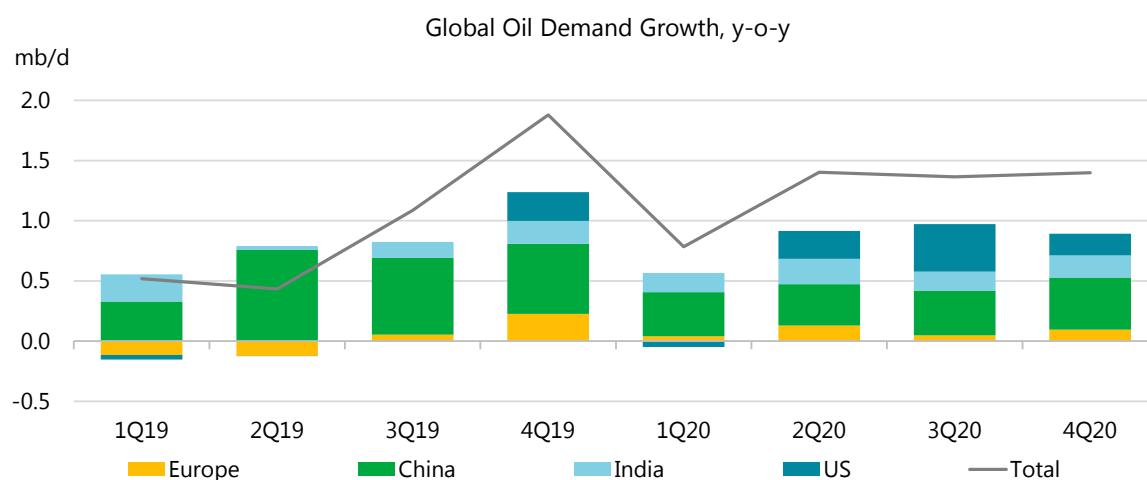
The hefty supply cushion that is likely to build up during the first half of next year will offer cold comfort to OPEC+ ministers gathering in Vienna at the start of next month. However, a continuously well-supplied market will lend support to a fragile global economy.



Demand

Overview

Global oil demand rose 1.1 mb/d year-on-year (y-o-y) in 3Q19, its fastest pace in a year and more than double the rate of 435 kb/d registered in 2Q19. Stronger growth reflects robust uptake in China (+640 kb/d), Russia (+150 kb/d) and Saudi Arabia (+105 kb/d). Oil demand also recovered in India (+135 kb/d) following a weak 2Q19.



Slower growth elsewhere reflected tough economic conditions, a slowdown in the petrochemical industry as well as falling bunker sales linked to reduced trade. OECD oil demand contracted for the fourth straight quarter, by 40 kb/d y-o-y, although this was less dramatic than earlier in the year, due to strong transport fuels use.

Global Oil Demand (2018-2020)															
(million barrels per day)*															
	1Q18	2Q18	3Q18	4Q18	2018	1Q19	2Q19	3Q19	4Q19	2019	1Q20	2Q20	3Q20	4Q20	2020
Africa	4.3	4.2	4.1	4.3	4.2	4.3	4.3	4.2	4.3	4.3	4.4	4.4	4.3	4.4	4.4
Americas	31.6	31.7	32.3	32.0	31.9	31.6	31.7	32.4	32.4	32.0	31.6	31.9	32.8	32.6	32.2
Asia/Pacific	35.5	35.0	34.6	35.3	35.1	35.9	35.5	35.3	36.5	35.8	36.7	36.3	36.1	37.4	36.6
Europe	14.8	14.9	15.4	14.9	15.0	14.7	14.8	15.5	15.1	15.0	14.7	14.9	15.5	15.2	15.1
FSU	4.5	4.6	4.9	4.8	4.7	4.6	4.8	5.1	5.0	4.9	4.7	4.9	5.1	5.0	4.9
Middle East	8.1	8.4	8.7	8.2	8.4	8.1	8.2	8.7	8.2	8.3	8.0	8.3	8.7	8.2	8.3
World	98.7	98.9	100.0	99.5	99.3	99.3	99.3	101.1	101.4	100.3	100.1	100.7	102.5	102.8	101.5
Annual Chg (%)	2.1	0.6	1.4	0.6	1.1	0.5	0.4	1.1	1.9	1.0	0.8	1.4	1.4	1.4	1.2
Annual Chg (mb/d)	2.0	0.6	1.4	0.6	1.1	0.5	0.4	1.1	1.9	1.0	0.8	1.4	1.4	1.4	1.2
Changes from last OMR (mb/d)	0.0	0.0	0.0	0.0	0.0	0.2	0.0	-0.2	0.0	0.0	0.1	-0.1	-0.1	0.1	0.0

* Including biofuels

Despite the healthier demand growth in many countries, we have revised down our overall 3Q19 *estimate* by 170 kb/d from last month's *Report*. This was largely attributable to lower than expected deliveries in the OECD, particularly in the US due to petrochemical plant outages and lower diesel sales amid a manufacturing slowdown, as well as in Japan. In the non-OECD, Brazilian and Indian oil demand estimates were reduced due to slower economic activity and poor weather. Going further back, updated data lifted our 1Q19 growth estimate by 145 kb/d

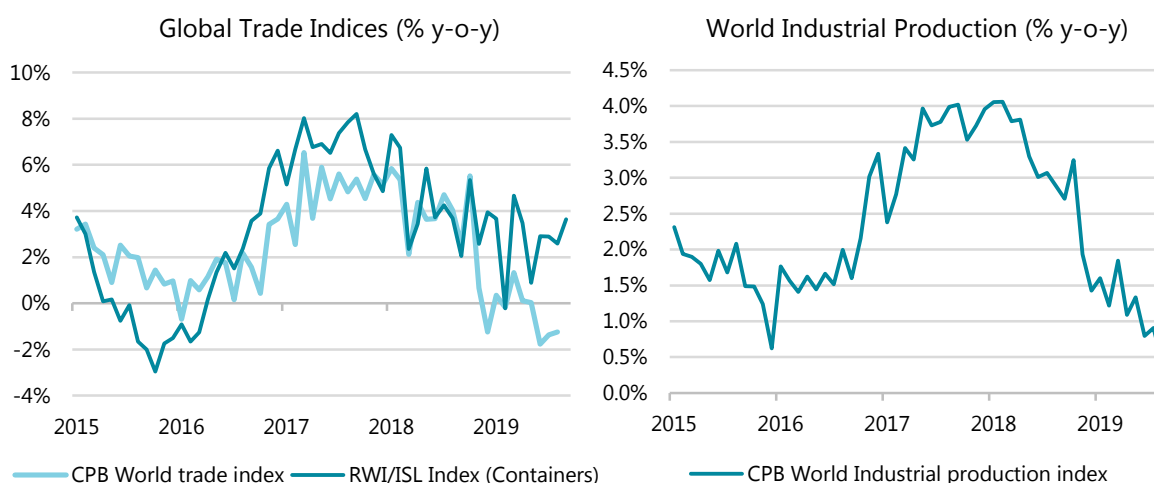
and lowered our 2Q19 estimate by 45 kb/d. For 2019 as a whole, combined revisions cut our annual demand growth forecast in this *Report* by 20 kb/d to 985 kb/d (1 mb/d). Our 2020 outlook remains little changed.

In 4Q19, oil demand is expected to grow by 1.9 mb/d y-o-y, due to weak demand in 4Q18 as well as a recovery of growth in the OECD, particularly US use of LPG/ethane.

Global Demand by Product							
(thousand barrels per day)							
	Demand			Annual Chg (kb/d)		Annual Chg (%)	
	2018	2019	2020	2019	2020	2019	2020
LPG & Ethane	12 386	12 600	13 066	214	466	14.1	14.3
Naphtha	6 568	6 528	6 690	- 40	162	5.0	6.3
Motor Gasoline	26 175	26 488	26 562	314	74	5.3	3.4
Jet Fuel & Kerosene	7 865	8 014	8 215	149	201	15.0	13.8
Gas/Diesel Oil	28 451	29 027	30 079	576	1 052	3.2	8.2
Residual Fuel Oil	6 672	6 345	5 660	- 326	- 686	-11.1	-20.1
Other Products	11 185	11 281	11 248	96	- 33	3.4	3.4
Total Products	99 301	100 284	101 520	983	1 236	4.9	5.3

Fundamentals

We have incorporated the October release of the International Monetary Fund (IMF) World Economic Outlook into our projections. For 2019, IMF world GDP growth was revised slightly down to 3% and 2020 growth was revised down to 3.4%, reflecting a general weakening in economic activity.



The latest economic indicators confirm a general slowdown in the world economy. Global trade, tracked by the CPB Netherlands Bureau for Economic Policy Analysis, has contracted on a y-o-y basis since 2H19. By contrast, the RWI/ISL container index from the Leibniz Institute for Economic Research and the Institute of Shipping Economics and Logistics has held up well, with y-o-y growth accelerating to close to 4% in September. The CPB index is based on total world imports and exports, and incorporates potential declines in the trade of intermediate goods, commodities and vehicles whereas the RWI/ISL index is based only on container traffic in major ports, providing a reflection of the trade of consumer goods. Growth in container trade may

reflect the resilience of consumer spending vs. weak industrial activity that is better captured by the CPB data.

Recent data point to a significant slowdown in world industrial production growth since the end of 2018. The IMF attributes this slowdown to a sharp drop in car production and sales, weak business confidence and slowing Chinese demand. According to the European Automobile Manufacturers Association, worldwide sales of passenger cars contracted by 0.8% in 2018 and the decline accelerated sharply to 8% y-o-y in 1H19. Global car production fell 7.3% y-o-y in 1H19.

Weak business confidence largely reflects trade tensions, and the IMF estimates that current trade barriers between the US and China will reduce global economic activity by 0.8 % points vs. a no-tariffs baseline by 2020. Chinese GDP growth, in particular, will be reduced by 2% points in 2020 and US growth by 0.6% points. The impact of trade tensions on Chinese activity is amplified by regulatory tightening to control debt levels which have reduced domestic demand. Chinese GDP growth is expected at 6.1% in 2019 and 5.8% in 2020, according to the IMF.

Using IMF analysis, we estimated the impact of trade disputes on 2020 oil demand using industrial production as a proxy for economic activity. Our current demand forecast may slightly underestimate the impact of tariffs, as we have seen in recent data that trade tensions have a greater impact on industrial production than on total GDP. Applying our IP elasticities to the growth impact computed by the IMF for 2020 and our estimate of oil demand in 2019, we obtain a rough assessment of the impact of trade tensions on oil demand.

Oil Demand response to trade tariffs in 2020				
Country/Region	2019 Oil Demand (mb/d)	Growth Impact (% pts)	IP Elasticity	Impact (kb/d)
USA	20.9	-0.6%	0.40	- 48
China	13.6	-2.0%	0.70	- 187
Japan	3.7	-0.4%	0.35	- 6
Europe	14.2	-0.4%	0.35	- 21
World	100.3	-0.8%	0.50	- 395

If current tariffs are maintained through the end of the forecast period, which is the IMF base case, oil demand in 2020 will be roughly 400 kb/d lower than in the no-tariffs case. Oil demand in China will be particularly impacted, down 190 kb/d vs. the no-tariffs case, as China has the highest elasticity of consumption and suffers the most from tariffs.

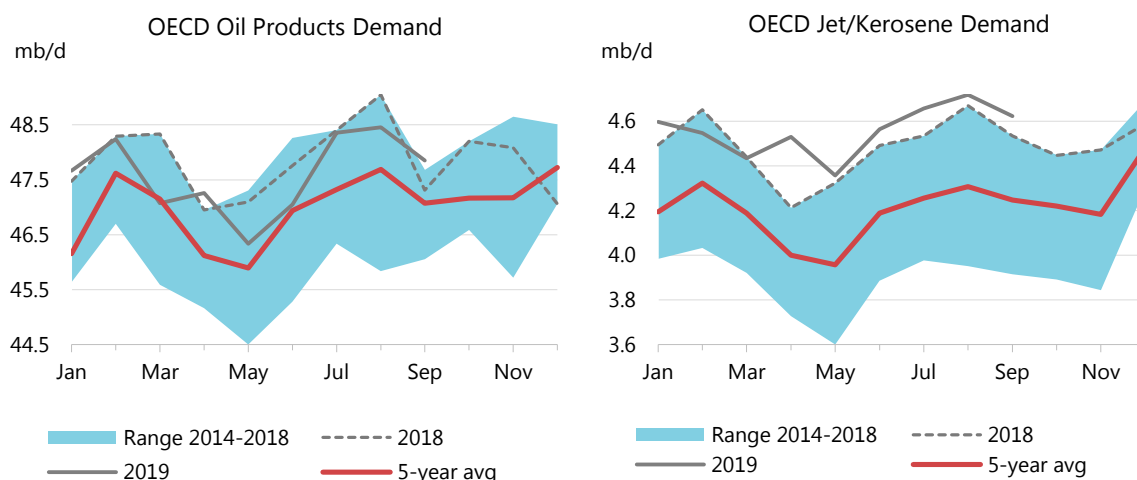
Perhaps more interestingly, this exercise shows the potential upside for oil demand in 2020 if some or all tariffs are lifted in the coming months. Under this scenario, GDP growth may not rebound immediately in the no-tariffs case, but world economic growth and oil demand growth would both rise significantly.

While tariffs are incorporated in the latest IMF forecast (and therefore in our macroeconomic assumptions), supportive economic policies are nevertheless expected to boost global growth in 4Q19 and into 2020.

OECD

OECD oil consumption fell by 590 kb/d y-o-y in August, before rising 540 kb/d in September – the largest y-o-y gain recorded in nearly a year. This month, we have analysed August data for

all OECD countries and September figures for France, Germany, Italy, Japan, Korea, Mexico and the US. In addition, preliminary figures are available for the US up to the end of October.



OECD demand contracted for the fourth straight quarter in 3Q19 by 40 kb/d y-o-y, to reach 48.2 mb/d. The rate of decline eased vs. earlier in the year, due to a strong seasonal pickup in transport fuel deliveries (jet fuel, diesel and gasoline). By contrast, demand for petrochemical feedstocks naphtha and LPG/ethane fell by 90 kb/d and 40 kb/d y-o-y respectively, as slower economic growth and weaker petrochemical margins limited production. The largest declines were seen in Japan (-145 kb/d y-o-y), the Netherlands (-60 kb/d), Norway (-55 kb/d), the UK (-35 kb/d) and Turkey (-20 kb/d), whereas demand rose in Germany (+80 kb/d) and France (+35 kb/d).

OECD Demand based on Adjusted Preliminary Submissions - September 19

(million barrels per day)

	Gasoline		Jet/Kerosene		Diesel		LPG/Ethane		RFO		Other		Total Products	
	mb/d	% pa	mb/d	% pa	mb/d	% pa	mb/d	% pa	mb/d	% pa	mb/d	% pa	mb/d	% pa
OECD Americas	11.05	0.9	2.02	-0.5	4.59	-3.0	3.60	0.3	0.59	-6.7	3.59	9.4	25.44	0.9
US*	9.32	1.2	1.74	0.0	3.85	-3.0	2.78	2.0	0.38	-11.4	2.51	9.4	20.58	1.1
Canada	0.95	1.1	0.18	-3.9	0.27	0.0	0.42	-3.5	0.04	7.6	0.80	6.3	2.65	1.4
Mexico	0.70	-3.0	0.07	-7.4	0.30	-10.7	0.34	-7.8	0.16	1.4	0.26	19.7	1.84	-2.6
OECD Europe	2.04	3.6	1.75	3.1	5.13	1.4	1.11	2.8	0.82	-3.9	3.95	4.1	14.80	2.4
Germany	0.50	2.1	0.25	0.7	0.76	-2.3	0.13	23.1	0.04	-5.1	0.75	10.3	2.44	3.7
United Kingdom	0.29	-3.6	0.36	3.1	0.51	-4.4	0.14	1.9	0.03	-1.8	0.30	-0.7	1.62	-1.4
France	0.21	11.7	0.19	0.5	0.69	0.9	0.10	-5.6	0.05	0.9	0.54	8.9	1.78	3.9
Italy	0.17	5.6	0.13	4.7	0.44	-1.1	0.09	10.1	0.07	6.8	0.41	-0.1	1.31	1.7
Spain	0.13	3.4	0.17	3.0	0.49	3.7	0.07	-7.6	0.16	-3.7	0.34	3.9	1.35	2.1
OECD Asia & Oceania	1.53	0.6	0.82	5.9	1.35	-3.4	0.72	8.4	0.42	-8.2	2.78	-2.1	7.62	-0.5
Japan	0.90	4.2	0.40	9.5	0.49	0.8	0.30	-10.0	0.26	10.5	1.18	-5.3	3.53	0.0
Korea	0.19	-15.9	0.19	-0.9	0.29	-19.9	0.34	33.8	0.12	-35.2	1.33	-0.8	2.45	-3.9
Australia	0.31	1.5	0.17	4.2	0.51	4.6	0.06	2.9	0.01	1.1	0.13	5.8	1.20	3.7
OECD Total	14.62	1.3	4.59	2.0	11.07	-1.0	5.42	1.8	1.82	-5.8	10.32	4.0	47.85	1.1

* Including US territories

Box 1. 'Flight shame' movement yet to impact jet fuel demand

Total OECD oil demand fell by an average 265 kb/d y-o-y in the first nine months of the year, reflecting reduced production in the petrochemical sector, falling bunker volumes amid a trade and economic slowdown and mediocre transport fuel deliveries. But one oil product has outperformed

all the others: jet fuel consumption has risen 75 kb/d (1.7%) during the same period, reflecting continuing growth in travel.



In 3Q19, the latest quarter for which data is available, jet deliveries gained 85 kb/d y-o-y (1.9%), more than twice as much as in non-OECD countries. We expect OECD demand to reach 4.5 mb/d in 2019, up 85 kb/d on the year and a new historical peak. Growth is likely to be lower than in recent years although this likely reflects a slowing economy rather than a newfound aversion to flying.

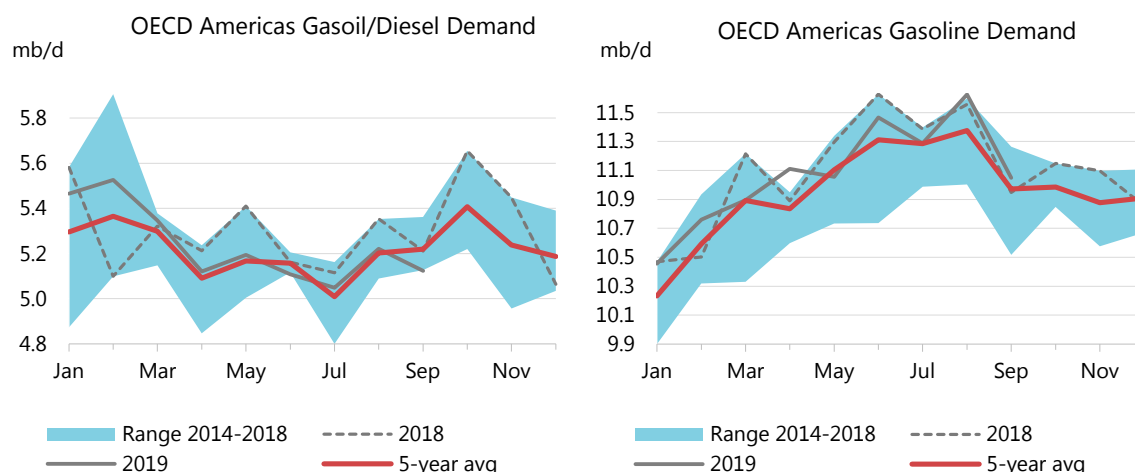
The Flygskam – or flight shame – movement started in Sweden in 2017. It encourages travellers to avoid flying and use less polluting alternatives, such as trains, when possible. It has received a lot of press attention internationally and was reportedly responsible for a slowdown in traffic at some Scandinavian airports this year. Jet fuel deliveries fell by 4% in Sweden in January-August 2019. However, for now, the impact on overall plane traffic in OECD countries appears to be minimal.

Global air passenger traffic has continued to grow this year, even if the rate of expansion is down due to slower economic growth, according to the International Air Traffic Association (IATA). In-line with slower international trade, the air freight market has seen y-o-y declines for nearly a year, but it is responsible for a much lower share of traffic than passengers overall. As indicated by the head of Boeing, less than 20% of the world population has ever flown.

OECD Americas

Oil demand in the OECD Americas fell by 130 kb/d y-o-y in August as diesel deliveries dropped and use of LPG and ethane contracted. Gasoil/diesel sales volumes from April through August were consistently below last year, reflecting a broader manufacturing slowdown in North America and reduced economic growth. For LPG/ethane, the y-o-y fall in August was the largest in two years and likely resulted from unplanned cracker maintenance on the US Gulf Coast (some of which may continue until end-year). As for gasoline demand in August, it rose 70 kb/d y-o-y marking a reversal from the general decline seen since the start of the year.

September oil deliveries rose 225 kb/d y-o-y on the back of even higher gasoline demand growth (+100 kb/d) and a big increase in deliveries of other products (+270 kb/d), whereas demand for gasoil/diesel continued to fall on a y-o-y basis. The US manufacturing PMI of the Institute for Supply Management (ISM) has remained below 50 since August, signalling a potential contraction of US industrial activity. Overall, OECD Americas oil demand rose seasonally from 2Q to 3Q19 (summer driving season in the US) and gained 75 kb/d y-o-y vs. 3Q18. However, most of the y-o-y growth was driven by jet fuel and other products, rather than gasoline sales, which increased only moderately, or diesel, which fell. We forecast a sharp overall rise of oil demand in the OECD Americas by 350 kb/d in 4Q19 due to the start-up of several petrochemical crackers in the US. For the year as a whole oil demand growth should reach 135 kb/d y-o-y.



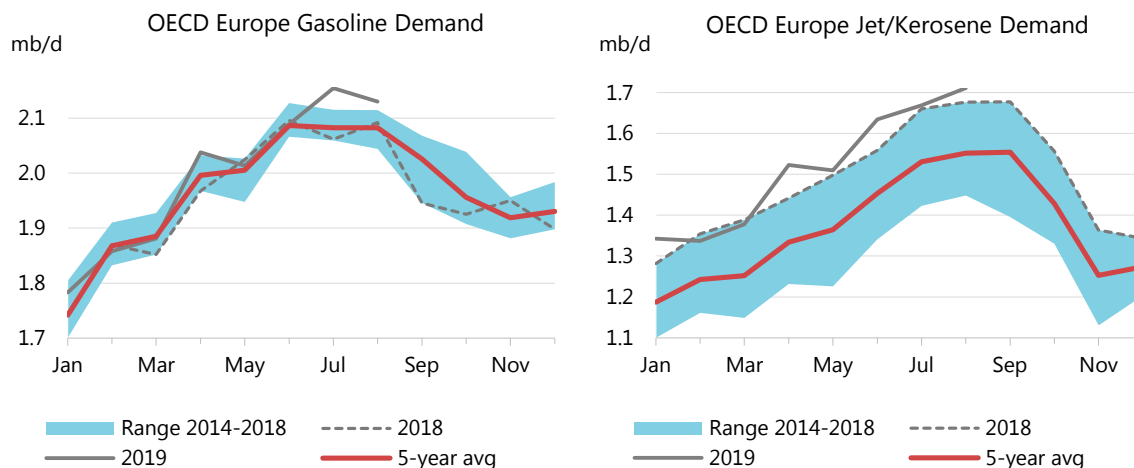
US oil deliveries showed robust growth of 215 kb/d in September and preliminary data point to a rise of 275 kb/d in October, driven by gasoline and jet fuel. We expect a strong recovery in ethane demand following a drop of 115 kb/d m-o-m in August with the commissioning and ramp up of several ethane crackers before the end of the year. August ethane demand fell in part due to a fire at the ExxonMobil Baytown petrochemical plant, expected to keep part of the plant off-line until end-year. The ramp up of several new ethane crackers, including Sasol's 1.5 mt/y plant and Lotte Chemical's 1 mt/y plant at Lake Charles should support 4Q19 ethane demand. However, despite strong deliveries in recent months, estimated US oil demand growth of 50 kb/d in 2019 would be the smallest annual increase since 2012 and well down from the 550 kb/d seen in 2018.

Canadian oil demand rose 50 kb/d in August, the last month for which data is available, continuing a general pattern of growth seen since the start of the year. Demand rose for middle distillates and LPG. We forecast overall oil demand growth of 55 kb/d in 2019 (vs 30 kb/d in 2018). **Mexican** oil demand rose 45 kb/d y-o-y in August and declined 50 kb/d y-o-y in September. We expect it to gain by around 20 kb/d in 2019, after falling in 2018.

OECD Europe

OECD Europe oil consumption fell 265 kb/d y-o-y in August, the fourth straight monthly decline, with continuing falls in LPG and naphtha, and slower growth in gasoil/diesel deliveries. The European petrochemical industry has suffered from the slowdown in economic activity seen in the last few months as well as from competing low-cost ethane based producers, notably in North America. On the contrary, demand for gasoline and jet continued to grow, reflecting the continuing dynamism of these transport fuels in Europe.

We do not yet have complete data for 3Q19. Preliminary figures for France, Italy and Germany point to overall regional growth of 15 kb/d during the quarter, the first gain in European oil demand since 1Q18. This was driven mostly by the ongoing resurgence of gasoline demand (+70 kb/d) since the diesel emissions scandal of 2015 and by robust gasoil/diesel sales (+150 kb/d) and jet/kerosene deliveries (+30 kb/d). Nevertheless, we expect the region's consumption to fall 30 kb/d in 2019, a lesser decline than the 130 kb/d registered in 2018.



German oil demand rose 20 kb/d in August and 85 kb/d in September, mostly on the back of robust growth in diesel sales. Last year's deliveries were impacted by very low water levels on the Rhine, which lasted until the end of 2018. This year's levels have been more or less normal, enabling higher barge flows. Gasoline and LPG demand were also up in both months, whereas naphtha deliveries fell. Germany's demand is forecast to grow 25 kb/d in 2019.

French oil demand fell by 25 kb/d y-o-y in August, before rising by 65 kb/d in September. Gasoline, jet fuel and naphtha consumption have risen this year in contrast to other oil products. We expect French oil demand to grow by 15 kb/d in 2019, reversing the fall of 2018.

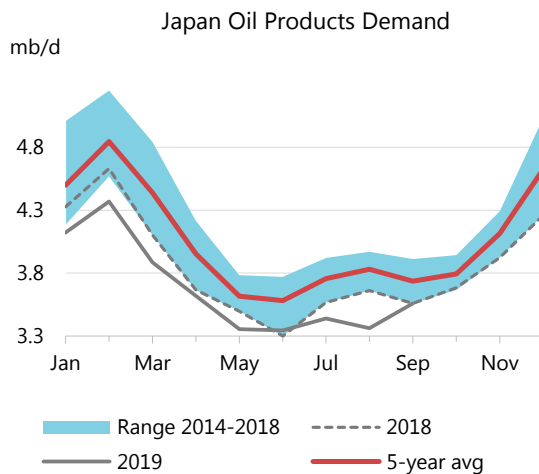
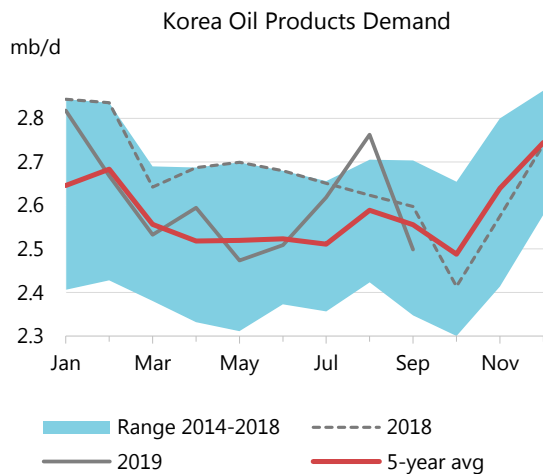
Italian oil demand fell by a significant 110 kb/d y-o-y in August. Preliminary data point to growth of 20 kb/d in September.

OECD Asia Oceania

OECD Asia Oceania oil demand continued to fall on an annual basis in both August and September, by 195 kb/d and 35 kb/d, respectively. Over 3Q19, consumption in the region dropped 130 kb/d y-o-y, the sixth quarterly reduction in a row. Fuel oil, other products and gasoline showed the largest drops, whereas LPG/ethane and jet/kerosene increased. Demand for oil products such as diesel or naphtha were more or less unchanged. We expect the region's oil demand to fall 135 kb/d overall in 2019, the largest y-o-y drop since 2014.

Australian oil demand fell 35 kb/d y-o-y in August, the sixth consecutive monthly decrease. As in previous months, it was weighed down by reduced diesel and gasoline sales. We forecast that consumption will be flat in 2019, following gains in recent years.

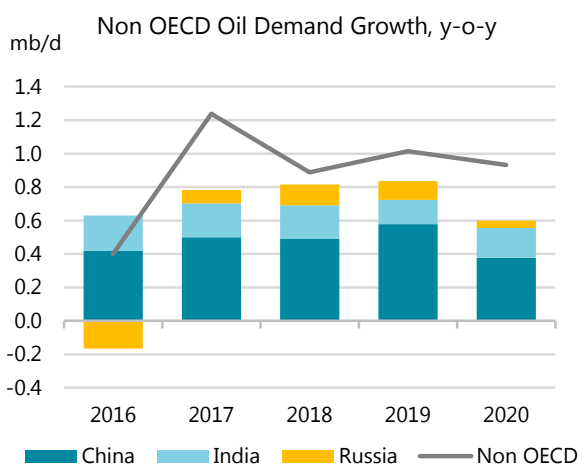
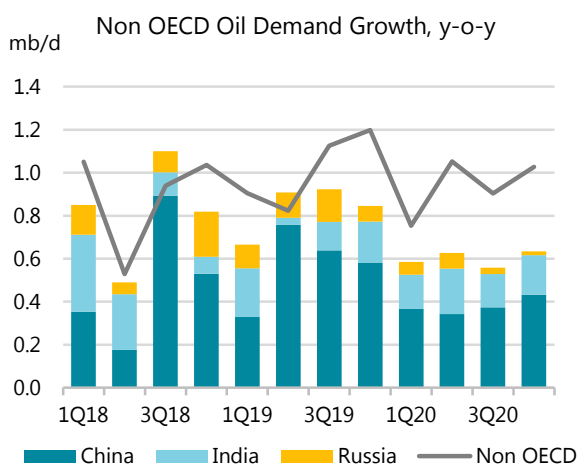
In **Korea**, the government reduced fuel taxes by about 15% in November 2018 in order to boost consumer spending and this tax break ended in August 2019. As a result, September consumption fell 70 kb/d y-o-y for diesel and 35 kb/d for gasoline. Total September oil demand fell 100 kb/d. In addition, fuel oil demand remained well below last year's levels due to slowing trade and reduced bunkering volumes. Naphtha fell 40 kb/d, but LPG/ethane deliveries rose 85 kb/d, highlighting continued fuel switching between the two products in the country's petrochemical industry. We expect Korean oil demand to decrease by 40 kb/d in 2019, the largest annual fall since 2008.



Japanese oil demand was more or less unchanged in September. Reduced demand for petrochemical feedstocks such as LPG (-35 kb/d) and naphtha (-20 kb/d) as well as gasoil/diesel (-10 kb/d) was offset by higher consumption of gasoline and jet fuel. Oil demand has continued to follow a downward path in 2019. We forecast consumption to contract 100 kb/d y-o-y, the seventh annual decline in a row.

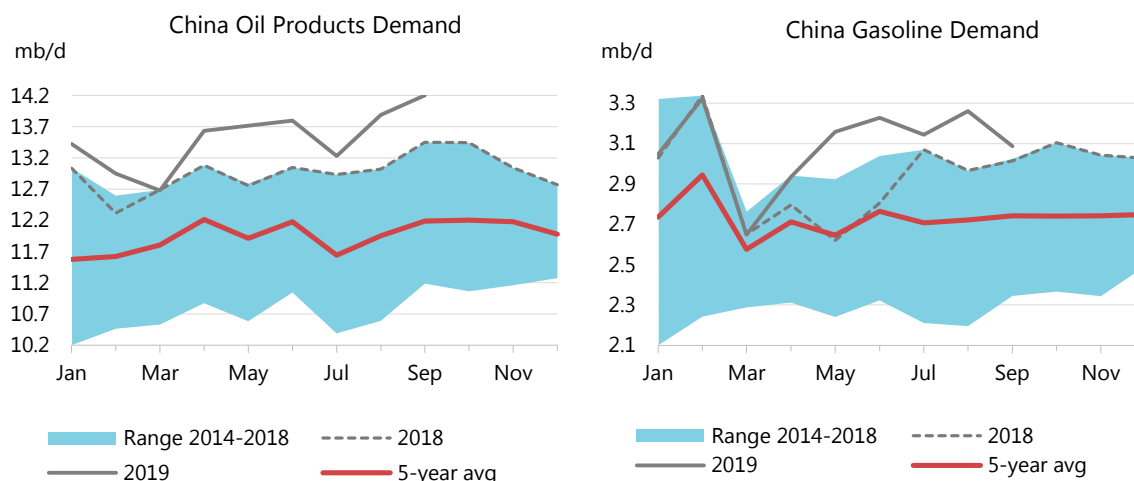
Non-OECD

Non-OECD oil demand growth is estimated at 1.1 mb/d y-o-y in 3Q19 and is expected to accelerate to 1.2 mb/d in 4Q19. Chinese growth has remained very strong, at around 640 kb/d in 3Q19. By contrast, Indian growth fell to 35 kb/d in 2Q19 and 135 kb/d in 3Q19, as a result of high monsoon rains and slowing economic activity. Russian oil demand is estimated to have increased by 150 kb/d in 3Q19, continuing this year's strong recovery. Brazilian demand rose by 65 kb/d in 3Q19. Argentina stopped declining in 3Q19, after drops of 35 kb/d and 30 kb/d respectively in 1Q19 and 2Q19. Finally, Saudi Arabian demand rose by an impressive 105 kb/d y-o-y in 3Q19 after a drop of 160 kb/d in 2Q19.



China

Chinese apparent oil demand, based on refinery runs and net imports of products, reached a record high above 14 mb/d in September. China's oil demand growth averaged 580 kb/d y-o-y in the first nine month of 2019, a faster pace of growth than the 490 kb/d recorded in 2018.



Chinese economic indicators were mixed in October, as the official manufacturing PMI remained below 50, pointing to a contraction in industrial activity for the sixth consecutive month, while the Caixin/Markit PMI ended up stronger than expected at 51.7. The official PMI is more oriented toward large state-owned companies, while the Caixin PMI survey covers small and medium sized companies. The Caixin new orders sub-index rose to its highest level since January 2013 and the new export orders component rose to its highest since February 2018. The rebound in domestic and external demand is likely to support diesel consumption, estimated to have increased by 470 kb/d in September.

Gasoline demand growth slowed in September to 70 kb/d from 295 kb/d in August. Chinese car sales fell for the 16th consecutive month in October, down 4% y-o-y, reportedly suffering from early implementation of new vehicles emission standards. Fifteen provinces accounting for 60% of China's car sales implemented new standards ahead of the 2020 deadline, reducing sales of older model vehicles that are potentially non-compliant.

China: Demand by Product

(thousand barrels per day)

	Demand			Annual Chg (kb/d)		Annual Chg (%)	
	2018	2019	2020	2019	2020	2019	2020
LPG & Ethane	1 620	1 705	1 824	85	119	5.2	7.0
Naphtha	1 268	1 310	1 393	43	83	3.4	6.3
Motor Gasoline	2 984	3 140	3 182	156	42	5.2	1.3
Jet Fuel & Kerosene	812	860	919	47	60	5.8	7.0
Gas/Diesel Oil	3 355	3 500	3 598	145	98	4.3	2.8
Residual Fuel Oil	432	396	363	- 36	- 33	-8.4	-8.2
Other Products	2 503	2 643	2 650	139	8	5.6	0.3
Total Products	12 975	13 553	13 930	578	377	4.5	2.8

China's domestic air revenue passenger kilometres (RPKs) rose by 8.9% y-o-y in September after growth of 9.8% y-o-y in August. Domestic growth has been supported by better

infrastructure and the recent pickup in economic activity. However, jet/kerosene demand remains well below last year, increasing by less than 35 kb/d y-o-y in January-September 2019.

For 2019 as a whole, China's oil demand is expected to reach a new record high of 13.6 mb/d, up 580 kb/d on 2018. Gasoline and diesel will contribute the most, followed by other products and LPG, whereas fuel oil demand is expected to fall. Growth is expected to ease to 375 kb/d in 2020 on slowing transport fuel demand.

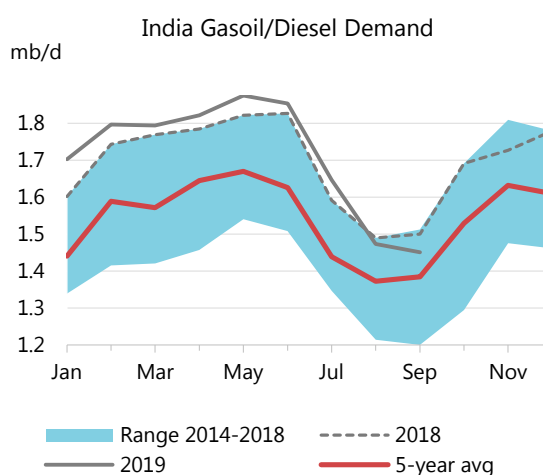
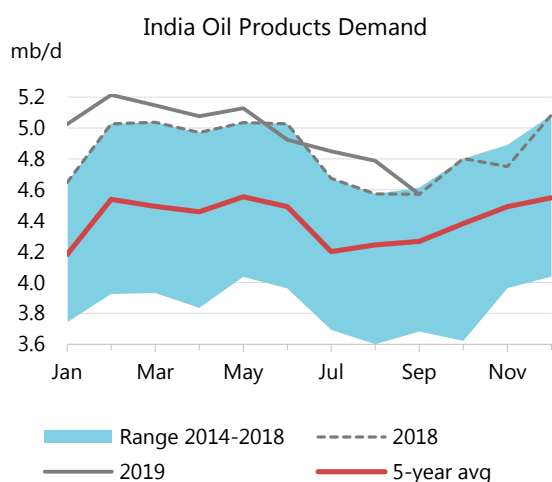
India

Indian oil demand remained stagnant y-o-y in September. Gasoil/diesel consumption dropped by 50 kb/d y-o-y and naphtha demand by 85 kb/d. LPG and gasoline demand contributed to support growth, however.

Heavy monsoon rains and flooding in northern India reduced economic activity and gasoil consumption. India's Meteorological Society said that September was the wettest for that month in more than a century. Heavy rainfall reduced the need for irrigation and the use of gasoil in agriculture. In addition, driving and construction activity was also reduced and hydropower resources maximised. All this contributed to lower gasoil demand. After a drop of 5 kb/d in 3Q19, demand is expected to rise 55 kb/d in 4Q19, following the end of the monsoon season.

India's car industry suffered from funding cuts for car purchases from the shadow-banking sector. Around half of Indians reportedly buy their cars through such bank loans. In October, however, the y-o-y growth in sales of cars and SUVs turned positive (0.3%) after 11 months of declines. New models and lower financing costs contributed to the improvement. In spite of the sharp drop in car sales through September, gasoline demand has remained buoyant increasing by 60 kb/d in Jan-Sep 2019.

Indian air travel slowed as RPKs growth was just 1.6% y-o-y in September, after 4.5% in August. After very strong growth in 2015-2018, slower economic growth and the Jet Airways bankruptcy has undermined Indian air passenger traffic. Jet/kerosene demand fell by 30 kb/d y-o-y in September, as a switch of household demand to LPG also contributed to pressure kerosene.



Indian oil demand should rebound in 4Q19, as the monsoon ended at the start of October and it will benefit from a comparison with a weak 4Q18 base. Overall, India's demand growth is expected to slow to 145 kb/d in 2019, but should recover to 180 kb/d in 2020.

India: Demand by Product							
(thousand barrels per day)							
	Demand			Annual Chg (kb/d)		Annual Chg (%)	
	2018	2019	2020	2019	2020	2019	2020
LPG & Ethane	782	836	866	54	30	6.8	3.6
Naphtha	324	313	327	- 11	14	-3.4	4.3
Motor Gasoline	676	729	760	53	31	7.8	4.3
Jet Fuel & Kerosene	252	242	262	- 10	20	-4.0	8.2
Gas/Diesel Oil	1 728	1 766	1 803	38	37	2.2	2.1
Residual Fuel Oil	150	145	143	- 5	- 2	-3.5	-1.1
Other Products	949	976	1 025	27	49	2.9	5.0
Total Products	4 863	5 008	5 186	145	178	3.0	3.6

Other Non-OECD

Russian oil demand rose by 50 kb/d y-o-y in September, on strong fuel oil and kerosene consumption. Air traffic growth fell to 3.2% y-o-y in September from 6% in August on slowing economic activity. The recent easing of visa requirements could support air transport demand in the next few months.

Argentina's oil demand remained stagnant y-o-y in September, after a fall of 25 kb/d in January-August 2019. **Brazilian** oil demand rose by 55 kb/d y-o-y in September, on strong gasoline (+60 kb/d) and gasoil (+30 kb/d) demand. Kerosene consumption was relatively weak, as the air transport sector experienced difficulties. Brazilian air passenger traffic returned to growth in September, increasing by 1.7% y-o-y after a drop of 1.4% in August. Air transport has recovered from the demise of Avianca Brazil, helped by a slightly better economic environment.

Non-OECD: Demand by Region							
(thousand barrels per day)							
	Demand			Annual Chg (kb/d)		Annual Chg (%)	
	1Q19	2Q19	3Q19	2Q19	3Q19	2Q19	3Q19
Africa	4 304	4 337	4 196	90	82	2.1	2.0
Asia	27 565	28 016	27 648	758	825	2.8	3.1
FSU	4 625	4 752	5 058	139	173	3.0	3.5
Latin America	6 245	6 346	6 441	15	- 28	0.2	-0.4
Middle East	8 127	8 208	8 745	- 226	45	-2.7	0.5
Non-OECD Europe	757	791	801	47	28	6.2	3.6
Total Products	51 623	52 449	52 889	824	1 125	1.6	2.2

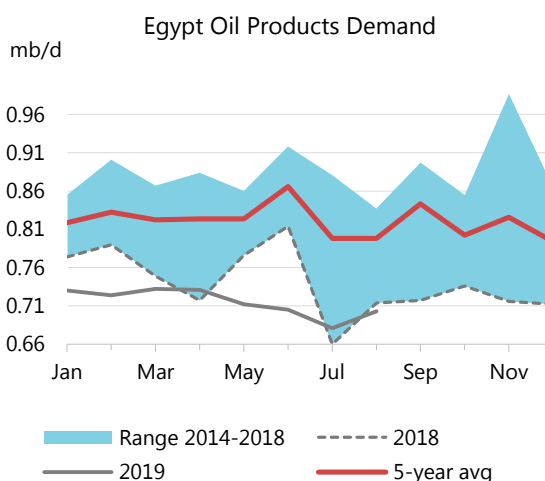
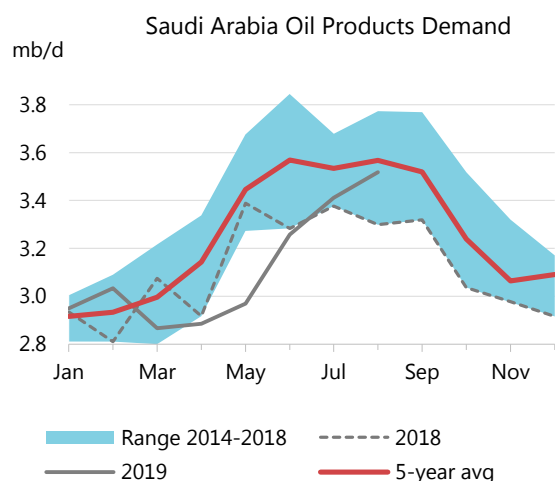
In **Saudi Arabia**, oil demand grew by 220 kb/d y-o-y in August, the second consecutive increase after several months of falling sales data. Growth came from crude oil (largely a base effect), fuel oil and gasoil demand. After a fall of 160 kb/d in 2Q19, Saudi oil demand is set to increase by 105 kb/d in 3Q19 and 90 kb/d in 4Q19.

Non-OECD: Demand by Product

(thousand barrels per day)

	Demand			Annual Chg (kb/d)		Annual Chg (%)	
	1Q19	2Q19	3Q19	2Q19	3Q19	2Q19	3Q19
LPG & Ethane	6 959	6 808	7 025	13	242	0.2	3.6
Naphtha	3 273	3 089	3 160	- 57	26	-1.8	0.8
Motor Gasoline	11 657	11 860	12 002	505	297	4.4	2.5
Jet Fuel & Kerosene	3 465	3 352	3 576	- 42	33	-1.2	0.9
Gas/Diesel Oil	14 589	15 450	15 294	403	512	2.7	3.5
Residual Fuel Oil	4 557	4 579	4 606	- 159	- 102	-3.4	-2.2
Other Products	7 123	7 312	7 226	162	119	2.3	1.7
Total Products	51 623	52 449	52 889	824	1 125	1.6	2.2

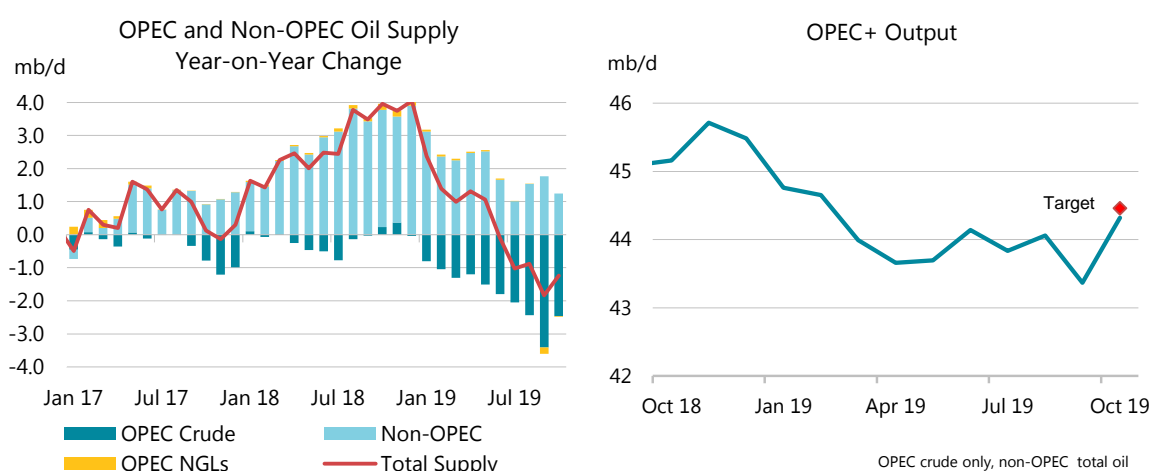
Egypt is another country where demand stopped contracting y-o-y in the past two months after steady declines since the middle of 2018 due to price reforms and switch to natural gas. Demand fell 50 kb/d y-o-y in 1H19, but matched last year's already low levels in July and August.



Supply

Overview

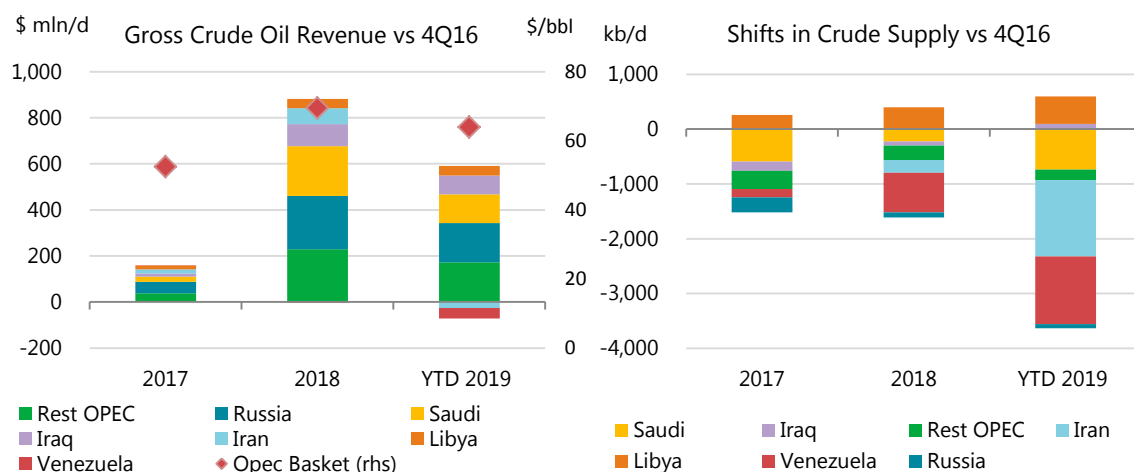
Saudi Arabia's rapid recovery from attacks on its energy sector drove global oil supply up 1.5 mb/d month-on-month (m-o-m) in October. The Kingdom alone contributed 1.4 mb/d to the rise. There were also substantial increases from Norway, Canada and the US. At 101 mb/d, world oil production was down 1.2 mb/d year-on-year (y-o-y). Driven by the US, non-OPEC supply was up 1.3 mb/d on a year ago, while OPEC was down 2.5 mb/d due to OPEC+ supply cuts as well as losses in Iran and Venezuela due mostly to sanctions.



Ahead of the 5-6 December meetings of the OPEC+ countries, the group's output remains below its target. The compliance rate delivered by the 24 producers was 111% in October, but production was at its highest since February when Saudi Arabia last pumped more than 10 mb/d of crude. Total OPEC crude output rose 1.06 mb/d to 29.91 mb/d.

The OPEC+ countries face a major challenge in 2020 as demand for their crude is expected to fall sharply. During the first half of 2020, the call on OPEC crude falls to 28.2 mb/d versus 30.2 mb/d in 4Q19, according to the current outlook. Surging non-OPEC supply explains this drop, with growth of 2.3 mb/d next year versus 1.8 mb/d in 2019. While the pace of US expansion slows, significant contributions are expected from Brazil, Norway and newcomer Guyana.

Three years into supply cuts, those taking part are still earning more than they were before the initial deal was agreed in 4Q16 when OPEC was producing at its highest ever. On average this year, OPEC has earned \$1.9 billion a day, up \$350 mln/d on the last three months of 2016 while producing nearly 3 mb/d less. So far this year, Saudi Arabia is earning \$630 mln/d, up \$125 mln/d on 4Q16. It is bearing the burden of the OPEC+ supply cuts, with output down around 740 kb/d versus the fourth quarter of 2016. Russia has seen its revenue increase by \$170 mln/d to \$670 mln/d, as its output is only 75 kb/d lower than in 4Q16. The only OPEC producers not making more money are Venezuela and Iran, where output has plunged.



Forging consensus on an extension of the supply cuts beyond their March 2020 expiry could prove tricky. A number of Russian producers have already signalled that further cuts could undermine investments in new upstream developments and derail longer-term supply targets. Within OPEC, Iraq and the UAE are pressing ahead with ambitious plans to boost capacity.

OPEC / Non-OPEC Output ¹								
(million barrels per day)								
	Sep 2019 Supply	Oct 2019 Supply	Supply Baseline ²	Agreed Cut	October Compliance	Average Compliance	Sustainable Production Capacity ⁵	Spare Capacity vs Oct Supply ⁶
Algeria	1.02	1.02	1.06	0.032	116%	105%	1.05	0.03
Angola	1.38	1.37	1.53	0.047	336%	268%	1.45	0.08
Congo	0.34	0.32	0.33	0.010	50%	-172%	0.35	0.03
Ecuador ³	0.55	0.46	0.53	0.016	444%	-31%	0.55	0.09
Equatorial Guinea	0.11	0.12	0.13	0.004	175%	453%	0.12	0.00
Gabon	0.19	0.21	0.19	0.006	-383%	-457%	0.22	0.01
Iraq	4.77	4.72	4.65	0.141	-48%	-60%	4.90	0.18
Kuwait	2.65	2.63	2.81	0.085	211%	148%	2.88	0.25
Nigeria ³	1.80	1.77	1.83	0.055	107%	-24%	1.80	0.03
Saudi Arabia	9.02	10.20	10.63	0.322	134%	268%	12.00	1.80
UAE	3.07	3.09	3.17	0.096	81%	99%	3.39	0.30
Total OPEC 11	24.90	25.91	26.85	0.814	115%	149%		
Iran ⁴	2.18	2.15					3.85	-
Libya ⁴	1.12	1.16					1.17	0.01
Venezuela ⁴	0.65	0.69					0.69	0.00
Total OPEC	28.85	29.91					34.42	2.81
Azerbaijan	0.76	0.72	0.797	0.020	395%	143%		
Kazakhstan	1.88	1.94	2.03	0.040	225%	285%		
Mexico	1.98	1.95	2.02	0.040	169%	231%		
Oman	0.98	0.98	1.00	0.025	68%	66%		
Russia	11.60	11.56	11.75	0.230	81%	72%		
Others ⁷	1.27	1.26	1.22	0.028	-154%	-3%		
Total Non-OPEC	18.47	18.41	18.81	0.383	103%	109%		
Total OPEC+	43.37	44.32	45.65	1.197	111%	136%		

1 OPEC figures are crude oil only, Non-OPEC figures are total oil supply (including NGLs).

2 Based on Oct-2018, except for Azerbaijan and Kuwait based on Sept-2018 and Kazakhstan Nov-2018. Non-OPEC supply baseline for Kazakhstan and Russia use IEA estimates.

3 Nigeria assigned new target from June 2019, Ecuador, Malaysia, Brunei from March 2019.

4 Iran, Libya, Venezuela exempt from cuts.

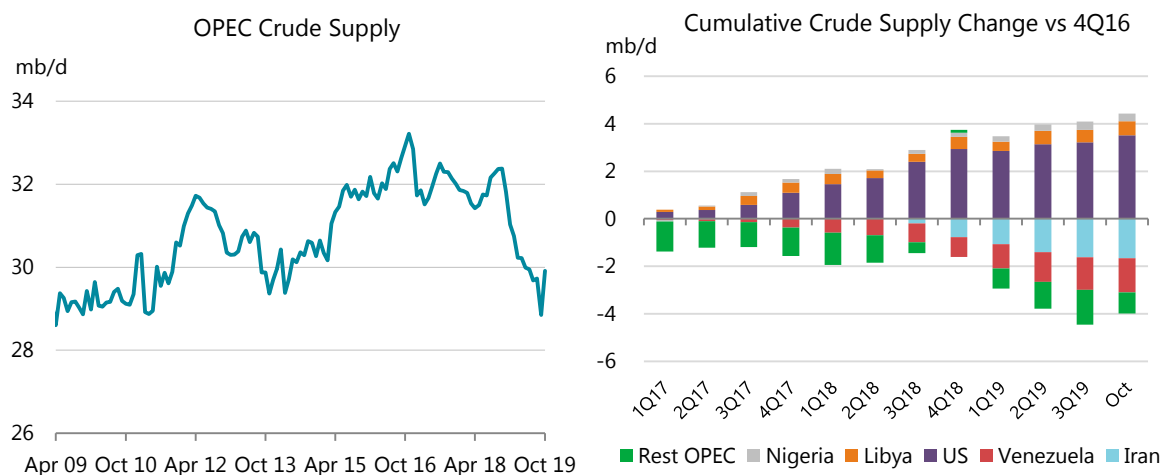
5 Capacity can be reached in 90 days and sustained for extended period.

6 Spare capacity excludes Iranian crude offline due to sanctions.

7 Bahrain, Brunei, Malaysia, Sudan and South Sudan

OPEC crude oil supply

OPEC crude output bounced back from a 10-year low in October after Saudi Arabia swiftly restored supply lost following attacks on its oil sector. At 29.91 mb/d, production from the 14-member group was up 1.06 mb/d m-o-m, but down 2.46 mb/d y-o-y. Ecuador, which is leaving in January, turned in the largest loss after protests shut in output. Iraq produced at lower rates, but was still 210 kb/d above its OPEC+ supply target. Despite topping 10 mb/d for the first time since February, Saudi output was 110 kb/d below its quota.

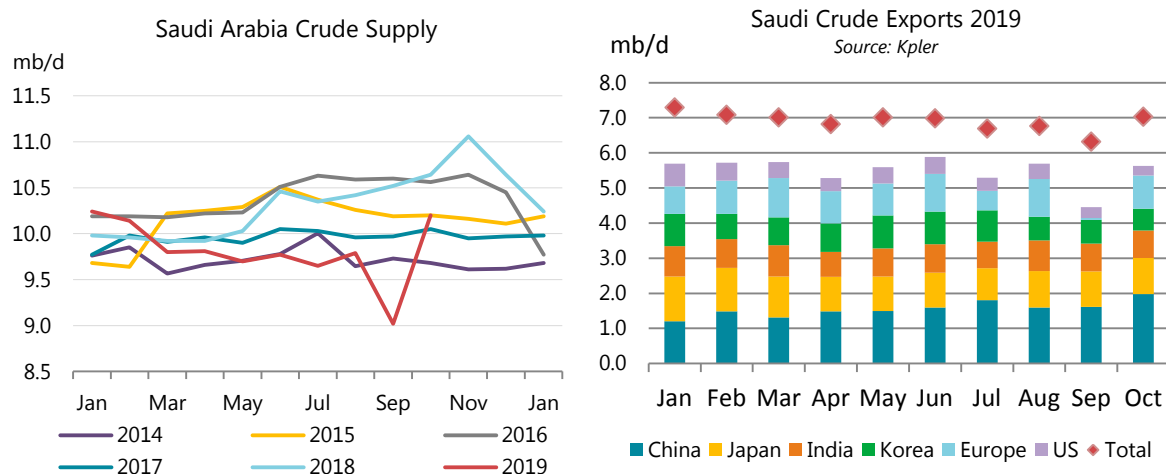


Taken altogether, the 11 members bound by supply limits pumped 120 kb/d below their target during October, putting compliance with the deal at 115%. OPEC as a whole in October pumped 3.1 mb/d below 4Q16 when cuts were announced. Iran and Venezuela between them have seen their production plunge by 3.1 mb/d. Libya, outside the agreement, and Nigeria – which only joined the deal in 2019 – have grown by 590 kb/d and 310 kb/d, respectively. The rest of OPEC has seen production fall by 900 kb/d. By contrast, US crude oil production has increased by 3.5 mb/d since 4Q16.

With plans underway for the Aramco IPO and the persistent need for revenues to fund the government budget, Riyadh has every incentive to keep oil prices supported. So ahead of the OPEC+ meeting, the Kingdom has urged those taking part in production cuts to comply fully.

Saudi crude oil production recovered strongly in October, rising 1.18 mb/d to 10.2 mb/d. According to data company *Kayrros*, Aramco built inventories by 275 kb/d during October, while tanker tracking from *Kpler* shows a 710 kb/d rise in exports. The Kingdom demonstrated impressive resilience following the 14 September attacks that shut in nearly 6 mb/d of its production, restoring lost output in little more than a week. Saudi officials expect production *capacity* to return to the pre-attack level of 12 mb/d by the end of November.

Shipments of Saudi crude to world markets climbed to around 7 mb/d in October. Exports to China rose to a record near 2 mb/d, up 370 kb/d m-o-m. To bolster Saudi Arabia's rank as China's top crude supplier, Aramco has signed crude oil contracts for 2020 with five customers that raised the total volume by 151 kb/d versus 2019. As for NGLs, our 2016 and 2017 estimates have been revised down by around 100 kb/d to reflect lower annual figures in Aramco's IPO prospectus.



Box 2. Aramco gears up for long-awaited IPO

Saudi Aramco's eagerly-anticipated listing on the local Tadawul stock exchange kicks off on 17 November, with up to 0.5% of its shares allocated to retail investors, according to its 658-page initial public offering (IPO) prospectus published on 9 November. While the size and price range of the offering have yet to be disclosed, the world's most profitable company could reportedly sell up to 2% of its shares, which could raise as much as \$40 billion. A deal of more than \$25 billion would beat the record IPO of China's e-commerce giant Alibaba in 2014.

Aramco's prospectus flagged its status as the world's lowest cost producer, with an average lifting cost of \$2.8/bbl of oil equivalent. It also outlined a number of risks, including terrorist attacks. The Saudi government retains the right to take decisions regarding the level of crude output and the cost to Aramco of complying with such decisions may impact its profitability. Furthermore, a shortfall in funding to the government or a decision to seek more revenue from hydrocarbons may lead it to change the fiscal regime. The Kingdom may also direct Aramco to undertake projects beyond its core remit.

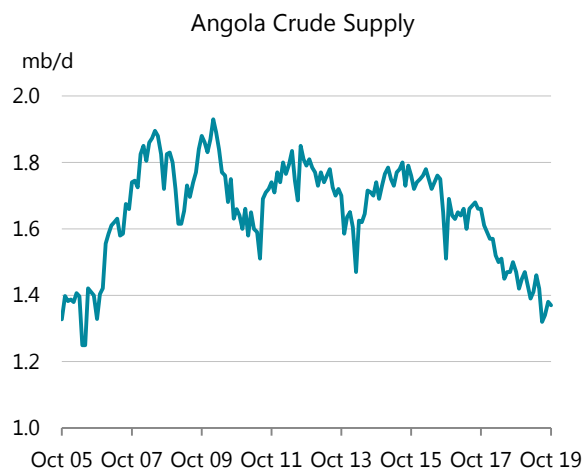
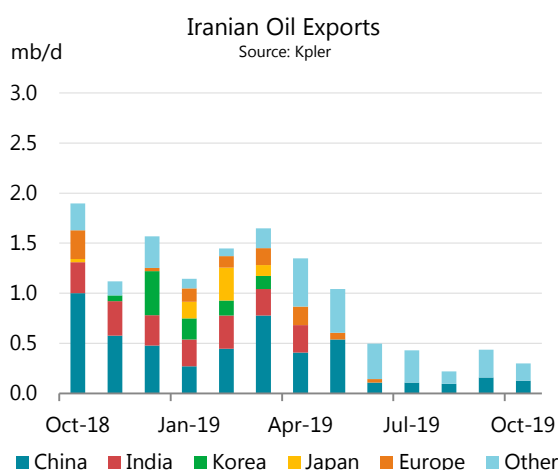
The offering ends over three years of speculation as to whether Riyadh would proceed with the IPO. Crown Prince Mohammed bin Salman is seeking to raise billions as part of his plan to shift the Kingdom's economy away from oil. The offering period for the share float closes on 28 November for retail subscribers and on 4 December for institutional investors. Final pricing for the IPO will be announced on 5 December, with trading due to start on 11 December. Aramco has said it will not list new shares under a six-month statutory lock-up period and will enter a one-year contractual lock-up period in which it will not issue additional shares except to foreign governments and overseas state-related strategic investors.

Output in **Iraq** eased to 4.72 million b/d in October, but was up 60 kb/d on a year ago. Although exports slowed, anti-government demonstrations have not yet had a material impact on operations. Output from the **UAE** edged higher during October along with rising crude exports. In a bid to boost trading volume and strengthen its influence on world markets, the Abu Dhabi National Oil Co has created a new forward pricing mechanism for its Murban crude and a

Murban futures contract (see *Prices*). International oil companies such as BP, Total and China National Petroleum Corp are equity partners in Murban, which is pumping around 1.7 mb/d.

Crude supply in **Iran** eased to 2.15 mb/d, the lowest since June 1988. US sanctions have driven Iranian oil exports down by 140 kb/d to 300 kb/d in October, according to *Kpler* data. It is not entirely clear where all of the barrels are headed. By comparison, exports were running at 1.9 mb/d in October 2018.

China remains Iran's top buyer, albeit at sharply lower levels since US sanctions waivers finished in May. China loaded just 130 kb/d in October, down from 1 mb/d the previous year. Malaysia lifted 65 kb/d, its first loading since May. Other major customers such as India, Korea, Japan and Turkey stopped lifting months ago. The National Iranian Oil Co continued to build stocks on land and at sea. According to *EA Gibson* data, Iran holds oil on 27 VLCCs and three Suezmax tankers. The assumed volume is close to the 2016 historic high, but Iran still has other vessels it can use for storage.



Angola is struggling to stabilise output and hopes that a new licensing round will help to arrest declines. Production in October of 1.37 kb/d was down 100 kb/d on 2018 due to technical and operational issues at core oil fields.

As other producers in Africa seek to improve fiscal terms and lure investment, **Nigeria's** plans to raise taxes on its deepwater oil production could make investments far less attractive and threaten future development. Production has risen sharply with the October level of 1.77 mb/d up 120 kb/d on 2018 thanks to the start-up of the Total-operated Egina deepwater field.

Total, however, is reportedly looking to sell its 12.5% stake in deepwater (OML) 118, which includes the Bonga field, as it seeks to adjust its African exposure. Output from the block is expected to rise whenever the Shell-operated Bonga Southwest gets off the drawing board. However, the final investment decision on the project may be further delayed by uncertainty over commercial terms. Chevron, too, is reportedly seeking buyers for some of its Nigerian assets following a similar move by ExxonMobil earlier in 2019. Shell and Chevron have already sold several blocks in recent years.

Despite ongoing domestic conflict, production in **Libya** climbed back to a six-year high of 1.16 mb/d in October. The UN-supported government of Prime Minister Faye Serraj is fighting to regain control of Tripoli from Libyan National Army forces loyal to General Khalifa Haftar.

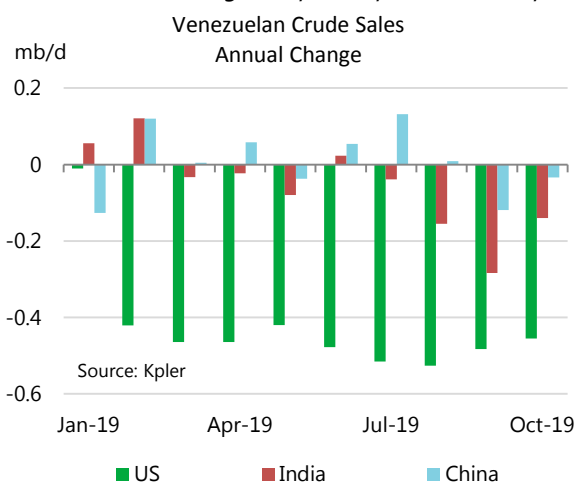
Congo expects production capacity to rise to 400 kb/d by early 2021, up from 320 kb/d pumped in October, as new discoveries and drilling programmes bear fruit. After sliding from 310 kb/d in 2010, new deepwater projects began to revive production in 2017. Under the first phase of its latest licensing round, Congo awarded three offshore production-sharing contracts (PSCs) in 2018 to Total, Kosmos and Perenco. In the second phase, a consortium of Eni and Lukoil won two offshore blocks, while US-based Kosmos Energy won a single offshore block. Eni-Lukoil secured Marine XXXI and Marine XXIV and Kosmos snared Marine XXII. PSC negotiations for the blocks are now under way.

Equatorial Guinea is aiming to reverse its slumping output in 2020 after two offshore discoveries start up. It pumped 120 kb/d in October, but recent finds by Noble Energy and Kosmos Energy are expected to boost flows. Equatorial Guinea also expects to award up to eight blocks from its current licensing round at the end of November. Crude output from OPEC's smallest producer peaked at 310 kb/d in 2004.

The biggest drop in OPEC production in October was from **Ecuador**, where supply fell to a nine-year low of 460 kb/d after protesters disrupted operations. Petroecuador declared *force majeure* on exports, but was able to resume shipments on 20 October.

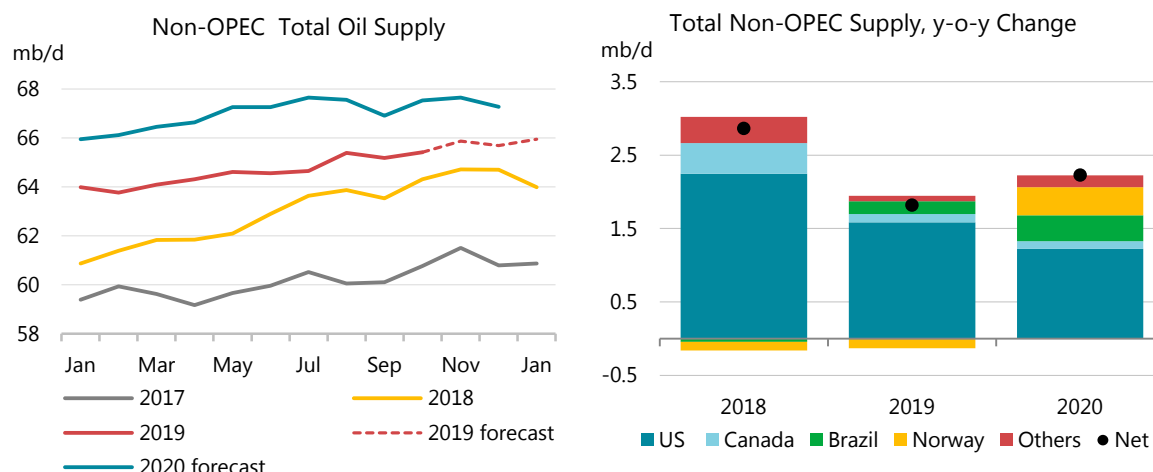
Venezuela managed to raise production by 40 kb/d to 690 kb/d in October although further declines are all but inevitable due to US sanctions and long-standing mismanagement. Exports climbed to 600 kb/d led by stronger shipments to China. The Petropiar joint venture between Petroleos de Venezuela (PDVSA) and Chevron has been making heavy Merey crude, mostly for the Asian market, since July after the upgrader unit was converted into a blending operation. However, plans are reportedly underway to turn the facility back into a crude upgrader early next year. PDVSA said in July it expected Petropiar to crank out some 130 kb/d of Merey, but it was forced to halt blending in September due to high stock levels. It restarted operations in October.

The US Treasury Department meanwhile extended a license, which was set to expire on 22 October, allowing Chevron and four US-based service companies to continue operating in Venezuela. The new license expires on 22 January 2020. Chevron is partnered with PDVSA in four joint ventures that had produced a combined 200 kb/d earlier in the year.



Non-OPEC supply

Non-OPEC oil supply rose by an estimated 255 kb/d in October, to 65.6 mb/d, as Norwegian oil production surged by 230 kb/d following the start-up of the Johan Sverdrup field on 5 October. Completion of maintenance in Canada and Kazakhstan also boosted supply, while biofuels production fell seasonally. While US supply rose by 145 kb/d m-o-m, the risk to the forecast is shifting to the downside. A slowdown in activity that started early this year now looks engrained in company strategies, with firms prioritising capital discipline and investor returns.



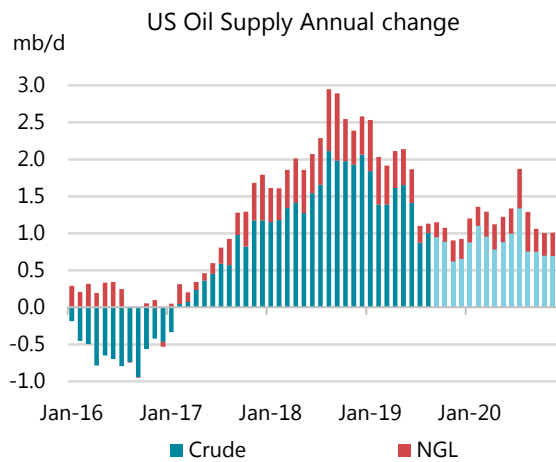
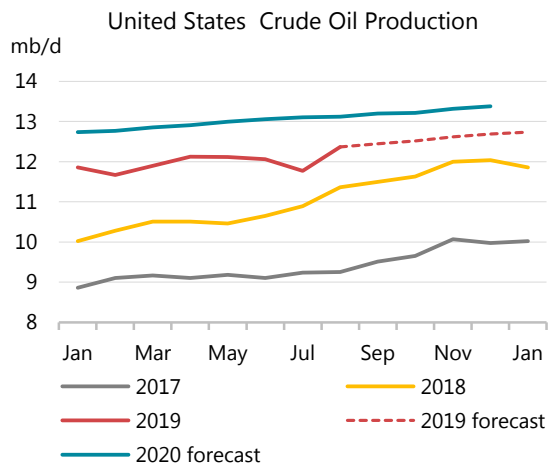
Even so, the outlook for 2020 supply growth has increased since last month's *Report*, following a faster than expected ramp-up of output at Johan Sverdrup, an advanced start-up for the Liza project in Guyana and tentative signs of recovery in Mexico. Non-OPEC supply is now forecast to rise by 2.3 mb/d next year, up from 1.8 mb/d in 2019. The contribution of the US to overall growth falls from 1.6 mb/d, or 87%, this year to 1.2 mb/d, or 54%, next year.

Non-OPEC Supply											
(million barrels per day)											
	2018	1Q19	2Q19	3Q19	4Q19	2019	1Q20	2Q20	3Q20	4Q20	2020
Americas	23.03	24.05	24.52	24.57	25.23	24.60	25.59	25.87	26.12	26.42	26.00
Europe	3.47	3.46	3.17	3.11	3.48	3.31	3.69	3.68	3.62	3.81	3.70
Asia Oceania	0.41	0.43	0.48	0.51	0.57	0.50	0.60	0.62	0.63	0.63	0.62
Total OECD	26.9	27.9	28.2	28.2	29.3	28.4	29.9	30.2	30.4	30.9	30.3
Former USSR	14.56	14.81	14.41	14.61	14.61	14.61	14.64	14.62	14.56	14.61	14.61
Europe	0.12	0.12	0.12	0.12	0.12	0.12	0.11	0.11	0.11	0.11	0.11
China	3.85	3.92	3.95	3.92	3.91	3.93	3.92	3.94	3.91	3.92	3.92
Other Asia	3.36	3.33	3.24	3.12	3.19	3.22	3.16	3.14	3.11	3.08	3.12
Latin America	4.52	4.51	4.58	4.85	4.91	4.72	5.05	5.11	5.14	5.13	5.11
Middle East	3.27	3.26	3.27	3.26	3.26	3.26	3.25	3.25	3.25	3.25	3.25
Africa	1.45	1.49	1.50	1.49	1.49	1.49	1.48	1.47	1.46	1.45	1.46
Total Non-OECD	31.1	31.4	31.1	31.4	31.5	31.3	31.6	31.6	31.5	31.6	31.6
Processing Gains	2.32	2.35	2.35	2.35	2.35	2.35	2.38	2.38	2.38	2.38	2.38
Global Biofuels	2.62	2.21	2.90	3.20	2.58	2.73	2.36	2.93	3.20	2.82	2.83
Total Non-OPEC	63.0	64.0	64.5	65.1	65.7	64.8	66.2	67.1	67.5	67.6	67.1
Annual Chg (mb/d)	2.86	2.59	2.22	1.43	1.12	1.83	2.29	2.61	2.37	1.93	2.30
Changes from last OMR (mb/d)	0.00	0.09	0.06	0.06	0.03	0.06	0.10	0.12	0.18	0.12	0.15

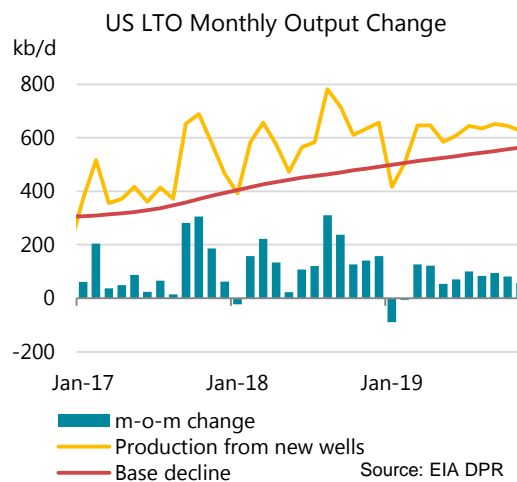
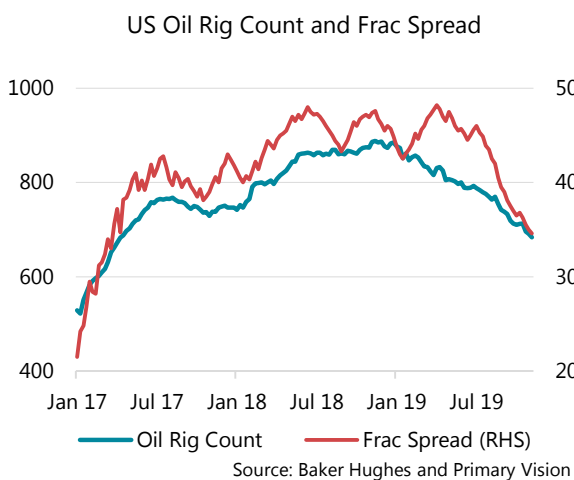
US oil supply continues to surprise to the upside, even as the outlook appears increasingly precarious. In August, the latest month for which complete data is available, crude oil production surged by a stronger-than-expected 600 kb/d m-o-m, to 12.36 mb/d. The bulk of the increase stemmed from the Gulf of Mexico (GoM), where output roared back following hurricane shut-ins in July. US GOM supply was up 470 kb/d m-o-m to a new record above 2 mb/d.

Still, the biggest surprise came from the onshore. Despite a continuous reduction in drilling activity, lower-48 onshore crude production rose by 195 kb/d m-o-m, a sharp acceleration from July's 70 kb/d increase. Output gains were recorded in Texas (+100 kb/d), New Mexico (+43 kb/d), North Dakota (+28 kb/d) and Colorado (+12 kb/d). Oklahoma production was flat

from July while seasonal maintenance curbed production in Alaska by 66 kb/d m-o-m. At 9.96 mb/d, lower-48 onshore production rose 1 mb/d y-o-y.



Capital discipline and investor apathy is restricting investment. Operating rigs in the US in early November fell to 684, 28 fewer than at the start of October and 200 less than one year ago. However, producers have gained in output per rig deployed. Moreover, operators have drawn down the inventory of drilled but uncompleted wells (DUCs). According to the Energy Information Administration's *Drilling Productivity Report*, after reaching a peak of more than 8 250 DUCs in March, by September the number had fallen to 7 740. In September, 1 390 wells were completed (+ 124 wells y-o-y) while only 1 184 new wells were drilled (- 234 wells y-o-y), according to the EIA. As a result, output from new wells is still exceeding the decline from old ones, resulting in a net increase of roughly 80 kb/d per month.



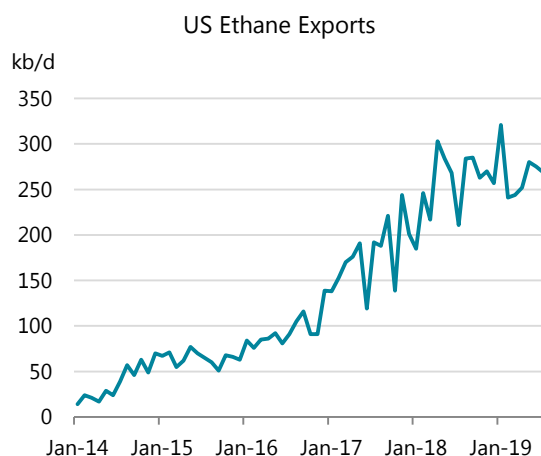
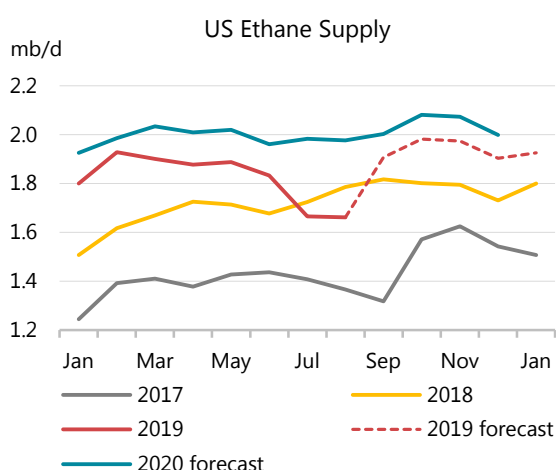
Oil service companies are bracing for further declines in upstream activity. Schlumberger said in its latest investor update that it expects a deeper year-on-year decline in drilling and well completions in the fourth quarter and into 2020. Halliburton reported an 11% decrease in North American revenue in 3Q19 when compared to 2Q19 and said it idled more equipment in the third quarter than it did during the first half of the year.

Pioneer Natural Resources Chief Executive Scott Sheffield told investors that he expects the Permian Basin to "slow down significantly over the next several years". Occidental Petroleum announced it will slash spending by 40% next year, in order to meet dividend and debt

payments after closing its \$38 billion purchase of rival Anadarko Petroleum. The company lowered its oil and gas production growth forecast for 2020 from 5% to just 2%. At the same time, the oil majors continue to scale up activity in US shale, and in the Permian basin in particular. The majors have deeper pockets and set longer term strategies than most of the independents and will account for an increasing share of growth in the future.

Our forecast for US crude production growth is largely unchanged since last month's *Report* at 1.2 mb/d and 0.9 mb/d for 2019 and 2020, respectively.

Meanwhile, US NGL supply was lower than expected for a second consecutive month in August, with ethane production especially weak. Overall NGL supply was up only 125 kb/d y-o-y, compared with gains of more than 550 kb/d on average during 1H19 and 585 kb/d in 2018. Ethane production declined y-o-y for a second month running, after a fire at Exxon's Baytown ethylene cracker in July exacerbated already weak domestic demand and as prices fell to all-time lows. In early November the price of ethane at Mont Belvieu had recovered to around 20¢/USG from a low of 10¢/USG at the end of July. In comparison, US propane costs over 50¢/USG. In August, the US exported 317 kb/d of ethane to Brazil, Canada, China, India, Mexico, Norway, Sweden and the United Kingdom. Additional export capacity and the start-up of new ethylene crackers is nevertheless expected to support US ethane demand and supply growth going forward. Total US NGL production is forecast to expand by 420 kb/d this year and a further 360 kb/d in 2020.

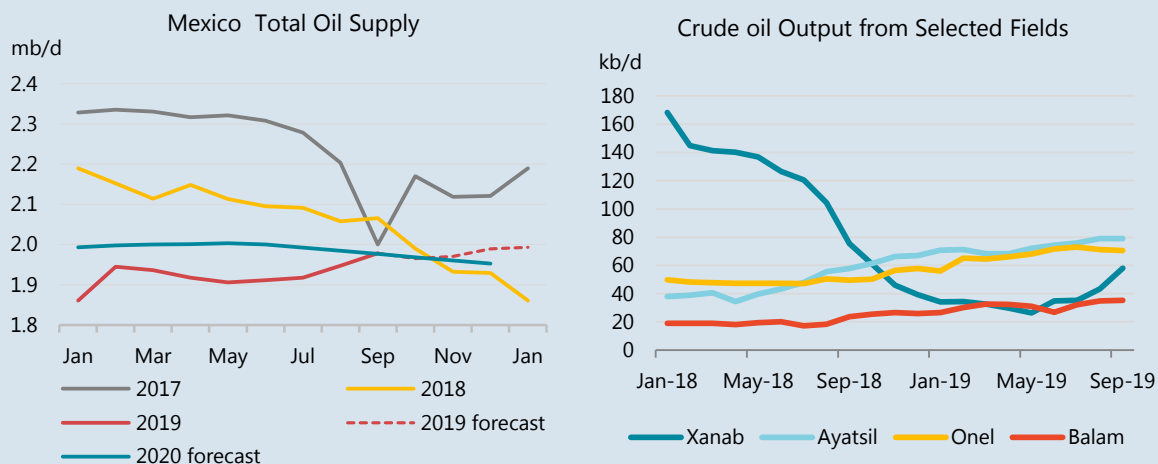


Box 3. Mexican reform efforts start to pay off

Mexican oil production posted a fourth consecutive monthly increase in September, rising 30 kb/d m-o-m to 1.98 mb/d. In its latest investor presentation, Pemex said that the new Business Plan is yielding positive results and that it is on the right path to reverse output declines that have lasted for 14 years. While it might be premature to celebrate the Plan's success, the latest data show output from a number of fields rising.

Since the start of the year, annual declines have eased from a peak of nearly 330 kb/d in January to 90 kb/d in September. The biggest improvement has come from the shallow water Xanab field that saw its production fall precipitously last year. Since hitting a low of 26 kb/d in May, 110 kb/d below a year earlier, production from Xanab recovered to 58 kb/d by September. Steady increases have

also come from Ek-Balam, Onel and the heavy Ayatsil field, which rose by a combined 32 kb/d since January. Pemex drilled 146 wells between January and August 2019; an increase of 28% compared with the same period a year earlier and the highest level since 2015.



Over the past year, Pemex has presented 17 development plans for its 20 priority fields which have all been approved by Mexico's National Hydrocarbons Regulator (CNH). Output from the fields is expected to reach 307 kb/d by 2022, with the greatest projected volumes from Ixachi, Xikin and Esah, which represent 68% of the total increase. In addition, gas production could increase by up to 894 mcf/d over the same period. To reach these targets, Pemex plans to invest US\$13.8 billion over the next 20 years, \$7 billion of which will be spent over the next five years.

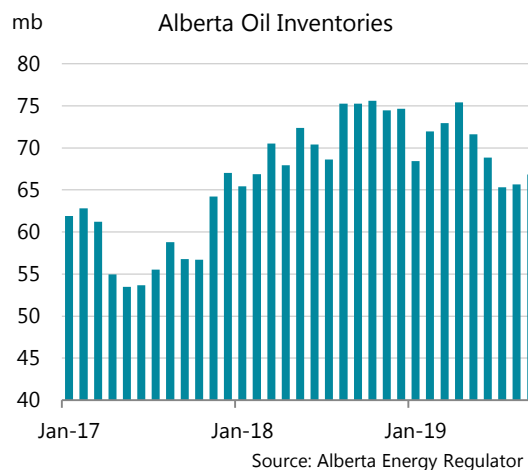
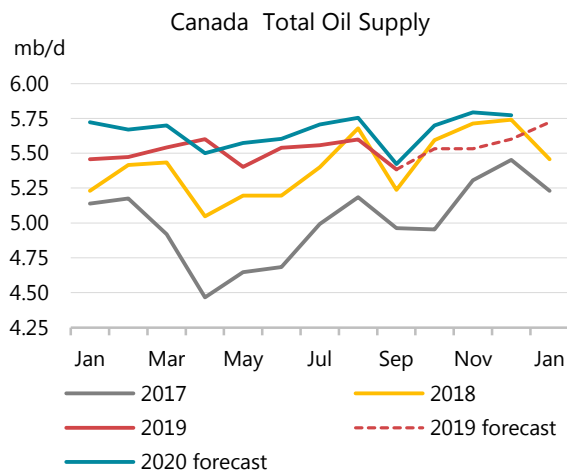
Increases from these fields are already expected by year-end as Pemex plans to drill 11 additional development wells and 10 exploration wells at its priority fields. Three development wells are planned for the Xikin field, three at Ixachi and one each at the Mulach, Cheek, Tiacame, Manik and Hok fields. According to Pemex, these developments could add as much as 100 kb/d.

While the increased drilling rates and the launch of new priority fields is good news, Pemex and new entrants might struggle to reach the government's ambitious 2024 oil production target of 2.6 mb/d. In the meantime, our forecast of total Mexican oil supply has been revised up to 1.93 mb/d for 2019 and to 1.96 mb/d for 2020, of which crude oil accounts for 1.71 mb/d and 1.75 mb/d, respectively.

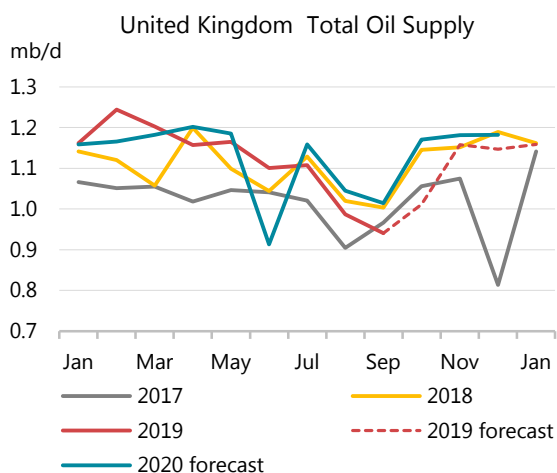
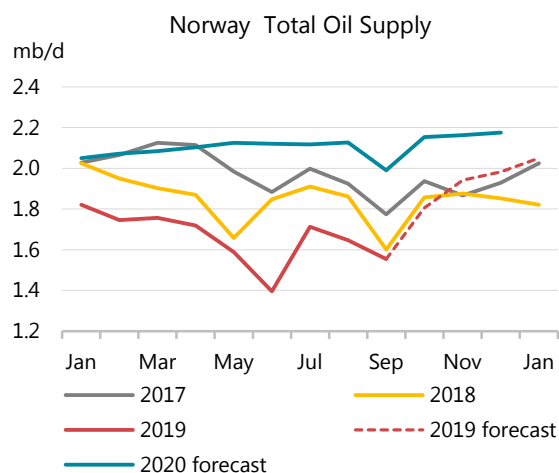
Canadian oil production rebounded in October as seasonal maintenance wound down. In September, oil supply fell by 215 kb/d m-o-m, to 5.4 mb/d, as maintenance curbed output of synthetic crude oil (-250 kb/d) in line with seasonal trends. Raw bitumen production was up by 150 kb/d, however, providing a partial offset. Offshore output eased another 25 kb/d, as lower production from Hebron (-42 kb/d) was partially offset by increases at Hibernia, Terra Nova and the White Rose fields. Production at Hibernia, which was shut in August due to an oil spill, was nevertheless only 14 kb/d in September, compared with average levels of 125 kb/d during 1H19.

The shutdown at the end of October of the Keystone pipeline that ships up to 590kb/d of crude oil to the US Midwest following has led us to slightly lower our Canadian production forecast for the remainder of the year. While the pipeline resumed partial shipments on 10 November, the

pipeline operator said November volumes would be cut by 39%. With limited surplus pipeline capacity, producers turned to rail or put oil in storage but it is possible that some production was also shut in. Canadian exports by rail have risen steadily this year from a low of 120 kb/d in February to 310 kb/d in August. That is still some way off the record volumes of 350 kb/d shipped last December before mandatory output cuts took effect. Oil inventories in Alberta are also lower than they were at end-2018, suggesting producers could store excess barrels, limiting the overall impact on production.



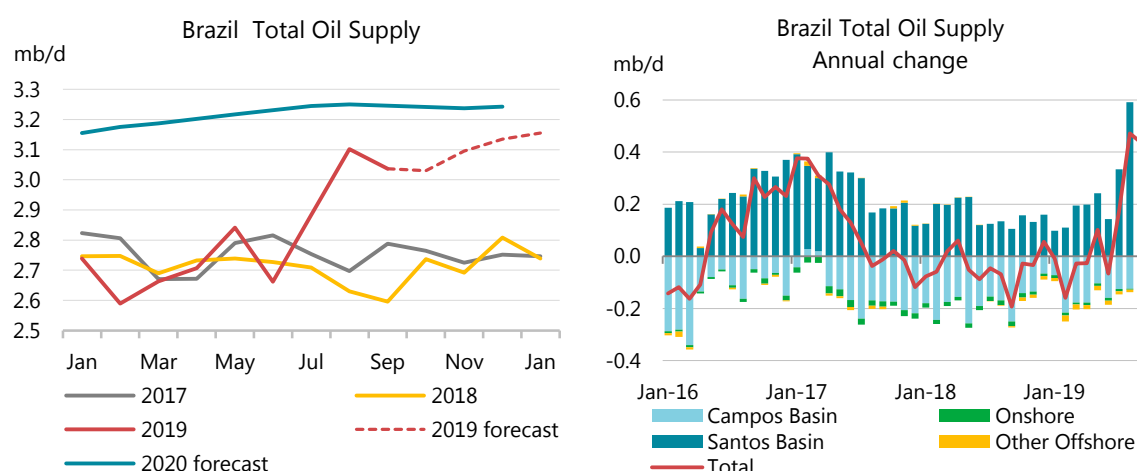
In October, **Norwegian** oil production rebounded by 230 kb/d m-o-m following the end of seasonal maintenance and with the commissioning of Equinor's giant Johan Sverdrup field. The company announced that, three weeks after first oil on 5 October, flows had already reached 200 kb/d. Preliminary loading programmes indicated that by the end of the year offtakes will reach 350 kb/d. From November, thanks to Johan Sverdrup, Norway should see sustained monthly y-o-y production growth for the first time since 2017. Equinor also brought the Oseberg Western Flank project online in mid-October which will add 30 kb/d of oil by the end of 2020. Although field declines and heavy maintenance at Ekofisk are responsible for an overall 125 kb/d y-o-y drop of Norwegian output in 2019, in 2020 impressive gains of 380 kb/d will make Norway one of the largest contributors to global oil supply growth.



UK production was disrupted by a number of unplanned outages in October and at 1 mb/d was 120 kb/d below year ago levels. The largest producing field, Buzzard, was offline for most of the month while operator CNOOC made repairs to pipework. Buzzard feeds into the Forties

Pipeline System which itself was briefly closed on two occasions due to power failures. Elsewhere, an evacuation of the Thistle platform and a fire at the Heather facility hampered flows in the Brent and Ninian systems, respectively, but these outages were relatively small. Overall, UK production is flat in 2019 and growing modestly by 20 kb/d in 2020, as field declines are just offset by rising production from field West of Shetlands and Equinor's Mariner project. Mariner started up in August and will add around 55 kb/d when it reaches its plateau next year.

After reaching a record high a month earlier, **Brazilian** oil production dropped unexpectedly by 65 kb/d in September. The decline was largely accounted for by the Lula field, the country's largest, which saw output fall by 66 kb/d m-o-m to 1.02 mb/d on lower production from the Cidade de Marica and Cidade de Mangaratiba floating production, storage and offloading vessels (FPSOs). A scheduled stop of the Libra early production system, that has been producing 40 kb/d, also contributed to the fall.



At more than 3 mb/d, output was nevertheless 440 kb/d higher than a year earlier, underpinned by gains from new production units in the Buzios and Lula pre-salt fields in the Santos Basin. Buzios production was up 290 kb/d y-o-y while Lula posted an annual gain of 170 kb/d. Further support came from the Campos Basin, where output increased by 45 kb/d m-o-m, to 1.09 mb/d, which was 16 kb/d higher than a year earlier. By comparison, production from the basin declined by 145 kb/d y-o-y on average during the first 8 months of the year and by 175 kb/d during 2018. A significant boost came from the Tartaruga Verde field that was launched in June 2018 but also from the Jubarte field that saw output rise to a record high of 247 kb/d in September, up more than 100 kb/d on a year ago.

On average, Brazilian oil production is set to increase by 160 kb/d this year and a further 350 kb/d in 2020.

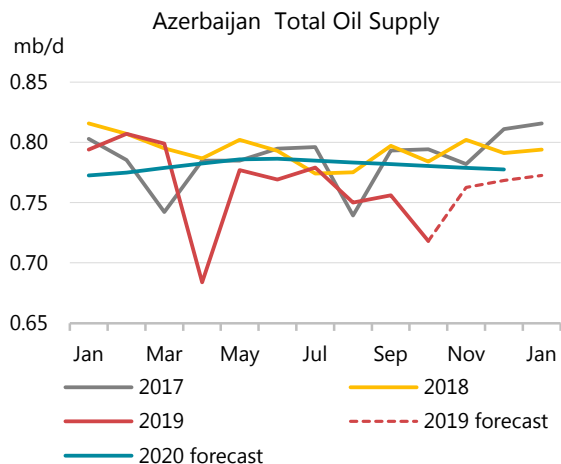
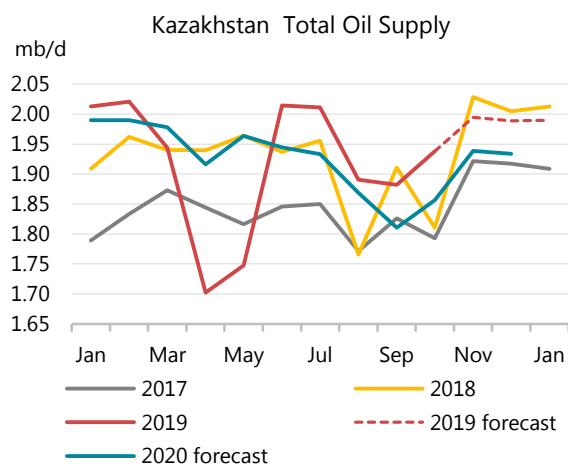
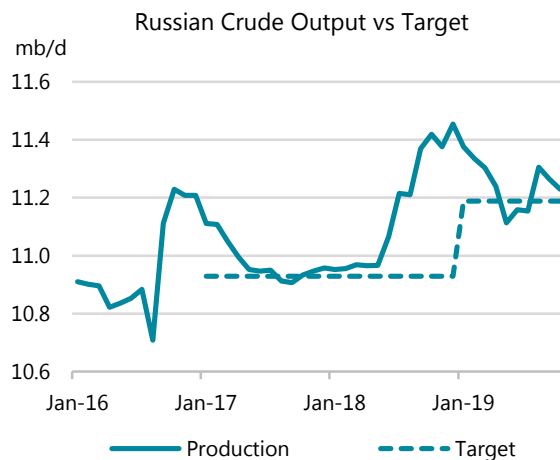
Brazil held its largest-ever auction for oil prospects on 6 November. While more than a dozen major oil firms registered to bid on the four offshore blocks, only two of them received bids. Petrobras took a 90% stake in the biggest block, Buzios, while the remaining 10% was split between two Chinese state energy companies. Petrobras made the only bid for Itapu, the smallest block. The Brazilian government received about \$17 billion in signing fees from the Buzios and Itapu blocks. This was far less than the target of \$26 billion for the four blocks on offer. In a separate auction held on 7 November, only one out of five blocks received any bids. Petrobras and China National Oil and Gas Exploration and Development Corp (CNODC), a unit of China National Petroleum Corp, made the minimum bid for the Aram block, with CNODC taking a 20% stake. They paid a combined signing bonus of about \$1.2 billion.

Russian crude and condensate production eased by 35 kb/d in October, on declines from Rosneft (-36 kb/d), Gazpromneft (-21 kb/d) and Slavneft (-21 kb/d), partially offset by gains from smaller producers. At 11.23 mb/d, production was 190 kb/d lower than a year ago but 40 kb/d higher than the quota set under the OPEC+ deal. According to Russian Energy Minister Alexander Novak, Russian oil companies struggled to meet the target as seasonally higher gas production led to higher gas condensate production, which is included in the official crude oil statistics.

While President Vladimir Putin confirmed during his visit to Saudi Arabia in October that Russia would stay in the alliance with OPEC, oil companies are warning that further participation in the deal would undermine output growth. According to Rosneft, an extension of the OPEC+ deal means that it will struggle to reach its liquids production target of 5.02 mb/d in 2022. The commissioning of Rosneft's Rospan project that will see output of 100 kb/d has already been delayed from 2019 to 1H20.

Rosneft also said that investment and production plans would be adjusted if the OPEC-plus deal is extended. Rosneft plans to reduce its drilling program and delay the launch of some greenfields, including East-Kamennoye, if the cuts are maintained.

In the Caspian, **Kazakhstan's** production rebounded in October as maintenance at the Karachaganak field concluded. In September, output from the gas condensate field dropped to 122 kb/d, from 260 kb/d a month earlier, offsetting a 100 kb/d increase in Tengiz output after scheduled works were completed there. Preliminary data show a 55 kb/d increase, to 1.94 mb/d in October. In contrast, **Azeri** oil output dropped by 40 kb/d in October due to maintenance at the West Chirag platform which is part of the BP-operated offshore Azeri-Chirag-Gunashli (ACG) complex. ACG produced 541 kb/d on average during the first nine months of 2019, down from 588 kb/d in the same period last year. The 8% drop came despite an increase in spending of 21.8% to \$1.452 billion over the same period.

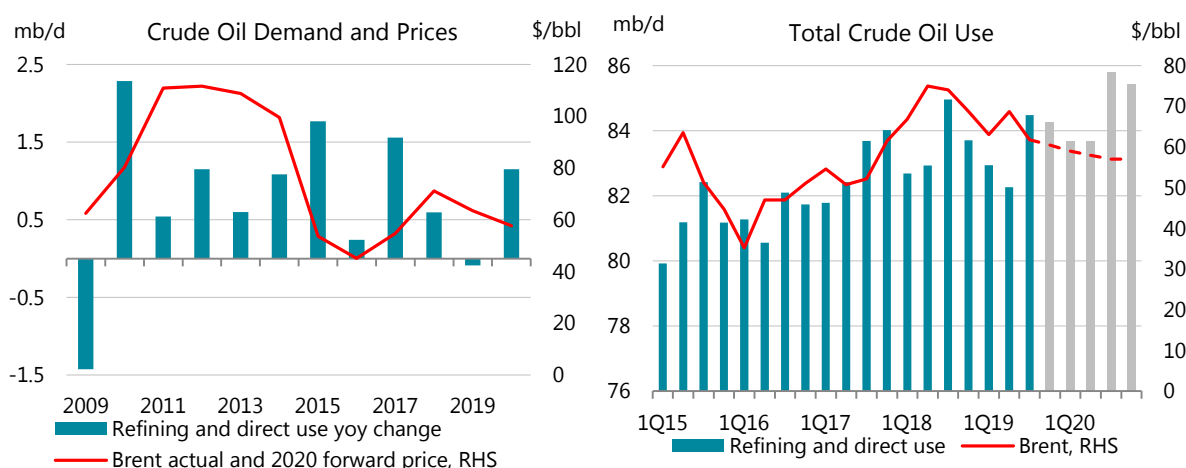


Refining

Overview

With September data now largely finalised, we can see that the refining activity in the first three quarters of the year has not been exciting. Global refining intake fell 250 kb/d year-on-year (y-o-y). Atlantic Basin runs dropped 790 kb/d, but East of Suez runs only accelerated by 540 kb/d, barely half the rate for the same period in 2018. Since January, we reduced our headline demand growth forecast for 2019 by 440 kb/d, but this accounts for only a third of the downward revision in the refining growth forecast to effectively zero. The remainder came from several major developments. In January, we forecast US throughputs unchanged y-o-y, but they are now seen declining 320 kb/d in 2019, partly due to the closure of the 335 kb/d Philadelphia refinery in June, following a major accident. Protracted turnarounds and later than expected start-ups in Asia (excluding China), resulted in the 220 kb/d growth forecast for the region turning into a small net decline. The increase in the Middle East was also revised down by 325 kb/d largely owing to developments in Saudi Arabia.

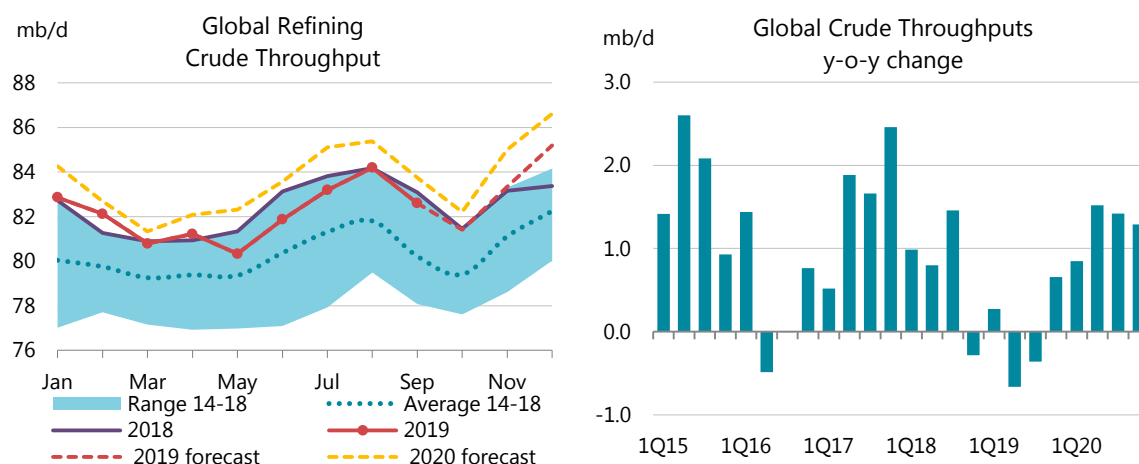
Refining activity levels more directly impact headline crude prices than final demand growth variations, as the latter can be driven by non-crude oil components such as natural gas liquids and biofuels. Slower refining activity in the first three quarters of 2019, combined with lower rates of direct crude use, resulted in total demand for crude oil declining by 300 kb/d y-o-y. Even with our 660 kb/d forecast for refining runs increase in 4Q19, crude demand for 2019 as whole is set to contract for the first time since 2009, albeit by only 90 kb/d.



The weak refining activity in 2019 kept runs below their quarterly record level of 3Q18. The most recent episode of a similar development, outside periods of economic recession, was in 2016, when refining growth was constrained due to the oversupply of refined products in 2015. The seasonality of refining activity and direct use of crude oil means that the next new record level for crude oil demand may not arrive before the second half of 2020.

The closer we get to 2020, the more difficult it becomes to outline expected developments in refining and crude and product markets. The uncertainties around IMO 2020 have added to the

difficulty of forecasting refining activity, challenging our assumptions in particular about the regional drivers of refining activity.



The weakness in the US, observed since February, culminated in October runs falling to a level just above those of September 2017, when throughputs were affected by Hurricane Harvey. In September, Chinese intake surged 1 mb/d month-on-month (m-o-m), well beyond forecast levels, to a new record high at 13.7 mb/d. The intense domestic competition in China is affecting refining earnings for major state-owned companies. Several new refineries are close to starting up including Saudi Aramco's Jazan, their Malaysian joint venture RAPID and a Chinese petrochemical company's Brunei outpost. Mexico's ambitions of a swift recovery in refinery throughput, although not yet visible in actual data, are very clear. The largely opportunistic projects to re-start the mothballed Caribbean assets (*see OMR, October 2019, "Caribbean not a refining paradise"*) are adding to the pressure on existing refineries.

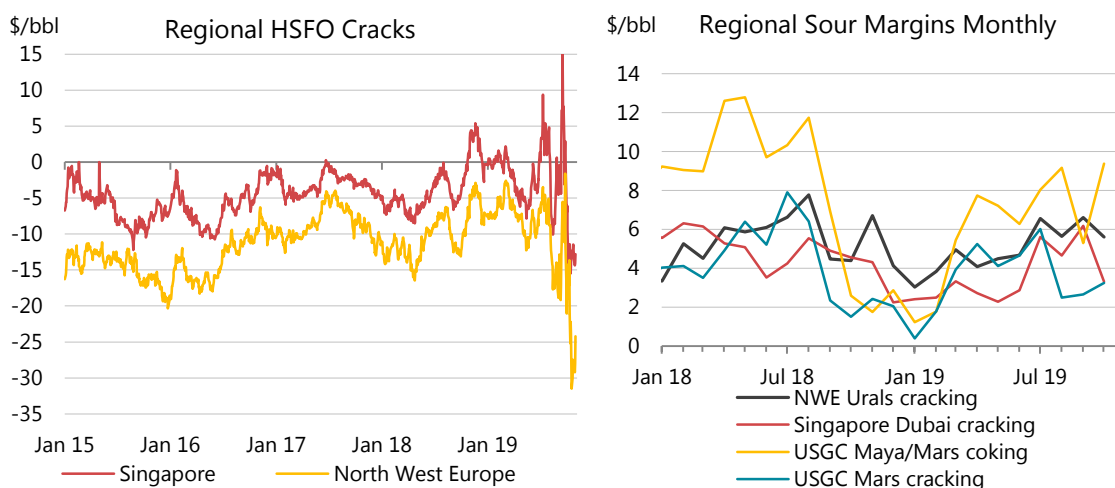
Our throughput forecast for 2020 was revised up by 125 kb/d to reflect higher forecast for China.

Global Refinery Crude Throughput ¹											
	(million barrels per day)										
	1Q19	2Q19	Aug 19	Sep 19	3Q19	Oct 19	Nov 19	Dec 19	4Q19	2019	2020
Americas	18.7	19.2	20.3	19.2	19.8	18.4	19.3	19.8	19.2	19.2	19.5
Europe	12.3	11.9	12.8	12.0	12.5	12.2	12.4	12.7	12.4	12.3	12.2
Asia Oceania	7.1	6.6	6.9	7.0	6.9	6.6	6.8	7.1	6.8	6.9	6.9
Total OECD	38.1	37.7	40.1	38.2	39.2	37.2	38.5	39.7	38.4	38.4	38.6
FSU	6.9	6.5	6.9	6.8	6.9	6.6	7.0	7.0	6.9	6.8	6.7
Non-OECD Europe	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
China	12.7	12.8	12.6	13.7	12.9	13.5	13.4	13.2	13.4	12.9	13.4
Other Asia	10.8	10.4	10.7	10.2	10.5	10.5	10.5	10.9	10.6	10.6	11.0
Latin America	3.1	3.2	3.3	3.3	3.3	3.2	3.3	3.2	3.2	3.2	3.2
Middle East	7.9	7.8	7.9	7.6	7.8	7.7	7.9	8.3	7.9	7.9	8.2
Africa	2.0	2.1	2.0	2.1	2.0	2.0	2.1	2.1	2.1	2.0	2.1
Total Non-OECD	43.7	43.3	44.0	44.3	44.0	44.1	44.8	45.4	44.8	44.0	45.0
Total	81.8	81.0	84.1	82.5	83.2	81.3	83.2	85.1	83.2	82.3	83.6
Year-on-year change	0.3	-0.7	0.0	-0.5	-0.4	0.0	0.2	1.8	0.7	0.0	1.3

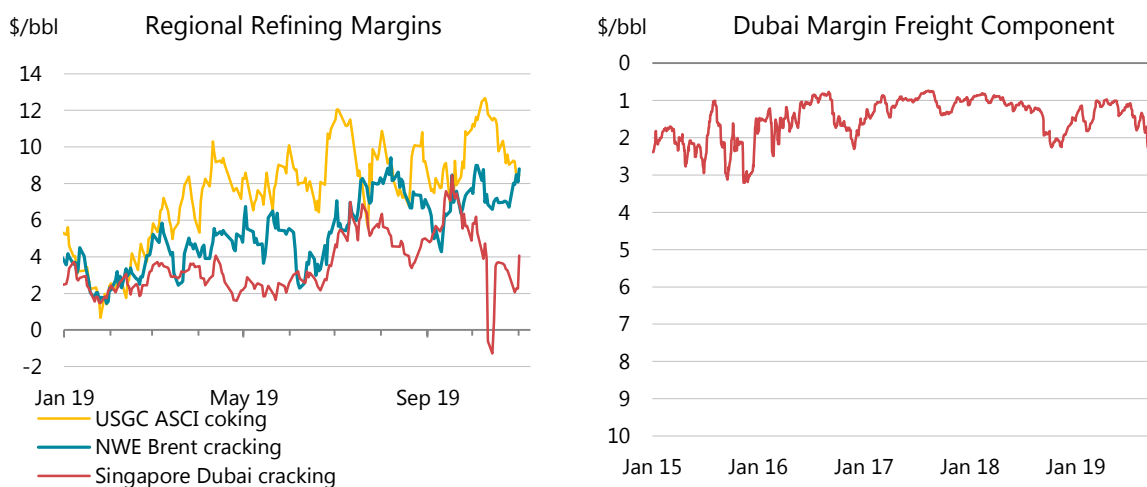
¹ Preliminary and estimated runs based on capacity, known outages, economic runcuts and global demand forecast

Margins

Refining margins are moving in different directions, both between regions and crude grades. In October, crude prices were lower month-on-month (m-o-m), setting the scene for stronger product cracks, before the markets factored in regional refining activity variations and priced in high sulphur fuel oil (HSFO) discounts. US Gulf Coast margins were the clear leaders in m-o-m gains in October, due to refining outages. The largest increases were seen in Maya-based blended margins, which reflected the volatility in HSFO, used in the pricing of this grade. This effect will soon end, with the implementation of the new Pemex formula for Maya pricing starting from December, which will remove the reference to HSFO, using WTI and Brent futures instead (see *Prices*). In the US Midwest, margins were lower m-o-m on better supplied regional markets, as PADD 2 throughput hit a seasonal record in October, up 520 kb/d y-o-y.



European sour margins were dragged down by HSFO cracks dropping to their lowest levels since 2008, but complex margins remained at comfortable levels. Sweet crude margins rose m-o-m, benefitting from higher light product cracks.



Singapore margins are used as a benchmark for a much larger region than either the US or Europe. Runs in Asia, excluding China (where refineries have different domestic drivers for margins), typically amount to 17 mb/d, compared to 9 mb/d in the US PADD 3 and North West Europe's 8 mb/d. It is also a very diverse region in terms of refining capacity. Our set of

Singapore refining margin indicators are likely not more than a crude reflection of the regional nuances. Nevertheless, the extreme movements observed in October in Dubai margins were without a doubt applicable to the region as a whole. While HSFO cracks have fallen continuously since mid-September's record highs, the impact has been mostly offset by higher cracks for lighter products. However, daily complex margins briefly fell below zero due to the spike in dirty freight rates (see *Prices*). The region, including China, imports 24 mb/d of crude oil, largely from the Middle East and the Atlantic Basin, or 80% of its crude requirement. As freight rates stabilised following the spike, Dubai margins returned to their normal range.

IEA/KBC Global Indicator Refining Margins ¹											
(\$/bbl)											
	Jul 19	Aug 19	Sep 19	Oct 19	Change		Average for week ending:				
					Oct 19-Sep 19	11 Oct	18 Oct	25 Oct	01 Nov	08 Nov	
NW Europe											
Brent (Cracking)	6.87	7.75	6.42	7.57	↑ 1.15	7.64	6.98	6.94	8.27	6.62	
Urals (Cracking)	6.55	5.64	6.61	5.61	↓ -1.00	7.25	5.52	3.99	3.15	1.06	
Brent (Hydroskimming)	4.26	4.52	4.33	5.29	↑ 0.96	6.15	4.37	4.48	5.86	3.86	
Urals (Hydroskimming)	2.46	-0.60	1.38	-2.64	↓ -4.02	0.48	-3.26	-5.34	-6.12	-8.51	
Mediterranean											
Es Sider (Cracking)	7.93	8.26	7.63	9.24	↑ 1.61	9.44	8.84	8.94	9.79	7.57	
Urals (Cracking)	6.62	5.00	7.24	7.39	↑ 0.15	9.16	7.04	6.31	4.93	2.10	
Es Sider (Hydroskimming)	5.62	5.35	5.22	6.68	↑ 1.45	7.49	5.87	6.17	7.37	4.84	
Urals (Hydroskimming)	2.30	-1.65	1.24	-1.06	↓ -2.30	2.26	-1.99	-3.26	-4.50	-8.81	
US Gulf Coast											
Mars (Cracking)	6.02	2.50	2.65	3.25	↑ 0.60	6.54	2.29	0.70	0.81	0.21	
50/50 HLS/LLS (Coking)	13.75	11.61	10.22	12.87	↑ 2.65	14.40	13.49	11.97	10.85	9.19	
50/50 Maya/Mars (Coking)	8.04	9.16	5.30	9.37	↑ 4.07	9.38	10.22	9.42	8.69	7.22	
ASCI (Coking)	9.60	8.87	8.56	10.70	↑ 2.14	12.38	11.10	9.57	8.76	7.80	
US Midwest											
30/70 WCS/Bakken (Cracking)	18.77	11.05	12.11	10.42	↓ -1.69	15.06	9.07	6.04	7.71	9.86	
Bakken (Cracking)	20.41	13.98	14.85	13.20	↓ -1.65	16.58	13.01	9.29	10.41	11.54	
WTI (Coking)	21.02	14.39	13.37	13.46	↑ 0.08	17.12	13.96	10.31	9.71	10.92	
30/70 WCS/Bakken (Coking)	20.87	14.79	15.24	14.88	↓ -0.36	18.46	14.22	11.34	12.76	14.92	
Singapore											
Dubai (Hydroskimming)	3.56	0.29	3.07	-3.81	↓ -6.88	-4.82	-5.70	-3.43	-3.91	-4.57	
Tapis (Hydroskimming)	3.78	2.10	1.27	0.22	↓ -1.05	0.72	1.13	-1.54	-1.33	-2.77	
Dubai (Hydrocracking)	5.61	4.66	6.18	3.31	↓ -2.87	3.25	2.00	3.36	2.67	3.15	
Tapis (Hydrocracking)	3.48	4.70	3.64	4.80	↑ 1.17	5.95	5.89	3.00	2.59	1.70	

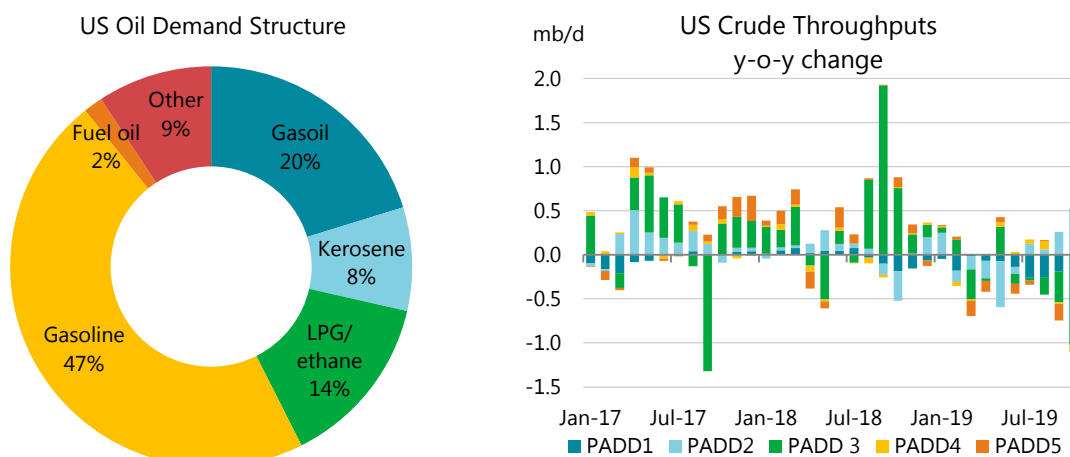
¹ Global Indicator Refining Margins are calculated for various complexity configurations, each optimised for processing the specific crude(s) in a specific refining centre. Margins include energy cost, but exclude other variable costs, depreciation and amortisation. Consequently, reported margins should be taken as an indication, or proxy, of changes in profitability for a given refining centre. No attempt is made to model or otherwise comment upon the relative economics of specific refineries running individual crude slates and producing custom product sales, nor are these calculations intended to infer the marginal values of crude for pricing purposes.

Source: IEA, KBC Advanced Technologies (KBC)

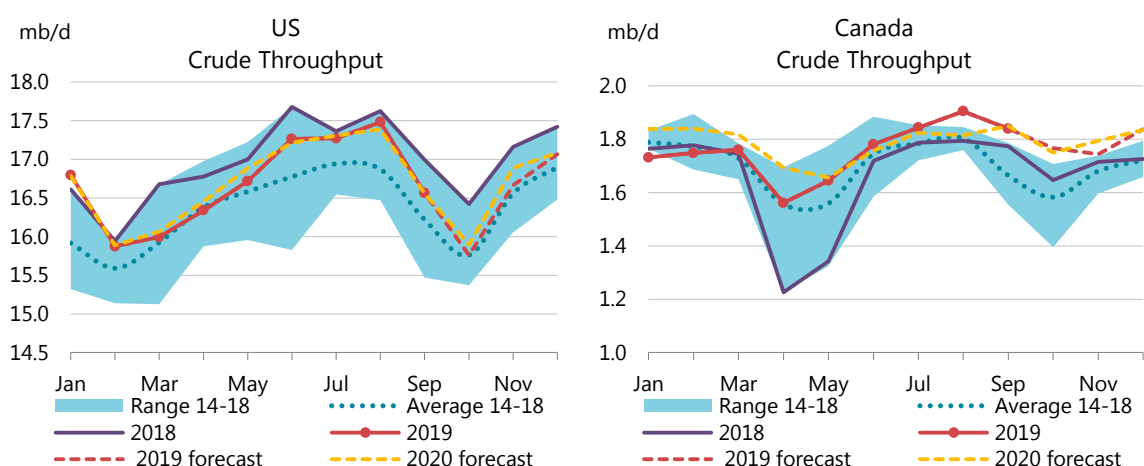
OECD refinery throughput

US refinery throughput in October fell by 660 kb/d y-o-y. At 15.75 mb/d, runs were the lowest since September 2017, which was affected by Hurricane Harvey. Declines in PADD 1 (affected by the Philadelphia refinery shutdown in August) and PADD 3 were only partially offset by strong y-o-y gains in PADD 2. The US Gulf Coast, or PADD 3, saw refining throughput fall another 435 kb/d m-o-m, despite lower announced outages. Runs dropped 845 kb/d y-o-y, the

largest decline since September 2017. Due to increased rates of processing domestic light crudes, PADD 3's crude intake gravity has consistently remained above 33 degrees API since February. However, despite overall lower runs and lighter crude use, coker utilisation did not decline visibly. US refiners have increasingly taken advantage of falling prices ahead of the IMO regulations to import heavy residual oils for processing in secondary units, according to *EIA* data available through August. At the same time, higher atmospheric distillation yields of naphtha resulted in increased reformer intake. The US refining system is heavily geared to produce gasoline for the domestic market, where it accounts for half of the demand barrel.



The increased availability of HSFO from the start of 2020, due to the IMO regulations, may help provide attractively priced feedstock for complex refiners looking to top up secondary units. As such, US crude intake growth in the future could depend on HSFO processing economics. Accordingly, we have revised down our 2020 runs forecast by 200 kb/d, with the growth now expected at 50 kb/d.



Mexican throughputs fell 80 kb/d in September to 660 kb/d, despite daily rates reportedly reaching 800 kb/d at some point in the month. **Canadian** runs continued to rise y-o-y in 3Q19, after a recovery in 2Q19. Preliminary August data showed runs at their highest level in over a decade.

Refinery Crude Throughput and Utilisation in OECD Countries

(million barrels per day)

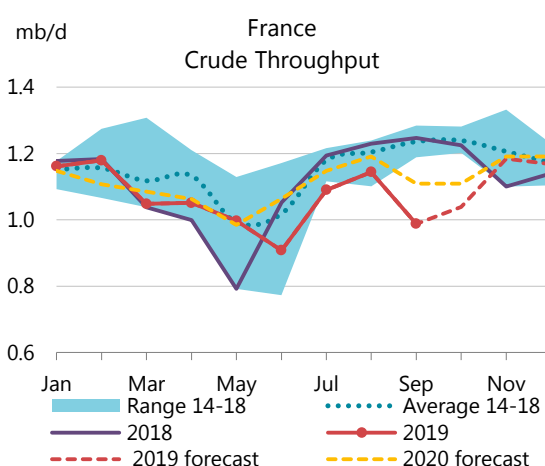
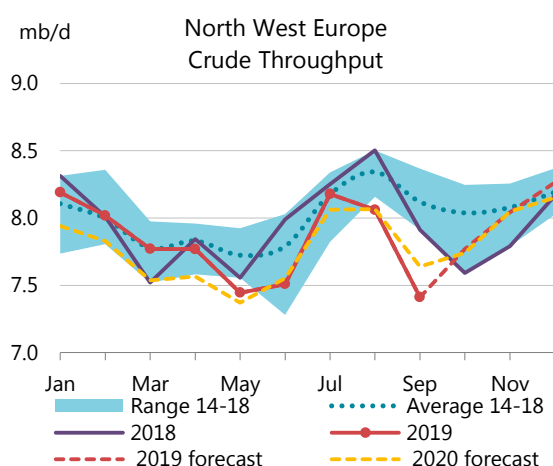
	Apr 19	May 19	Jun 19	Jul 19	Aug 19	Sep 19	Change from		Utilisation rate ¹	
							Aug 19	Sep 18	Sep 19	Sep 18
US ²	16.33	16.71	17.25	17.26	17.47	16.55	-0.92	-0.43	87%	89%
Canada	1.55	1.63	1.77	1.83	1.89	1.83	-0.06	0.07	91%	88%
Chile	0.20	0.22	0.20	0.20	0.21	0.21	0.00	0.02	92%	83%
Mexico	0.58	0.59	0.68	0.57	0.74	0.66	-0.08	0.05	40%	37%
OECD Americas³	18.66	19.15	19.90	19.87	20.31	19.25	-1.06	-0.29	84%	85%
France	1.04	0.99	0.90	1.08	1.13	0.98	-0.16	-0.26	79%	100%
Germany	1.71	1.65	1.75	1.88	1.81	1.80	-0.02	0.24	89%	77%
Italy	1.30	1.33	1.37	1.46	1.51	1.49	-0.02	0.14	86%	78%
Netherlands	1.09	1.04	0.96	1.15	1.16	1.14	-0.02	0.14	89%	78%
Spain	1.38	1.29	1.21	1.30	1.41	1.28	-0.13	-0.10	91%	98%
United Kingdom	1.08	1.03	0.98	1.07	1.11	1.00	-0.11	-0.16	79%	91%
Other OECD Europe	4.56	4.40	4.57	4.79	4.69	4.28	-0.41	-0.35	82%	92%
OECD Europe	12.16	11.73	11.73	12.73	12.82	11.96	-0.86	-0.34	83%	86%
Japan	3.08	2.72	2.87	2.98	3.17	3.15	-0.02	0.10	89%	86%
South Korea	3.15	2.82	2.82	2.93	2.93	2.91	-0.01	-0.07	85%	91%
Other Asia Oceania	0.82	0.79	0.85	0.90	0.84	0.91	0.07	-0.02	104%	107%
OECD Asia Oceania	7.06	6.33	6.53	6.82	6.94	6.97	0.03	0.01	89%	90%
OECD Total	37.88	37.21	38.17	39.41	40.07	38.18	-1.88	-0.63	85%	87%

¹ Expressed as a percentage, based on crude throughput and current operable refining capacity

² US\$0

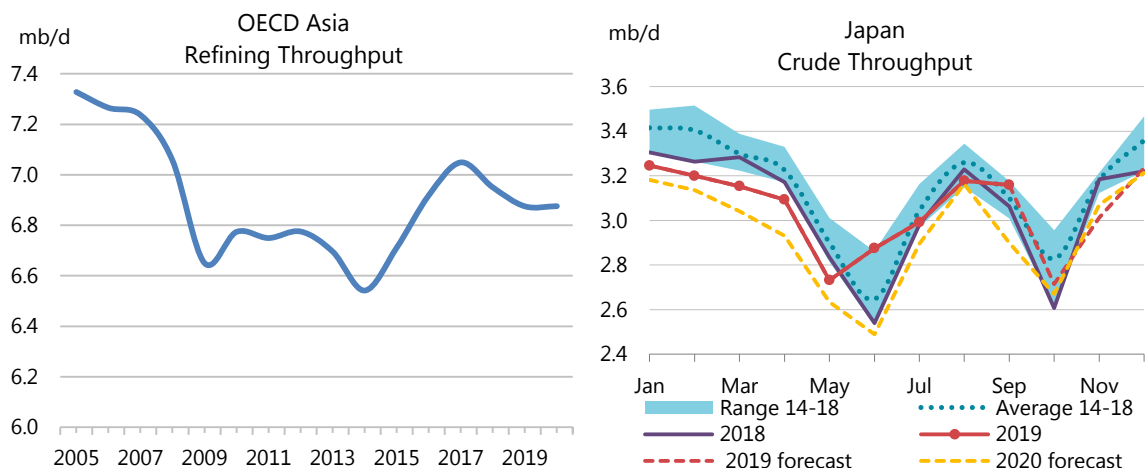
³ OECD Americas includes Chile and OECD Asia Oceania includes Israel. OECD Europe includes Slovenia and Estonia, though neither country has a refinery

European runs were flat y-o-y between January and September; however, excluding the ramp-up in the Star refinery complex in **Turkey**, regional throughput was down 200 kb/d, primarily in North West Europe. In 3Q19, **France** replaced **Germany** as a major underperformer in the region, with maintenance and strike actions cutting September runs to a record seasonal low, while German runs registered y-o-y increase thanks largely due to a comparison with a low base in 2018.



Refinery runs in OECD Asia are in their second consecutive year of annual declines, after a **Korean** ramp-up drove runs to a decade-high in 2017. **Japanese** refiners have performed better than expected this year, with runs flat instead the declines we had anticipated. Japanese oil demand continues to fall this year, but in contrast to previous years, product imports that took the hit, rather than domestic refineries. Net refined product imports fell by 110 kb/d through

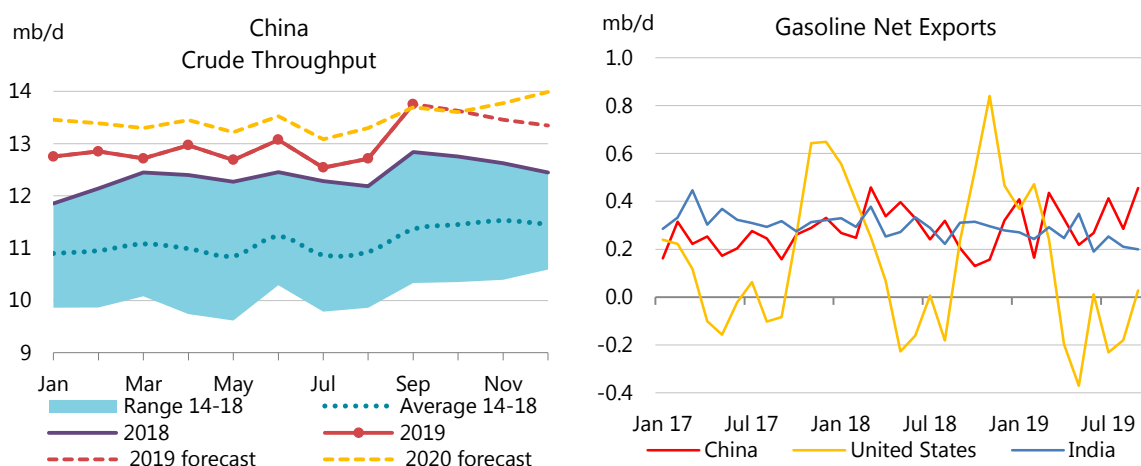
August, while demand decline is forecast at 90 kb/d. The UK-Korea trade deal was finalised, allowing Korean refiners to continue tariff-free imports of UK crude oil if Brexit is achieved.



Non-OECD refinery throughput

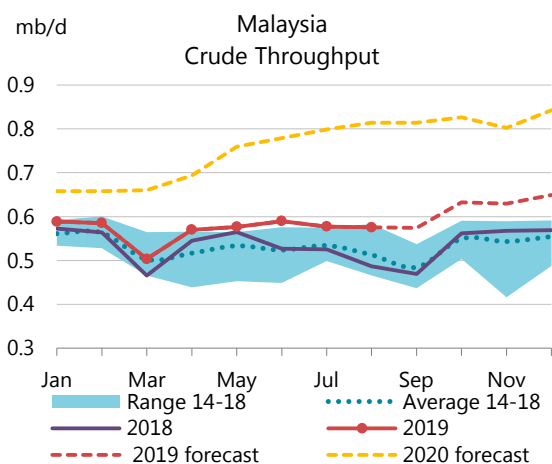
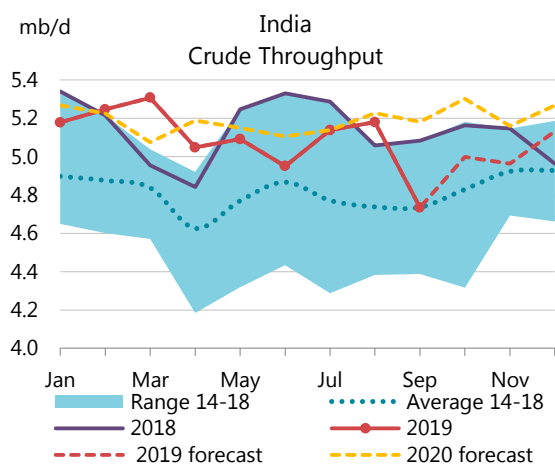
Chinese throughput in September surged 1 mb/d m-o-m to a new record level at 13.7 mb/d, up 0.9 mb/d y-o-y and October data showed output declining only slightly to 13.5 mb/d. This helped push China's product exports to new highs. September net gasoline exports were at record 455 kb/d. China has quietly turned into the largest net exporter of gasoline this year, having overtaken India in 2018. US gasoline exports, which can seasonally surge to 600 kb/d in winter months, have averaged less than 300 kb/d.

We have made further revisions to historical Chinese throughputs based on annual data reported by the National Bureau of Statistics. The annual data tend to exceed the sum of monthly figures for the same period, reported by the same agency. Our estimate of 2018 runs has been revised up by 190 kb/d to 12.3 mb/d and in 2014 to 2017 by an average 130 kb/d.

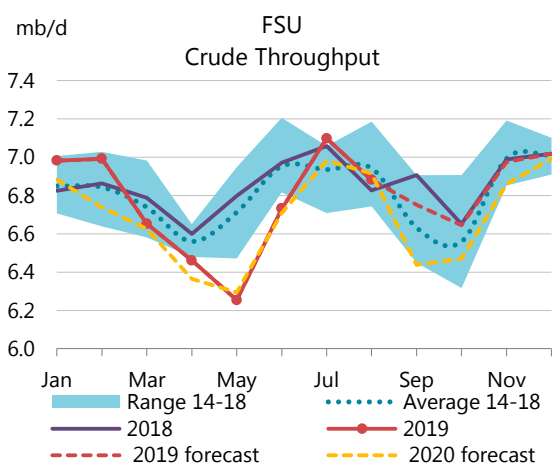
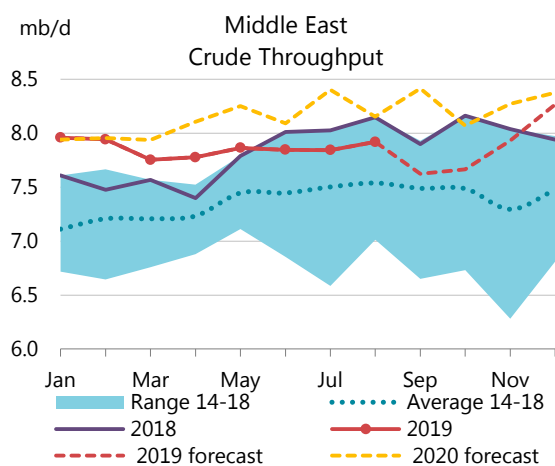


Indian runs were expected to decline in September on maintenance, but size of the fall came as a surprise. The 445 kb/d m-o-m drop in intake was the steepest in seven years, and throughput fell 350 kb/d y-o-y. Saudi Aramco said in its IPO prospectus that it expects its **Malaysian** joint venture RAPID to become fully operational by 2H20. We have extended the ramp-up period

accordingly, resulting in a downward revision to Malaysian throughput by 50 kb/d this year and 100 kb/d in 2020.

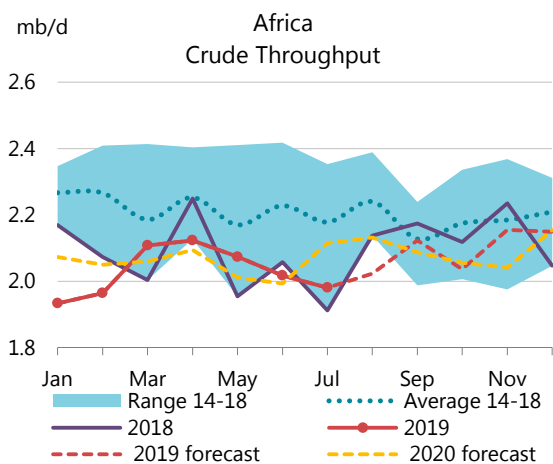
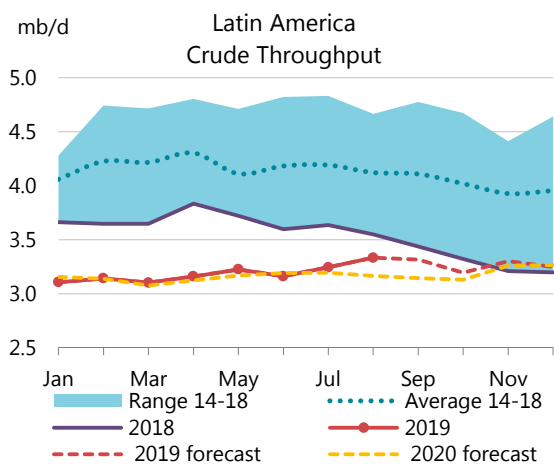


Saudi Aramco gave similar provisions for its 400 kb/d Jazan project in **Saudi Arabia**. In 2020, Saudi runs are forecast to increase by 260 kb/d, after an expected decline of 65 kb/d in 2019.



Russian throughput was practically unchanged m-o-m, at 5.7 mb/d according to the preliminary October data. Activity should pick up in November-December as the maintenance season draws to an end. **Ukraine's** 200 kb/d Kremenchug refinery that has run at utilisation rates of just 20% in recent years, is trying to increase processing, by importing a wider range of crudes in addition to domestic output. It recently brought in Libyan grades.

Brazil's throughput in September was sustained at the relatively high level of 1.825 mb/d. In 3Q19, **Colombian** throughput data, updated in Ecopetrol's quarterly results, showed runs flat y-o-y, at 400 kb/d. Shipments of Venezuelan crude to **Cuba** increased in recent weeks, which could result in refining rates improving. At the same time, Mexico's foreign ministry raised the possibility of an energy trade deal with Cuba on preferential terms, echoing Venezuela's Petrocaribe and Mexico's earlier programmes that ended more than a decade ago.

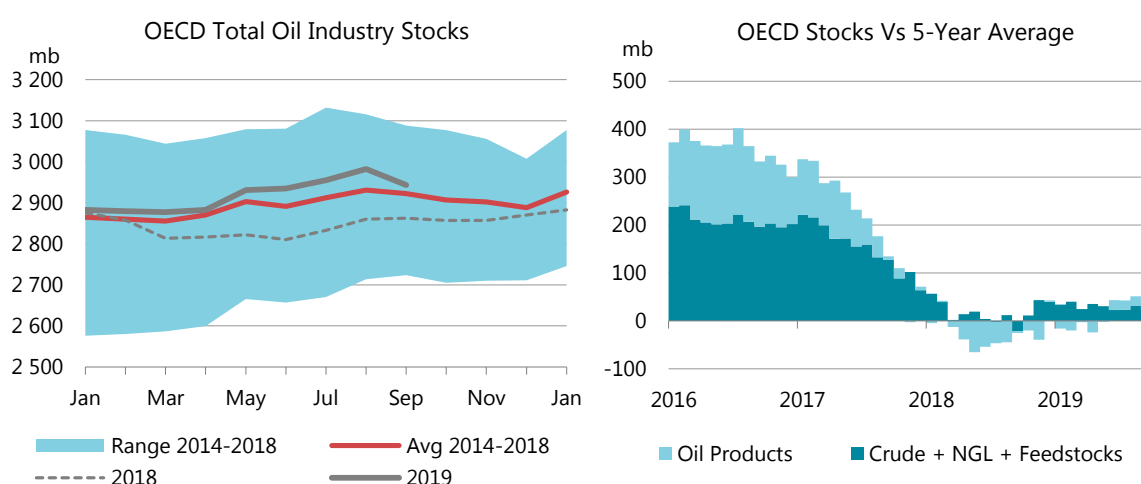


In Africa, **Tunisia's** sole 37 kb/d refinery announced a restart after several months of shutdown due to lack of crude. **Egypt's** Mostorod refinery commissioned its 80 kb/d residue upgrading complex just in time for the IMO regulations. This may help increase overall processing rates, which have been around 75% this year.

Stocks

Overview

OECD commercial inventories drew 38.9 mb month-on-month (m-o-m) in September to 2 944 mb after five straight monthly builds. The fall was larger than the average 8.9 mb for the month as oil products drew by 25.8 mb. At end-month total stocks stood 21.5 mb above the five-year average. Based on a forward demand metric, they were one day lower than the five-year average of 61.7 days.



Crude oil stocks fell by 7.5 mb to 1 096 mb. The decrease was in line with the usual fall for the month, but showed counter-seasonal movements in different regions. Crude oil inventories in OECD Americas built by 5.5 mb and were roughly unchanged in Europe, due to lower refinery runs. Those in the Asia Oceania region drew by a relatively large 13.1 mb led by a fall in Korea.

Oil product inventories drew 25.8 mb to 1 488 mb, more than the usual fall of 5.7 mb. Middle distillates drew by 16.9 mb, over three times the usual decrease owing to a counter-seasonal fall in the Americas and a larger decrease in Europe driven by the lower refinery runs. Motor gasoline and other oil categories also fell counter-seasonally by 2.8 mb and 6.8 mb, respectively. On the contrary, fuel oil inventories rose 0.7 mb.

Preliminary data for October showed total stocks falling in the US and Europe, while inventories gained in Japan. US crude inventories showed a larger than usual increase of 21.8 mb amid lower refinery runs on the month. Total US oil product inventories fell 40.1 mb, offsetting the build in crude oil. Total European oil stocks drew 0.7 mb. Both crude oil and total product stockpiles decreased by 0.4 mb. Japanese crude inventories decreased counter-seasonally by 0.2 mb. Total Japanese products stocks increased by 1.3 mb owing to stock builds in middle distillate products.

Preliminary Industry Stock Change in September 2019 and Third Quarter 2019												
	September 2019 (preliminary)				Third Quarter 2019							
	(million barrels)				(million barrels per day)				(million barrels per day)			
	Am	Europe	As.Ocean	Total	Am	Europe	As.Ocean	Total	Am	Europe	As.Ocean	Total
Crude Oil	5.5	0.0	-13.1	-7.5	0.2	0.0	-0.4	-0.3	-0.3	0.0	0.0	-0.3
Gasoline	-2.0	-0.9	0.1	-2.8	-0.1	0.0	0.0	-0.1	0.0	0.0	0.0	-0.1
Middle Distillates	-6.3	-12.2	1.6	-16.9	-0.2	-0.4	0.1	-0.6	0.0	0.0	0.1	0.1
Residual Fuel Oil	-0.2	-0.2	1.1	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other Products	-2.6	-2.3	-1.9	-6.8	-0.1	-0.1	-0.1	-0.2	0.2	0.0	0.1	0.2
Total Products	-11.1	-15.7	1.0	-25.8	-0.4	-0.5	0.0	-0.9	0.1	0.0	0.2	0.3
Other Oils ¹	-2.8	-1.2	-1.6	-5.6	-0.1	0.0	-0.1	-0.2	0.1	0.0	0.0	0.1
Total Oil	-8.3	-16.9	-13.7	-38.9	-0.3	-0.6	-0.5	-1.3	-0.1	0.0	0.2	0.1

¹ Other oils includes NGLs, feedstocks and other hydrocarbons.

Data for August show that OECD stocks were revised up by 8.4 mb. The largest adjustment was for crude oil, which rose by 5.7 mb in total. European product stocks were revised up by 3.6 mb. July stock figures were also revised up by 1.5 mb, mainly in the Americas.

Revisions versus October 2019 Oil Market Report								
	Americas		Europe		Asia Oceania		OECD	
	Jul-19	Aug-19	Jul-19	Aug-19	Jul-19	Aug-19	Jul-19	Aug-19
Crude Oil	-0.5	5.1	0.1	2.9	0.0	-2.3	-0.4	5.7
Gasoline	-0.2	0.9	0.0	-2.5	0.0	-1.3	-0.2	-2.9
Middle Distillates	0.4	0.6	0.0	2.9	0.0	0.3	0.4	3.9
Residual Fuel Oil	0.2	-0.7	0.0	2.2	0.0	0.0	0.2	1.6
Other Products	0.7	-3.7	0.0	1.0	0.0	0.7	0.7	-2.0
Total Products	1.2	-2.9	0.0	3.6	0.0	-0.1	1.2	0.6
Other Oils ¹	0.7	1.3	0.0	0.2	0.0	0.6	0.7	2.1
Total Oil	1.4	3.6	0.1	6.6	0.0	-1.8	1.5	8.4

¹ Other oils includes NGLs, feedstocks and other hydrocarbons.

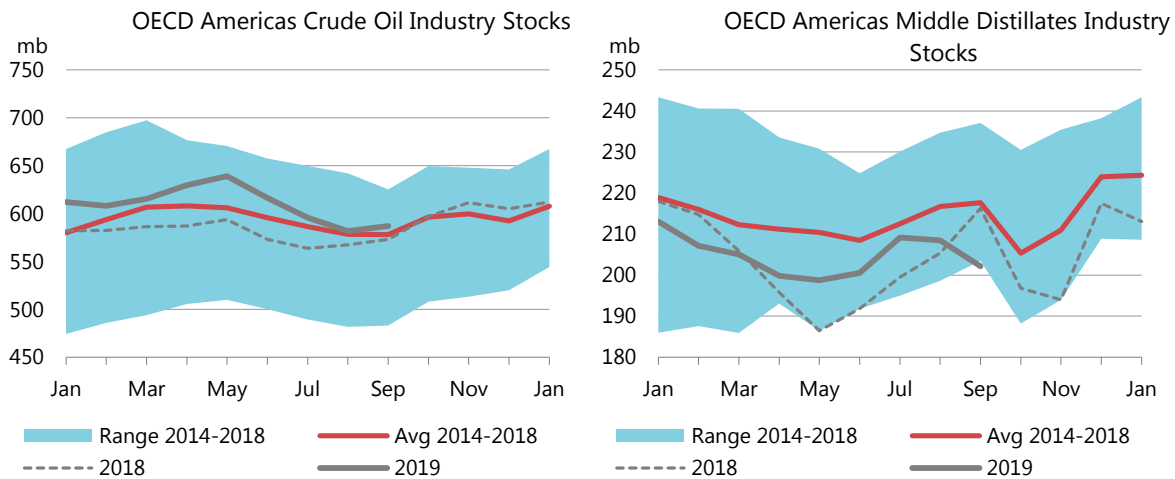
Recent OECD industry stock changes

OECD Americas

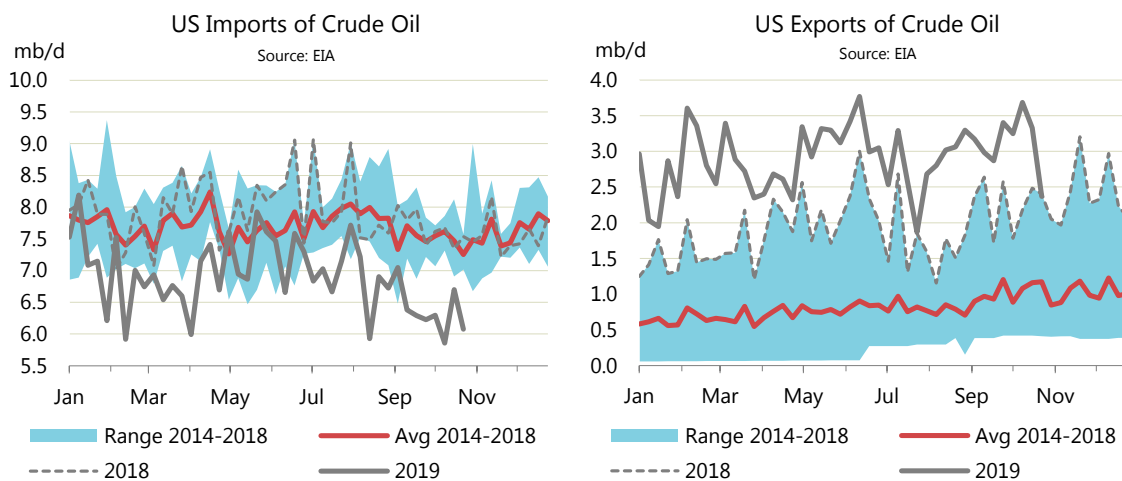
Industry stocks in the OECD Americas region decreased by 8.3 mb m-o-m in September to 1 555 mb, 22.2 mb above the five-year average. On a forward demand basis, they stood 1.4 days below the average of 61.2 days. The fall was counter-seasonal for the month and was due to large draws observed in oil products.

Crude oil inventories built 5.5 mb, which is a counter-seasonal gain for the month (usually crude stocks decrease by 0.4 mb). Despite a m-o-m rise in crude oil exports from the US (+365 kb/d m-o-m reaching 3.1 mb/d on average in September according to the *US Census Bureau*), lower refinery runs in the US (-920 kb/d m-o-m in September) amid major maintenance season pushed-up crude inventories. Overall OECD Americas crude stocks stood at 587 mb, 9.1 mb above the five-year average.

Oil product stocks showed counter-seasonal falls in all categories and drew 11.1 mb overall. Middle distillates and motor gasoline fell by 6.3 mb and 2 mb, respectively (they normally build 0.9 mb and 1 mb for the month). Stocks of other oil products also drew by 2.6 mb and fuel oil stocks fell 0.2 mb.



Preliminary data from the *Energy Information Administration* showed a larger than usual crude inventory build of 21.8 mb m-o-m in October, mainly due to reduced refinery runs (-805 kb/d m-o-m). Total oil product inventories drew by 40.1 mb. The main components were: middle distillates (-15.2 mb), other refined products (-12 mb) and gasoline (-11.8 mb).

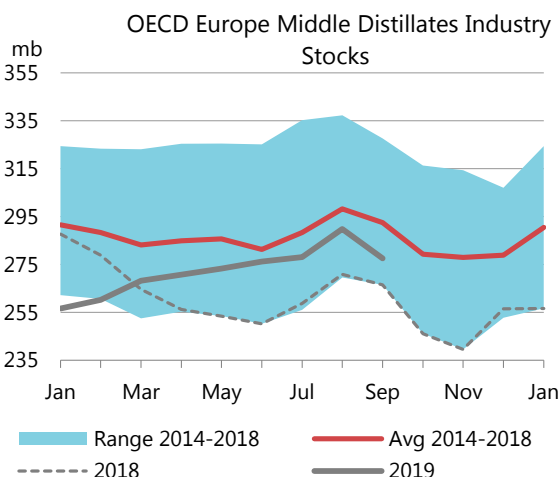
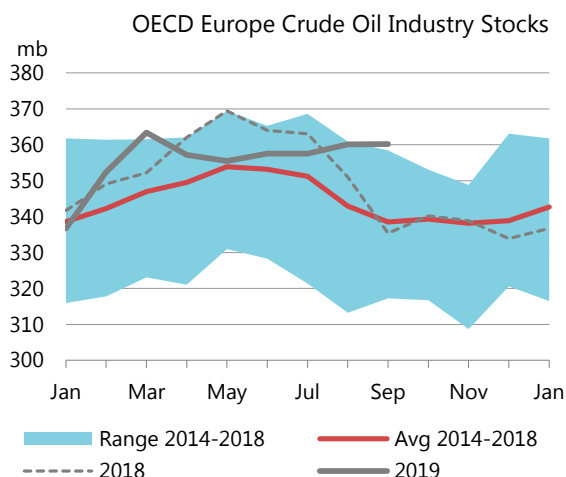


OECD Europe

Total industry stocks in OECD Europe decreased in September by 16.9 mb to 984 mb, 24.1 mb above the five-year average. The fall was larger than usual of 13.3 mb for the month due to large draws in oil product stocks.

Product inventories drew 15.7 mb, more than the usual fall of 9.1 mb for the month. Middle distillates fell by 12.2 mb. The biggest declines stemmed from the United Kingdom (-2.2 mb) and France (-2 mb). Stocks of motor gasoline and other oil also decreased by 0.9 mb and 2.3 mb, respectively. Fuel oil fell by 0.2 mb.

Crude oil throughputs in the region were lower by 855 kb/d m-o-m in September, and crude oil inventories were largely unchanged (usually, crude stocks fall by 4.4 mb). Crude inventories in Italy and Germany rose counter-seasonally by 2.6 mb and 0.7 mb, respectively.

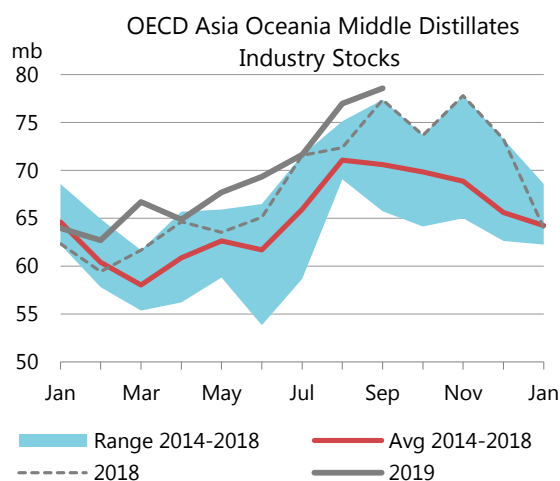
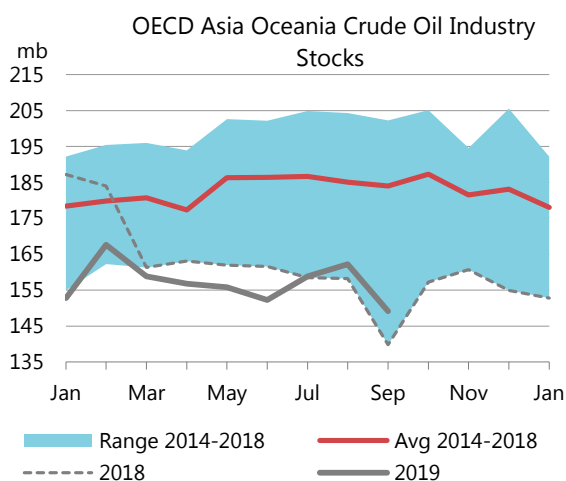


Preliminary October data from *Euroilstock* showed inventories falling by 0.7 mb. Crude stocks drew 0.4 mb, notably in Italy (-2.6 mb) and the Netherlands (-2.2 mb). For product inventories, naphtha and gasoline stocks fell by 0.4 mb and 0.2 mb, respectively. Middle distillates also decreased by a modest 0.1 mb.

OECD Asia Oceania

In September, total commercial inventories in the Asia Oceania region decreased by 13.7 mb to 405 mb. The end-month stock level was 24.8 mb below the five-year average. The fall was larger than usual due to large draws for crude oil. Crude stocks in Korea fell counter-seasonally by 7.2 mb due to large draws by refineries. Japanese crude stocks also fell, by 5.9 mb.

Oil product stocks increased counter-seasonally by 1 mb. Middle distillate and fuel oil inventories rose 1.6 mb and 1.1 mb, respectively. Higher refinery runs m-o-m in Korea helped increase refined product stocks, notably middle distillates (+2.8 mb). Regional gasoline stocks increased just 0.1 mb. By contrast, stocks of other oils fell 1.9 mb due to large draws in Japan (-2.5 mb).



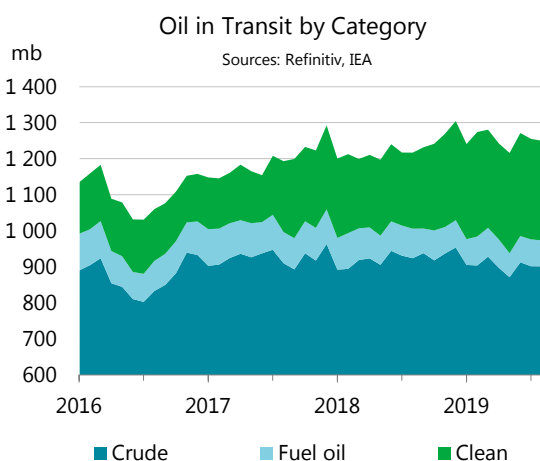
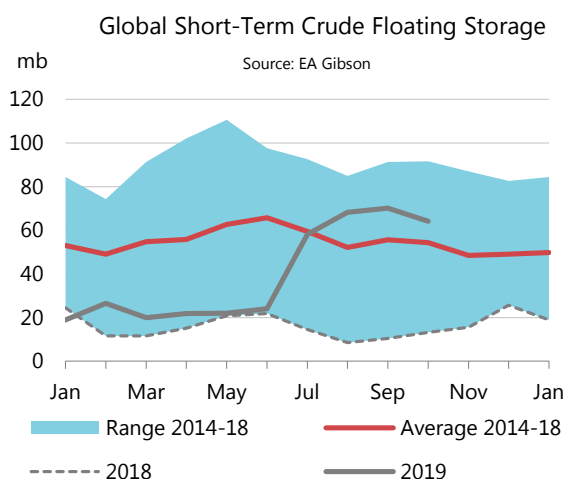
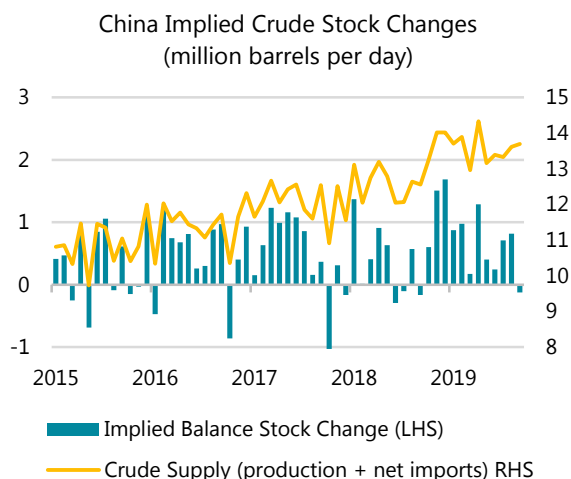
Preliminary data for October from the *Petroleum Association of Japan* showed total stocks built 4.5 mb m-o-m, which is larger than the usual gain of 3.5 mb. Both crude oil and product stocks moved counter-seasonally. Crude inventories, which usually rise by 4.9 mb, fell 0.2 mb. Total

product stocks increased by 1.3 mb owing to stock builds in middle distillates (1.5 mb) and residual fuel oil (0.6 mb). Other product and gasoline inventories decreased by 0.8 mb and 0.1 mb, respectively, in line with the seasonal draws.

Other stock developments

Chinese implied crude stocks drew by 3.9 mb (-130 kb/d) in September according to data derived from reported crude production, refinery runs and crude import data. Implied draws were observed for the first time since September 2018. Crude oil imports were close to 10 mb/d. However, refinery runs increased by 1 mb/d m-o-m and reached a historical high at 13.7 mb/d in September, thus depleting crude inventories.

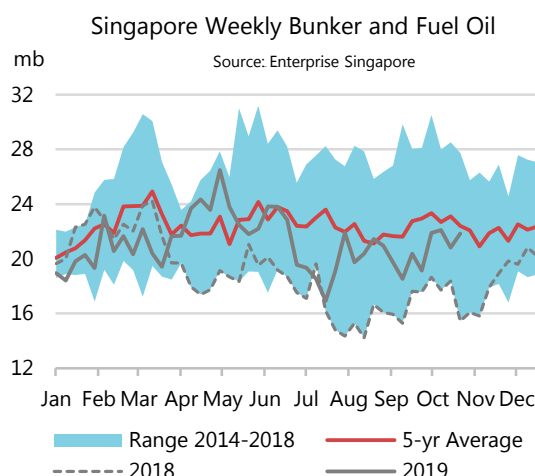
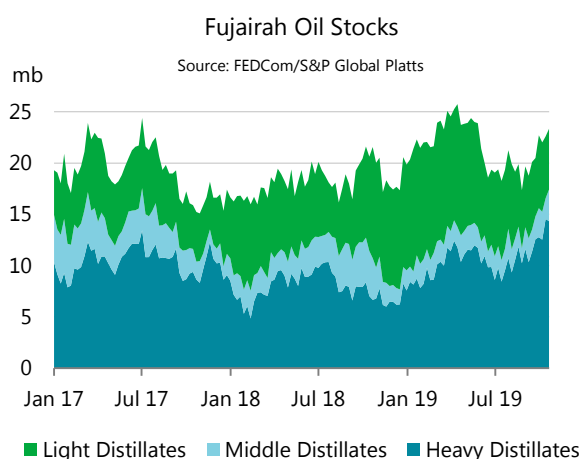
Short-term floating storage of crude oil fell 6 mb in October to 64.1 mb, according to *EA Gibson's* data. Storage in the Middle East Gulf increased by 2.1 mb to 61.8 mb. The number of Iranian VLCCs used for storage increased by 1 to 27. Together with Suezmax ships, the total numbers of vessels thought to hold Iranian crude oil is 30. Other vessels, owned or controlled by Iranian entities could also be storing oil. Crude oil in floating storage in the Asia Pacific region and the Mediterranean fell by 6.4 mb and 1.7 mb, respectively.



Seaborne oil in transit volumes, based on data from *Refinitiv*, increased by 3.1 mb in September due to a m-o-m increase in crude oil (5.5 mb) and clean products (2.8 mb). Fuel oil in transit fell by 5.2 mb. In 3Q19, total volumes of oil on the water fell by 18.3 mb amid lower crude exports from OPEC+ producers and the impact of sanctions against Iran and Venezuela.

Oil stocks in major bunkering hubs rose in October. In Fujairah, total stocks increased by 2.8 mb m-o-m according to data from *FEDCom* and *S&P Global Platts*. Middle distillate and fuel oil stocks rose 0.3 mb and 3.1 mb, respectively, while light distillates fell by 0.6 mb.

Fuel stocks in Singapore, the world's largest bunkering hub, also built 2.4 mb during the month. However, they stood 0.8 mb below the five-year average based on data from *Enterprise Singapore*. Light distillates and residues rose 1.6 mb and 2.4 mb, respectively. Middle distillate inventories, on the contrary, fell 1.5 mb.



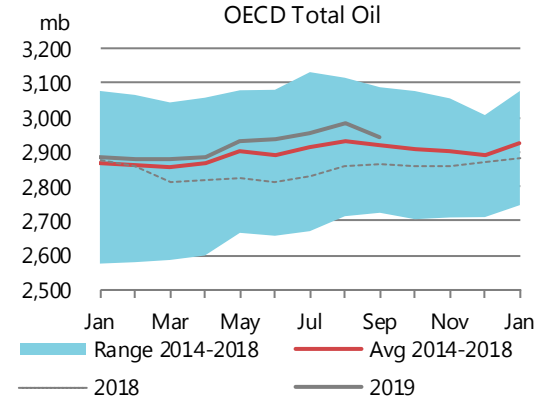
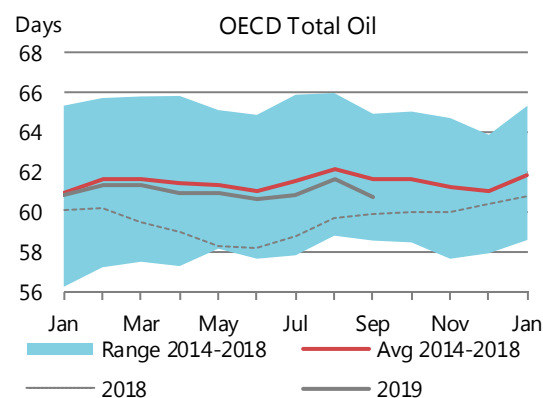
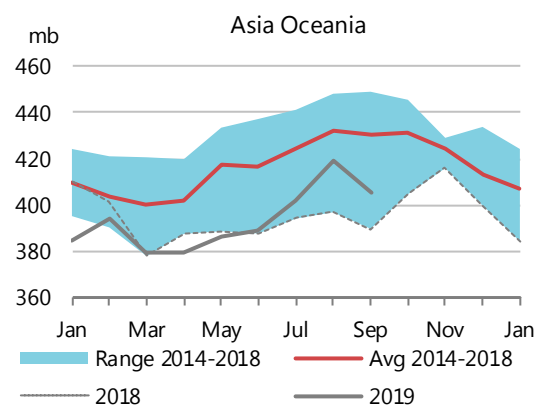
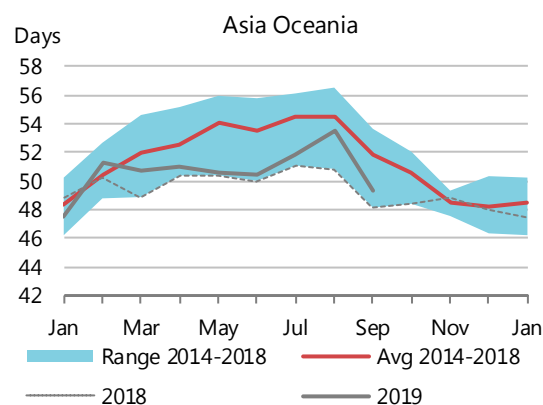
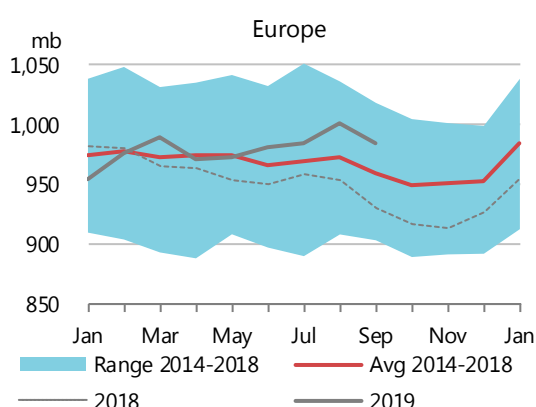
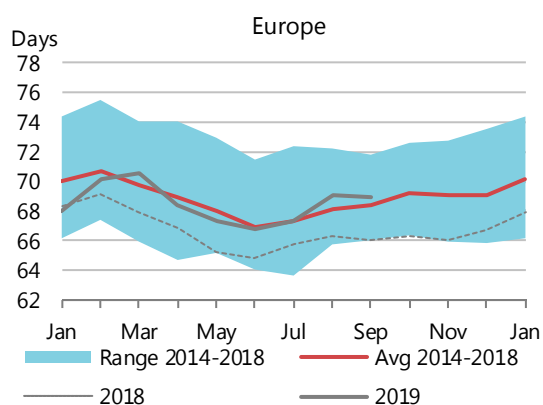
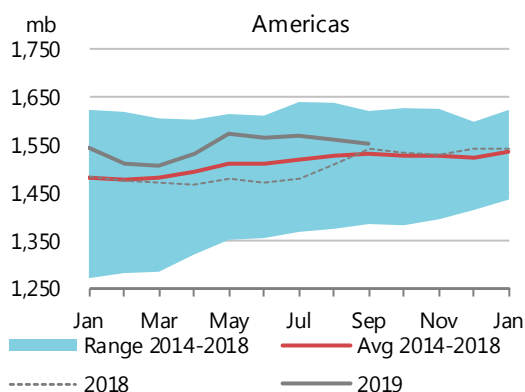
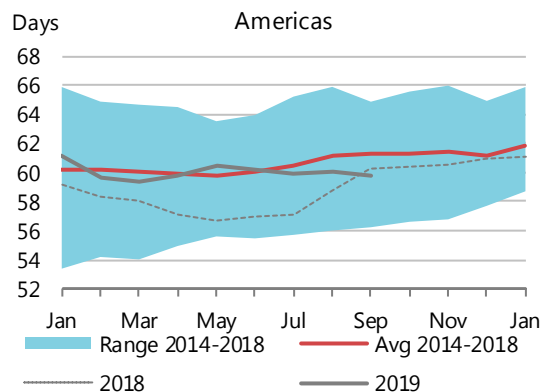
Oil stocks in the 18 non-OECD economies covered by the *JODI* database fell by 9.1 mb m-o-m in August to 575 mb. Crude stocks in Saudi Arabia decreased by 7 mb. India's also fell by 2.7 mb. By contrast, Chinese Taipei and Iraq saw their inventories rise 4.1 mb and 1.7 mb, respectively. For oil products, Nigeria and Saudi Arabia saw stocks decrease by 4.4 mb and 4.3 mb, respectively. India's product stocks rose by 2.3 mb. The Chinese Administrative Region of Hong Kong also saw inventories rise, by 2.1 mb.

Regional OECD End-of-Month Industry Stocks

(in days of forward demand and million barrels of total oil)

Days¹

Million Barrels



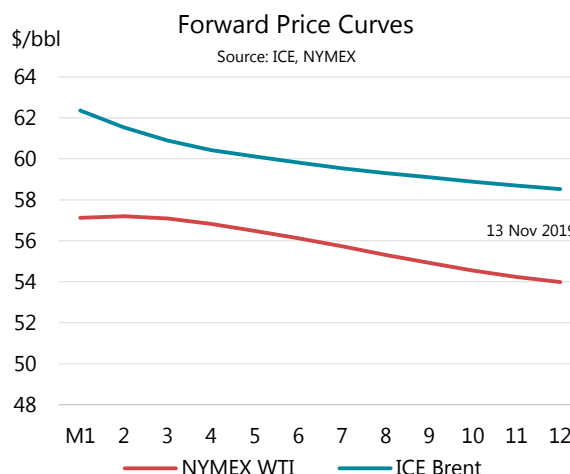
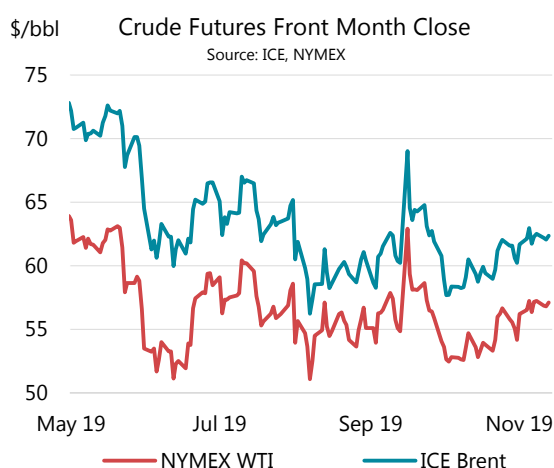
1 Days of forward demand are based on average demand over the next three months.

Prices

Overview

Global benchmark crude futures prices fell month-on-month (m-o-m) in October as prices receded from high levels seen in the wake of attacks on oil infrastructure in Saudi Arabia. Prior to the attacks on 14 September, concerns about weakening global demand growth had pressured prices and these have returned to the fore. However, at the end of October positive news regarding US-China trade negotiations pushed ICE Brent above \$62/bbl.

In October, crude and product prices were influenced by developments in freight markets. Amid tight ship availability largely due to US sanctions against a Chinese company, a tanker attack in the Red Sea propelled shipping rates on some key routes to record highs. Prices for crudes with shorter delivery times to markets in Asia, such as Eastern Siberia Pacific Oil (ESPO) Blend, rose. Conversely, demand fell for crude which had further to travel, such as from the US.

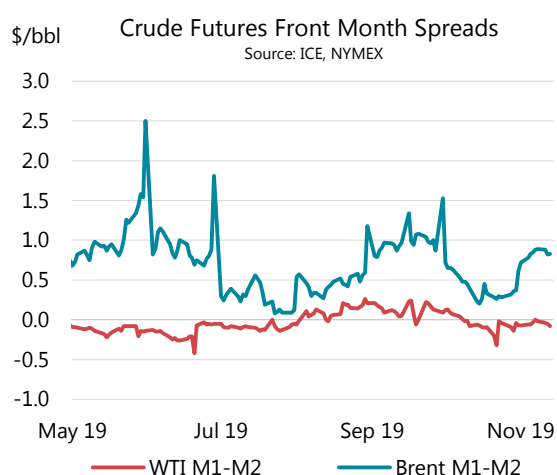
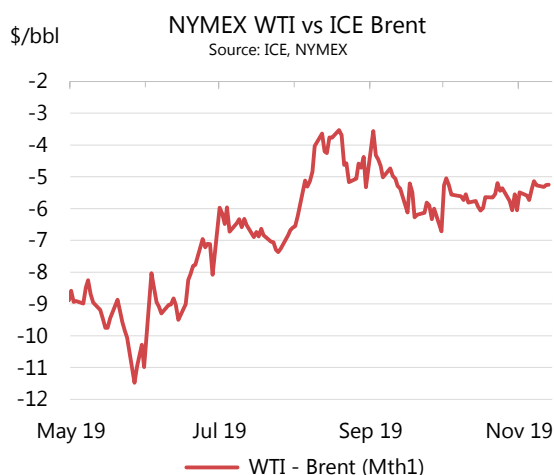


Oil prices reflect an increasing impact of the transition to meet the International Maritime Organisation's (IMO) new shipping fuels specifications. From January 2020, ships must use 0.5% sulphur bunkers instead of the higher sulphur fuels commonly used today. Cracks for High Sulphur Fuel Oil (HSFO) have plummeted to their lowest in more than ten years, while the price spread between high and low sulphur fuel oil prices in North West Europe has blown out to \$30/bbl compared to an average of less than \$3/bbl in 2018. Meanwhile, marine gasoil (0.5% sulphur) prices have increased, even though many ship operators are waiting until the last possible moment to switch to compliant fuel. Physical trading liquidity in very low sulphur fuels remains thin, although rising volumes are being reported.

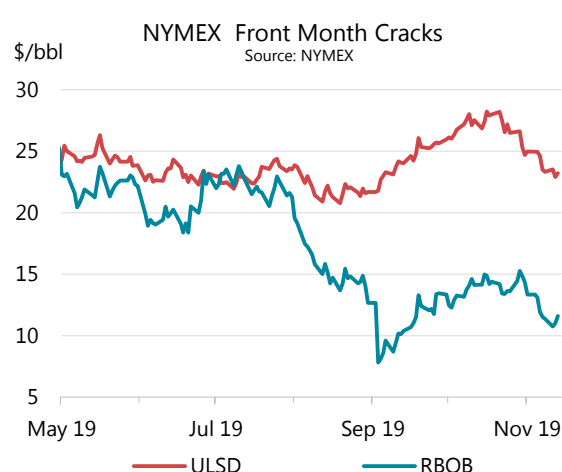
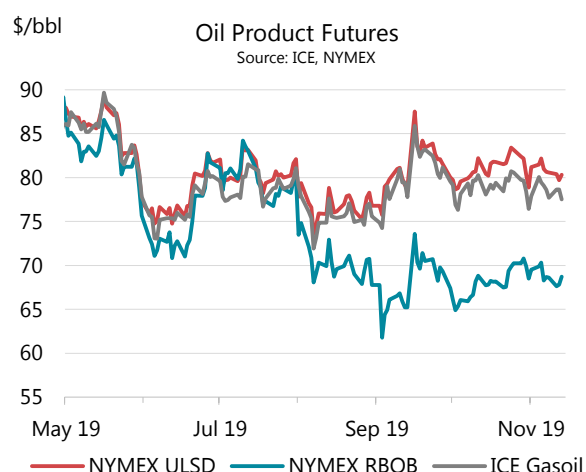
Futures markets

In October, ICE Brent and NYMEX WTI prices fell \$2.66/bbl and \$2.96/bbl m-o-m, respectively. US benchmark WTI was, in particular, pressured by higher freight rates that reduced the attractiveness of exports. WTI's discount to Brent widened slightly to \$5.62/bbl, but remains significantly narrower than the \$8.75/bbl average seen in 1H19 before new pipeline

infrastructure from the mid-continent to the USGC was commissioned, providing relief to constrained US production.



While the Brent forward curve remains in backwardation, prompt WTI has flipped to a narrow contango with January contracts priced at a premium of \$0.08/bbl above December. On 25 October, the backwardation of the Dubai curve rose to \$1.92/bbl (M1-M2), the steepest in six years thanks to healthy demand for Middle East crude.

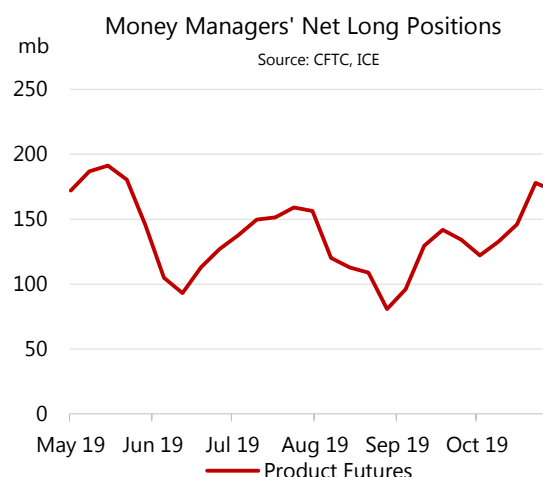
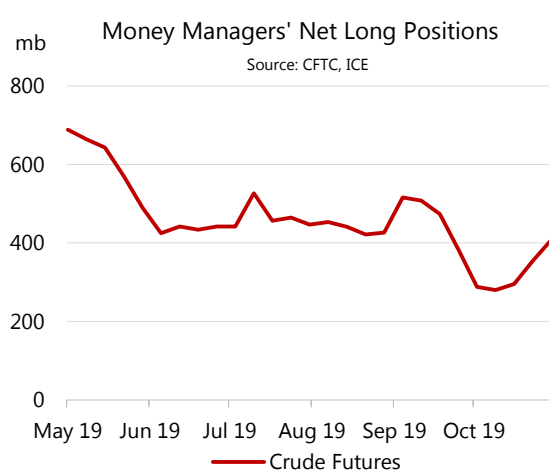


In product futures, NYMEX ultra-low sulphur diesel (ULSD) and ICE gasoil slipped modestly in October, by \$0.42/bbl and \$1.25/bbl m-o-m, respectively. NYMEX ULSD cracks rose to \$28.23/bbl on 16 October, the highest in seven months as supply tightened due to refinery maintenance and with middle distillate demand expected to rise seasonally for winter heating and ahead of the IMO regulatory change. NYMEX RBOB cracks averaged \$13.93/bbl in October, higher m-o-m by \$3.03/bbl, but well below the level of around \$20/bbl seen during July/August when more expensive summer-grade fuel is required for the peak northern hemisphere driving season.

Prompt Month Oil Futures Prices										
(monthly and weekly averages, \$/bbl)										
	Aug	Sep	Oct	Oct-Sep Avg Chg	% Chg	Week Commencing:				
						07 Oct	14 Oct	21 Oct	28 Oct	04 Nov
NYMEX										
Light Sweet Crude Oil	54.84	56.97	54.01	-2.96	-5.2	53.24	53.49	55.27	55.36	56.90
RBOB	70.34	67.87	67.94	0.07	0.1	67.20	68.02	68.92	69.80	69.16
ULSD	76.83	81.39	80.97	-0.42	-0.5	80.73	81.17	82.44	81.00	81.17
ULSD (\$/mmbtu)	13.55	14.35	14.28	-0.07	-0.5	14.24	14.32	14.54	14.29	14.32
Henry Hub Natural Gas (\$/mmbtu)	2.17	2.52	2.34	-0.18	-7.2	2.25	2.31	2.28	2.62	2.81
ICE										
Brent	59.50	62.29	59.63	-2.66	-4.3	58.90	59.37	60.70	61.14	62.33
Gasoil	75.43	79.85	78.60	-1.25	-1.6	79.08	78.49	79.53	78.12	78.66
Prompt Month Differentials										
NYMEX WTI - ICE Brent	-4.66	-5.32	-5.62	-0.30		-5.66	-5.88	-5.43	-5.78	-5.43
NYMEX ULSD - WTI	21.99	24.42	26.96	2.54		27.49	27.68	27.17	25.64	24.27
NYMEX RBOB - WTI	15.50	10.90	13.93	3.03		13.96	14.53	13.65	14.44	12.26
NYMEX 3-2-1 Crack (RBOB)	17.66	15.41	18.27	2.86		18.47	18.91	18.15	18.18	16.27
NYMEX ULSD - Natural Gas (\$/mmbtu)	11.38	11.83	11.94	0.11		11.99	12.00	12.26	11.67	11.50
ICE Gasoil - ICE Brent	15.93	17.56	18.97	1.41		20.18	19.12	18.83	16.98	16.33

Source: ICE, NYMEX.

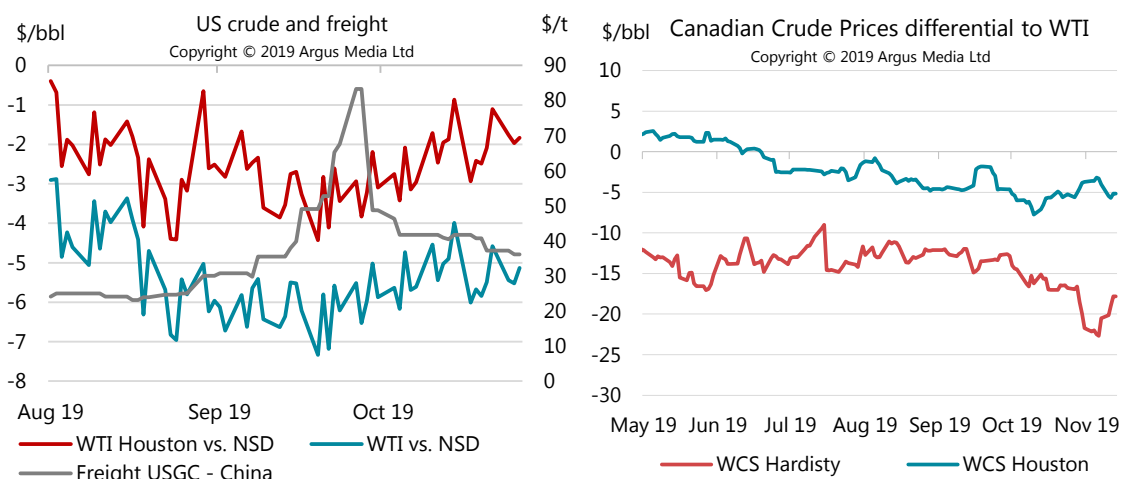
On 15 October, money managers' net length in crude futures fell to 280 mb. This is the lowest since January when net length hit a trough following the slide in the Brent price to \$50/bbl in December 2018. The long-short ratio was around 2.6:1, having been at 4.8:1 in September as more hedge funds increased their positions anticipating lower prices. However, by the end of the month net length had ticked up thanks to increased bets that prices will rise. For the second consecutive month hedge funds generally increased their net length in oil product futures. Net length in NYMEX RBOB and ULSD rose by 35 mb and 16 mb, respectively, but fell for ICE gasoil by 7 mb.



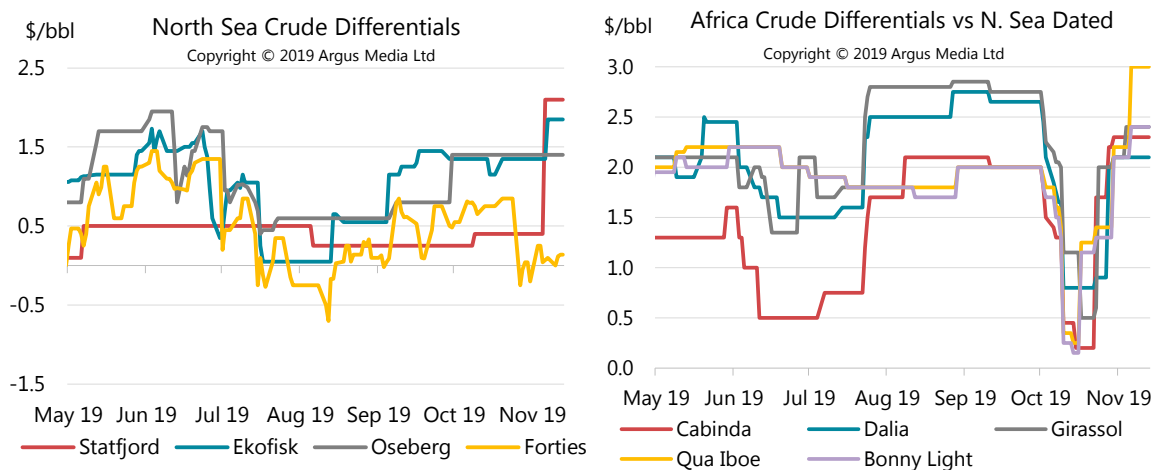
Spot crude oil prices

The sharp increase in freight rates in early October weighed on the economics of US exports. WTI priced in Cushing eased by \$0.13/bbl vs. North Sea Dated, while WTI in Houston fell by \$0.30/bbl m-o-m. There were minor disruptions to Gulf of Mexico operations due to Tropical Storm Nestor but little impact on prices. Mars and Poseidon crude prices fell \$0.62/bbl and \$0.36/bbl against WTI, respectively. WTI Midland maintained a discount to WTI Houston of around \$2/bbl. The spread has narrowed significantly since early August when new pipeline

infrastructure to transport crude from the Permian Basin began operations. Also, line-fill on the Gray Oak pipeline began in late October. The line will add 900 kb/d of capacity to transport oil to the Gulf Coast when it is fully operational in 1Q20.



The price of Western Canada Select (WCS) in Hardisty fell by \$3.15/bbl against WTI m-o-m in October. Maintenance at US refineries pressured demand and at the end of the month prices were dragged down due to disruptions on the Keystone pipeline, a major export route. A power cut due to stormy weather forced flows to be reduced from the usual levels of around 590 kb/d; then on 31 October a leak was discovered and the pipeline was shut in entirely. The WCS discount to WTI blew out to \$22.70/bbl, having averaged \$11.79/bbl for the year so far. On 10 November, operator TC Energy announced that it was gradually re-starting flows.



The Brent-Dubai Exchange of Futures for Swaps (EFS) rose to \$3.81/bbl in early November, almost double the level in mid-October on strong demand for Atlantic Basin crudes and as easing freight rates reduced pressure on the economics to transport crude to Asia Pacific. Loading programmes indicate lower November supplies from some North Sea grades and this also supported differentials for components of the North Sea Dated benchmark. Forties rose by \$0.15/bbl m-o-m against North Sea Dated but the differential was volatile and fell by \$1.10/bbl on 25 October when production from the Buzzard field returned from a week-long outage. The UK's largest producing field, with output of 120 kb/d, was halted twice in October and flows on the Forties Pipeline system were also disrupted due to power outages. Ekofisk rose \$0.14/bbl

m-o-m on demand from Chinese independent refiners who have been issued additional crude import quotas.

Differentials for key West African crudes fell m-o-m in October, as premiums to North Sea Dated came down from the recent record highs. In the first half of the month, higher freight rates stymied demand from Asia Pacific, in particular from Chinese buyers who had recently favoured medium and heavy sweet crudes better suited to produce low-sulphur middle distillates. As freight rates eased, premia for Dalia, Cabinda and Qua Iboe rebounded to over \$2/bbl above North Sea Dated. The new Chinese import quotas also supported demand.

Spot crude oil prices and differentials

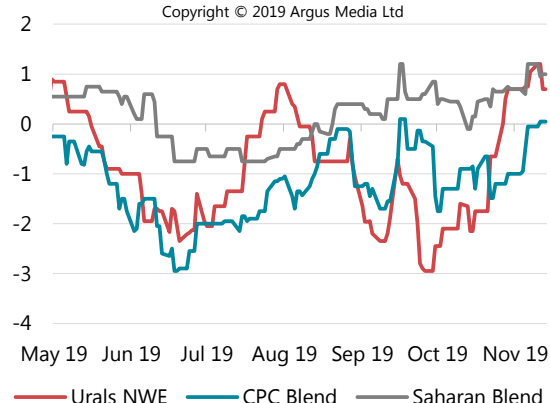
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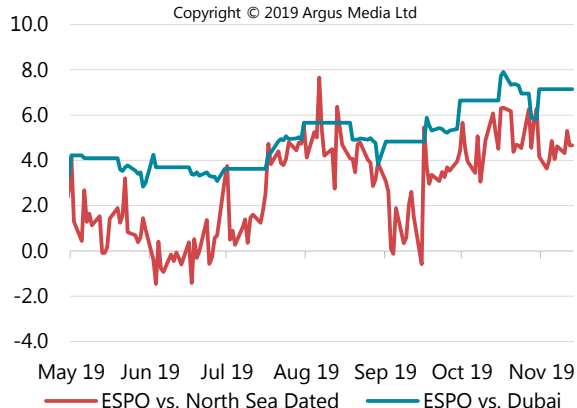
\$/bbl Urals / Saharan/ CPC Blend Differentials

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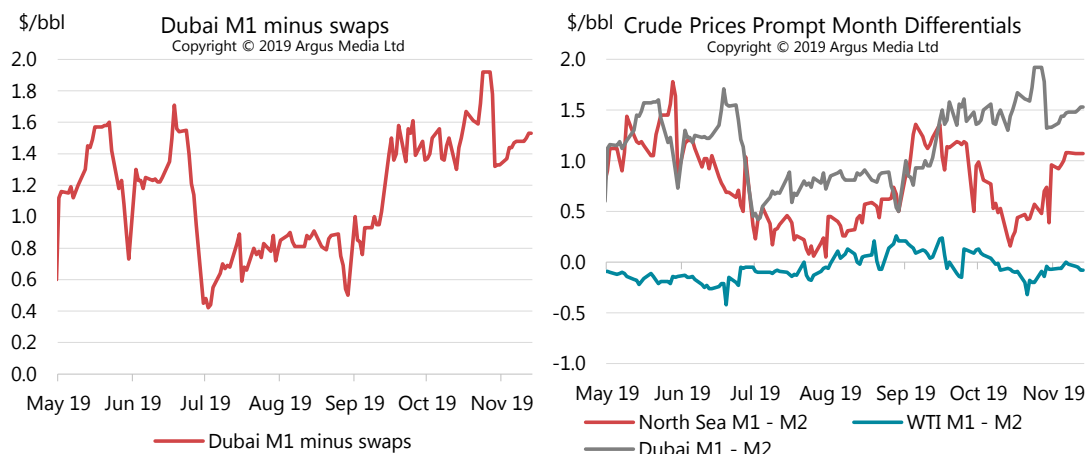
\$/bbl ESPO Differentials

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High freight rates boosted demand for crudes with short delivery times to North Asian markets such as ESPO Blend which gained \$2.49/bbl m-o-m against North Sea Dated. From the Russian ports of Kozmino and De-Kastri the shipping time to China and Japan is less than one week, and crude is usually transported on Aframaxes, rates for which have been more stable. Urals in North West Europe rose to a \$0.70/bbl premium to North Sea Dated, a three month high, on loading programmes that show tighter exports in November. Higher domestic demand will reduce export volumes as Russian refineries return from heavy maintenance. CPC Blend fell \$0.34/bbl against North Sea Dated over October as a post-maintenance rise in Kashagan and Karachagnak production should boost Kazakh exports to record high levels in November. Azeri Light and BTC Blend, which are both well suited to produce IMO-compliant fuels, saw healthy

demand amidst an anticipated tightening of exports in November and December. Azeri Light rose by \$0.48/bbl and BTC Blend rose by \$0.59/bbl vs. North Sea Dated m-o-m, respectively, with differentials hitting record highs in early November.



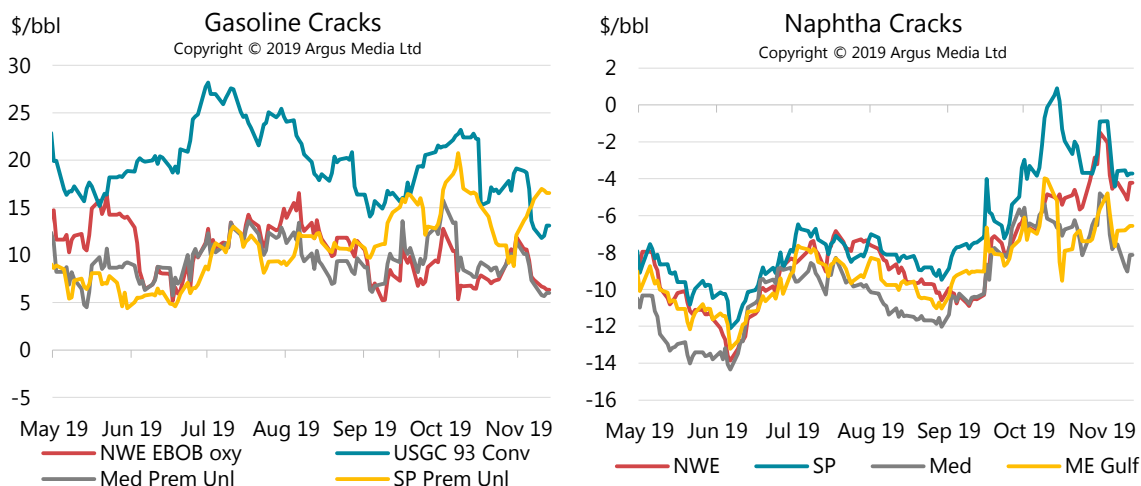
Healthy demand for crude from the Middle East Gulf was evidenced by the rising price of prompt Dubai vs. forward price swaps which gained \$0.30/bbl m-o-m in October. On 25 October, the premium of Dubai for delivery in November (M1) rose to \$1.92/bbl above second month contracts, the highest in six years, thanks to strong demand for prompt supplies of medium sour crude from Asia Pacific refiners. Murban prices rose \$0.17/bbl vs. Dubai m-o-m as the middle distillate-rich grade was likely supported by buying ahead of the pick-up in heating fuel demand ahead of the northern hemisphere winter.

Box 4. Murban futures launched

On 4 November, Abu Dhabi's Supreme Petroleum Council announced that a Murban futures contract would be launched and approved Adnoc's plans to change the pricing mechanism for Murban. Today, a retroactive mechanism is used but, in coming months Adnoc will engage with buyers and stakeholders to implement a forward pricing mechanism using an exchange-listed futures contract. The destination restrictions on sales of Murban crude were also revoked. These are important changes to support Adnoc's ambition to make Murban a benchmark for the Middle East, replacing the dominance of Dubai and Oman that are used to price almost all of the region's crude sales to Asia. Murban has some favourable characteristics for benchmark status: around 1.7 mb/d is produced; its quality is similar to other benchmarks and it has a diverse customer base. However, there are substantial headwinds to attracting sufficient liquidity and it will be difficult to persuade sellers to make significant changes to their current pricing formulae. Ideally, benchmarks need to be independent from government policy which could be complicated by the UAE's membership of OPEC. Adnoc has announced an expansion in its trading and storage operations to build momentum behind the new physically delivered futures contract. Time will tell if other regional producers and Asia Pacific buyers will support the initiative. On 12 November, further progress was made when ICE announced that it would launch the Murban futures contract on a new Abu Dhabi exchange in 1H20 in partnership with Adnoc and major oil trading companies including BP, Shell, Total and Vitol.

Spot product prices

With the exception of High Sulphur Fuel Oil (HSFO), product prices held up better than crude in October causing cracks to strengthen. However, this may not be sustained as supplies of refined products are expected to increase towards the end of the year when maintenance eases and on higher exports from China where new refinery capacity is ramping-up.



In North West Europe and the Mediterranean, gasoline cracks held steady at \$8.52/bbl and \$10.10/bbl, respectively, as seasonally weaker demand in the region was offset by buoyant exports to West Africa. On the US Gulf Coast, super unleaded gasoline rose by \$2.82/bbl vs. Louisiana Light Sweet (LLS) with domestic demand robust despite the driving season having ended. The price was also supported by healthy exports to Central and South America. In Singapore, cracks for premium unleaded rose by \$1.55/bbl m-o-m, having been boosted to three year highs in early October by refinery issues in Malaysia. Later in the month rising exports from India and the Philippines caused cracks to ease to below \$10/bbl. In early November, Singapore gasoline cracks ticked back up thanks to strong demand.

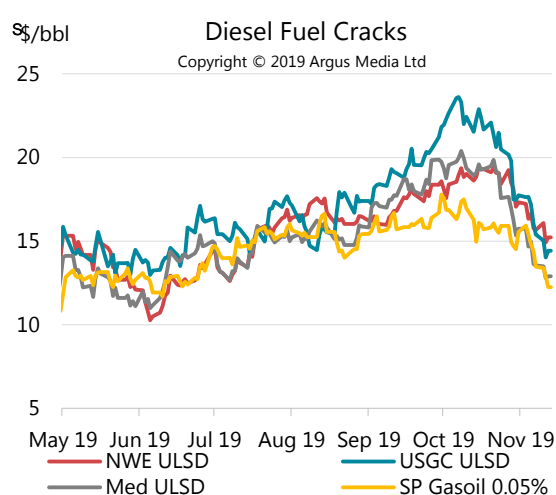
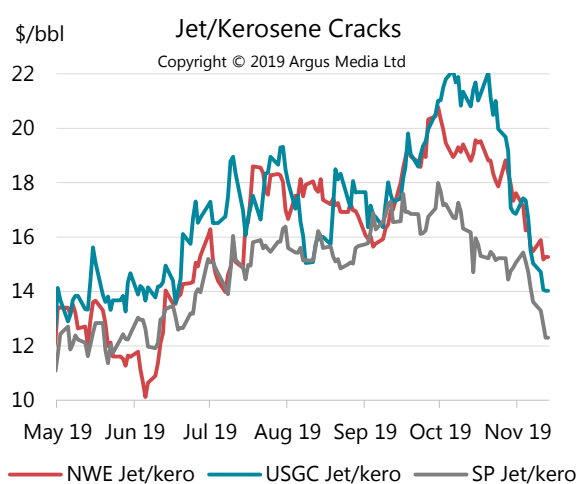
Ongoing supply tightness following the attacks in Saudi Arabia helped naphtha markets to maintain rising momentum. In Singapore, cracks vs. Dubai rose by an impressive \$4.69/bbl m-o-m, as regional petrochemical facilities returned from maintenance. On 14 October, cracks briefly moved into positive territory for the first time in 14 months on fears that high freight rates might lead refiners to cut runs. As freight rates eased, cracks fell but remained elevated. In North West Europe petrochemical demand was more muted and cracks in Rotterdam vs. North Sea Dated rose by \$3.95/bbl m-o-m. In the Mediterranean cracks fell by \$0.85/bbl over the month as higher freight costs weighed on demand from Asia Pacific.

Cracks for jet/kerosene fell in North West Europe, Singapore and on the US Gulf Coast in October. Seasonally weak European demand caused barge quotes in Rotterdam to decline to a premium of \$17.34/bbl vs. North Sea Dated, having reached \$20.78/bbl in late September following the disruptions caused by the attacks in Saudi Arabia. In Singapore, cracks for jet/kerosene fell \$0.62/bbl m-o-m with the market well supplied and weak regional aviation demand. Furthermore, winter heating demand for kerosene in North East Asia has been slow to pick up as temperatures remain mostly above average levels.

Spot product prices

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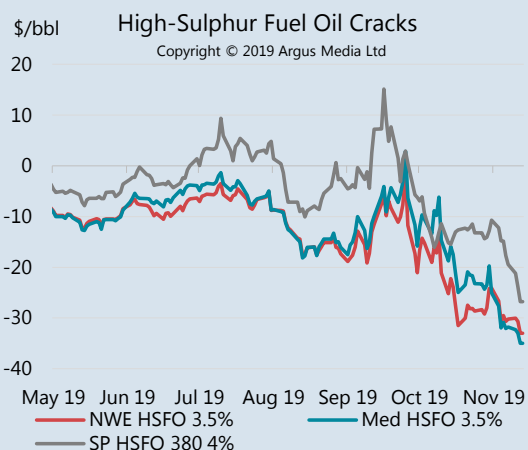
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Diesel cracks remained elevated in October with refinery maintenance at its peak and ahead of the imminent hike in demand due to the new IMO regulations and for heating in winter. In North West Europe, ultra-low sulphur diesel's premium to North Sea Dated peaked at a ten month high of \$19.43/bbl on 16 October as regional maintenance hampered supplies. Cracks eased to \$17.06/bbl by end-month with rising exports from Russia. In Singapore, 0.05% gasoil slipped by \$2.17/bbl despite healthy demand during October as higher exports from China eased market tightness. Furthermore, weak domestic demand in India has freed more gasoil for export.

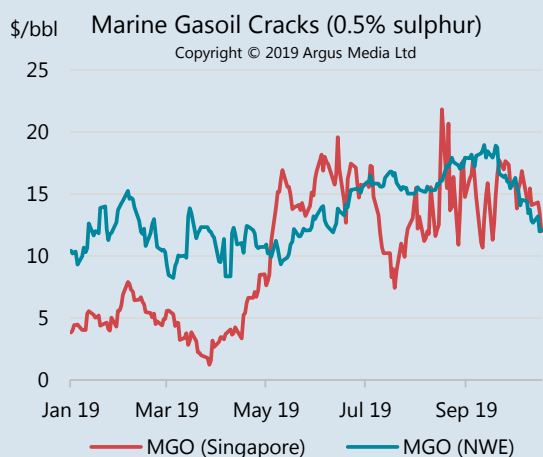
Box 5. Getting ready for the switch

Prices for HSFO are collapsing in the run up to the implementation of the IMO's new shipping fuel regulations. Cracks for HSFO in Rotterdam fell \$11.07/bbl m-o-m against North Sea Dated in October, reaching a ten year low of -\$33.01/bbl on 13 November. Meanwhile, prices for low sulphur fuel oil (LSFO) have been supported with demand expected to pick up following the regulatory change. The LSFO-HSFO spread in North West Europe blew out to almost \$30/bbl in late October, having been \$2.13/bbl on average in 2018. LSFO is currently used mostly in the power sector but in the future could be blended with gasoil to produce Very Low Sulphur Fuel Oil (VLSFO). A similar story is seen on the US Gulf Coast where IMO-compliant fuel is trading at almost \$30/bbl above 3.5% bunker fuel. HSFO cracks in Singapore averaged -\$12.36/bbl in October, a drop of \$13.58/bbl from September. Cracks in Asia Pacific were significantly higher than those in Europe and the Mediterranean on tighter regional supplies of HSFO while shippers are continuing to demand high-sulphur bunkers up to the deadline for the new rules.



Meanwhile, cracks for IMO-compliant marine gasoil (MGO) have been on a rising, if volatile, trend over 2019. In North West Europe, MGO's (barge, 0.5% sulphur) premium to North Sea Dated has risen for five consecutive months to \$18.88/bbl in mid-October. In Singapore, 0.5% sulphur marine fuel cracks vs. Dubai averaged \$15.22/bbl in October, having been \$6.78/bbl on average in 1H19.

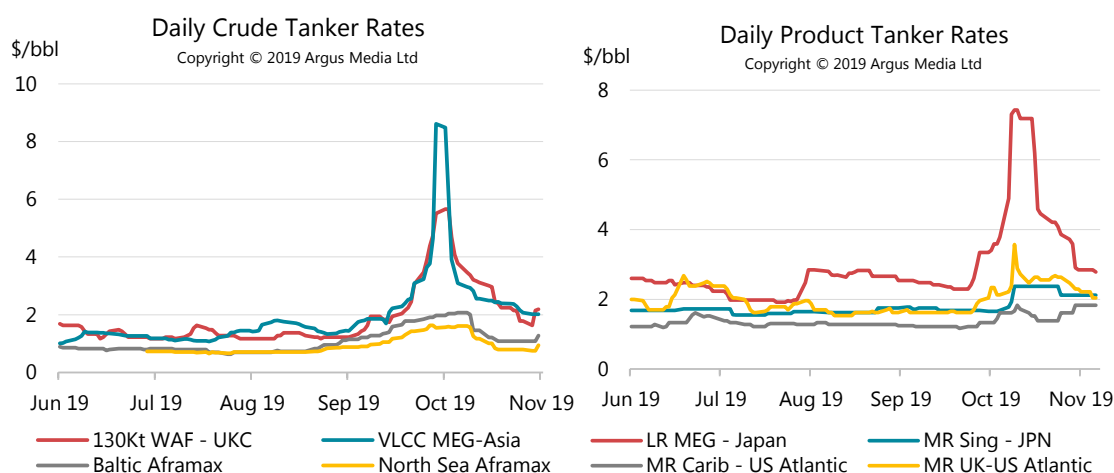
There are other signs of the market's transition to comply with the new IMO rules. Liquidity in Very Low Sulphur Fuel Oil (VLSFO) swaps markets is rising and trading volumes on the CME platform rose above 2 000 trades in October (the contract was launched in late 2018). Physical trading is also picking up. In Singapore, daily VLSFO trade volumes have risen to 120 kt since late September when the first deal was made. Argus reported that on their platform, so far in November, over 60% of marine fuel deals delivered in Singapore were for IMO-compliant fuel, and a similar share for those delivered in Chinese ports and Fujairah.



In related news, Pemex announced a change to the pricing formula for Maya. Previously calculated using US Gulf Coast HSFO (along with West Texas Sour, LLS and North Sea Dated), the new formula will have WTI Houston and ICE Brent as components. In recent months Maya pricing has been complicated by the high volatility of HSFO prices and, as the new components have higher liquidity, it is hoped they will be less exposed

Freight

Geopolitics and fundamentals combined to boost freight markets. Although by late October rates had declined from record highs, they remained at elevated levels not seen in almost a year. Recent sanctions against a Chinese company have further tightened availability at a time when a number of ships are out of service while scrubbers are fitted to meet the IMO regulations. Insurance premia have soared for ships operating in the Middle East following a number of incidents in recent months. This is all taking place alongside a seasonal increase in shipping demand, and with the new IMO rules expected to push up bunker fuel prices.



Rates to ship crude on Very Large Crude Carriers (VLCC) rose sharply following the announcement on 25 September that a subsidiary of Chinese shipping company COSCO would be subject to US sanctions. On 11 October, industry sources described the market as “panicked”, following reports that an Iranian tanker had sustained a missile attack in the Red Sea. In the immediate aftermath, VLCC rates on the Middle East to Asia route spiked to \$8.61/bbl, more than three times the level at the beginning of the month. The market adjusted by cancelling cargoes where possible, with some refiners drawing down stocks, by increasing ship speeds and delaying vessel maintenance and scrubber fitting to increase availability. This, along with the announcement on 24 October that the COSCO sanctions would be postponed until 20 December, saw VLCC rates retreat to \$2.45/bbl by month-end.

While the direct impact of the sanctions was on the VLCC market, there was a spill-over effect on other segments. Suezmax rates spiked (it was a Suezmax that was subject to the attack on 11 October) and Baltic and North Sea Aframax rates rose by \$0.57/bbl and \$0.46/bbl m-o-m, respectively.

In clean product freight markets, it was reported that a number of long range (LR) vessels switched to transporting crude to access the higher rates. Rates for LRs travelling between the Middle East Gulf and Japan rose by \$2.32/bbl m-o-m, thanks also to rising demand to transport naphtha between the Middle East Gulf and Asia Pacific. Healthy exports of products to West Africa boosted the market for Medium Range (MR) vessels. Rates for MRs travelling in the Atlantic basin rose by \$0.77/bbl m-o-m.

TABLES

Table 1
WORLD OIL SUPPLY AND DEMAND
(million barrels per day)

	2016	2017	1Q18	2Q18	3Q18	4Q18	2018	1Q19	2Q19	3Q19	4Q19	2019	1Q20	2Q20	3Q20	4Q20	2020
OECD DEMAND																	
Americas	24.9	25.1	25.3	25.3	25.9	25.6	25.5	25.4	25.4	25.9	25.9	25.7	25.3	25.6	26.3	26.2	25.9
Europe	14.0	14.4	14.1	14.2	14.7	14.1	14.3	13.9	14.0	14.7	14.3	14.2	13.9	14.1	14.7	14.4	14.3
Asia Oceania	8.1	8.1	8.7	7.7	7.8	8.1	8.1	8.3	7.5	7.6	8.2	7.9	8.4	7.5	7.7	8.3	8.0
Total OECD	47.1	47.6	48.0	47.3	48.3	47.8	47.8	47.6	46.9	48.2	48.5	47.8	47.7	47.2	48.7	48.8	48.1
NON-OECD DEMAND																	
FSU	4.4	4.5	4.5	4.6	4.9	4.8	4.7	4.6	4.8	5.1	5.0	4.9	4.7	4.9	5.1	5.0	4.9
Europe	0.7	0.7	0.7	0.7	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
China	12.0	12.5	12.7	13.0	13.1	13.1	13.0	13.0	13.7	13.8	13.7	13.6	13.4	14.1	14.1	14.1	13.9
Other Asia	13.2	13.7	14.1	14.3	13.7	14.2	14.1	14.5	14.3	13.9	14.6	14.3	14.9	14.7	14.2	15.0	14.7
Americas	6.5	6.4	6.3	6.3	6.5	6.4	6.4	6.2	6.3	6.4	6.4	6.4	6.2	6.4	6.5	6.4	6.4
Middle East	8.4	8.4	8.1	8.4	8.7	8.2	8.4	8.1	8.2	8.7	8.2	8.3	8.0	8.3	8.7	8.2	8.3
Africa	4.2	4.2	4.3	4.2	4.1	4.3	4.2	4.3	4.3	4.2	4.3	4.3	4.4	4.4	4.3	4.4	4.4
Total Non-OECD	49.3	50.6	50.7	51.6	51.8	51.7	51.5	51.6	52.4	52.9	52.9	52.5	52.4	53.5	53.8	54.0	53.4
Total Demand¹	96.4	98.2	98.7	98.9	100.0	99.5	99.3	99.3	99.3	101.1	101.4	100.3	100.1	100.7	102.5	102.8	101.5
OECD SUPPLY																	
Americas	19.6	20.5	22.0	22.3	23.5	24.3	23.0	24.1	24.5	24.6	25.2	24.6	25.6	25.9	26.1	26.4	26.0
Europe	3.5	3.5	3.6	3.4	3.3	3.5	3.5	3.5	3.2	3.1	3.5	3.3	3.7	3.7	3.6	3.8	3.7
Asia Oceania	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.6	0.5	0.6	0.6	0.6	0.6	0.6
Total OECD⁴	23.5	24.4	26.0	26.1	27.3	28.2	26.9	27.9	28.2	28.2	29.3	28.4	29.9	30.2	30.4	30.9	30.3
NON-OECD SUPPLY																	
FSU	14.2	14.3	14.4	14.4	14.6	14.8	14.6	14.8	14.4	14.6	14.6	14.6	14.6	14.6	14.6	14.6	14.6
Europe	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
China	4.0	3.9	3.8	3.9	3.8	3.9	3.8	3.9	4.0	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
Other Asia	3.6	3.5	3.4	3.4	3.3	3.3	3.4	3.3	3.2	3.1	3.2	3.2	3.2	3.1	3.1	3.1	3.1
Americas	4.5	4.6	4.5	4.6	4.4	4.6	4.5	4.5	4.6	4.9	4.9	4.7	5.0	5.1	5.1	5.1	5.1
Middle East	3.3	3.2	3.2	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
Africa	1.4	1.4	1.4	1.5	1.5	1.4	1.4	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.4	1.5
Total Non-OECD⁴	31.1	31.0	30.9	31.1	31.0	31.5	31.1	31.4	31.1	31.4	31.5	31.3	31.6	31.6	31.5	31.6	31.6
Processing gains ³	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.4	2.4	2.4	2.4	2.4
Global Biofuels	2.4	2.5	2.1	2.8	3.1	2.5	2.6	2.2	2.9	3.2	2.6	2.7	2.4	2.9	3.2	2.8	2.8
Total Non-OPEC Supply	59.3	60.1	61.4	62.3	63.7	64.6	63.0	64.0	64.5	65.1	65.7	64.8	66.3	67.1	67.5	67.6	67.1
OPEC²																	
Crude	32.4	32.0	31.7	31.6	32.0	32.2	31.9	30.7	30.1	29.4							
NGLs	5.3	5.4	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.4	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Total OPEC	37.7	37.4	37.2	37.0	37.5	37.7	37.4	36.2	35.6	34.9							
Total Supply	96.9	97.5	98.6	99.3	101.2	102.3	100.4	100.2	100.1	100.0							
STOCK CHANGES AND MISCELLANEOUS																	
Reported OECD																	
Industry	0.0	-0.4	-0.3	0.0	0.6	0.1	0.1	0.1	0.6	0.1							
Government	0.0	-0.1	0.0	0.0	0.0	-0.2	-0.1	0.1	-0.1	0.0							
Total	0.0	-0.5	-0.2	-0.1	0.5	-0.1	0.0	0.1	0.5	0.1							
Floating storage/Oil in transit	0.2	0.4	-1.0	0.3	-0.3	0.6	0.0	-0.3	-0.5	-0.2							
Miscellaneous to balance ⁵	0.4	-0.5	1.0	0.2	0.9	2.3	1.1	1.0	0.7	-1.0							
Total Stock Ch. & Misc	0.5	-0.6	-0.2	0.4	1.2	2.8	1.1	0.9	0.7	-1.1							
Memo items:																	
Call on OPEC crude + Stock ch. ⁶	31.8	32.7	31.9	31.1	30.9	29.4	30.8	29.8	29.3	30.6	30.2	30.0	28.3	28.1	29.5	29.6	28.9

¹ Measured as deliveries from refineries and primary stocks, comprises inland deliveries, international marine bunkers, refinery fuel, crude for direct burning, oil from non-conventional sources and other sources of supply. Includes Biofuels.

² OPEC data based on today's membership throughout the time series.

³ Net volumetric gains and losses in the refining process and marine transportation losses.

⁴ Comprises crude oil, condensates, NGLs, oil from non-conventional sources and other sources of supply.

⁵ Includes changes in non-reported stocks in OECD and non-OECD areas.

⁶ Equals the arithmetic difference between total demand minus total non-OPEC supply minus OPEC NGLs.

Table 1a
WORLD OIL SUPPLY AND DEMAND: CHANGES FROM LAST MONTH'S TABLE 1
(million barrels per day)

	2016	2017	1Q18	2Q18	3Q18	4Q18	2018	1Q19	2Q19	3Q19	4Q19	2019	1Q20	2Q20	3Q20	4Q20	2020
OECD DEMAND																	
Americas	-	-	-	-	-	-	-	0.1	-0.1	-0.1	-0.1	-	0.1	-0.1	-	-	-
Europe	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Asia Oceania	-	-	-	-	-	-	-	-	-	-0.1	-	-	-	-	-0.1	-	-
Total OECD	-	-	-	-	-	-	-	0.1	-	-0.2	-	-	0.1	-0.1	-0.1	-	-
NON-OECD DEMAND																	
FSU	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Europe	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
China	-	-	-	-	-	-	-	-	-	0.2	-	-	0.1	0.1	0.2	0.2	0.1
Other Asia	-	-	-	-	-	-	-	0.1	-	-0.1	-	-	-	-0.1	-0.2	-0.1	-0.1
Americas	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Middle East	-	-	-	-	-	-	-	-	-	0.1	0.1	-	-	-	-	-	-
Africa	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Non-OECD	-	-	-	-	-	-	-	0.1	-	-	-	-	-	-	-	0.1	-
Total Demand	-	-	-	-	-	-	-	0.2	-	-0.2	-	-	0.1	-0.1	-0.1	0.1	-
OECD SUPPLY																	
Americas	-	-	-	-	-	-	-	-	-	0.1	-	-	-	0.1	0.2	0.1	0.1
Europe	-	-	-	-	-	-	-	-	-	-	0.1	-	0.1	-	-	-	-
Asia Oceania	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total OECD	-	-	-	-	-	-	-	-	-	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.1
NON-OECD SUPPLY																	
FSU	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Europe	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
China	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Asia	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Americas	-	-	-	-	-	-	-	-	-	-	-0.1	-	-	-	-	-	-
Middle East	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Africa	-	-	-	-	-	-	-	-	0.1	0.1	-	0.1	-	-	-	-	-
Total Non-OECD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Processing gains	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Global Biofuels	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Non-OPEC Supply	-	-	-	0.1	-	0.1	0.1	0.1	0.1	0.1	-	0.1	0.1	0.1	0.2	0.1	0.1
OPEC																	
Crude	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NGLs	-0.1	-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total OPEC	-0.1	-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Supply	-0.1	-0.1	-	-	-	-	-	0.1	-	-	-	-	-	-	-	-	-
STOCK CHANGES AND MISCELLANEOUS																	
REPORTED OECD																	
Industry	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Government	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Floating storage/Oil in transit	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Miscellaneous to balance	-0.1	-0.1	-	-	-	-	-	-0.1	0.1	-	-	-	-	-	-	-	-
Total Stock Ch. & Misc	-0.1	-0.1	-	-	-	-	-	-0.1	0.1	0.2	-	-	-	-	-	-	-
Memo items:																	
Call on OPEC crude + Stock ch.	0.1	0.1	-	-	-	-	-	0.1	-0.1	-0.2	-	-	-	-0.2	-0.2	-	-0.1

When submitting their monthly oil statistics, OECD Member countries periodically update data for prior periods. Similar updates to non-OECD data can occur.

Table 2
SUMMARY OF GLOBAL OIL DEMAND

	2017	1Q18	2Q18	3Q18	4Q18	2018	1Q19	2Q19	3Q19	4Q19	2019	1Q20	2Q20	3Q20	4Q20	2020
Demand (mb/d)																
Americas	25.07	25.31	25.33	25.86	25.60	25.53	25.40	25.35	25.94	25.95	25.66	25.35	25.57	26.34	26.20	25.87
Europe	14.38	14.06	14.20	14.66	14.09	14.25	13.91	14.03	14.67	14.28	14.23	13.93	14.14	14.69	14.35	14.28
Asia Oceania	8.15	8.66	7.73	7.75	8.10	8.06	8.33	7.49	7.62	8.24	7.92	8.40	7.52	7.66	8.29	7.96
Total OECD	47.60	48.03	47.27	48.27	47.78	47.84	47.64	46.88	48.23	48.47	47.81	47.67	47.23	48.69	48.84	48.11
Asia	26.20	26.79	27.26	26.82	27.25	27.03	27.56	28.02	27.65	28.23	27.87	28.28	28.80	28.40	29.11	28.65
Middle East	8.40	8.09	8.43	8.70	8.18	8.35	8.13	8.21	8.74	8.19	8.32	7.99	8.27	8.74	8.18	8.30
Americas	6.45	6.31	6.33	6.47	6.43	6.39	6.24	6.35	6.44	6.42	6.36	6.24	6.37	6.46	6.44	6.38
FSU	4.54	4.49	4.61	4.89	4.82	4.70	4.63	4.75	5.06	4.96	4.85	4.72	4.86	5.12	4.99	4.93
Africa	4.23	4.29	4.25	4.11	4.26	4.23	4.30	4.34	4.20	4.33	4.29	4.38	4.41	4.26	4.41	4.36
Europe	0.75	0.73	0.74	0.77	0.79	0.76	0.76	0.79	0.80	0.80	0.79	0.77	0.80	0.81	0.82	0.80
Total Non-OECD	50.57	50.72	51.63	51.76	51.73	51.46	51.62	52.45	52.89	52.93	52.48	52.38	53.50	53.79	53.95	53.41
World	98.18	98.75	98.90	100.03	99.51	99.30	99.27	99.33	101.12	101.39	100.28	100.05	100.73	102.48	102.79	101.52
of which: US50	19.96	20.35	20.36	20.71	20.59	20.50	20.31	20.35	20.70	20.83	20.55	20.26	20.58	21.10	21.01	20.74
Europe 5*	8.32	8.22	8.24	8.34	8.17	8.24	8.12	8.10	8.38	8.23	8.21	8.07	8.11	8.33	8.24	8.19
China	12.49	12.70	12.96	13.14	13.09	12.97	13.03	13.72	13.78	13.67	13.55	13.39	14.06	14.15	14.11	13.93
Japan	3.92	4.31	3.46	3.56	3.92	3.81	4.09	3.41	3.42	3.94	3.71	4.04	3.35	3.41	3.90	3.67
India	4.66	4.91	5.03	4.62	4.89	4.86	5.14	5.06	4.75	5.08	5.01	5.30	5.27	4.91	5.27	5.19
Russia	3.39	3.36	3.43	3.68	3.60	3.52	3.47	3.55	3.83	3.67	3.63	3.53	3.62	3.86	3.69	3.68
Brazil	3.03	2.97	2.94	3.10	3.11	3.03	3.01	3.05	3.16	3.16	3.10	3.04	3.10	3.18	3.19	3.13
Saudi Arabia	3.30	2.96	3.21	3.35	2.99	3.13	2.96	3.05	3.45	3.08	3.14	2.83	3.09	3.39	3.02	3.08
Canada	2.42	2.34	2.37	2.58	2.51	2.45	2.45	2.40	2.61	2.56	2.51	2.47	2.39	2.62	2.62	2.53
Korea	2.63	2.73	2.64	2.58	2.53	2.62	2.63	2.48	2.58	2.63	2.58	2.72	2.53	2.62	2.70	2.64
Mexico	2.02	1.91	1.94	1.89	1.80	1.89	1.92	1.93	1.91	1.86	1.91	1.90	1.92	1.91	1.87	1.90
Iran	1.92	1.98	1.98	1.98	1.98	1.98	1.99	1.94	1.94	1.92	1.95	1.99	1.94	1.93	1.91	1.94
Total	68.07	68.74	68.56	69.54	69.20	69.01	69.11	69.04	70.53	70.64	69.84	69.53	69.96	71.41	71.52	70.61
% of World	69.3%	69.6%	69.3%	69.5%	69.5%	69.5%	69.6%	69.5%	69.7%	69.7%	69.6%	69.5%	69.5%	69.7%	69.6%	69.6%
Annual Change (% per annum)																
Americas	0.7	2.8	0.8	2.8	1.0	1.8	0.3	0.1	0.3	1.4	0.5	-0.2	0.9	1.6	1.0	0.8
Europe	2.5	1.2	-1.0	-1.0	-2.7	-0.9	-1.1	-1.2	0.1	1.3	-0.2	0.1	0.8	0.1	0.5	0.4
Asia Oceania	0.1	1.2	-0.4	-1.6	-3.7	-1.1	-3.7	-3.1	-1.7	1.8	-1.7	0.8	0.3	0.5	0.5	0.5
Total OECD	1.1	2.0	0.1	0.9	-0.9	0.5	-0.8	-0.8	-0.1	1.4	-0.1	0.1	0.7	1.0	0.8	0.6
Asia	4.1	3.5	2.5	3.9	2.8	3.2	2.9	2.8	3.1	3.6	3.1	2.6	2.8	2.7	3.1	2.8
Middle East	0.3	-0.3	-1.5	-0.8	0.5	-0.5	0.4	-2.7	0.5	0.1	-0.4	-1.7	0.7	-0.1	0.0	-0.3
Americas	-0.3	0.0	-1.5	-1.6	-0.6	-1.0	-1.0	0.2	-0.4	-0.2	-0.4	0.0	0.3	0.3	0.4	0.2
FSU	2.5	4.1	2.1	2.9	5.0	3.5	2.9	3.0	3.5	3.1	3.1	2.0	2.3	1.3	0.6	1.5
Africa	1.5	-0.6	-0.2	-0.8	1.0	-0.1	0.3	2.1	2.0	1.6	1.5	1.8	1.7	1.5	1.7	1.7
Europe	3.2	2.4	-1.0	1.3	4.5	1.8	3.2	6.2	3.6	1.3	3.5	1.1	0.6	1.6	2.1	1.4
Total Non-OECD	2.5	2.1	1.0	1.8	2.0	1.8	1.8	1.6	2.2	2.3	2.0	1.5	2.0	1.7	1.9	1.8
World	1.8	2.1	0.6	1.4	0.6	1.1	0.5	0.4	1.1	1.9	1.0	0.8	1.4	1.4	1.4	1.2
Annual Change (mb/d)																
Americas	0.18	0.69	0.20	0.70	0.25	0.46	0.08	0.02	0.08	0.35	0.13	-0.05	0.22	0.40	0.25	0.21
Europe	0.35	0.16	-0.15	-0.14	-0.39	-0.13	-0.15	-0.17	0.02	0.19	-0.03	0.02	0.11	0.02	0.07	0.05
Asia Oceania	0.01	0.10	-0.03	-0.12	-0.31	-0.09	-0.32	-0.24	-0.13	0.14	-0.14	0.06	0.02	0.04	0.05	0.04
Total OECD	0.54	0.95	0.03	0.43	-0.45	0.24	-0.39	-0.39	-0.04	0.68	-0.03	0.03	0.35	0.46	0.37	0.30
Asia	1.04	0.91	0.68	1.00	0.73	0.83	0.77	0.76	0.83	0.98	0.83	0.72	0.78	0.75	0.89	0.78
Middle East	0.03	-0.03	-0.13	-0.07	0.04	-0.05	0.03	-0.23	0.05	0.01	-0.03	-0.14	0.06	-0.01	0.00	-0.02
Americas	-0.02	0.00	-0.10	-0.11	-0.04	-0.06	-0.06	0.02	-0.03	-0.02	-0.02	0.00	0.02	0.02	0.02	0.02
FSU	0.11	0.18	0.09	0.14	0.23	0.16	0.13	0.14	0.17	0.15	0.15	0.09	0.11	0.07	0.03	0.07
Africa	0.06	-0.02	-0.01	-0.03	0.04	-0.01	0.01	0.09	0.08	0.07	0.06	0.08	0.07	0.06	0.07	0.07
Europe	0.02	0.02	-0.01	0.01	0.03	0.01	0.02	0.05	0.03	0.01	0.03	0.01	0.00	0.01	0.02	0.01
Total Non-OECD	1.24	1.05	0.53	0.94	1.04	0.89	0.91	0.82	1.13	1.20	1.01	0.75	1.05	0.90	1.03	0.93
World	1.78	2.00	0.55	1.37	0.59	1.12	0.52	0.43	1.09	1.88	0.98	0.78	1.40	1.37	1.40	1.24
Revisions to Oil Demand from Last Month's Report (mb/d)																
Americas	0.00	0.00	0.00	0.00	0.00	0.00	0.07	-0.06	-0.09	-0.06	-0.03	0.05	-0.07	0.03	-0.03	-0.01
Europe	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.01	-0.02	0.01	0.01	0.01	0.00	-0.01	0.02	0.00
Asia Oceania	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.09	0.03	-0.02	0.02	0.02	-0.08	0.03	0.00
Total OECD	-	-	-	-	-	-	0.09	-0.05	-0.19	-0.01	-0.04	0.08	-0.05	-0.07	0.02	-0.00
Asia	0.00	-0.01	-0.01	-0.01	-0.01	-0.01	0.08	0.01	0.01	-0.01	0.02	0.05	0.03	0.04	0.08	0.05
Middle East	0.02	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.06	0.06	0.03	-0.03	-0.05	-0.01	-0.01	-0.03
Americas	0.00	0.00	0.00	0.00	0.00	0.00	-0.01	0.00	-0.05	-0.03	-0.02	-0.02	-0.02	-0.04	-0.03	-0.03
FSU	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.03	0.01	-0.01	0.00	0.00	-0.03	0.01	0.00
Africa	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.01	0.01	0.01	0.01	0.01
Europe	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.01	0.00	0.01	0.01	0.00	0.01
Total Non-OECD	0.02	0.01	0.01	0.00	0.01	0.01	0.06	0.01	0.02	0.03	0.03	0.00	-0.01	-0.02	0.05	0.01
World	0.02	0.01	0.01	0.00	0.01	0.01	0.15	-0.04	-0.17	0.02	-0.01	0.08	-0.07	-0.08	0.07	0.00
Revisions to Oil Demand Growth from Last Month's Report (mb/d)																
World	0.02	-0.01	-0.01	-0.02	-0.01	-0.01	0.14	-0.05	-0.17	0.01	-0.02	-0.07	-0.03	0.09	0.06	0.01

* France, Germany, Italy, Spain and UK

Table 2a
OECD REGIONAL OIL DEMAND¹
(million barrels per day)

										Latest month vs.	
	2017	2018	3Q18	4Q18	1Q19	2Q19	Jun 19	Jul 19	Aug 19 ²	Jul 19	Aug 18
Americas											
LPG and ethane	3.39	3.69	3.55	3.78	4.17	3.40	3.31	3.59	3.39	-0.21	-0.15
Naphtha	0.31	0.31	0.33	0.33	0.30	0.28	0.26	0.26	0.27	0.01	-0.06
Motor gasoline	11.08	11.09	11.31	11.04	10.71	11.21	11.47	11.29	11.63	0.34	0.07
Jet and kerosene	1.98	2.03	2.12	2.01	1.97	2.10	2.15	2.22	2.24	0.02	0.02
Gasoil/diesel oil	5.15	5.32	5.24	5.40	5.46	5.15	5.12	5.06	5.23	0.17	-0.13
Residual fuel oil	0.66	0.61	0.65	0.60	0.62	0.60	0.67	0.68	0.69	0.02	0.05
Other products	2.51	2.48	2.66	2.44	2.18	2.61	2.69	2.86	2.94	0.08	0.07
Total	25.07	25.53	25.86	25.60	25.40	25.35	25.66	25.96	26.39	0.43	-0.13
Europe											
LPG and ethane	1.15	1.16	1.15	1.11	1.12	1.07	1.09	1.12	1.09	-0.02	-0.12
Naphtha	1.13	1.03	1.00	0.93	1.13	0.88	0.85	0.95	0.96	0.01	-0.02
Motor gasoline	1.99	1.97	2.05	1.94	1.86	2.07	2.11	2.17	2.15	-0.02	0.04
Jet and kerosene	1.45	1.51	1.69	1.44	1.38	1.58	1.66	1.69	1.73	0.04	0.03
Gasoil/diesel oil	6.48	6.44	6.45	6.57	6.41	6.30	6.26	6.71	6.41	-0.31	-0.03
Residual fuel oil	0.89	0.86	0.88	0.84	0.88	0.85	0.81	0.83	0.84	0.01	-0.03
Other products	1.29	1.28	1.42	1.26	1.13	1.28	1.26	1.32	1.24	-0.08	-0.13
Total	14.38	14.25	14.66	14.09	13.91	14.03	14.03	14.80	14.42	-0.38	-0.27
Asia Oceania											
LPG and ethane	0.76	0.75	0.68	0.73	0.85	0.72	0.65	0.73	0.70	-0.03	0.02
Naphtha	2.08	2.04	2.02	2.07	2.10	1.91	1.88	2.02	2.06	0.04	0.05
Motor gasoline	1.54	1.53	1.59	1.52	1.47	1.47	1.47	1.51	1.56	0.06	-0.08
Jet and kerosene	0.93	0.93	0.74	1.02	1.15	0.78	0.73	0.72	0.72	0.00	-0.01
Gasoil/diesel oil	1.89	1.89	1.84	1.92	1.94	1.87	1.87	1.86	1.90	0.04	0.06
Residual fuel oil	0.54	0.53	0.50	0.51	0.50	0.41	0.40	0.41	0.41	0.00	-0.12
Other products	0.40	0.40	0.39	0.33	0.32	0.34	0.36	0.35	0.29	-0.06	-0.10
Total	8.15	8.06	7.75	8.10	8.33	7.49	7.36	7.60	7.65	0.05	-0.19
OECD											
LPG and ethane	5.30	5.60	5.39	5.62	6.14	5.19	5.05	5.44	5.19	-0.26	-0.26
Naphtha	3.52	3.39	3.35	3.33	3.54	3.07	2.98	3.23	3.29	0.06	-0.03
Motor gasoline	14.62	14.59	14.95	14.50	14.04	14.75	15.05	14.97	15.34	0.37	0.02
Jet and kerosene	4.35	4.46	4.55	4.47	4.50	4.45	4.53	4.63	4.69	0.06	0.05
Gasoil/diesel oil	13.53	13.65	13.54	13.89	13.80	13.33	13.26	13.64	13.54	-0.09	-0.10
Residual fuel oil	2.09	2.00	2.03	1.94	1.99	1.86	1.87	1.92	1.94	0.03	-0.11
Other products	4.20	4.16	4.47	4.03	3.64	4.23	4.31	4.53	4.46	-0.07	-0.17
Total	47.60	47.84	48.27	47.78	47.64	46.88	47.05	48.36	48.46	0.10	-0.59

¹ Demand, measured as deliveries from refineries and primary stocks, comprises inland deliveries, international bunkers and refinery fuel. It includes crude for direct burning, oil from non-conventional sources and other sources of supply. Jet/kerosene comprises jet kerosene and non-aviation kerosene. Gasoil comprises diesel, light heating oil and other gasoils. North America comprises US 50 states, US territories, Mexico and Canada.

² Latest official OECD submissions (MOS).

Table 2b
OIL DEMAND IN SELECTED OECD COUNTRIES¹
(million barrels per day)

	2017	2018	3Q18	4Q18	1Q19	2Q19	Jun 19	Jul 19	Aug 19 ²	Latest month vs.	
										Jul 19	Aug 18
United States³											
LPG and ethane	2.54	2.87	2.72	3.02	3.29	2.60	2.51	2.77	2.54	-0.23	-0.19
Naphtha	0.23	0.23	0.25	0.24	0.21	0.21	0.22	0.21	0.23	0.02	-0.02
Motor gasoline	9.33	9.33	9.53	9.25	8.96	9.48	9.67	9.48	9.82	0.34	0.04
Jet and kerosene	1.69	1.71	1.78	1.70	1.66	1.78	1.80	1.84	1.85	0.01	-0.01
Gasoil/diesel oil	3.93	4.15	4.06	4.19	4.28	4.01	4.01	3.91	4.00	0.10	-0.19
Residual fuel oil	0.34	0.32	0.33	0.33	0.29	0.26	0.33	0.34	0.34	0.00	0.05
Other products	1.90	1.89	2.05	1.86	1.62	2.02	2.07	2.19	2.28	0.09	0.03
Total	19.96	20.50	20.71	20.59	20.31	20.35	20.60	20.74	21.06	0.32	-0.30
Japan											
LPG and ethane	0.41	0.40	0.34	0.39	0.47	0.35	0.30	0.32	0.28	-0.04	-0.07
Naphtha	0.78	0.74	0.70	0.80	0.80	0.69	0.69	0.70	0.73	0.03	0.01
Motor gasoline	0.87	0.86	0.92	0.85	0.81	0.81	0.80	0.86	0.85	-0.01	-0.12
Jet and kerosene	0.52	0.50	0.33	0.57	0.69	0.37	0.33	0.32	0.32	0.01	-0.01
Diesel	0.44	0.46	0.47	0.49	0.47	0.45	0.47	0.47	0.46	-0.01	0.00
Other gasoil	0.34	0.32	0.27	0.32	0.35	0.28	0.27	0.28	0.26	-0.02	-0.01
Residual fuel oil	0.28	0.28	0.26	0.27	0.26	0.21	0.21	0.23	0.23	0.00	-0.06
Other products	0.28	0.26	0.26	0.23	0.25	0.23	0.25	0.24	0.21	-0.03	-0.05
Total	3.92	3.81	3.56	3.92	4.09	3.41	3.31	3.41	3.33	-0.08	-0.30
Germany											
LPG and ethane	0.13	0.11	0.11	0.09	0.12	0.13	0.13	0.15	0.13	-0.02	0.02
Naphtha	0.30	0.27	0.24	0.23	0.33	0.22	0.21	0.25	0.24	-0.01	-0.01
Motor gasoline	0.50	0.49	0.50	0.48	0.47	0.50	0.50	0.52	0.52	0.00	0.00
Jet and kerosene	0.22	0.22	0.25	0.22	0.20	0.23	0.24	0.22	0.24	0.02	0.00
Diesel	0.78	0.76	0.79	0.77	0.74	0.78	0.75	0.82	0.78	-0.04	-0.02
Other gasoil	0.35	0.32	0.28	0.35	0.41	0.29	0.32	0.36	0.35	-0.01	0.07
Residual fuel oil	0.07	0.06	0.06	0.05	0.06	0.05	0.06	0.06	0.05	0.00	-0.01
Other products	0.10	0.11	0.14	0.13	0.08	0.10	0.10	0.12	0.11	-0.01	-0.03
Total	2.45	2.35	2.37	2.32	2.42	2.31	2.31	2.49	2.42	-0.08	0.02
Italy											
LPG and ethane	0.10	0.10	0.08	0.10	0.09	0.07	0.05	0.07	0.06	0.00	-0.02
Naphtha	0.12	0.13	0.13	0.11	0.08	0.08	0.09	0.09	0.09	0.00	-0.04
Motor gasoline	0.17	0.17	0.18	0.16	0.14	0.16	0.17	0.18	0.17	-0.01	-0.01
Jet and kerosene	0.10	0.11	0.13	0.10	0.08	0.11	0.12	0.13	0.14	0.01	0.01
Diesel	0.45	0.46	0.46	0.47	0.45	0.45	0.45	0.48	0.42	-0.06	-0.02
Other gasoil	0.08	0.08	0.08	0.08	0.06	0.06	0.08	0.08	0.06	-0.01	-0.01
Residual fuel oil	0.07	0.07	0.07	0.07	0.06	0.07	0.07	0.08	0.07	-0.01	0.00
Other products	0.15	0.16	0.17	0.17	0.14	0.16	0.17	0.18	0.14	-0.04	-0.01
Total	1.24	1.27	1.30	1.26	1.10	1.17	1.21	1.28	1.15	-0.13	-0.11
France											
LPG and ethane	0.12	0.13	0.11	0.12	0.15	0.12	0.11	0.11	0.12	0.00	0.00
Naphtha	0.12	0.10	0.12	0.07	0.14	0.11	0.11	0.11	0.12	0.00	0.00
Motor gasoline	0.18	0.19	0.20	0.19	0.18	0.21	0.21	0.23	0.22	-0.01	0.01
Jet and kerosene	0.16	0.17	0.19	0.16	0.16	0.18	0.18	0.20	0.19	0.00	0.01
Diesel	0.72	0.71	0.71	0.72	0.68	0.71	0.70	0.77	0.66	-0.11	-0.03
Other gasoil	0.25	0.24	0.23	0.25	0.26	0.20	0.20	0.23	0.21	-0.02	-0.01
Residual fuel oil	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.00	0.00
Other products	0.12	0.12	0.14	0.13	0.10	0.12	0.14	0.16	0.12	-0.04	0.00
Total	1.74	1.71	1.75	1.69	1.72	1.71	1.70	1.87	1.69	-0.18	-0.02
United Kingdom											
LPG and ethane	0.14	0.14	0.13	0.14	0.14	0.14	0.13	0.13	0.10	-0.02	-0.02
Naphtha	0.03	0.03	0.02	0.03	0.02	0.03	0.02	0.02	0.02	0.00	0.00
Motor gasoline	0.29	0.28	0.29	0.28	0.29	0.29	0.30	0.27	0.29	0.01	0.01
Jet and kerosene	0.32	0.32	0.33	0.31	0.33	0.32	0.32	0.32	0.33	0.01	0.00
Diesel	0.52	0.52	0.52	0.52	0.51	0.52	0.53	0.49	0.52	0.02	0.00
Other gasoil	0.14	0.14	0.16	0.14	0.12	0.14	0.14	0.14	0.15	0.01	-0.02
Residual fuel oil	0.03	0.03	0.02	0.03	0.02	0.02	0.02	0.02	0.02	0.00	0.00
Other products	0.12	0.11	0.12	0.11	0.11	0.11	0.10	0.11	0.11	-0.01	-0.02
Total	1.60	1.57	1.60	1.56	1.55	1.57	1.57	1.52	1.54	0.03	-0.06
Canada											
LPG and ethane	0.40	0.39	0.41	0.35	0.42	0.42	0.41	0.43	0.42	-0.01	0.04
Naphtha	0.05	0.05	0.05	0.05	0.05	0.03	0.01	0.01	0.01	0.00	-0.04
Motor gasoline	0.84	0.88	0.92	0.91	0.85	0.84	0.92	0.92	0.92	0.00	0.01
Jet and kerosene	0.14	0.16	0.19	0.16	0.16	0.17	0.20	0.22	0.24	0.02	0.05
Diesel	0.29	0.26	0.26	0.26	0.27	0.26	0.27	0.26	0.26	0.00	0.00
Other gasoil	0.27	0.29	0.31	0.33	0.29	0.24	0.22	0.27	0.28	0.01	-0.03
Residual fuel oil	0.05	0.05	0.04	0.06	0.07	0.06	0.05	0.04	0.07	0.02	0.03
Other products	0.37	0.38	0.40	0.38	0.35	0.37	0.39	0.42	0.41	-0.02	0.00
Total	2.42	2.45	2.58	2.51	2.45	2.40	2.46	2.58	2.61	0.03	0.05

¹ Demand, measured as deliveries from refineries and primary stocks, comprises inland deliveries, international bunkers and refinery fuel. It includes crude for direct burning, oil from non-conventional sources and other sources of supply. Jet/kerosene comprises jet kerosene and non-aviation kerosene. Gasoil comprises diesel, light heating oil and other gasoils.

² Latest official OECD submissions (MOS).

³ US figures exclude US territories.

Table 3
WORLD OIL PRODUCTION
(million barrels per day)

	2018	2019	2020	2Q19	3Q19	4Q19	1Q20	2Q20	Aug 19	Sep 19	Oct 19
OPEC											
Crude Oil											
Saudi Arabia	10.33			9.76	9.49				9.79	9.02	10.20
Iran	3.58			2.41	2.19				2.18	2.18	2.15
Iraq	4.57			4.73	4.79				4.81	4.77	4.72
UAE	3.00			3.07	3.08				3.08	3.07	3.09
Kuwait	2.75			2.69	2.65				2.63	2.65	2.63
Neutral Zone ¹	0.00			0.00	0.00				0.00	0.00	0.00
Angola	1.49			1.43	1.35				1.34	1.38	1.37
Nigeria	1.60			1.72	1.81				1.81	1.80	1.77
Libya	0.97			1.15	1.09				1.06	1.12	1.16
Algeria	1.04			1.02	1.02				1.02	1.02	1.02
Congo	0.32			0.35	0.34				0.34	0.34	0.32
Gabon	0.19			0.22	0.21				0.21	0.19	0.21
Equatorial Guinea	0.12			0.11	0.11				0.11	0.11	0.12
Ecuador	0.52			0.53	0.55				0.55	0.55	0.46
Venezuela	1.40			0.86	0.75				0.80	0.65	0.69
Total Crude Oil	31.88			30.05	29.43				29.73	28.85	29.91
Total NGLs²	5.49	5.49	5.53	5.52	5.43	5.48	5.54	5.54	5.49	5.29	5.48
Total OPEC³	37.36			35.57	34.85				35.22	34.14	35.39
NON-OPEC⁴											
OECD											
Americas											
United States	15.54	17.13	18.37	17.08	17.10	17.70	17.90	18.32	17.25	17.45	17.59
Mexico	2.07	1.93	1.96	1.91	1.95	1.96	1.98	1.98	1.95	1.98	1.95
Canada	5.41	5.52	5.66	5.51	5.51	5.56	5.70	5.56	5.60	5.38	5.53
Chile	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Europe											
UK	3.47	3.31	3.71	3.17	3.12	3.49	3.70	3.69	3.09	2.99	3.29
Norway	1.11	1.12	1.14	1.14	1.01	1.12	1.18	1.11	0.98	0.95	1.02
Others	1.85	1.72	2.11	1.57	1.65	1.91	2.07	2.12	1.65	1.57	1.80
Asia Oceania											
Australia	0.51	0.47	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46
Others	0.41	0.50	0.62	0.48	0.51	0.57	0.60	0.62	0.52	0.51	0.57
Australia	0.34	0.43	0.55	0.41	0.44	0.50	0.53	0.55	0.45	0.44	0.50
Others	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
Total OECD	26.91	28.41	30.33	28.17	28.21	29.29	29.90	30.18	28.43	28.32	28.95
NON-OECD											
Former USSR											
Russia	14.56	14.61	14.61	14.41	14.61	14.61	14.64	14.62	14.62	14.58	14.56
Others	11.49	11.57	11.56	11.50	11.57	11.55	11.54	11.56	11.64	11.60	11.56
Asia											
China	3.07	3.04	3.04	2.91	3.03	3.06	3.10	3.06	2.98	2.98	3.00
China	7.21	7.14	7.04	7.20	7.04	7.09	7.08	7.07	6.98	7.10	7.11
China	3.85	3.93	3.92	3.95	3.92	3.91	3.92	3.94	3.92	3.92	3.91
Malaysia	0.71	0.69	0.71	0.69	0.63	0.72	0.71	0.71	0.61	0.71	0.72
India	0.84	0.80	0.77	0.81	0.79	0.78	0.78	0.78	0.79	0.77	0.79
Indonesia	0.80	0.75	0.72	0.75	0.73	0.73	0.73	0.72	0.69	0.74	0.74
Others	1.01	0.98	0.93	1.00	0.97	0.96	0.95	0.93	0.98	0.96	0.96
Europe											
Europe	0.12	0.12	0.11	0.12	0.12	0.12	0.11	0.11	0.12	0.12	0.12
Americas											
Brazil	4.52	4.72	5.11	4.58	4.85	4.91	5.05	5.11	4.96	4.89	4.86
Brazil	2.71	2.87	3.22	2.74	3.01	3.06	3.19	3.23	3.10	3.04	3.02
Argentina	0.58	0.60	0.61	0.60	0.61	0.61	0.61	0.61	0.61	0.61	0.61
Colombia	0.87	0.89	0.86	0.90	0.88	0.88	0.87	0.86	0.89	0.88	0.88
Others	0.36	0.35	0.42	0.35	0.36	0.36	0.38	0.40	0.36	0.36	0.35
Middle East											
Oman	3.27	3.26	3.25	3.27	3.26	3.26	3.25	3.25	3.27	3.26	3.26
Oman	0.99	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Qatar	2.01	2.01	1.99	2.01	2.00	2.01	1.99	1.99	2.02	1.99	2.01
Syria	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Yemen	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
Others	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.22	0.21
Africa											
Africa	1.45	1.49	1.46	1.50	1.49	1.49	1.48	1.47	1.49	1.49	1.49
Egypt	0.65	0.63	0.60	0.64	0.63	0.62	0.61	0.60	0.62	0.62	0.62
Others	0.80	0.86	0.87	0.86	0.86	0.87	0.87	0.87	0.87	0.87	0.87
Total Non-OECD	31.14	31.34	31.59	31.08	31.37	31.48	31.62	31.64	31.44	31.43	31.39
Processing gains ⁵	2.32	2.35	2.38	2.35	2.35	2.35	2.38	2.38	2.35	2.35	2.35
Global Biofuels	2.62	2.73	2.83	2.90	3.20	2.58	2.36	2.93	3.19	3.21	2.88
TOTAL NON-OPEC	62.99	64.82	67.13	64.50	65.12	65.70	66.26	67.12	65.41	65.32	65.57
TOTAL SUPPLY	100.35			100.07	99.98				100.63	99.46	100.96

¹ Neutral Zone production is also included in Saudi Arabia and Kuwait production with their respective shares.

² Includes condensates reported by OPEC countries, oil from non-conventional sources, e.g. NGLs in Qatar and Nigeria and non-oil inputs to Saudi Arabian MTBE.

³ OPEC data based on today's membership throughout the time series.

⁴ Comprises crude oil, condensates, NGLs and oil from non-conventional sources.

⁵ Net volumetric gains and losses in refining and marine transportation losses.

Table 3a
OIL SUPPLY IN OECD COUNTRIES¹
(thousand of barrels per day)

	2018	2019	2020	2Q19	3Q19	4Q19	1Q20	2Q20	Aug 19	Sep 19	Oct 19
United States											
Alaska	479	468	462	468	424	492	489	468	382	444	483
California	477	457	438	461	453	448	444	440	452	451	450
Texas	4408	5043	5473	4963	5090	5263	5349	5431	5121	5126	5191
Federal Gulf of Mexico ²	1758	1883	1987	1928	1820	1934	1970	2004	2006	1921	1920
Other US Lower 48	3869	4329	4693	4278	4402	4471	4531	4641	4404	4502	4472
NGLs ³	4369	4786	5142	4806	4747	4928	4966	5149	4727	4839	4917
Other Hydrocarbons	178	169	174	178	164	167	156	186	163	166	162
Total	15537	17133	18369	17083	17100	17703	17905	18319	17254	17449	17595
Canada											
Alberta Light/Medium/Heavy	489	483	479	486	480	479	479	479	481	479	479
Alberta Bitumen	1856	1813	1930	1833	1856	1876	1912	1868	1827	1976	1898
Saskatchewan	488	475	445	480	466	460	454	448	468	462	462
Other Crude	449	453	486	509	431	394	463	538	429	405	456
NGLs	904	971	995	947	956	990	1022	975	986	946	957
Other Upgraders	164	178	178	174	181	182	184	167	194	149	172
Synthetic Crudes	1056	1146	1147	1084	1144	1174	1183	1084	1214	968	1109
Total	5408	5519	5660	5513	5514	5555	5697	5559	5598	5384	5532
Mexico											
Crude	1831	1710	1750	1689	1728	1734	1758	1765	1725	1749	1724
NGLs	236	218	207	218	215	220	215	210	217	224	220
Total	2073	1933	1962	1911	1947	1959	1978	1979	1947	1978	1949
UK											
Brent Fields	45	42	33	47	37	38	38	37	42	31	34
Forties Fields	355	309	266	345	248	277	301	227	212	234	212
Ninian Fields	34	35	32	36	36	34	34	33	45	34	30
Flotta Fields	65	54	49	52	50	51	50	47	57	52	49
Other Fields	519	582	671	563	552	626	666	679	545	510	606
NGLs	89	95	88	98	91	91	89	88	84	91	92
Total	1108	1118	1139	1141	1015	1116	1178	1110	984	952	1023
Norway⁵											
Ekofisk-Ula Area	145	141	163	106	162	152	161	160	160	158	160
Oseberg-Troll Area	251	256	270	251	251	259	264	269	258	234	258
Statfjord-Gullfaks Area	306	239	229	203	235	240	236	233	247	222	240
Haltenbanken Area	331	289	324	271	284	311	325	324	298	273	309
Sleipner-Frigg Area	403	414	759	355	346	570	709	767	338	339	451
Other Fields	79	85	92	73	88	93	93	88	79	104	92
NGLs	335	301	270	309	279	284	280	275	267	244	294
Total	1850	1724	2107	1568	1645	1909	2068	2116	1647	1574	1805
Other OECD Europe											
Denmark	114	107	93	114	101	99	97	95	96	103	100
Italy	89	79	95	78	76	76	83	91	76	75	75
Turkey	55	58	59	58	60	60	59	59	60	60	60
Other	117	104	101	97	95	106	104	102	92	106	107
NGLs	11	8	6	8	7	7	7	6	7	7	7
Non-Conventional Oils	128	113	108	108	123	116	108	108	129	114	116
Total	515	469	462	463	461	464	457	460	461	464	464
Australia											
Gippsland Basin	13	8	7	8	8	8	8	7	8	8	8
Cooper-Eromanga Basin	30	34	32	34	33	33	32	32	33	33	33
Carnarvon Basin	60	69	103	57	72	90	95	103	73	81	91
Other Crude	180	252	304	249	256	280	294	304	269	236	279
NGLs	59	67	107	59	71	90	102	106	66	84	87
Total	342	430	552	407	440	502	532	551	450	443	498
Other OECD Asia Oceania											
New Zealand	24	23	21	25	24	22	22	21	23	23	22
Japan	3	4	4	4	4	4	4	4	4	4	4
NGLs	13	12	11	12	12	11	11	11	11	11	11
Non-Conventional Oils	29	31	34	31	34	34	34	34	36	32	34
Total	69	70	70	73	73	71	71	70	75	70	72
OECD											
Crude Oil	19328	20299	21854	20125	20171	20984	21528	21765	20313	20437	20759
NGLs	6023	6466	6834	6465	6386	6628	6700	6828	6373	6454	6594
Non-Conventional Oils ⁴	1560	1642	1645	1580	1651	1678	1669	1583	1741	1433	1597
Total	26912	28408	30333	28170	28208	29290	29897	30176	28426	28324	28950

¹ Subcategories refer to crude oil only unless otherwise noted.

² Only production from Federal waters is included.

³ To the extent possible, condensates from natural gas processing plants are included with NGLs, while field condensates are counted as crude oil.

⁴ Does not include biofuels.

⁵ North Sea production is grouped by area including all fields being processed through the named field complex, ie, not just the field of that name.

⁶ Other North Sea NGLs is included.

Table 4
OECD STOCKS AND QUARTERLY STOCK CHANGES

	RECENT MONTHLY STOCKS ²					PRIOR YEARS' STOCKS ²			STOCK CHANGES			
	in Million Barrels					in Million Barrels			in mb/d			
	May2019	Jun2019	Jul2019	Aug2019	Sep2019*	Sep2016	Sep2017	Sep2018	4Q2018	1Q2019	2Q2019	3Q2019
OECD INDUSTRY-CONTROLLED STOCKS¹												
OECD Americas												
Crude	639.2	616.4	595.7	581.5	587.1	623.9	625.2	572.9	0.35	0.11	0.01	-0.32
Motor Gasoline	265.1	259.9	261.0	258.5	256.5	259.8	251.9	270.5	0.09	-0.14	-0.07	-0.04
Middle Distillate	198.8	200.5	209.2	208.4	202.2	237.1	210.9	216.3	0.01	-0.12	-0.05	0.02
Residual Fuel Oil	35.0	35.5	36.3	34.2	34.0	45.2	40.4	35.3	-0.01	-0.01	0.02	-0.02
Total Products ³	733.0	743.7	762.6	767.8	756.7	801.5	744.0	765.7	-0.17	-0.41	0.37	0.14
Total⁴	1571.9	1564.8	1568.5	1562.9	1554.5	1620.9	1571.0	1542.9	0.01	-0.35	0.62	-0.11
OECD Europe												
Crude	355.5	357.5	357.6	360.1	360.2	358.4	340.0	335.4	-0.02	0.33	-0.06	0.03
Motor Gasoline	88.3	89.8	87.7	87.4	86.4	90.4	87.4	84.5	0.10	0.06	-0.10	-0.04
Middle Distillate	273.2	276.2	278.1	289.8	277.6	327.6	294.9	266.5	-0.11	0.13	0.09	0.02
Residual Fuel Oil	60.7	59.2	60.8	63.9	63.7	71.6	59.4	55.8	-0.02	0.06	0.00	0.05
Total Products ³	534.3	541.6	540.6	555.7	540.0	586.2	558.0	521.4	-0.06	0.28	0.00	-0.02
Total⁴	973.2	981.2	984.6	1000.6	983.8	1018.1	971.1	930.2	-0.03	0.66	-0.09	0.03
OECD Asia Oceania												
Crude	155.8	152.3	158.8	162.2	149.1	201.4	198.2	139.8	0.16	0.04	-0.07	-0.03
Motor Gasoline	26.2	24.4	26.6	24.4	24.5	23.8	22.7	23.8	0.00	0.02	-0.01	0.00
Middle Distillate	67.7	69.3	71.7	77.0	78.6	73.2	65.7	77.4	-0.04	-0.07	0.03	0.10
Residual Fuel Oil	20.0	19.7	18.9	19.8	20.9	18.6	18.6	19.1	0.01	-0.01	0.00	0.01
Total Products ³	170.1	173.2	179.1	190.6	191.6	186.0	171.3	184.5	-0.04	-0.18	0.10	0.20
Total⁴	386.2	388.9	401.7	419.1	405.4	449.0	432.4	389.7	0.11	-0.23	0.10	0.18
Total OECD												
Crude	1150.5	1126.1	1112.1	1103.8	1096.3	1183.7	1163.5	1048.0	0.50	0.48	-0.12	-0.32
Motor Gasoline	379.6	374.1	375.2	370.3	367.4	374.0	362.0	378.8	0.19	-0.06	-0.19	-0.07
Middle Distillate	539.7	546.1	558.9	575.2	558.3	637.9	571.6	560.1	-0.14	-0.06	0.07	0.13
Residual Fuel Oil	115.8	114.4	116.0	117.8	118.6	135.4	118.5	110.1	-0.02	0.04	0.02	0.05
Total Products ³	1437.3	1458.6	1482.2	1514.1	1488.3	1573.6	1473.4	1471.6	-0.27	-0.31	0.48	0.32
Total⁴	2931.3	2934.8	2954.9	2982.6	2943.7	3088.1	2974.4	2862.8	0.08	0.08	0.64	0.10
OECD GOVERNMENT-CONTROLLED STOCKS⁵												
OECD Americas												
Crude	644.8	644.8	644.8	644.8	644.7	695.1	673.6	660.0	-0.12	0.00	-0.05	0.00
Products	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.00	0.00	0.00	0.00
OECD Europe												
Crude	206.3	207.0	205.8	205.8	205.4	206.3	208.0	212.1	-0.01	-0.02	-0.02	-0.02
Products	277.2	275.8	274.1	275.3	274.7	269.9	268.5	271.3	-0.04	0.10	-0.01	-0.01
OECD Asia Oceania												
Crude	378.6	378.6	378.6	378.6	378.7	385.4	385.0	383.4	-0.02	-0.03	0.00	0.00
Products	38.8	38.8	38.9	38.9	38.9	35.9	38.3	38.7	0.00	0.00	0.00	0.00
Total OECD												
Crude	1229.7	1230.4	1229.2	1229.2	1228.8	1286.8	1266.7	1255.4	-0.16	-0.05	-0.07	-0.02
Products	318.0	316.5	315.0	316.2	315.5	307.8	308.8	312.0	-0.04	0.10	-0.01	-0.01
Total⁴	1549.8	1548.8	1546.0	1547.7	1545.6	1596.9	1579.0	1570.1	-0.20	0.06	-0.09	-0.03

* estimated

1 Stocks are primary national territory stocks on land (excluding utility stocks and including pipeline and entepot stocks where known) and include stocks held by industry to meet IEA, EU and national emergency reserve commitments and are subject to government control in emergencies.

2 Closing stock levels.

3 Total products includes gasoline, middle distillates, fuel oil and other products.

4 Total includes NGLs, refinery feedstocks, additives/oxygenates and other hydrocarbons.

5 Includes government-owned stocks and stock holding organisation stocks held for emergency purposes.

Table 4a
INDUSTRY STOCKS¹ ON LAND IN SELECTED COUNTRIES

(million barrels)

	April			May			June			July			August		
	2018	2019	%	2018	2019	%	2018	2019	%	2018	2019	%	2018	2019	%
United States²															
Crude	436.6	468.8	7.4	434.2	480.2	10.6	415.2	464.0	11.8	409.6	442.1	7.9	407.6	430.8	5.7
Motor Gasoline	240.1	230.2	-4.1	242.9	235.7	-3.0	240.7	229.7	-4.6	234.3	235.2	0.4	236.3	230.4	-2.5
Middle Distillate	163.5	171.1	4.6	158.5	171.4	8.1	162.9	173.2	6.3	169.7	183.2	8.0	175.9	181.0	2.9
Residual Fuel Oil	32.3	27.9	-13.6	31.9	30.0	-6.0	30.0	30.3	1.0	29.3	30.6	4.4	27.8	28.6	2.9
Other Products	169.9	195.6	15.1	181.5	214.0	17.9	194.2	229.0	17.9	204.2	235.7	15.4	214.3	246.8	15.2
Total Products	605.8	624.8	3.1	614.8	651.1	5.9	627.8	662.2	5.5	637.5	684.7	7.4	654.3	686.8	5.0
Other ³	161.2	173.7	7.8	163.9	181.0	10.4	166.2	183.8	10.6	167.4	187.9	12.2	171.8	189.5	10.3
Total	1203.6	1267.3	5.3	1212.9	1312.3	8.2	1209.2	1310.0	8.3	1214.5	1314.7	8.3	1233.7	1307.1	5.9
Japan															
Crude	93.4	94.1	0.7	97.5	97.2	-0.3	92.6	91.9	-0.8	97.1	102.6	5.7	97.0	99.1	2.2
Motor Gasoline	10.7	9.7	-9.3	11.5	9.8	-14.8	9.9	9.5	-4.0	9.3	9.6	3.2	9.9	9.9	0.0
Middle Distillate	29.8	25.8	-13.4	29.4	27.4	-6.8	28.4	28.2	-0.7	30.0	31.0	3.3	34.2	35.8	4.7
Residual Fuel Oil	7.7	7.9	2.6	8.3	8.0	-3.6	8.0	7.8	-2.5	7.4	7.7	4.1	7.9	7.5	-5.1
Other Products	34.2	30.9	-9.6	33.1	33.8	2.1	32.5	35.8	10.2	33.4	37.0	10.8	35.0	42.0	20.0
Total Products	82.4	74.3	-9.8	82.3	79.0	-4.0	78.8	81.3	3.2	80.1	85.3	6.5	87.0	95.2	9.4
Other ³	50.9	51.4	1.0	52.9	50.8	-4.0	51.7	53.1	2.7	53.6	53.8	0.4	56.6	56.7	0.2
Total	226.7	219.8	-3.0	232.7	227.0	-2.4	223.1	226.3	1.4	230.8	241.7	4.7	240.6	251.0	4.3
Germany															
Crude	48.0	48.7	1.5	48.9	48.6	-0.6	49.4	47.7	-3.4	48.3	49.7	2.9	47.4	48.5	2.3
Motor Gasoline	10.0	9.5	-5.0	9.5	10.0	5.3	9.4	11.9	26.6	9.8	11.7	19.4	10.1	10.0	-1.0
Middle Distillate	26.5	23.7	-10.6	25.6	22.7	-11.3	25.2	24.8	-1.6	25.1	23.8	-5.2	25.1	24.4	-2.8
Residual Fuel Oil	8.1	7.1	-12.3	8.3	7.0	-15.7	7.8	6.8	-12.8	7.9	6.6	-16.5	7.6	7.1	-6.6
Other Products	10.9	10.3	-5.5	10.6	10.1	-4.7	10.8	10.4	-3.7	10.6	10.5	-0.9	10.9	10.5	-3.7
Total Products	55.5	50.6	-8.8	54.0	49.8	-7.8	53.2	53.9	1.3	53.4	52.6	-1.5	53.7	52.0	-3.2
Other ³	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	103.5	99.3	-4.1	102.9	98.4	-4.4	102.6	101.6	-1.0	101.7	102.3	0.6	101.1	100.5	-0.6
Italy															
Crude	42.0	43.1	2.6	40.9	40.4	-1.2	39.7	45.0	13.4	46.8	42.2	-9.8	44.3	41.6	-6.1
Motor Gasoline	11.8	11.1	-5.9	10.3	11.0	6.8	10.9	11.3	3.7	11.8	11.5	-2.5	12.2	11.5	-5.7
Middle Distillate	27.5	29.9	8.7	28.2	29.3	3.9	27.4	28.0	2.2	27.2	28.0	2.9	28.6	30.9	8.0
Residual Fuel Oil	10.2	8.7	-14.7	10.4	8.6	-17.3	9.8	8.7	-11.2	10.2	8.9	-12.7	9.5	9.4	-1.1
Other Products	12.9	12.1	-6.2	13.4	11.7	-12.7	12.9	12.4	-3.9	12.7	12.0	-5.5	13.0	13.3	2.3
Total Products	62.4	61.8	-1.0	62.3	60.6	-2.7	61.0	60.4	-1.0	61.9	60.4	-2.4	63.3	65.1	2.8
Other ³	15.2	14.8	-2.6	16.1	16.2	0.6	15.6	13.8	-11.5	14.6	15.1	3.4	15.8	15.1	-4.4
Total	119.6	119.7	0.1	119.3	117.2	-1.8	116.3	119.2	2.5	123.3	117.7	-4.5	123.4	121.8	-1.3
France															
Crude	13.6	12.9	-5.1	15.2	13.7	-9.9	15.8	15.8	0.0	13.7	13.5	-1.5	11.0	14.0	27.3
Motor Gasoline	3.4	3.8	11.8	3.3	4.5	36.4	4.1	5.9	43.9	3.2	5.7	78.1	4.2	5.5	31.0
Middle Distillate	20.1	20.9	4.0	18.9	21.7	14.8	18.1	21.1	16.6	19.6	19.6	0.0	20.0	22.1	10.5
Residual Fuel Oil	1.0	0.9	-10.0	0.9	0.8	-11.1	0.8	0.9	12.5	0.8	1.2	50.0	1.0	1.6	60.0
Other Products	3.5	4.0	14.3	3.4	3.9	14.7	3.4	4.3	26.5	3.7	4.4	18.9	3.9	4.4	12.8
Total Products	28.0	29.6	5.7	26.5	30.9	16.6	26.4	32.2	22.0	27.3	30.9	13.2	29.1	33.6	15.5
Other ³	8.8	7.4	-15.9	9.0	7.6	-15.6	9.3	8.5	-8.6	9.1	8.0	-12.1	8.3	8.4	1.2
Total	50.4	49.9	-1.0	50.7	52.2	3.0	51.5	56.5	9.7	50.1	52.4	4.6	48.4	56.0	15.7
United Kingdom															
Crude	30.3	30.6	1.0	32.7	29.1	-11.0	34.2	30.0	-12.3	33.0	27.1	-17.9	31.1	27.8	-10.6
Motor Gasoline	10.5	9.8	-6.7	9.4	9.0	-4.3	9.9	8.7	-12.1	10.3	9.2	-10.7	9.6	8.9	-7.3
Middle Distillate	23.7	25.9	9.3	23.8	24.9	4.6	23.0	24.3	5.7	24.8	26.6	7.3	25.0	27.5	10.0
Residual Fuel Oil	1.2	1.4	16.7	1.2	1.3	8.3	1.3	1.4	7.7	1.3	1.1	-15.4	1.3	1.3	0.0
Other Products	5.3	6.2	17.0	4.7	6.1	29.8	5.2	6.6	26.9	5.7	6.4	12.3	5.5	7.2	30.9
Total Products	40.7	43.3	6.4	39.1	41.3	5.6	39.4	41.0	4.1	42.1	43.3	2.9	41.4	44.9	8.5
Other ³	7.6	9.7	27.6	8.5	8.8	3.5	8.4	8.9	6.0	7.7	9.5	23.4	7.8	9.7	24.4
Total	78.6	83.6	6.4	80.3	79.2	-1.4	82.0	79.9	-2.6	82.8	79.9	-3.5	80.3	82.4	2.6
Canada⁴															
Crude	115.7	125.3	8.3	123.6	126.2	2.1	120.9	121.0	0.1	116.9	120.5	3.1	126.0	120.3	-4.5
Motor Gasoline	16.8	14.6	-13.1	14.0	14.4	2.9	14.3	13.9	-2.8	15.8	14.2	-10.1	15.1	14.7	-2.6
Middle Distillate	20.1	17.1	-14.9	16.1	15.5	-3.7	17.0	14.9	-12.4	18.3	15.9	-13.1	18.4	16.1	-12.5
Residual Fuel Oil	2.4	2.2	-8.3	2.1	1.6	-23.8	2.3	2.0	-13.0	2.2	2.0	-9.1	2.4	1.5	-37.5
Other Products	12.9	11.4	-11.6	13.7	11.2	-18.2	12.8	9.6	-25.0	12.2	10.6	-13.1	12.3	10.1	-17.9
Total Products	52.2	45.3	-13.2	45.9	42.7	-7.0	46.4	40.4	-12.9	48.5	42.7	-12.0	48.2	42.4	-12.0
Other ³	18.0	18.4	2.2	20.6	18.5	-10.2	23.0	20.5	-10.9	24.0	22.0	-8.3	25.8	23.8	-7.8
Total	185.9	189.0	1.7	190.1	187.4	-1.4	190.3	181.9	-4.4	189.4	185.2	-2.2	200.0	186.5	-6.8

¹ Stocks are primary national territory stocks on land (excluding utility stocks and including pipeline and entropot stocks where known) and include stocks held by industry to meet IEA, EU and national emergency reserve commitments and are subject to government control in emergencies.

² US figures exclude US territories.

³ Other includes NGLs, refinery feedstocks, additives/oxygenates and other hydrocarbons.

⁴ Canadian stock information for recent months is the administration's best estimate. Data are usually finalised three months after first publication.

Table 5
TOTAL STOCKS ON LAND IN OECD COUNTRIES¹
(‘millions of barrels’ and ‘days’)

	End September 2018		End December 2018		End March 2019		End June 2019		End September 2019 ³	
	Stock	Days Fwd ²	Stock	Days Fwd	Stock	Days Fwd	Stock	Days Fwd	Stock	Days Fwd
	Level	Demand	Level	Demand	Level	Demand	Level	Demand	Level	Demand
OECD Americas										
Canada	195.5	78	192.3	81	186.1	78	182.0	-	-	-
Chile	11.6	32	10.4	28	10.5	28	11.0	-	-	-
Mexico	40.6	22	54.7	29	40.5	21	39.6	-	-	-
United States ⁴	1935.2	94	1915.3	94	1900.2	93	1956.9	-	-	-
Total⁴	2204.9	86	2194.7	87	2159.4	85	2211.6	85	2201.2	85
OECD Asia Oceania										
Australia	42.6	35	40.7	35	44.0	37	45.8	-	-	-
Israel	-	-	-	-	-	-	-	-	-	-
Japan	561.2	143	564.8	138	539.7	158	547.7	-	-	-
Korea	200.0	79	205.8	78	205.1	83	204.4	-	-	-
New Zealand	7.9	42	8.3	43	8.0	46	8.4	-	-	-
Total	811.8	100	819.6	98	796.8	106	806.3	106	823.0	100
OECD Europe⁵										
Austria	20.2	73	20.9	80	23.0	80	21.5	-	-	-
Belgium	44.0	68	42.0	63	45.8	78	49.1	-	-	-
Czech Republic	21.5	97	22.8	110	23.0	100	20.4	-	-	-
Denmark	20.6	126	20.3	133	22.1	135	24.4	-	-	-
Estonia	2.6	84	2.9	87	2.6	88	2.7	-	-	-
Finland	40.0	196	39.9	198	38.5	197	38.9	-	-	-
France	164.6	97	160.8	94	169.0	99	169.2	-	-	-
Germany	272.6	118	271.0	112	274.5	119	278.7	-	-	-
Greece	34.4	113	32.1	110	35.3	116	29.0	-	-	-
Hungary	25.6	147	25.6	158	25.8	147	23.8	-	-	-
Ireland	9.9	61	10.2	65	10.8	68	9.8	-	-	-
Italy	124.5	99	125.1	114	130.5	112	129.4	-	-	-
Latvia	2.3	70	2.4	67	4.0	98	3.9	-	-	-
Lithuania	6.8	103	6.6	113	7.5	107	6.2	-	-	-
Luxembourg	0.5	8	0.5	8	0.5	8	0.6	-	-	-
Netherlands	136.0	156	133.3	147	151.2	183	147.0	-	-	-
Norway	24.1	121	26.7	161	27.2	165	26.6	-	-	-
Poland	74.1	108	76.8	118	80.6	116	77.8	-	-	-
Portugal	23.5	102	24.6	107	26.4	105	24.8	-	-	-
Slovak Republic	12.0	124	11.8	135	12.0	141	11.2	-	-	-
Slovenia	4.8	89	5.0	107	4.9	93	5.1	-	-	-
Spain	119.7	89	115.9	87	124.2	93	126.0	-	-	-
Sweden	34.5	108	35.8	118	38.3	114	41.9	-	-	-
Switzerland	33.0	141	30.8	137	31.6	148	30.7	-	-	-
Turkey	87.0	102	87.6	101	87.7	90	87.0	-	-	-
United Kingdom	77.5	50	76.4	49	80.7	51	80.0	-	-	-
Total	1416.2	101	1407.8	101	1477.7	105	1465.8	100	1465.1	103
Total OECD	4432.8	93	4422.2	93	4434.0	95	4483.6	93	4489.3	93
DAYS OF IEA Net Imports⁶ -	190	-	189	-	191	-	215	-	-	-

1 Total Stocks are industry and government-controlled stocks (see breakdown in table below). Stocks are primary national territory stocks on land (excluding utility stocks and including pipeline and entrepot stocks where known) they include stocks held by industry to meet IEA, EU and national emergency reserves commitments and are subject to government control in emergencies.

2 Note that days of forward demand represent the stock level divided by the forward quarter average daily demand and is very different from the days of net imports used for the calculation of IEA Emergency Reserves.

3 End September 2019 forward demand figures are IEA Secretariat forecasts.

4 US figures exclude US territories. Total includes US territories.

5 Data not available for Iceland.

6 Reflects stock levels and prior calendar year's net imports adjusted according to IEA emergency reserve definitions (see www.iea.org/netimports.asp). Net exporting IEA countries are excluded.

TOTAL OECD STOCKS

CLOSING STOCKS	Total	Government ¹ controlled Millions of Barrels	Industry	Total	Government ¹ controlled Days of Fwd. Demand ²	Industry
3Q2016	4685	1597	3088	99	34	65
4Q2016	4608	1601	3007	98	34	64
1Q2017	4636	1601	3035	98	34	64
2Q2017	4614	1590	3024	96	33	63
3Q2017	4553	1579	2974	94	33	62
4Q2017	4428	1569	2860	92	33	60
1Q2018	4390	1577	2814	93	33	60
2Q2018	4385	1575	2810	91	33	58
3Q2018	4433	1570	2863	93	33	60
4Q2018	4422	1552	2870	93	33	60
1Q2019	4434	1557	2877	95	33	61
2Q2019	4484	1549	2935	93	32	61
3Q2019	4489	1546	2944	93	32	61

1 Includes government-owned stocks and stock holding organisation stocks held for emergency purposes.

2 Days of forward demand calculated using actual demand except in 3Q2019 (when latest forecasts are used).

Table 6
IEA MEMBER COUNTRY DESTINATIONS OF SELECTED CRUDE STREAMS¹
(million barrels per day)

											Year Earlier	
	2016	2017	2018	3Q18	4Q18	1Q19	2Q19	Jun 19	Jul 19	Aug 19	Aug 18	change
Saudi Light & Extra Light												
Americas	0.69	0.59	0.66	0.64	0.66	0.35	0.15	0.12	-	-	0.58	-
Europe	0.79	0.69	0.69	0.76	0.73	0.70	0.75	0.75	0.83	0.74	0.74	0.00
Asia Oceania	1.40	1.56	1.45	1.36	1.50	1.62	1.41	1.34	1.33	1.35	1.49	-0.14
Saudi Medium												
Americas	0.44	0.33	0.30	0.37	0.33	0.13	0.21	0.32	0.04	0.05	0.49	-0.44
Europe	0.01	0.01	0.01	0.01	0.01	-	0.01	0.01	-	0.06	0.01	0.05
Asia Oceania	0.41	0.37	0.41	0.41	0.39	0.24	0.23	0.23	0.25	0.30	0.45	-0.15
Canada Heavy												
Americas	2.04	2.23	2.41	2.39	2.43	2.29	2.19	2.34	2.31	2.14	2.44	-0.30
Europe	0.01	0.02	0.04	0.05	0.02	0.03	0.05	0.08	0.04	0.07	0.04	0.02
Asia Oceania	-	-	0.00	-	0.01	-	-	-	-	-	-	-
Iraqi Basrah Light ²												
Americas	0.42	0.63	0.50	0.41	0.32	0.46	0.24	0.40	0.30	0.27	0.21	0.06
Europe	0.81	0.76	0.76	0.87	0.92	0.89	0.96	0.93	0.92	1.02	0.96	0.06
Asia Oceania	0.46	0.40	0.43	0.42	0.42	0.45	0.39	0.32	0.25	0.28	0.41	-0.13
Kuwait Blend												
Americas	0.14	0.11	0.02	-	-	-	-	-	-	-	-	-
Europe	0.19	0.20	0.13	0.17	0.13	0.04	0.11	0.16	0.15	0.16	0.22	-0.06
Asia Oceania	0.66	0.68	0.66	0.67	0.62	0.63	0.62	0.51	0.55	0.70	0.67	0.03
Iranian Light												
Americas	-	-	-	-	-	-	-	-	-	-	-	-
Europe	0.21	0.27	0.16	0.13	0.03	0.01	-	-	-	-	0.12	-
Asia Oceania	0.01	0.01	0.01	0.01	-	0.01	-	-	-	-	0.01	-
Iranian Heavy ³												
Americas	-	-	-	-	-	-	-	-	-	-	-	-
Europe	0.21	0.52	0.35	0.41	0.11	0.09	0.07	0.00	-	-	0.45	-
Asia Oceania	0.52	0.57	0.28	0.24	0.02	0.36	0.18	-	-	-	0.23	-
BFOE												
Americas	0.02	0.02	0.00	0.00	-	-	-	-	-	-	-	-
Europe	0.44	0.45	0.35	0.43	0.31	0.39	0.31	0.24	0.29	0.33	0.47	-0.14
Asia Oceania	0.05	0.10	0.09	0.07	0.10	-	0.01	-	-	0.07	0.13	-0.07
Kazakhstan												
Americas	0.01	-	-	-	-	-	-	-	-	-	-	-
Europe	0.70	0.75	0.75	0.70	0.71	0.86	0.78	0.77	0.89	0.78	0.81	-0.03
Asia Oceania	0.03	0.10	0.19	0.21	0.22	0.17	0.17	0.25	0.24	0.20	0.20	0.01
Venezuelan 22 API and heavier												
Americas	0.63	0.48	0.44	0.45	0.45	0.19	-	-	-	-	0.39	-
Europe	0.05	0.04	0.03	0.03	0.06	0.10	0.06	0.06	0.06	0.08	0.03	0.05
Asia Oceania	-	-	-	-	-	-	-	-	-	-	-	-
Mexican Maya												
Americas	0.53	0.58	0.63	0.75	0.51	0.54	0.51	0.50	0.51	0.64	0.84	-0.20
Europe	0.17	0.20	0.21	0.17	0.17	0.21	0.21	0.23	0.20	0.18	0.13	0.05
Asia Oceania	0.05	0.07	0.08	0.08	0.09	0.12	0.14	0.13	0.13	0.13	0.03	0.09
Russian Urals												
Americas	-	0.01	0.01	-	0.02	0.04	-	-	-	0.02	-	-
Europe	1.72	1.64	1.40	1.37	1.38	1.38	1.38	1.55	1.66	1.41	1.45	-0.04
Asia Oceania	-	0.01	0.00	-	-	-	-	-	-	-	-	-
Cabinda and Other Angola												
North America	0.16	0.07	0.06	0.11	0.02	-	0.04	0.11	-	-	0.10	-
Europe	0.27	0.11	0.14	0.22	0.08	0.17	0.10	0.06	0.22	0.17	0.27	-0.10
Pacific	0.01	0.01	0.01	-	0.03	-	-	-	-	-	-	-
Nigerian Light ⁴												
Americas	0.07	0.04	0.01	-	-	-	0.07	0.06	-	0.16	-	-
Europe	0.39	0.39	0.53	0.54	0.63	0.47	0.58	0.72	0.26	0.63	0.56	0.07
Asia Oceania	0.01	0.02	0.02	0.01	0.02	0.03	0.00	-	0.03	0.02	-	-
Libya Light and Medium												
Americas	-	0.02	-	-	-	-	0.01	0.03	-	-	-	-
Europe	0.20	0.54	0.62	0.55	0.65	0.54	0.72	0.66	0.72	0.73	0.50	0.23
Asia Oceania	0.02	0.03	0.02	0.02	0.02	0.04	0.03	0.05	0.04	0.06	0.02	0.05

¹ Data based on monthly submissions from IEA countries to the crude oil import register (in '000 bbl), subject to availability. May differ from Table 8 of the Report. IEA Americas includes United States and Canada. IEA Europe includes all countries in OECD Europe except Estonia, Hungary, Slovenia and Latvia. IEA Asia Oceania includes Australia, New Zealand, Korea and Japan.

² Iraqi Total minus Kirkuk.

³ Iranian Total minus Iranian Light.

⁴ 33° API and lighter (e.g., Bonny Light, Escravos, Qua Iboe and Oso Condensate).

Table 7
REGIONAL OECD IMPORTS^{1,2}
(thousand barrels per day)

	2016	2017	2018	3Q18	4Q18	1Q19	2Q19	Jun 19	Jul 19	Aug 19	Year Earlier	
											Aug 18	% change
Crude Oil												
Americas	4542	4361	3759	3905	3223	2891	2961	3048	2490	2853	3899	-27%
Europe	9437	9902	9814	10046	9664	10014	9574	9575	10463	10420	10074	3%
Asia Oceania	6659	6849	6657	6474	6834	6852	6304	6069	6579	6625	6822	-3%
Total OECD	20638	21112	20230	20426	19720	19758	18839	18693	19531	19898	20794	-4%
LPG												
Americas	20	20	22	17	24	35	21	22	22	18	16	17%
Europe	441	432	457	404	470	482	414	452	394	465	394	18%
Asia Oceania	567	551	556	504	557	587	554	596	586	640	543	18%
Total OECD	1028	1003	1035	925	1050	1105	989	1070	1002	1124	952	18%
Naphtha												
Americas	10	19	8	6	11	5	4	4	3	5	3	50%
Europe	348	369	391	376	364	348	334	333	255	384	400	-4%
Asia Oceania	908	978	1018	1004	1085	918	955	945	1014	1127	919	23%
Total OECD	1266	1366	1417	1386	1461	1271	1293	1282	1271	1515	1322	15%
Gasoline³												
Americas	735	727	773	968	504	595	1045	844	1101	952	1047	-9%
Europe	91	153	110	83	77	118	148	116	64	98	81	22%
Asia Oceania	87	102	108	91	95	110	110	89	83	109	106	3%
Total OECD	913	983	992	1142	676	822	1303	1049	1248	1159	1233	-6%
Jet & Kerosene												
Americas	169	171	140	178	115	138	185	186	212	199	176	13%
Europe	502	504	509	591	476	455	571	586	543	582	623	-6%
Asia Oceania	73	80	89	55	121	82	60	33	75	69	45	56%
Total OECD	744	755	738	825	711	675	815	805	831	850	843	1%
Gasoil/Diesel												
Americas	67	77	124	130	125	204	81	90	107	65	160	-59%
Europe	1304	1337	1339	1397	1224	1396	1285	1364	1280	1319	1342	-2%
Asia Oceania	196	196	253	232	313	233	259	226	265	312	214	46%
Total OECD	1566	1610	1717	1758	1663	1833	1626	1680	1652	1696	1716	-1%
Heavy Fuel Oil												
Americas	149	131	161	195	130	149	104	80	96	87	198	-56%
Europe	461	233	197	172	208	217	224	226	249	253	182	39%
Asia Oceania	153	146	162	151	149	103	106	137	90	137	160	-14%
Total OECD	762	510	520	518	488	469	434	442	435	477	541	-12%
Other Products												
Americas	652	717	679	699	637	520	730	689	877	799	719	11%
Europe	783	1012	1008	1056	937	1006	901	821	778	856	1017	-16%
Asia Oceania	348	259	282	272	296	273	292	276	286	236	311	-24%
Total OECD	1783	1987	1969	2027	1870	1799	1923	1786	1942	1890	2047	-8%
Total Products												
Americas	1802	1862	1908	2194	1547	1645	2171	1915	2418	2125	2320	-8%
Europe	3930	4040	4011	4078	3756	4022	3877	3898	3564	3957	4038	-2%
Asia Oceania	2331	2312	2470	2309	2616	2306	2337	2301	2399	2630	2297	15%
Total OECD	8063	8214	8388	8582	7920	7973	8384	8114	8381	8713	8654	1%
Total Oil												
Americas	6344	6223	5666	6100	4770	4536	5131	4964	4907	4978	6218	-20%
Europe	13367	13942	13825	14124	13420	14036	13451	13473	14027	14377	14112	2%
Asia Oceania	8990	9160	9127	8783	9450	9158	8641	8370	8978	9255	9119	1%
Total OECD	28701	29326	28618	29007	27640	27731	27224	26807	27912	28611	29449	-3%

¹ Based on Monthly Oil Questionnaire data submitted by OECD countries in tonnes and converted to barrels.

² Excludes intra-regional trade.

³ Includes additives.

Table 7a
REGIONAL OECD IMPORTS FROM NON-OECD COUNTRIES^{1,2}
(thousand barrels per day)

	2016	2017	2018	3Q18	4Q18	1Q19	2Q19	Jun 19	Jul 19	Aug 19	Year Earlier	
											Aug 18	% change
Crude Oil												
Americas	4428	4235	3606	3749	3051	2790	2707	2802	2388	2743	3828	-28%
Europe	9051	9436	9088	9374	8912	9100	8773	8646	9396	9513	9513	0%
Asia Oceania	6429	6553	6210	6005	6188	6311	5734	5554	5857	5960	6310	-6%
Total OECD	19908	20224	18904	19128	18151	18201	17214	17001	17641	18216	19651	-7%
LPG												
Americas	16	16	15	14	16	27	21	22	22	18	10	82%
Europe	329	337	350	320	349	354	308	311	258	318	313	2%
Asia Oceania	342	205	161	111	143	85	99	105	66	82	153	-46%
Total OECD	687	557	527	445	509	466	429	439	346	418	476	-12%
Naphtha												
Americas	5	16	4	2	8	1	1	2	1	1	1	25%
Europe	329	350	360	355	305	328	322	314	225	355	381	-7%
Asia Oceania	856	931	921	906	1002	801	865	887	962	1086	797	36%
Total OECD	1189	1297	1286	1263	1315	1130	1188	1204	1187	1443	1180	22%
Gasoline³												
Americas	246	213	271	344	210	244	367	339	445	402	341	18%
Europe	89	149	105	80	73	114	142	111	64	95	78	22%
Asia Oceania	86	102	85	77	85	91	55	48	82	64	106	-40%
Total OECD	422	464	461	501	368	449	564	499	591	560	524	7%
Jet & Kerosene												
Americas	72	67	56	49	37	45	24	31	67	59	54	10%
Europe	409	436	445	491	425	414	521	505	493	480	518	-7%
Asia Oceania	73	80	89	55	121	82	60	33	75	69	45	56%
Total OECD	554	583	590	594	582	541	604	568	635	608	616	-1%
Gasoil/Diesel												
Americas	37	50	100	105	114	167	40	44	94	45	127	-64%
Europe	988	1086	1160	1154	1070	1228	1093	1146	1041	1058	1139	-7%
Asia Oceania	194	195	253	232	313	233	259	226	249	312	214	46%
Total OECD	1220	1331	1513	1491	1497	1629	1392	1416	1384	1416	1479	-4%
Heavy Fuel Oil												
Americas	130	123	147	186	117	123	97	77	96	76	182	-58%
Europe	436	218	185	153	190	206	196	188	216	217	168	29%
Asia Oceania	152	146	162	151	148	101	106	137	90	132	160	-18%
Total OECD	718	487	493	490	454	430	400	402	403	425	511	-17%
Other Products												
Americas	526	542	522	541	481	345	560	557	651	653	556	17%
Europe	516	731	702	770	625	736	654	590	609	600	715	-16%
Asia Oceania	269	182	201	194	206	191	200	165	191	178	226	-21%
Total OECD	1311	1455	1425	1504	1312	1272	1414	1312	1451	1431	1497	-4%
Total Products												
Americas	1031	1026	1115	1241	982	952	1110	1073	1375	1254	1270	-1%
Europe	3097	3307	3307	3322	3037	3382	3236	3166	2907	3123	3312	-6%
Asia Oceania	1971	1841	1873	1726	2018	1584	1644	1601	1716	1924	1700	13%
Total OECD	6100	6175	6295	6289	6037	5918	5990	5840	5998	6301	6282	0%
Total Oil												
Americas	5460	5261	4721	4990	4033	3742	3818	3875	3764	3997	5098	-22%
Europe	12149	12744	12395	12697	11949	12482	12009	11812	12303	12636	12825	-1%
Asia Oceania	8400	8394	8082	7730	8206	7895	7377	7155	7573	7884	8010	-2%
Total OECD	26008	26399	25199	25417	24188	24119	23203	22841	23639	24517	25934	-5%

1 Based on Monthly Oil Questionnaire data submitted by OECD countries in tonnes and converted to barrels.

2 Excludes intra-regional trade

3 Includes additives

Table 7b
INTER-REGIONAL OECD TRANSFERS^{1,2}
(thousand barrels per day)

	2016	2017	2018	3Q18	4Q18	1Q19	2Q19	Jun 19	Jul 19	Aug 19	Year Earlier	
											Aug 18	% change
Crude Oil												
Americas	114	126	153	157	172	101	253	247	101	110	71	56%
Europe	386	466	726	672	752	914	802	929	1067	907	561	62%
Asia Oceania	230	296	448	469	645	542	570	516	722	665	512	30%
Total OECD	730	888	1326	1298	1569	1557	1625	1691	1890	1682	1143	47%
LPG												
Americas	4	4	7	4	8	8	0	0	0	0	6	-100%
Europe	112	95	107	84	120	128	105	141	136	148	81	82%
Asia Oceania	225	346	395	393	413	502	455	491	519	558	390	43%
Total OECD	342	445	508	480	542	639	560	631	656	706	477	48%
Naphtha												
Americas	5	3	4	5	4	4	3	2	2	4	2	63%
Europe	19	19	31	21	58	20	12	19	30	29	19	54%
Asia Oceania	52	47	97	98	83	117	90	58	52	40	121	-67%
Total OECD	77	69	132	123	145	140	105	78	84	73	142	-49%
Gasoline³												
Americas	489	514	502	624	294	351	678	504	656	551	706	-22%
Europe	2	5	5	3	4	4	6	5	0	4	3	31%
Asia Oceania	0	0	23	14	10	19	56	41	1	45	0	na
Total OECD	491	519	530	641	308	373	740	550	657	599	709	-16%
Jet & Kerosene												
Americas	97	104	84	130	78	93	161	155	145	140	122	14%
Europe	93	68	64	100	51	40	50	81	50	103	105	-2%
Asia Oceania	0	0	0	0	0	0	0	0	0	0	0	na
Total OECD	190	172	148	230	129	134	211	236	196	242	227	7%
Gasoi/Diesel												
Americas	30	28	25	24	12	37	42	46	13	20	33	-40%
Europe	315	250	179	243	155	167	193	218	239	260	203	28%
Asia Oceania	2	1	0	0	0	0	0	0	16	0	0	na
Total OECD	347	279	204	267	166	204	235	264	267	280	236	19%
Heavy Fuel Oil												
Americas	19	8	15	9	14	26	6	3	0	11	16	-34%
Europe	25	15	12	19	18	10	28	38	33	36	14	157%
Asia Oceania	1	0	0	0	2	2	0	0	0	6	0	na
Total OECD	45	23	27	28	33	39	35	40	33	53	30	73%
Other Products												
Americas	126	175	157	158	156	174	170	132	227	146	163	-10%
Europe	266	280	305	286	312	270	247	231	169	256	302	-15%
Asia Oceania	80	77	81	78	90	82	92	111	95	57	85	-33%
Total OECD	472	532	544	522	559	526	509	474	491	459	550	-16%
Total Products												
Americas	770	836	793	953	565	693	1060	842	1042	871	1050	-17%
Europe	833	733	704	756	719	640	641	732	657	835	726	15%
Asia Oceania	360	470	597	584	598	722	693	700	683	706	597	18%
Total OECD	1963	2039	2093	2293	1883	2055	2395	2274	2383	2412	2372	2%
Total Oil												
Americas	884	962	945	1110	737	794	1314	1089	1143	981	1120	-12%
Europe	1219	1199	1429	1428	1470	1554	1443	1661	1724	1741	1286	35%
Asia Oceania	590	766	1044	1053	1244	1264	1264	1215	1405	1371	1109	24%
Total OECD	2693	2927	3419	3590	3452	3612	4020	3965	4273	4094	3515	16%

¹ Based on Monthly Oil Questionnaire data submitted by OECD countries in tonnes and converted to barrels.

² Excludes intra-regional trade

³ Includes additives

Table 8
REGIONAL OECD CRUDE IMPORTS BY SOURCE¹
(thousand barrels per day)

	2016	2017	2018	3Q18	4Q18	1Q19	2Q19	Jun 19	Jul 19	Aug 19	Year Earlier	
											Aug 18	change
OECD Americas												
Venezuela	741	618	506	538	506	285	41	-	-	-	462	-
Other Central & South America	1023	928	795	791	655	850	882	836	992	994	897	97
North Sea	109	124	150	151	172	101	246	247	101	110	71	39
Other OECD Europe	1	-	1	-	-	-	7	-	-	-	-	-
Non-OECD Europe	7	-	-	-	-	-	-	-	-	-	-	-
Former Soviet Union	75	121	145	217	94	151	253	217	179	240	161	79
Saudi Arabia	1185	1043	983	1084	1037	745	607	634	524	548	1172	-624
Kuwait	209	144	78	60	38	84	48	26	20	46	83	-37
Iran	-	-	-	-	-	-	-	-	-	-	-	-
Iraq	418	605	519	459	331	374	329	355	350	249	420	-171
Oman	30	14	-	-	-	-	-	-	-	-	-	-
United Arab Emirates	11	20	5	10	-	-	-	-	-	-	-	-
Other Middle East	-	2	-	-	-	-	-	-	-	-	-	-
West Africa ²	451	497	317	232	222	165	324	405	229	454	254	199
Other Africa	223	214	196	260	134	121	208	299	62	182	247	-65
Asia	46	26	61	103	34	16	16	30	32	31	132	-101
Other	13	4	3	-	-	-	-	-	-	-	-	-
Total	4542	4361	3759	3905	3223	2891	2961	3048	2490	2853	3899	-1046
of which Non-OECD	4428	4235	3606	3749	3051	2790	2707	2802	2388	2743	3828	-1085
OECD Europe												
Canada	32	45	81	94	44	66	34	54	45	146	74	72
Mexico + USA	354	419	645	578	708	848	768	875	1022	760	486	274
Venezuela	74	67	57	55	92	145	73	65	73	88	45	43
Other Central & South America	170	160	132	142	134	117	76	73	85	126	199	-73
Non-OECD Europe	11	9	12	9	11	11	11	10	9	9	9	0
Former Soviet Union	4427	4437	4154	4024	4084	4347	4018	3991	4764	4359	4199	160
Saudi Arabia	861	750	818	921	883	825	852	818	878	891	874	17
Kuwait	194	201	137	157	116	85	105	103	165	121	216	-96
Iran	436	801	536	598	159	148	77	31	50	25	608	-583
Iraq	1000	995	962	1060	1060	1180	1269	1322	1206	1169	983	186
Oman	-	-	-	-	-	-	-	-	-	-	-	-
United Arab Emirates	12	6	2	-	10	-	-	-	-	-	-	-
Other Middle East	12	1	-	-	-	2	8	13	7	-	-	-
West Africa ²	1095	960	1115	1269	1143	1146	1099	1150	967	1266	1407	-142
Other Africa	738	1045	1161	1149	1234	1074	1160	1070	1194	1459	972	487
Asia	-	2	-	-	-	-	-	-	-	-	-	-
Other	21	5	9	-	-	18	24	0	-	0	-	-
Total	9438	9903	9821	10057	9679	10015	9575	9575	10464	10420	10074	346
of which Non-OECD	9051	9436	9088	9374	8912	9100	8773	8646	9396	9513	9513	0
OECD Asia Oceania												
Canada	-	-	3	-	7	-	-	-	-	-	-	-
Mexico + USA	179	199	344	384	522	542	559	516	722	600	358	242
Venezuela	3	8	-	-	-	-	-	-	-	-	-	-
Other Central & South America	27	35	35	35	42	51	67	111	76	54	14	41
North Sea	51	97	100	85	117	-	11	-	-	65	154	-89
Other OECD Europe	-	-	-	-	-	-	-	-	-	-	-	-
Non-OECD Europe	-	-	-	-	-	-	-	-	-	-	-	-
Former Soviet Union	341	413	435	445	459	458	402	460	490	518	477	41
Saudi Arabia	2078	2166	2040	1879	2151	2108	1868	1842	1762	1920	2046	-126
Kuwait	661	671	672	695	671	680	665	572	574	748	697	52
Iran	469	543	274	244	11	368	184	-	-	-	227	-
Iraq	456	402	435	416	422	446	388	325	248	284	411	-127
Oman	88	42	56	68	43	54	66	68	95	48	61	-12
United Arab Emirates	1154	1147	1098	1147	1135	1108	1223	1187	1295	1462	1304	159
Other Middle East	472	390	450	464	454	430	387	451	448	571	435	136
West Africa ²	74	66	95	76	99	73	77	115	34	37	48	-11
Other Africa	62	92	105	100	122	85	72	66	148	76	212	-136
Non-OECD Asia	339	325	319	296	322	264	202	222	199	165	310	-145
Other	205	253	196	140	257	185	133	135	486	76	70	6
Total	6659	6849	6657	6474	6834	6852	6304	6069	6579	6625	6822	-197
of which Non-OECD	6429	6553	6210	6005	6188	6311	5734	5554	5857	5960	6310	-350
Total OECD Trade	20639	21113	20237	20436	19735	19759	18840	18693	19533	19898	20794	-897
of which Non-OECD	19908	20224	18904	19128	18151	18201	17214	17001	17641	18216	19651	-1435

¹ Based on Monthly Oil Questionnaire data submitted by OECD countries in tonnes, and converted to barrels at 7.37 barrels per tonne. Data will differ from Table 6 which is based on submissions in barrels.

² West Africa includes Angola, Nigeria, Gabon, Equatorial Guinea, Congo and Democratic Republic of Congo.

Table 9
REGIONAL OECD GASOLINE IMPORTS BY SOURCE¹
(thousand barrels per day)

	2016	2017	2018	3Q18	4Q18	1Q19	2Q19	Jun 19	Jul 19	Aug 19	Year Earlier	
											Aug 18	change
OECD Americas												
Venezuela	15	18	23	26	23	15	-	-	-	-	10	-
Other Central & South America	69	42	64	83	58	81	86	100	122	109	80	29
ARA (Belgium Germany Netherlands)	155	178	167	200	91	95	270	212	229	238	285	-48
Other Europe	328	326	323	420	203	232	365	267	386	285	427	-141
FSU	90	84	80	86	52	66	88	82	148	109	94	16
Saudi Arabia	-	1	11	14	28	19	7	-	-	10	10	1
Algeria	1	-	1	1	-	-	-	-	-	-	4	-
Other Middle East & Africa	32	24	19	22	12	10	11	17	32	17	23	-5
Singapore	6	10	8	16	4	-	6	-	17	19	4	15
OECD Asia Oceania	6	10	13	7	-	26	42	26	40	28	5	23
Non-OECD Asia (excl. Singapore)	64	63	84	114	48	71	180	143	155	142	132	10
Other	3	3	0	-	0	-	-	-	-	1	-	-
Total²	769	759	794	988	518	614	1056	847	1130	960	1073	-113
of which Non-OECD	246	213	271	344	210	244	367	339	445	402	341	61
OECD Europe												
OECD Americas	1	4	4	3	4	3	5	4	-	1	2	-2
Venezuela	0	-	0	0	-	-	-	-	0	-	-	-
Other Central & South America	1	3	5	2	9	6	2	1	5	0	-	-
Non-OECD Europe	15	15	11	17	9	11	21	18	7	20	21	-1
FSU	84	89	70	48	64	67	76	93	40	57	41	16
Saudi Arabia	0	0	2	3	0	1	-	-	1	3	4	-1
Algeria	1	1	0	-	1	0	0	-	-	-	-	-
Other Middle East & Africa	2	5	4	4	5	6	4	8	4	2	5	-3
Singapore	1	2	2	2	2	2	4	3	2	2	1	1
OECD Asia Oceania	1	1	1	0	-	1	1	1	-	3	0	2
Non-OECD Asia (excl. Singapore)	1	3	2	0	6	0	-	-	0	0	1	0
Other	-3	41	20	14	-9	30	43	-3	12	18	12	6
Total²	104	163	122	93	90	126	156	124	72	106	88	18
of which Non-OECD	89	149	105	80	73	114	142	111	64	95	78	17
OECD Asia Oceania												
OECD Americas	0	-	4	5	-	5	-	-	1	45	-	-
Venezuela	-	-	-	-	-	-	-	-	-	-	-	-
Other Central & South America	-	0	-	-	-	-	-	-	-	-	-	-
ARA (Belgium Germany Netherlands)	-	-	13	9	10	8	40	23	-	-	-	-
Other Europe	-	-	7	-	-	6	15	18	-	-	-	-
FSU	-	-	1	-	-	-	1	-	-	-	-	-
Saudi Arabia	0	0	0	-	2	3	-	-	-	-	-	-
Algeria	-	-	-	-	-	-	-	-	-	-	-	-
Other Middle East & Africa	-	5	1	5	-	-	-	-	-	-	16	-
Singapore	44	52	49	37	48	43	27	24	39	38	37	1
Non-OECD Asia (excl. Singapore)	27	30	19	20	21	29	11	9	28	11	38	-27
Other	16	15	15	15	15	17	15	15	15	15	15	0
Total²	87	102	109	91	95	110	110	89	83	109	106	3
of which Non-OECD	86	102	85	77	85	91	55	48	82	64	106	-42
Total OECD Trade²	960	1024	1025	1173	703	850	1323	1060	1286	1174	1266	-92
of which Non-OECD	422	464	461	501	368	449	564	499	591	560	524	36

¹ Based on Monthly Oil Questionnaire data submitted by OECD countries in tonnes.

² Total figure excludes intra-regional trade.

Table 10
REGIONAL OECD GASOIL/DIESEL IMPORTS BY SOURCE¹
(thousand barrels per day)

	2016	2017	2018	3Q18	4Q18	1Q19	2Q19	Jun 19	Jul 19	Aug 19	Year Earlier	
											Aug 18	change
OECD Americas												
Venezuela	0	2	4	8	7	3	-	-	-	-	-	-
Other Central and South America	10	13	30	25	46	29	35	38	59	45	31	14
ARA (Belgium Germany Netherlands)	3	7	6	4	-	-	1	-	-	-	3	-
Other Europe	9	3	3	-	-	2	4	13	3	-	-	-
FSU	15	6	16	31	7	7	2	6	10	-	62	-
Saudi Arabia	1	2	17	20	24	13	-	-	-	-	24	-
Algeria	-	-	-	-	-	-	-	-	-	-	-	-
Other Middle East and Africa	3	4	8	10	4	8	-	-	-	-	-	-
Singapore	1	0	1	-	3	0	-	-	-	-	-	-
OECD Asia Oceania	18	18	15	21	12	35	36	33	10	20	31	-11
Non-OECD Asia (excl. Singapore)	9	22	23	11	22	78	3	-	25	-	10	-
Other	0	0	-	-	-	28	-	-	-	-	-	-
Total²	68	77	124	130	125	204	81	90	107	65	160	-95
of which Non-OECD	37	50	100	105	114	167	40	44	94	45	127	-82
OECD Europe												
OECD Americas	276	222	154	227	128	126	159	196	201	230	189	41
Venezuela	-	-	-	-	-	-	-	-	-	-	-	-
Other Central and South America	3	3	4	1	1	-	0	-	-	-	-	-
Non-OECD Europe	48	48	39	44	41	41	37	35	55	26	41	-14
FSU	663	732	714	684	641	770	656	638	615	707	708	-1
Saudi Arabia	130	160	225	205	196	208	222	285	179	202	224	-21
Algeria	1	-	-	-	-	-	-	-	-	-	-	-
Other Middle East and Africa	70	72	76	90	94	94	89	73	63	86	61	25
Singapore	20	15	14	13	20	8	27	32	38	42	12	31
OECD Asia Oceania	40	28	25	16	27	41	34	22	38	30	13	17
Non-OECD Asia (excl. Singapore)	172	125	151	171	128	188	137	142	132	71	176	-105
Other	-18	21	12	12	16	6	7	15	28	19	11	8
Total²	1404	1427	1414	1463	1293	1482	1369	1439	1348	1414	1435	-21
of which Non-OECD	988	1086	1160	1154	1070	1228	1093	1146	1041	1058	1139	-80
OECD Asia Oceania												
OECD Americas	2	1	-	-	-	-	-	-	16	-	-	-
Venezuela	-	-	-	-	-	-	-	-	-	-	-	-
Other Central and South America	-	0	-	-	-	-	-	-	-	-	-	-
ARA (Belgium Germany Netherlands)	-	-	-	-	-	-	-	-	-	-	-	-
Other Europe	-	-	-	-	-	-	-	-	-	-	-	-
FSU	5	5	4	4	5	5	4	3	5	4	4	0
Saudi Arabia	1	-	3	-	9	-	-	-	-	-	-	-
Algeria	-	-	-	-	-	-	-	-	-	-	-	-
Other Middle East and Africa	2	1	8	1	32	10	9	-	-	-	-	-
Singapore	86	87	141	101	174	93	121	105	89	104	109	-5
Non-OECD Asia (excl. Singapore)	95	96	91	120	88	119	121	112	151	199	95	104
Other	6	7	6	6	6	6	6	6	6	6	6	0
Total²	196	196	253	232	313	233	259	226	265	312	214	98
of which Non-OECD	194	195	253	232	313	233	259	226	249	312	214	98
Total OECD Trade²	1669	1701	1791	1825	1731	1919	1710	1755	1720	1792	1809	-17
of which Non-OECD	1220	1331	1513	1491	1497	1629	1392	1416	1384	1416	1479	-63

¹ Based on Monthly Oil Questionnaire data submitted by OECD countries in tonnes.

² Total figure excludes intra-regional trade.

Table 11
REGIONAL OECD JET AND KEROSENE IMPORTS BY SOURCE¹
(thousand barrels per day)

	2016	2017	2018	3Q18	4Q18	1Q19	2Q19	Jun 19	Jul 19	Aug 19	Year Earlier Aug 18	change
OECD Americas												
Venezuela	11	16	6	2	1	1	0	0	-	-	1	-
Other Central and South America	0	1	2	1	7	6	1	-	14	-	-	-
ARA (Belgium Germany Netherlands)	0	-	0	1	-	-	-	-	-	-	2	-
Other Europe	-	0	0	-	-	-	-	-	-	2	-	-
FSU	0	1	0	-	-	-	-	-	-	-	-	-
Saudi Arabia	1	2	1	-	2	9	1	-	-	-	-	-
Algeria	-	0	-	-	-	-	-	-	-	-	-	-
Other Middle East and Africa	1	3	2	1	0	4	9	11	29	4	1	4
Singapore	0	2	6	5	8	3	6	15	1	10	10	0
OECD Asia Oceania	97	104	84	129	78	93	161	155	145	137	121	17
Non-OECD Asia (excl. Singapore)	55	30	27	28	9	12	6	5	23	44	29	16
Other	3	13	11	12	11	11	-	-	-	-	14	-
Total²	169	171	140	178	115	138	185	186	212	199	176	23
of which Non-OECD	72	67	56	49	37	45	24	31	67	59	54	5
OECD Europe												
OECD Americas	38	20	32	30	30	19	13	31	24	33	28	5
Venezuela	6	5	1	1	0	-	-	-	-	-	1	-
Other Central and South America	1	2	2	2	1	3	-	-	-	-	2	-
Non-OECD Europe	4	3	6	17	6	-	6	9	2	-	16	-
FSU	44	33	40	54	37	38	56	62	57	52	50	1
Saudi Arabia	112	94	98	109	102	88	112	67	121	112	181	-69
Algeria	14	12	9	8	8	12	-	-	8	16	-	-
Other Middle East and Africa	178	207	197	201	172	193	237	293	230	122	218	-96
Singapore	14	28	25	39	27	11	33	43	19	51	24	28
OECD Asia Oceania	55	48	32	70	21	21	37	50	26	70	77	-7
Non-OECD Asia (excl. Singapore)	51	53	69	62	73	74	80	38	55	130	31	99
Other	-7	1	1	2	0	0	0	-	5	-	-	-
Total²	509	508	512	595	478	459	574	592	546	586	628	-42
of which Non-OECD	409	436	445	491	425	414	521	505	493	480	518	-38
OECD Asia Oceania												
OECD Americas	-	-	-	-	-	-	-	-	-	-	-	-
Venezuela	-	-	-	-	-	-	-	-	-	-	-	-
Other Central and South America	-	-	-	-	-	-	-	-	-	-	-	-
ARA (Belgium Germany Netherlands)	-	-	-	-	-	-	-	-	-	-	-	-
Other Europe	-	-	-	-	-	-	-	-	-	-	-	-
FSU	-	-	-	-	-	-	-	-	-	-	-	-
Saudi Arabia	-	-	1	-	-	-	-	-	-	-	-	-
Algeria	-	-	-	-	-	-	-	-	-	-	-	-
Other Middle East and Africa	-	1	1	-	5	-	-	-	-	-	-	-
Singapore	24	23	28	36	19	22	19	18	20	34	33	1
Non-OECD Asia (excl. Singapore)	36	34	26	6	42	27	21	-	48	11	4	7
Other	13	22	33	13	54	33	19	15	8	24	8	16
Total²	73	80	89	55	121	82	60	33	75	69	45	25
of which Non-OECD	73	80	89	55	121	82	60	33	75	69	45	25
Total OECD Trade²	751	758	741	829	713	679	819	810	834	854	848	5
of which Non-OECD	554	583	590	594	582	541	604	568	635	608	616	-8

¹ Based on Monthly Oil Questionnaire data submitted by OECD countries in tonnes.

² Total figure excludes intra-regional trade.

Table 12
REGIONAL OECD RESIDUAL FUEL OIL IMPORTS BY SOURCE¹
(thousand barrels per day)

	2016	2017	2018	3Q18	4Q18	1Q19	2Q19	Jun 19	Jul 19	Aug 19	Year Earlier	
											Aug 18	change
OECD Americas												
Venezuela	17	16	42	65	27	27	-	-	-	-	111	-
Other Central and South America	49	71	72	80	63	56	51	37	53	32	44	-12
ARA (Belgium Germany Netherlands)	12	5	7	3	12	12	1	3	-	4	-	-
Other Europe	7	3	7	7	2	14	5	-	-	7	16	-9
FSU	49	24	23	31	15	16	39	29	36	44	15	29
Saudi Arabia	0	-	-	-	-	8	-	-	-	-	-	-
Algeria	4	1	-	-	-	10	5	6	2	-	-	-
Other Middle East and Africa	10	9	7	12	11	3	2	6	5	-	11	-
Singapore	1	3	-	-	-	4	-	-	-	-	-	-
OECD Asia Oceania	-	-	-	-	-	-	-	-	-	-	-	-
Non-OECD Asia (excl. Singapore)	-	1	0	-	1	-	0	-	-	-	-	-
Other	0	0	2	0	-	-	-	-	-	-	0	-
Total²	149	131	161	197	130	149	104	80	96	87	198	-112
of which Non-OECD	130	123	147	186	117	123	97	77	96	76	182	-106
OECD Europe												
OECD Americas	15	6	4	11	5	1	8	20	13	16	6	10
Venezuela	-	-	-	-	-	-	-	-	-	-	-	-
Other Central and South America	5	2	3	-	-	6	4	4	5	2	-	-
Non-OECD Europe	15	17	17	18	16	16	29	46	21	20	24	-4
FSU	448	195	154	130	155	158	146	151	156	162	133	30
Saudi Arabia	-	0	1	-	-	-	-	-	-	-	-	-
Algeria	3	1	1	2	-	1	-	-	-	-	-	-
Other Middle East and Africa	16	23	15	10	19	12	17	15	38	31	9	22
Singapore	0	-	-	-	-	-	-	-	-	5	-	-
OECD Asia Oceania	10	9	8	8	12	10	21	17	20	20	8	12
Non-OECD Asia (excl. Singapore)	0	1	0	-	0	7	1	1	-	10	-	-
Other	-18	-8	5	8	4	14	10	3	10	4	18	-14
Total²	496	246	208	188	212	223	235	258	262	270	197	73
of which Non-OECD	436	218	185	153	190	206	196	188	216	217	168	49
OECD Asia Oceania												
OECD Americas	-	0	0	-	2	2	-	-	-	6	-	-
Venezuela	-	-	-	-	-	-	-	-	-	-	-	-
Other Central and South America	-	-	-	-	-	-	-	-	-	-	-	-
ARA (Belgium Germany Netherlands)	-	-	-	-	-	-	-	-	-	-	-	-
Other Europe	1	-	-	-	-	-	-	-	-	-	-	-
FSU	4	9	16	24	19	7	0	0	9	-	17	-
Saudi Arabia	-	-	-	-	-	-	-	-	-	-	-	-
Algeria	-	1	-	-	-	-	-	-	-	-	-	-
Other Middle East and Africa	5	18	23	23	16	9	27	32	27	61	21	40
Singapore	73	58	37	29	24	36	21	29	47	11	49	-38
Non-OECD Asia (excl. Singapore)	69	59	85	75	88	48	53	69	8	59	74	-15
Other	1	0	0	0	1	0	5	5	-	0	-	-
Total²	153	146	162	151	149	103	106	137	90	137	160	-23
of which Non-OECD	152	146	162	151	148	101	106	137	90	132	160	-29
Total OECD Trade²	798	523	531	535	492	475	445	474	448	494	556	-61
of which Non-OECD	718	487	493	490	454	430	400	402	403	425	511	-86

¹ Based on Monthly Oil Questionnaire data submitted by OECD countries in tonnes.

² Total figure excludes intra-regional trade.

Table 13

AVERAGE IEA CIF CRUDE COST AND SPOT CRUDE AND PRODUCT PRICES**Table Unavailable**

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Table 14
MONTHLY AVERAGE END-USER PRICES FOR PETROLEUM PRODUCTS

October 2019

	NATIONAL CURRENCY *						US DOLLARS					
	Total	% change from		Ex-Tax	% change from		Total	% change from		Ex-Tax	% change from	
	Price	Sep-19	Oct-18	Price	Sep-19	Oct-18	Price	Sep-19	Oct-18	Price	Sep-19	Oct-18
GASOLINE ¹ (per litre)												
France	1.500	0.3	- 3.7	0.559	0.7	-7.9	1.658	0.8	-7.3	0.618	1.1	-11.4
Germany	1.397	- 0.8	- 8.3	0.519	-1.7	-17.1	1.544	-0.4	-11.8	0.574	-1.3	-20.2
Italy	1.577	0.1	- 4.8	0.565	0.2	-10.3	1.743	0.5	-8.4	0.625	0.6	-13.7
Spain	1.306	- 0.3	- 3.0	0.606	-0.7	-6.9	1.444	0.1	-6.6	0.670	-0.2	-10.4
United Kingdom	1.266	- 0.5	- 3.1	0.475	-1.2	-6.5	1.600	1.8	-5.8	0.600	1.0	-9.2
Japan	147.2	2.4	- 7.1	79.7	4.2	-11.5	1.361	1.8	-3.0	0.737	3.5	-7.7
Canada	1.206	0.2	- 6.9	0.812	0.4	-9.4	0.914	0.7	-8.2	0.616	0.8	-10.6
United States	0.694	1.3	- 8.2	0.567	1.6	-10.3	0.694	1.3	-8.2	0.567	1.6	-10.3
AUTOMOTIVE DIESEL FOR NON COMMERCIAL USE (per litre)												
France	1.441	0.6	- 4.8	0.592	1.2	-9.2	1.593	1.0	-8.4	0.654	1.6	-12.6
Germany	1.257	0.7	- 8.5	0.586	1.2	-14.5	1.389	1.1	-11.9	0.648	1.6	-17.7
Italy	1.473	0.3	- 5.2	0.590	0.7	-10.2	1.628	0.8	-8.8	0.652	1.1	-13.6
Spain	1.215	0.2	- 4.5	0.625	0.3	-8.6	1.343	0.7	-8.1	0.691	0.7	-12.0
United Kingdom	1.314	- 0.4	- 3.5	0.516	-0.6	-7.0	1.661	1.9	-6.3	0.652	1.7	-9.7
Japan	127.7	2.2	- 6.7	85.7	3.0	-8.9	1.181	1.5	-2.6	0.793	2.4	-4.9
Canada	1.247	3.7	- 6.2	0.936	4.8	-7.7	0.945	4.2	-7.5	0.710	5.2	-9.0
United States	0.807	1.3	- 9.2	0.659	1.5	-11.5	0.807	1.3	-9.2	0.659	1.5	-11.5
DOMESTIC HEATING OIL (per litre)												
France	0.928	- 0.2	- 7.2	0.617	-0.3	-8.8	1.026	0.2	-10.6	0.682	0.2	-12.2
Germany	0.708	- 0.4	- 16.9	0.533	-0.4	-18.4	0.782	0.0	-20.0	0.589	-0.0	-21.5
Italy	1.309	- 0.1	- 2.0	0.670	-0.2	-3.1	1.447	0.3	-5.6	0.740	0.2	-6.7
Spain	0.769	- 2.0	- 9.2	0.539	-2.3	-11.6	0.850	-1.5	-12.6	0.596	-1.9	-14.9
United Kingdom	0.588	- 2.3	- 11.1	0.448	-2.9	-13.5	0.743	-0.1	-13.6	0.567	-0.7	-15.9
Japan ²	92.0	2.0	- 5.0	82.4	2.0	-5.2	0.851	1.3	-0.8	0.762	1.4	-1.0
Canada	1.146	1.8	- 4.4	1.030	2.0	-4.7	0.869	2.3	-5.7	0.781	2.4	-6.0
United States	-	-	-	-	-	-	-	-	-	-	-	-
LOW SULPHUR FUEL OIL FOR INDUSTRY ³ (per kg)												
France	0.566	3.3	- 9.3	0.426	4.4	-12.0	0.625	3.7	-12.7	0.471	4.8	-15.3
Germany	-	-	-	-	-	-	-	-	-	-	-	-
Italy	0.476	2.8	- 5.6	0.445	3.0	-6.0	0.526	3.3	-9.1	0.492	3.5	-9.5
Spain	0.429	- 1.1	- 9.8	0.412	-1.1	-10.3	0.474	-0.6	-13.2	0.455	-0.7	-13.6
United Kingdom	-	-	-	-	-	-	-	-	-	-	-	-
Japan	-	-	-	-	-	-	-	-	-	-	-	-
Canada	-	-	-	-	-	-	-	-	-	-	-	-
United States	-	-	-	-	-	-	-	-	-	-	-	-

¹ Unleaded premium (95 RON) for France, Germany, Italy, Spain, UK; regular unleaded for Canada, Japan and the United States.

² Kerosene for Japan.

³ VAT excluded from prices for low sulphur fuel oil when refunded to industry.

* Prices for France, Germany, Italy and Spain are in Euros; UK in British Pounds, Japan in Yen, Canada in Canadian Dollars.

Table 15
IEA/KBC Global Indicator Refining Margins¹
 (\$/bbl)

	Monthly Average					Change	Average for week ending:				
	Jul 19	Aug 19	Sep 19	Oct 19		Oct 19-Sep 19	11 Oct	18 Oct	25 Oct	01 Nov	08 Nov
NW Europe											
Brent (Cracking)	6.87	7.75	6.42	7.57	↑	1.15	7.64	6.98	6.94	8.27	6.62
Urals (Cracking)	6.55	5.64	6.61	5.61	↓	-1.00	7.25	5.52	3.99	3.15	1.06
Brent (Hydroskimming)	4.26	4.52	4.33	5.29	↑	0.96	6.15	4.37	4.48	5.86	3.86
Urals (Hydroskimming)	2.46	-0.60	1.38	-2.64	↓	-4.02	0.48	-3.26	-5.34	-6.12	-8.51
Mediterranean											
Es Sider (Cracking)	7.93	8.26	7.63	9.24	↑	1.61	9.44	8.84	8.94	9.79	7.57
Urals (Cracking)	6.62	5.00	7.24	7.39	↑	0.15	9.16	7.04	6.31	4.93	2.10
Es Sider (Hydroskimming)	5.62	5.35	5.22	6.68	↑	1.45	7.49	5.87	6.17	7.37	4.84
Urals (Hydroskimming)	2.30	-1.65	1.24	-1.06	↓	-2.30	2.26	-1.99	-3.26	-4.50	-8.81
US Gulf Coast											
Mars (Cracking)	6.02	2.50	2.65	3.25	↑	0.60	6.54	2.29	0.70	0.81	0.21
50/50 HLS/LLS (Coking)	13.75	11.61	10.22	12.87	↑	2.65	14.40	13.49	11.97	10.85	9.19
50/50 Maya/Mars (Coking)	8.04	9.16	5.30	9.37	↑	4.07	9.38	10.22	9.42	8.69	7.22
ASCI (Coking)	9.60	8.87	8.56	10.70	↑	2.14	12.38	11.10	9.57	8.76	7.80
US Midwest											
30/70 WCS/Bakken (Cracking)	18.77	11.05	12.11	10.42	↓	-1.69	15.06	9.07	6.04	7.71	9.86
Bakken (Cracking)	20.41	13.98	14.85	13.20	↓	-1.65	16.58	13.01	9.29	10.41	11.54
WTI (Coking)	21.02	14.39	13.37	13.46	↑	0.08	17.12	13.96	10.31	9.71	10.92
30/70 WCS/Bakken (Coking)	20.87	14.79	15.24	14.88	↓	-0.36	18.46	14.22	11.34	12.76	14.92
Singapore											
Dubai (Hydroskimming)	3.56	0.29	3.07	-3.81	↓	-6.88	-4.82	-5.70	-3.43	-3.91	-4.57
Tapis (Hydroskimming)	3.78	2.10	1.27	0.22	↓	-1.05	0.72	1.13	-1.54	-1.33	-2.77
Dubai (Hydrocracking)	5.61	4.66	6.18	3.31	↓	-2.87	3.25	2.00	3.36	2.67	3.15
Tapis (Hydrocracking)	3.48	4.70	3.64	4.80	↑	1.17	5.95	5.89	3.00	2.59	1.70

¹ Global Indicator Refining Margins are calculated for various complexity configurations, each optimised for processing the specific crude(s) in a specific refining centre. Margins include energy cost, but exclude other variable costs, depreciation and amortisation. Consequently, reported margins should be taken as an indication, or proxy, of changes in profitability for a given refining centre. No attempt is made to model or otherwise comment upon the relative economics of specific refineries running individual crude slates and producing custom product sales, nor are these calculations intended to infer the marginal values of crude for pricing purposes.

Source: IEA, KBC Advanced Technologies (KBC)

Table 16
REFINED PRODUCT YIELDS BASED ON TOTAL INPUT (%)¹

	Jun-19	Jul-19	Aug-19	Aug-18	Aug 19 vs Previous Month	Aug 19 vs Previous Year	Aug 19 vs 5 Year Average	5 Year Average
OECD Americas								
Naphtha	1.3	1.3	1.4	1.5	0.1	-0.1	-0.3	1.7
Motor gasoline	44.0	44.3	44.0	44.3	-0.3	-0.3	-1.1	45.2
Jet fuel	9.6	10.0	9.9	10.0	-0.1	-0.2	0.5	9.4
Other kerosene	0.0	0.1	0.0	0.1	-0.1	-0.1	-0.1	0.2
Gasoil/diesel oil	28.4	27.7	28.0	27.9	0.4	0.1	-0.2	28.2
Residual fuel oil	3.3	3.0	3.1	3.3	0.1	-0.2	-0.6	3.6
Petroleum coke	4.2	4.4	4.3	4.6	-0.1	-0.3	-0.3	4.6
Other products	13.1	13.8	13.4	12.8	-0.4	0.6	0.2	13.2
OECD Europe								
Naphtha	7.8	8.0	7.7	8.4	-0.3	-0.7	0.3	7.4
Motor gasoline	20.9	20.4	20.1	20.4	-0.3	-0.3	-0.7	20.8
Jet fuel	8.8	9.8	10.1	9.5	0.3	0.7	1.4	8.7
Other kerosene	1.9	2.0	2.1	2.1	0.1	0.0	0.1	2.0
Gasoil/diesel oil	39.5	39.7	39.5	39.2	-0.2	0.3	-0.4	39.9
Residual fuel oil	8.5	8.2	8.8	9.3	0.6	-0.5	-0.5	9.3
Petroleum coke	1.4	1.4	1.5	1.3	0.1	0.2	0.3	1.3
Other products	15.8	15.6	15.2	14.7	-0.4	0.5	0.1	15.1
OECD Asia Oceania								
Naphtha	16.6	15.8	15.6	15.3	-0.2	0.3	0.8	14.9
Motor gasoline	21.5	21.6	22.1	22.0	0.6	0.2	-0.8	23.0
Jet fuel	15.6	14.9	15.5	15.1	0.6	0.4	0.3	15.2
Other kerosene	2.1	2.8	2.8	2.8	0.0	-0.1	-0.3	3.1
Gasoil/diesel oil	30.5	30.6	29.0	29.3	-1.5	-0.3	-0.4	29.4
Residual fuel oil	5.3	6.0	6.5	6.5	0.5	0.0	-0.6	7.0
Petroleum coke	0.5	0.5	0.4	0.4	-0.1	0.0	0.0	0.4
Other products	12.8	12.5	12.2	12.4	-0.3	-0.2	-0.1	12.4
OECD Total								
Naphtha	5.9	6.0	5.9	6.1	-0.1	-0.3	0.0	5.9
Motor gasoline	33.0	32.7	32.5	32.6	-0.1	-0.1	-0.8	33.3
Jet fuel	10.4	10.8	10.9	10.7	0.2	0.2	0.8	10.2
Other kerosene	1.0	1.2	1.2	1.2	0.0	-0.1	-0.1	1.3
Gasoil/diesel oil	32.2	32.0	31.9	31.9	-0.1	0.0	-0.4	32.3
Residual fuel oil	5.2	5.2	5.5	5.8	0.3	-0.3	-0.6	6.1
Petroleum coke	2.7	2.7	2.7	2.8	0.0	-0.1	0.0	2.8
Other products	13.9	14.2	13.8	13.3	-0.4	0.4	0.1	13.7

¹ Due to processing gains and losses, yields in % will not always add up to 100%

Table 17
WORLD BIOFUELS PRODUCTION
(thousand barrels per day)

	2017	2018	2019	1Q19	2Q19	3Q19	Aug 19	Sep 19	Oct 19
ETHANOL									
OECD Americas¹	1062	1081	1068	1048	1083	1073	1066	1068	1068
United States	1032	1048	1032	1012	1047	1037	1030	1031	1031
Other	30	33	36	36	36	36			
OECD Europe²	88	93	93	92	98	98	105	85	85
France	13	16	15	14	17	17	19	10	10
Germany	14	16	16	17	20	17	19	10	10
Spain	7	9	9	8	8	9	8	11	11
United Kingdom	11	9	8	10	8	8	10	4	4
Other	42	43	46	43	45	48			
OECD Asia Oceania³	3	5	5	5	5	5	5	6	6
Australia	3	4	4	5	4	4	4	4	4
Other	0	1	1	1	1	1			
Total OECD Ethanol	1153	1179	1167	1145	1186	1176	1176	1158	1158
Total Non-OECD Ethanol	627	713	772	331	943	1226	1260	1206	878
Brazil	478	547	579	138	751	1035	1069	1014	681
China	56	52	69	69	67	67			
Argentina	19	19	20	20	20	20			
Other	74	95	105	105	105	105	192	192	197
TOTAL ETHANOL	1780	1892	1939	1477	2129	2402	2436	2364	2037
BIODIESEL									
OECD Americas¹	111	128	138	115	123	141	125	172	172
United States	104	121	130	110	117	133	120	159	159
Other	7	7	8	5	5	8			
OECD Europe²	265	257	275	251	275	276	250	297	297
France	47	48	51	49	54	51	44	51	51
Germany	62	58	58	51	58	60	56	64	64
Italy	13	14	26	30	26	21			
Spain	34	36	35	31	32	34	30	42	42
Other	108	101	104	89	105	109	101	114	114
OECD Asia Oceania³	12	14	15	10	17	17	19	16	16
Australia	1	1	1	1	1	1	1	1	1
Other	11	13	14	9	16	17			
Total OECD Biodiesel	388	399	428	376	414	434	395	485	485
Total Non-OECD Biodiesel	293	325	360	360	359	360	360	360	360
Brazil	74	92	97	93	95	106	102	117	93
Argentina*	56	47	48	48	48	48			
Other	163	186	215	220	216	206			
TOTAL BIODIESEL	680	725	788	736	774	795	755	846	846
GLOBAL BIOFUELS	2460	2616	2726	2213	2902	3197	3191	3210	2882

1 As of August 2012 OMR, OECD Americas includes Chile.

2 As of August 2012 OMR, OECD Europe includes Estonia and Slovenia.

3 As of August 2012 OMR, OECD Asia Oceania includes Israel.

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