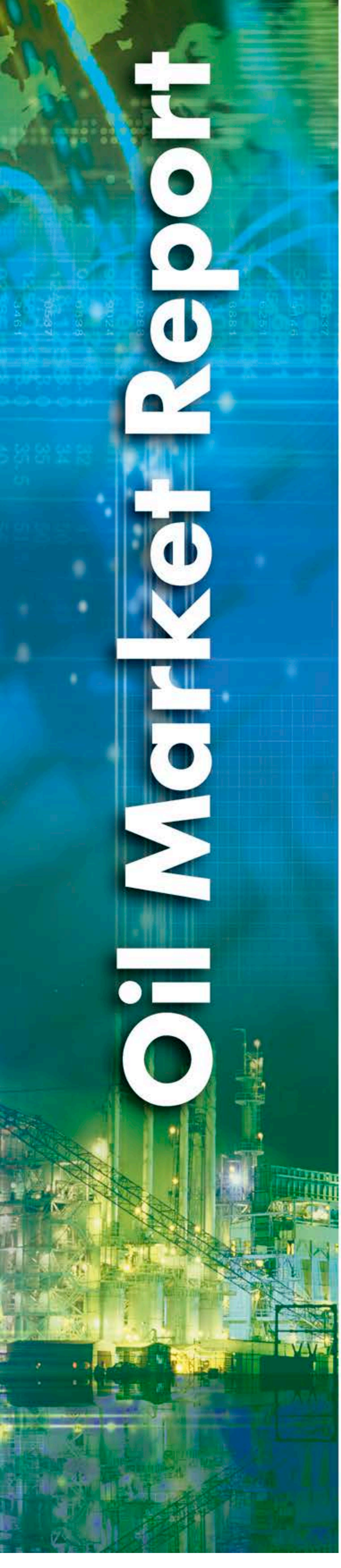

International Energy Agency
Secure Sustainable Together

14 November 2017

HIGHLIGHTS

- **Higher prices and relatively mild early winter temperatures contributed to a downward revision to our demand forecast.** Growth has been revised down by 0.1 mb/d for both 2017 and 2018 and we now see increases of 1.5 mb/d in 2017 (or 1.6%), to 97.7 mb/d, and 1.3 mb/d in 2018 (or 1.3%) to 98.9 mb/d.

- **Global oil supply rose 100 kb/d in October to 97.5 mb/d on higher flows from non-OPEC countries.** Production was 470 kb/d below a year ago, with OPEC supply sharply down from high 4Q16 levels. Non-OPEC supply is expected to rise by 0.7 mb/d in 2017 and 1.4 mb/d next year, led by higher US output.

- **OPEC crude output fell 80 kb/d in October due mainly to lower supply from Algeria, Iraq, and Nigeria.** Output of 32.53 mb/d, the lowest since May, was down 830 kb/d from the record rates seen a year ago. The compliance rate with supply cuts in October was 96% and for the year-to-date it was 87%.

- **Hurricane Harvey contributed to OECD industry stocks falling by 40 mb in September to below 3 000 mb for the first time in two years.** Global stocks dropped by 63 mb in 3Q17, only the second quarterly draw since 2014. In October, stocks drew in the US and likely in China, but rose elsewhere.

- **Benchmark crude prices increased by $1-2/bbl in October versus September and pushed higher in early November,** buoyed by tensions in the Middle East. Oil product markets weakened relative to crude following the return of US refineries to higher throughput levels.

- **For 4Q17, our refining throughput forecast is revised marginally lower to 80.8 mb/d, but refined product inventories are forecast to build as demand seasonally slows down.** Relatively robust refining activity level continues into January and February 2018, with runs forecast to grow 1.1 mb/d y-o-y.

- **Our analysis of global oil balances implies oversupplied crude oil markets in 4Q17 and 1Q18**. While refined product inventories are also forecast to increase, the main oil stock draws are expected from increased seasonal demand for LPG.

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TABLE OF CONTENTS

Another New Normal?

The events in Saudi Arabia have added extra momentum to the rally that has driven oil prices from lows of $45/bbl (Brent) in late June to around $63/bbl recently. To date, we have not seen any impact on the Saudi energy sector. However, we have seen real interruptions in Iraq where shipments from the north fell by an estimated 170 kb/d in October, as well as lower production in Algeria, Nigeria and Venezuela. In recent weeks, we also saw lower-than-expected production in the US, Mexico and the North Sea. These supply disruptions, geopolitical concerns, a growing expectation that the OPEC/non-OPEC output accord will be extended through 2018 at the end of the month, and with demand growth still robust, largely explain firmer prices.

Does it mean the market has found a "new normal" where the accepted floor might have moved from $50/bbl to $60/bbl? This might be a tempting view, assuming supply disturbances will continue and tensions in the Middle East will not ease. However, if these problems do prove to be temporary, a fresh look at the fundamentals confirms the view we expressed last month that the market balance in 2018 does not look as tight as some would like, and there is not in fact a "new normal".

This month's *Report* backs this up. We have reduced our demand numbers by 50 kb/d for 2017 and by 190 kb/d for 2018. The 2017 revision is not very large, although it includes a more significant downward revision in 4Q17 of 311 kb/d. This is partly because of northern hemisphere heating degree day numbers for the early winter season, revised demand data for some Middle East countries e.g. Iraq and Egypt, and modest changes elsewhere. We have also taken general account of prices rising, in broad terms, by about 20% since early September. For 2018, our demand outlook has been adjusted to reflect a lower estimate for heating degree days in the early months plus some impact from higher prices. (*See: Oil demand response to prices*).

For the overall market balance, our changes to demand growth, which remains robust, and supply largely cancel each other out. Using a scenario whereby current levels of OPEC production are maintained, the oil market faces a difficult challenge in 1Q18 with supply expected to exceed demand by 0.6 mb/d followed by another, smaller, surplus of 0.2 mb/d in 2Q18. The reality is that even after some modest reductions to growth, non-OPEC production will follow this year's 0.7 mb/d growth with 1.4 mb/d of additional production in 2018 and next year's demand growth will struggle to match this. This is why, absent any geopolitical premium, we may not have seen a "new normal" for oil prices.

Alongside this *Report*, the IEA is also releasing its *World Energy Outlook 2017,* whose horizon extends well beyond the five-year horizon contained in our *Oil Report 2017*, and which examines multiple potential long-term pathways for oil. Each of these scenarios responds to different assumptions about future policies and technologies. One is the "Low Oil Price Case" that examines what it might take to keep prices in a $50/bbl to $70/bbl range all the way through to 2040. The main conditions are: a high resource assumption for US tight oil; widespread up-take of digital and other technologies that help keep a lid on upstream costs; exceptionally rapid growth in the electric car fleet; and a favourable assumption about the ability of the main resource owners to weather the storm of lower revenues.

One of the findings of this *WEO-2017* "Low Oil Price Case" is that even a rapid growth in the electric car fleet is unlikely to have a substantial impact on oil consumption for passenger transport until the mid-2020s. Indeed, in the absence of a major switch in policy direction, there is likely to be continued robust growth in other sectors, including trucks, aviation, maritime transport and petrochemicals. This is a continuation of the strong demand growth we are seeing in our short term oil market analysis.

DEMAND

Summary

- **This month's demand outlook reflects the impact of rising prices and the start of the northern hemisphere winter season.** Higher prices and relatively mild winter temperatures contributed to a downward revision to our demand forecast. Growth has been revised down by 0.1 mb/d for both 2017 and 2018 and we now forecast demand growth of approximately 1.5 mb/d in 2017 (or 1.6%) and 1.3 mb/d in 2018 (or 1.3%).

- New and revised data confirmed **a slowdown in world demand growth to +1.3 mb/d in 3Q17**. The slowdown reflects relatively weak recent data and the impact of hurricanes Harvey and Irma on US oil demand. Growth is expected to accelerate to +1.4 mb/d in 4Q17, even though mild temperatures and rising prices will restrain demand.

- **US data for August was weaker than expected, showing a contraction in demand of 110 kb/d year-on-year (y-o-y) after an increase of 250 kb/d in July.** Gasoline demand growth bounced back 85 kb/d above last year but LPG/ethane demand declined by 190 kb/d after posting an increase of 100 kb/d in July.

- **German oil consumption rose by 50 kb/d y-o-y in September, despite lower diesel and gasoline deliveries.** Total gasoil demand growth stood 65 kb/d above last year, however, supported by high heating oil deliveries while diesel deliveries fell. French oil consumption rose by 70 kb/d y-o-y in September while Italian demand contracted by 80 kb/d on low diesel and gasoline deliveries.

- **Chinese estimated demand surged by 990 kb/d y-o-y in September, supported by strong increases in all products.** China apparent demand has been boosted by strong growth in refinery runs, but we assume that part of the increase in production moved into storage.

- **Indian demand also posted strong growth, increasing by 385 kb/d y-o-y in September.** Demand benefited from an improving economic environment, but part of the growth can be attributed to the weak 2016 numbers. Gasoil and gasoline were the fastest growing products.

Global Oil Demand (2016-2018)

(million barrels per day)*

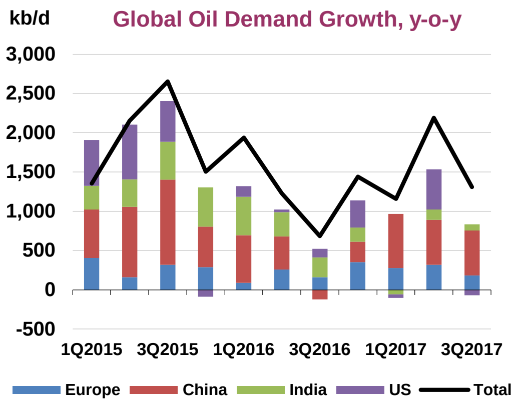
	1Q16	2Q16	3Q16	4Q16	2016	1Q17	2Q17	3Q17	4Q17	2017	1Q18	2Q18	3Q18	4Q18	2018
Africa	4.2	4.2	4.0	4.1	4.1	4.3	4.2	4.1	4.3	4.2	4.5	4.3	4.2	4.4	4.3
Americas	31.1	31.1	31.7	31.4	31.3	30.9	31.5	31.6	31.6	31.4	31.2	31.6	32.0	31.8	31.7
Asia/Pacific	33.4	32.8	32.2	33.3	32.9	34.2	33.9	33.2	34.2	33.9	35.0	34.4	33.8	35.1	34.6
Europe	14.3	14.6	15.2	14.9	14.8	14.6	15.0	15.4	14.9	15.0	14.5	15.0	15.4	15.0	15.0
FSU	4.6	4.6	4.9	4.9	4.8	4.6	4.7	5.0	4.9	4.8	4.7	4.8	5.1	5.0	4.9
Middle East	7.9	8.4	8.7	8.1	8.3	7.9	8.5	8.7	8.2	8.3	8.1	8.6	8.9	8.3	8.5
World	**95.4**	**95.6**	**96.7**	**96.8**	**96.1**	**96.6**	**97.8**	**98.0**	**98.2**	**97.7**	**97.9**	**98.7**	**99.4**	**99.7**	**98.9**
Annual Chg (%)	2.1	1.3	0.7	1.5	1.4	1.2	2.3	1.4	1.5	1.6	1.4	0.9	1.4	1.5	1.3
Annual Chg (mb/d)	1.9	1.2	0.7	1.4	1.3	1.2	2.2	1.3	1.4	1.5	1.3	0.9	1.4	1.5	1.3
Changes from last OMR (mb/d)	0.0	0.0	0.0	0.0	0.0	-0.1	0.0	0.2	-0.3	-0.1	0.0	-0.4	-0.1	-0.2	-0.2

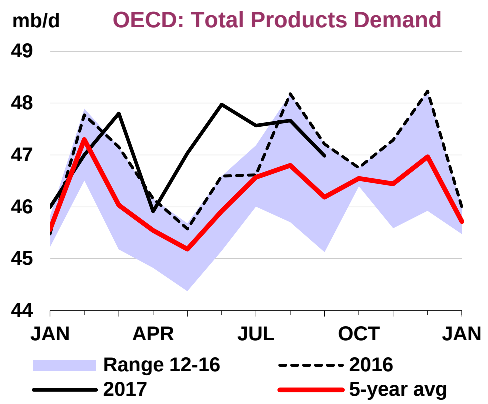
* Including biofuels

Global overview

Projections of global oil product demand in 2017 and 2018 have been revised downwards by, respectively, 50 kb/d and 190 kb/d, to 97.7 mb/d and 98.9 mb/d. The revisions result mainly from higher prices, possibly milder winter weather scenarios and new data for August and September 2017. The current Brent forward curve for 2017 is 20% higher y-o-y and 16% higher y-o-y in 2018. For 2018, the forward curve used in this demand forecast (based on 1 November prices) is on average 10% higher than last month's forward curve. The demand reaction to prices used in our models suggests a downward revision to our global oil demand projections for 2018 compared to our last *Report* of close to 200 kb/d (see *Oil demand response to prices*).

Assumptions regarding winter temperature are crucial for the near term forecast. After two very warm winters, US temperatures for this season are expected to be higher than the historical average but lower than recent winters. October and the start of November were very warm, but temperatures are expected to start to fall and degree day measurements will return to roughly 90% of the historical norm. US winter temperatures, particularly in the northeast, typically have a strong impact on heating oil demand. In Europe, after a relatively mild start, winter temperatures are expected to return to normal in 2018. Globally, warmer temperatures reduced heating oil demand y-o-y in October-November, but are expected to provide some support going forward.





Oil demand response to prices

Oil demand responds to various factors such as economic activity, weather, and energy policies, but price level is surely one of the key drivers. Price elasticites implemented in our models measure the response of oil demand to a change in oil price. In this *Report* we do not forecast oil prices, but we use the forward curve as a price assumption. The recent sharp movement in the curve led to a downward revision to our demand forecast.

For the year 2018, the forward curve used for this *Report* (based on 1 November ICE Brent futures prices) is 16% higher than a year ago and 10% higher than one month ago. With oil demand close to 100 mb/d, and assuming a global oil demand elasticity to Brent prices of -0.04, and everything else equal (which is obviously not the case), the 10% rise in price assumptions since last month's *Report* would trigger a 400 kb/d downward revision to our global oil demand forecast for 2018. Taking into account other factors in our demand forecast and the price elasticities we have in our models - depending on countries and products- in this *Report*, we have made a downward revision of 190 kb/d to 2018 demand.

The table below illustrates the type of elasticities used in our models. They are based on individual econometric estimations for various countries, over the period 2007- 2017.

Brent Price Elasticities	Gasoline	Gasoil	Kerosene	All Products
USA	-0.05		-0.05	-0.03
Europe (average)	-0.07	-0.06	-0.03	-0.04
Asia OECD		-0.08	-0.09	-0.01

Oil demand response to prices (continued)

Demand elasticities to oil prices used in our models are in general lower than those elasticities found in the literature on this topic, because our elasticities are computed versus Brent and not versus domestic prices for different fuels in different countries. Prices paid by consumers are less volatile than crude prices because of taxes and delays in passing through increases (not always passed through in full to consumers due to market competition). We can nevertheless identify a significant response by gasoline demand to Brent prices in the US and Europe, of gasoil demand in Europe and Asia and of kerosene demand in all regions. In the US, gasoline price elasticity is estimated at -0.05, and seems to remain very stable. In Europe, gasoline price elasticities vary from one country to the other, ranging from almost zero in Greece or Italy to -0.14 in France or -0.2 in Belgium and Turkey. Gasoil elasticities are in general lower and nil in the US, as diesel demand is mainly linked to industrial activity and freight transport demand and as such less responsive to prices. Globally, gasoline and diesel demand have negative (Brent) price elasticities in almost all OECD countries. As expected, price elasticities of total oil demand are lower than transport fuel elasticities.

Even with these low elasticities, the recent changes in prices have had a significant impact on demand, which can already be seen in recent OECD data. Brent prices increased by 52% y-o-y on average in Jan-April 2017, 4% y-o-y in May-July 2017 and 16% y-o-y in Aug-Oct 2017. At the same time, OECD demand remained unchanged in Jan-April 2017, rose by 2.7% y-o-y in May-July 2017, and dropped by -0.8% y-o-y in Aug-Sep 2017 as prices resumed growth. Of course, prices do not explain all the demand evolution but they are a significant factor.

Price elasticities in non-OECD countries are more difficult to identify because prices are often regulated – or recently deregulated - and often do not reflect changes in international prices. China, however, with domestic prices following international prices, shows a significant gasoline demand elasticity to prices, -0.06. Several non-OECD countries took the opportunity of lower oil prices from late 2014 onwards to remove or reduce subsidies and reform their domestic pricing policies. As a result, oil demand in some non-OECD countries should now become more responsive to prices and it makes sense to implement standard price elasticities in these countries' models.

OECD

In this *Report*, we have data through August for all OECD countries. For September, preliminary estimates are available for the US, Mexico, Japan, Korea and some European countries. These data confirm a slowdown in OECD demand growth since July.

OECD Demand based on Adjusted Preliminary Submissions - September 2017

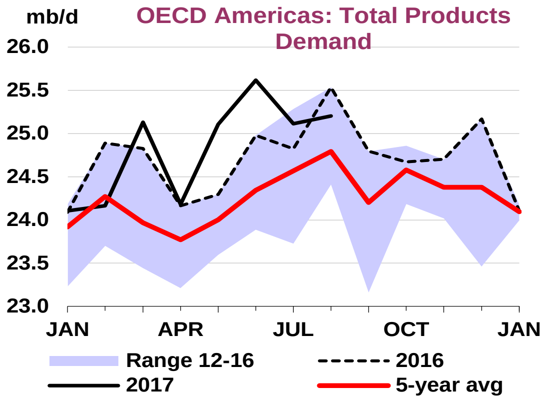
(million barrels per day)

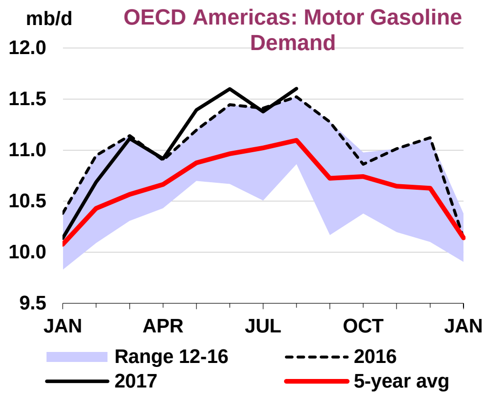
	Gasoline		Jet/Kerosene		Diesel		Other Gasoil		RFO		Other		Total Products	
	mb/d	% pa	mb/d	% pa	mb/d	% pa	mb/d	% pa	mb/d	% pa	mb/d	% pa	mb/d	% pa
OECD Americas*	**11.23**	**-0.4**	**1.94**	**1.4**	**4.55**	**-1.7**	**0.49**	**-5.1**	**0.59**	**14.2**	**5.54**	**-6.70**	**24.34**	**-1.8**
US50	9.46	-0.3	1.66	0.7	3.73	-0.8	0.14	-8.5	0.31	21.0	4.11	-7.77	19.40	-1.8
Canada	0.87	0.6	0.15	6.3	0.30	-3.1	0.28	-3.8	0.04	-10.5	0.82	1.62	2.46	0.1
Mexico	0.77	-3.1	0.08	8.6	0.33	-8.6	0.05	-5.5	0.15	19.1	0.50	-11.69	1.87	-4.8
OECD Europe	**1.97**	**-1.9**	**1.59**	**3.1**	**5.14**	**-1.5**	**1.54**	**12.4**	**0.87**	**1.7**	**3.64**	**1.56**	**14.76**	**1.2**
Germany	0.44	-1.9	0.23	-0.4	0.81	-3.0	0.37	31.4	0.08	-3.3	0.55	-0.73	2.47	2.0
United Kingdom	0.29	-2.9	0.35	0.9	0.51	-1.0	0.15	-5.2	0.03	2.3	0.30	4.75	1.64	-0.3
France	0.19	8.0	0.17	0.5	0.75	1.8	0.31	10.9	0.05	14.2	0.35	2.38	1.81	4.2
Italy	0.17	-9.8	0.11	8.0	0.45	-8.4	0.10	-2.9	0.06	-11.0	0.34	-4.70	1.24	-6.0
Spain	0.11	-2.1	0.15	2.1	0.47	-1.2	0.14	-1.1	0.15	3.5	0.30	1.12	1.32	0.1
OECD Asia & Oceania	**1.56**	**-0.5**	**0.77**	**4.5**	**1.43**	**5.3**	**0.46**	**-4.4**	**0.53**	**-8.8**	**3.14**	**0.68**	**7.88**	**0.6**
Japan	0.90	-0.7	0.38	7.0	0.45	0.7	0.30	-4.1	0.29	-6.2	1.39	-0.78	3.70	-0.6
Korea	0.23	2.1	0.18	4.9	0.44	9.2	0.10	-5.5	0.20	-13.4	1.53	1.77	2.68	1.5
Australia	0.31	-1.2	0.16	1.8	0.48	6.3	0.00	0.0	0.02	-6.7	0.15	6.05	1.12	3.0
OECD Total	**14.77**	**-0.6**	**4.30**	**2.6**	**11.12**	**-0.7**	**2.49**	**5.2**	**1.99**	**1.9**	**12.32**	**-2.54**	**46.98**	**-0.5**

* Including US territories

Americas

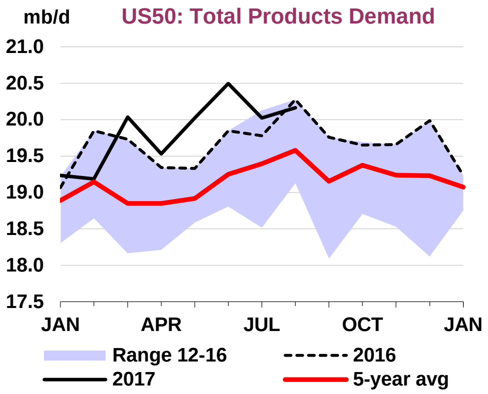
The latest monthly data from the Department of Energy (DOE) showed **US** oil demand contracted by 110 kb/d y-o-y in August compared to an increase of 250 kb/d in July. **Canada's** oil demand also contracted by 80 kb/d y-o-y in August, on lower LPG and other gasoil deliveries. **Mexican** demand continued to decline, by 150 kb/d y-o-y in August and 95 kb/d in September.

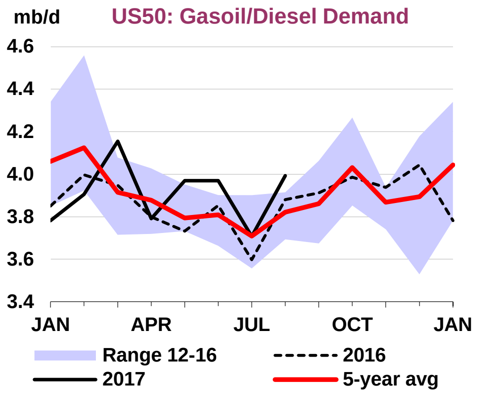




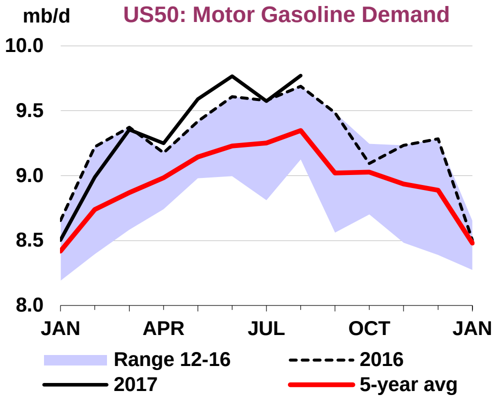
DOE data for August showed **US** gasoline demand increasing by 85 kb/d y-o-y, consistent with a growth of 1.4% y-o-y in travel demand reported by the Department of Transportation. Weekly data suggests that gasoline demand was down 30 kb/d y-o-y in September, possibly reflecting a small impact from the hurricanes.

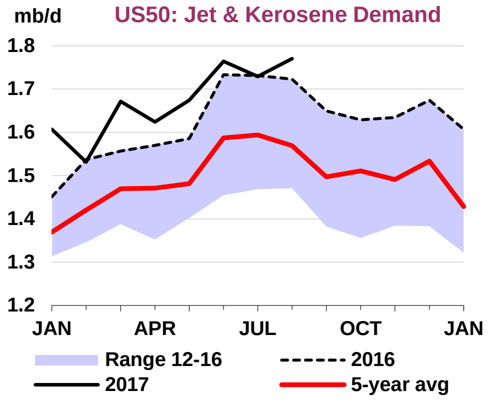
Distillates demand rose by 110 kb/d in August, supported by the y-o-y growth in manufacturing production and higher freight transportation. CPB world trade monitor (Netherlands Bureau for Economic Policy Analysis) showed an increase of 2.5% y-o-y in the volume of US imports in August. It represents a slight slowdown compared to July growth (3.8%). Part of US distillate demand is linked to the volume of imports and the subsequent freight transport demand. In addition, diesel demand benefited from good industrial production, reflected in the US index of Industrial production rising by 1.2 % y-o-y in August and 1.6% y-o-y in September.





US jet fuel demand rose by 50 kb/d y-o-y in August, after a small drop in July. September deliveries will reflect the sharp slowdown in air travel due to hurricanes Harvey and Irma. The International Air Transport Association reported growth in North American international Revenue Passenger Kilometres (RPK) of 0.4% y-o-y in September, sharply down from 6% in August. International traffic (RPK) increased by 5.5% in August and only 3% in September. Domestic traffic (RPK) increased by 6.4% y-o-y in August but contracted by 1.2% in September, as hurricanes reduced flights. Operations at the major airports impacted by the hurricanes have rapidly returned to normal and October demand is likely to reverse September's fall.





LPG/ethane demand contracted by 190 kb/d y-o-y in August, after a significant slowdown in July. The August decline partly reflects the impact of hurricanes at the end of the month. Ethane demand is expected to have further dropped in September, as Hurricane Harvey closed half of the Gulf Coast petrochemical facilities at the start of the month.

Our estimate of total US demand in 3Q17 has been revised down slightly, by 30 kb/d, on weak August data. After a very strong 2Q17, when demand increased by 515 kb/d y-o-y, demand in 3Q17 is expected to be 70 kb/d below last year. Gasoline demand growth will slow to 20 kb/d y-o-y in 3Q17 from 135 kb/d in 2Q17, reflecting the impact of the hurricanes. LPG/ethane demand was also largely impacted by Harvey, down by 160 kb/d y-o-y in 3Q17. Gasoil demand benefited from reconstruction work and the production of electricity by gasoil-fuelled generators after the hurricanes, increasing by 60 kb/d y-o-y in 3Q17. In 4Q17, US oil demand is expected to bounce back to growth of 230 kb/d y-o-y. For 2017 as a whole, US oil demand is expected to grow by 160 kb/d and we expect the same growth in 2018.

Europe

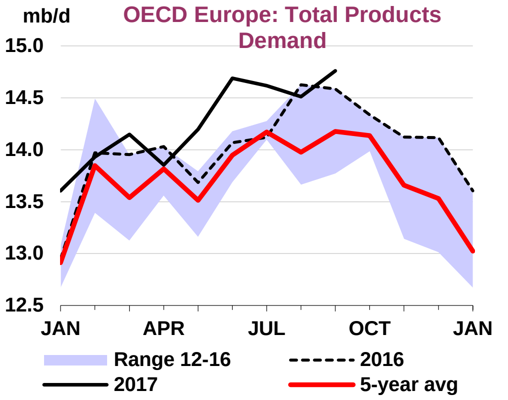
Europe's oil demand contracted by 115 kb/d y-o-y in August after posting growth averaging 540 kb/d in the three previous months. Preliminary data point to a y-o-y increase of 170 kb/d in September.

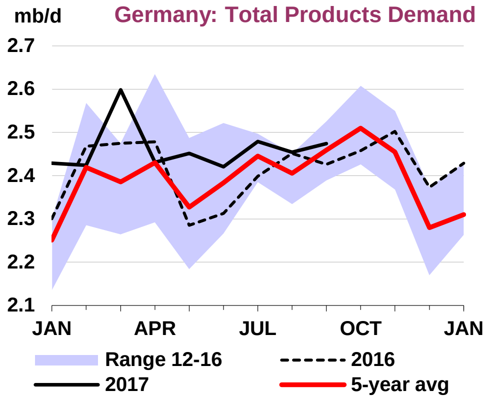
German oil demand rose by 5 kb/d y-o-y in August, as strong heating oil demand offset declines in other products. Preliminary data point to a 50 kb/d increase in September. Total gasoil consumption rose by 25 kb/d in August: preliminary September data indicates that gasoil growth should have accelerated to 65 kb/d in September, supported by strong heating oil demand (90 kb/d) while diesel demand contracted. German gasoline demand rose by 15 kb/d y-o-y in August but contracted by 10 kb/d y-o-y in September. Naphtha growth should have increased to 40 kb/d y-o-y in September, according to preliminary data.

French data shows a slowdown in oil demand growth from 50 kb/d y-o-y in July to 10 kb/d in August. Demand is likely to have increased by 70 kb/d in September. Gasoil demand growth slowed, from 100 kb/d in June to 30 kb/d in July and 5 kb/d in August.

Italy's oil demand rose by 30 kb/d y-o-y in August, supported by strong kerosene deliveries. Gasoline and gasoil demand contracted, however. Preliminary data point to a contraction of 80 kb/d y-o-y in September.

In **Poland**, after strong growth of 90 kb/d in July, oil demand rose by 20 kb/d in August. Most of the July growth was in gasoil, increasing by 80 kb/d. Strong gasoil demand growth in Poland since August 2016 partially reflected better data collection. The y-o-y difference therefore started to narrow in August 2017, with growth falling to 25 kb/d y-o-y.

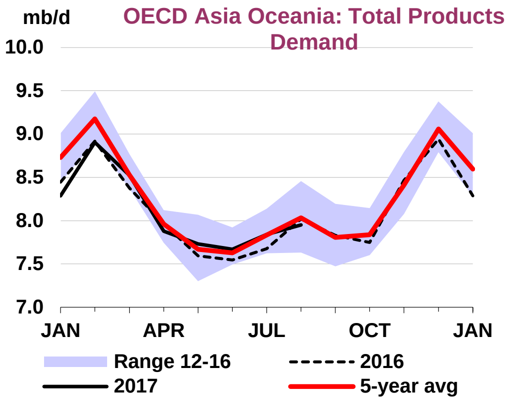


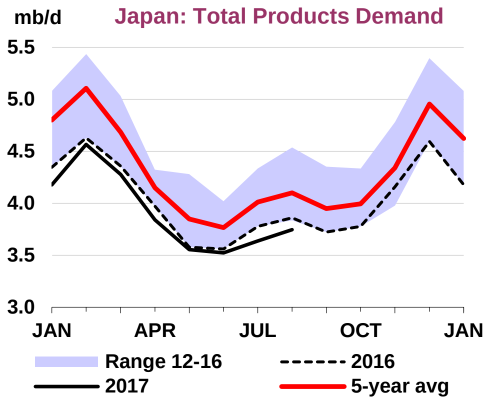


Overall, we expect growth in **European** oil demand of 185 kb/d in 3Q17 and stagnation in 4Q17, reflecting higher prices and the recent slowdown in demand. For 2017, growth should average 195 kb/d, but in 2018 demand will likely fall by 5 kb/d.

Asia Oceania

Asia Oceania demand declined by 70 kb/d y-o-y in August. Gasoline demand dropped by 60 kb/d y-o-y, although gasoil demand rose by 45 kb/d. For September, preliminary data point to a small rebound of 45 kb/d y-o-y.





Japanese oil demand dropped by 115 kb/d y-o-y in August and is expected to have contracted by 20 kb/d in September. Gasoline and gasoil were both weak in August, dropping by 40 kb/d and 20 kb/d respectively. Transport fuel demand continued to fall in September. **South Korean** demand dropped by 70 kb/d y-o-y in August on poor gasoil and gasoline numbers as record rains and floods triggered a fall in transportation activity. **Korea's** oil demand bounced back by 40 kb/d in September, supported by strong naphtha deliveries (increasing by 75 kb/d y-o-y) and a rebound in transport fuel demand.

Australia's gasoil demand rose by 105 kb/d y-o-y in August. Demand has been increasing since the start of 2017, in part supported by the restart of coal mines at the end of 2016. For OECD Asia as a whole, demand is expected to remain unchanged in 2017 and to decline by 145 kb/d in 2018.

Non-OECD

September demand data for the non-OECD area showed a significant rebound in most major countries. In **China**, oil demand grew by 990 kb/d y-o-y in September following growth of 250 kb/d in August. **India's** demand increased by 385 kb/d while **Russia's** demand rose by 60 kb/d. However, for **Brazil** demand growth slowed to 15 kb/d y-o-y.

Non-OECD: Demand by Product

(thousand barrels per day)

	Demand			Annual Chg (kb/d)		Annual Chg (%)	
	1Q17	2Q17	3Q17	2Q17	3Q17	2Q17	3Q17
LPG & Ethane	6,390	6,471	6,274	343	148	5.6	2.4
Naphtha	2,808	2,727	2,636	13	26	0.5	1.0
Motor Gasoline	11,101	11,293	11,183	406	377	3.7	3.5
Jet Fuel & Kerosene	3,184	3,129	3,231	58	89	1.9	2.8
Gas/Diesel Oil	14,063	14,919	14,593	318	285	2.2	2.0
Residual Fuel Oil	5,448	5,362	5,400	6	20	0.1	0.4
Other Products	6,648	6,949	7,280	175	290	2.6	4.1
Total Products	**49,643**	**50,849**	**50,599**	**1,320**	**1,235**	**2.7**	**2.5**

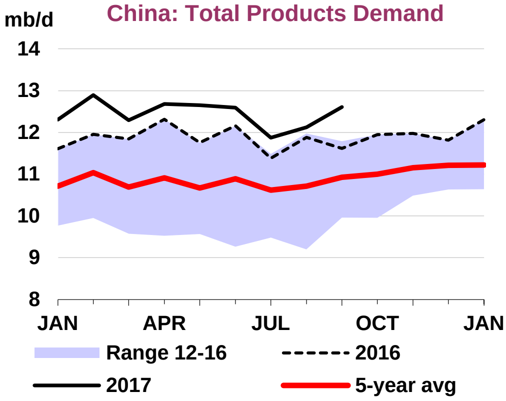
China

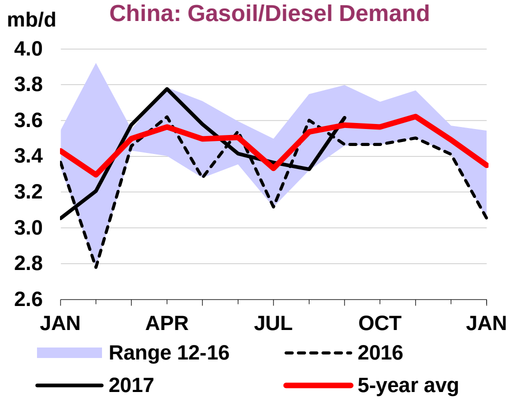
China's oil demand rose by 990 kb/d y-o-y in September after growth of 250 kb/d in August. Gains were distributed over all products, with particularly strong increases in gasoline and gasoil demand. Data have been adjusted this month, to reflect stockbuilds of finished and unfinished products that is likely to have taken place in September.

For China, we publish apparent demand numbers, derived from refinery production, trade, and stock changes. According to National Bureau of Statistics data, in September, refinery runs rose by 910 kb/d month-on-month (m-o-m) and 1 350 kb/d y-o-y. We estimate that refined product output in September rose by 955 kb/d m-o-m and 1 360 kb/d y-o-y. The increase in runs mainly reflects the start-up of new capacity in Yunnan and Guangdong, and a higher utilisation rate in Shandong. Inventories reported by *China Oil Gas and Petrochemicals* drew by roughly 140 kb/d during the month and net product imports rose by 250 kb/d. This data implies an implausible increase of 1.8 mb/d in Chinese apparent demand in September.

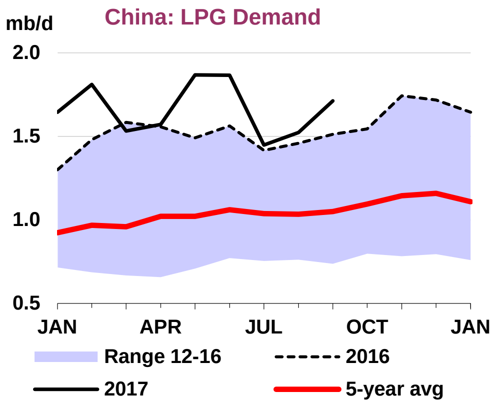
As such, we assume that a large part of the additional production ended up in storage, not reported in official data (naphtha, blending components and other products or independent storage). This assumption is supported by press reports of independent stocking of gasoil to take advantage of price increases ahead of a change in off-road specifications. China has brought forward the implementation of the new standards for off-road diesel with maximum sulphur content of 10 ppm from 50 ppm to 1st November 2017 from 1 January 2018. Off-road gasoil is used by the mining, construction, fishing, and agriculture sectors and represents 30% of China's gasoil consumption.

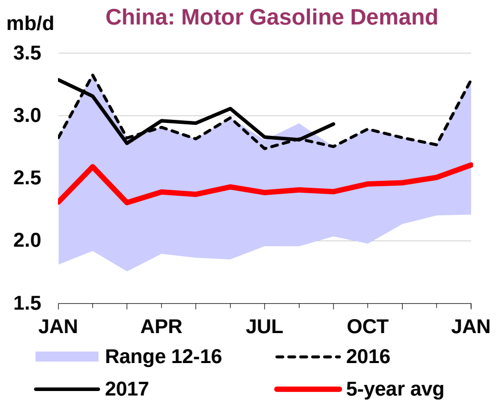
With our inventory build assumptions, Chinese demand growth has been estimated at 990 kb/d in September, still very high. It is partly explained by the Mid-Autumn festival and the anticipation of the Golden Week holiday at the start of October, which support jet fuel and gasoline demand.





Gasoline and gasoil demand rose by 180 kb/d and 150 kb/d y-o-y in September, after posting drops of 10 kb/d and 275 kb/d in August, respectively.





October demand growth looks weaker, with restrictions to the use of trucks ahead of the 19th National Congress of the Communist Party of China in mid-October, reducing diesel demand. Some factories and mining and construction projects in Shandong and north China have also been instructed to cut or suspend operations from mid-October to reduce local air pollution. In addition, recent trade data point to a slowdown in growth in October. Preliminary numbers suggest that China imported 7.3 mb/d of crude oil in October, a sharp drop from the 9 mb/d seen in September. We assume that the surge in September apparent demand will not be replicated, and on that basis we expect Chinese growth to be around 560 kb/d in 2017, slowing to 330 kb/d in 2018.

China: Demand by Product

(thousand barrels per day)

	Demand			Annual Chg (kb/d)		Annual Chg (%)	
	2016	2017	2018	2017	2018	2017	2018
LPG & Ethane	1,531	1,679	1,730	148	51	9.6	3.1
Naphtha	1,093	1,116	1,135	23	19	2.1	1.7
Motor Gasoline	2,870	2,965	3,030	95	65	3.3	2.2
Jet Fuel & Kerosene	656	712	749	56	38	8.5	5.3
Gas/Diesel Oil	3,386	3,452	3,553	67	100	2.0	2.9
Residual Fuel Oil	339	354	362	16	8	4.6	2.3
Other Products	1,977	2,133	2,184	156	51	7.9	2.4
Total Products	**11,851**	**12,411**	**12,744**	**560**	**333**	**4.7**	**2.7**

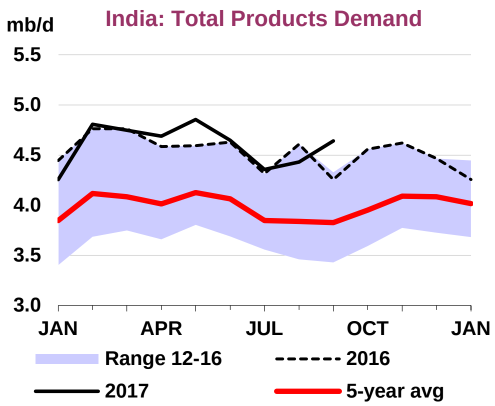
Other Non-OECD

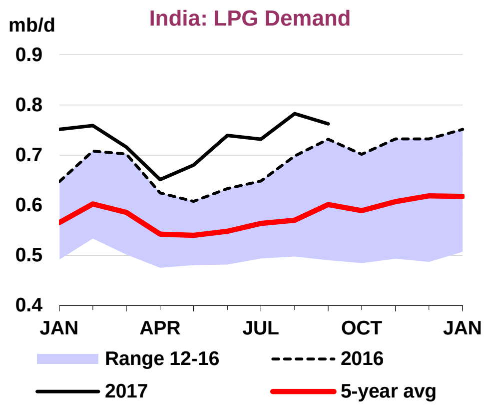
India's oil demand rose by 385 kb/d in September in comparison with a low 2016 number, after a drop of 180 kb/d in August. It was the highest y-o-y growth since August 2016. Also, in general the Indian economic environment seems to be improving.

Gasoil demand jumped by 210 kb/d y-o-y, after declining by 60 kb/d in August. Diesel demand has been impacted by severe flooding in recent months, reducing freight and manufacturing activities. Gasoil demand bounced back in September on an improving economic environment. The negative impact of demonetisation seems to be over, and the impact of the Goods and Services Tax (GST) reform is decreasing.

Gasoline demand rose by 95 kb/d during the month, as vehicle sales bounced back after the GST implementation (lowering taxes on vehicles). Passenger vehicle sales grew by more than 9% in September and for two wheelers by 11%.

LPG demand rose by 30 kb/d in September, supported by a government initiative to encourage use of the fuel by households at the expense of kerosene. The new GST tax of 5% imposed on LPG since July may, however, slow demand. Jet kerosene, by contrast, saw demand increase by 30 kb/d in September. Domestic air traffic growth slowed to 15.5% y-o-y in September but remained higher than 10% for the 37th consecutive month. We expect total Indian oil demand to increase by 100 kb/d in 2017, accelerating to 275 kb/d in 2018.

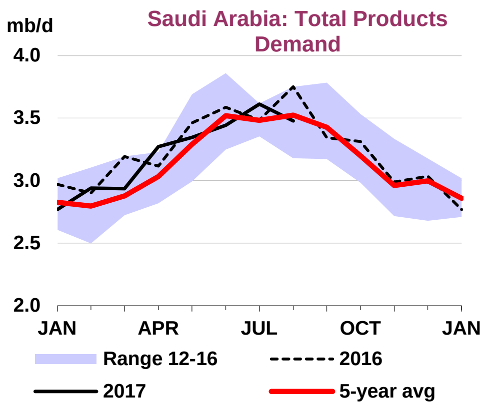


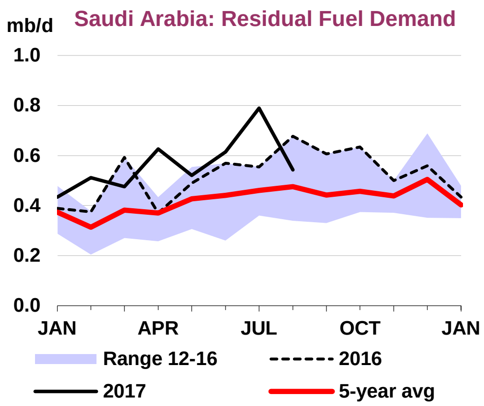


Saudi Arabian oil demand dropped by 275 kb/d in August, on weak fuel and gasoil deliveries. Fuel oil demand decreased by 135 kb/d y-o-y and gasoil deliveries by 185 kb/d. Since the start of 2016 fuel oil demand has been posting very strong increases at the expense of direct crude use (in particular in 2016) and gasoil (in 2017). Gasoil demand is also penalised by a sharp drop in economic activity, particularly in the construction sector.

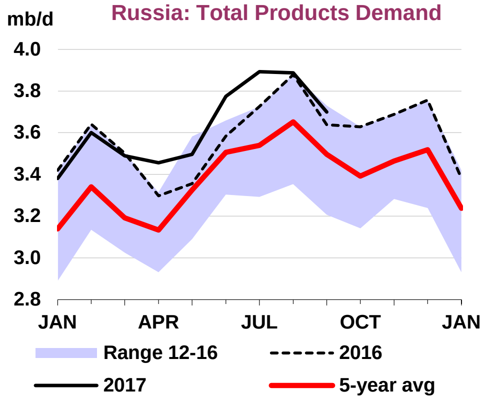
The Saudi government was reportedly considering an increase in gasoline prices to close to parity with international prices in November. Under the reform, prices for other fuels would be gradually raised between 2018 and 2021.

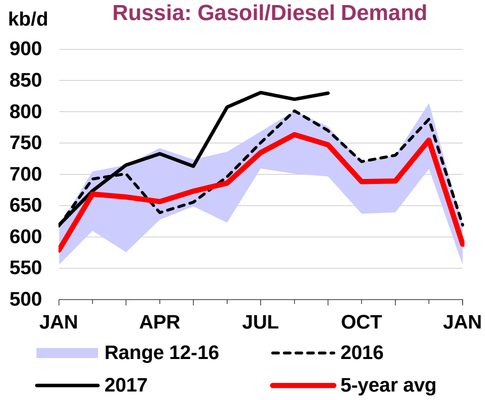
Overall, Saudi oil demand is expected to contract by 40 kb/d in 2017 and to bounce back by 60 kb/d in 2018. In 2016 and 2017, gasoil demand has been particularly affected by the slowdown in construction projects. In 2018, gasoil demand should benefit from an improved economic environment but will continue to be penalised by the switch to natural gas and fuel oil in the power sector.





Russian oil product demand rose by 60 kb/d in September, although LPG and naphtha deliveries contracted by 20 kb/d and 30 kb/d, respectively. Current weather forecasts suggest a warm winter in Russia, reducing demand for heating fuels. Overall, Russian oil product demand is forecast to increase by 50 kb/d in 2017 and 40 kb/d 2018.





Brazil's oil demand rose by 15 kb/d in September, supported by strong gasoil and fuel oil deliveries. Fuel sales have been increasing y-o-y for the past four months, supported by the ongoing economic recovery. Gasoil deliveries rose by 15 kb/d and fuel oil deliveries by 25 kb/d. Brazil's oil demand is expected to increase by 5 kb/d in 2017 and 55 kb/d in 2018.

Non-OECD: Demand by Region

(thousand barrels per day)

	Demand			Annual Chg (kb/d)		Annual Chg (%)	
	1Q17	2Q17	3Q17	2Q17	3Q17	2Q17	3Q17
Africa	4,350	4,223	4,119	40	96	0.9	2.4
Asia	25,626	26,107	25,277	1,026	935	4.1	3.8
FSU	4,600	4,748	5,028	188	106	4.1	2.2
Latin America	6,445	6,568	6,673	-9	18	-0.1	0.3
Middle East	7,918	8,464	8,748	61	48	0.7	0.6
Non-OECD Europe	703	738	752	15	32	2.0	4.4
Total Products	**49,643**	**50,849**	**50,599**	**1,320**	**1,235**	**2.7**	**2.5**

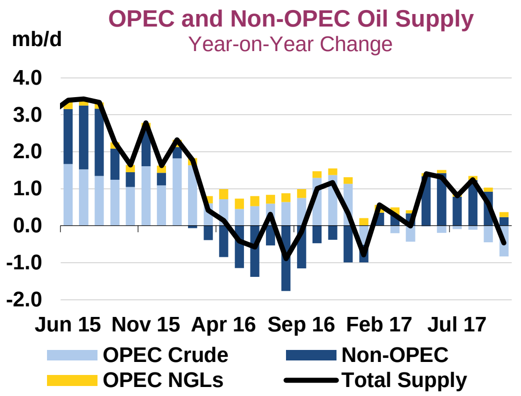
SUPPLY

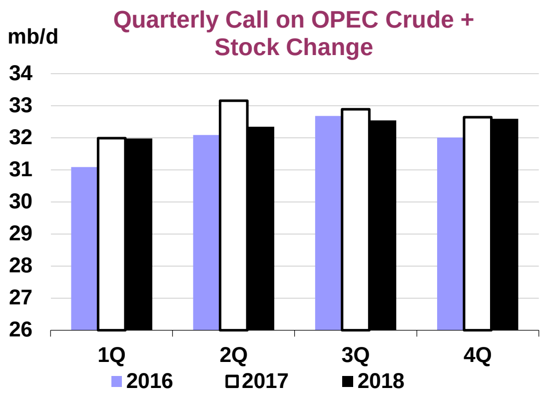
Summary

- **Global oil supply rose 100 kb/d in October to 97.5 mb/d due to higher flows from non-OPEC.** Production was 470 kb/d below a year ago, with OPEC supply sharply down from lofty 4Q16 rates.

- **OPEC crude output fell 80 kb/d in October due mostly to lower supply from Iraq, Algeria and Nigeria.** Output of 32.53 mb/d, the lowest since May, was down 830 kb/d on a year ago when OPEC was pumping at record rates. Lower flows from members subject to supply cuts raised compliance to 96% in October, the highest since the deal began in January, and lifted the year-to-date rate to 87%.

- **OPEC and non-OPEC participants meet on 30 November to discuss whether to extend supply cuts beyond 1Q18.** Saudi Arabia, which - with Russia - drove through the deal, is prepared to prolong it. As for market balances, a 4Q17 requirement of 32.6 mb/d for OPEC crude implies a slight draw in inventories. In 1Q18, however, the call drops to 32 mb/d, more than 500 kb/d below current output**.**





- **Non-OPEC supplies rose 205 kb/d in October, as North Sea and Mexican production recovered from** maintenance and weather related disruptions a month earlier. Hurricane shut-ins once again capped US output while Russian flows inched marginally higher. At 58.05 mb/d, total non-OPEC production stood 225 kb/d above a year ago, its lowest level of growth since the start of the year.

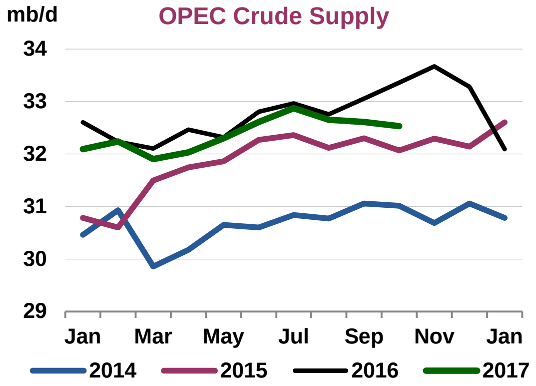
- **Non-OPEC oil production is forecast to expand by 0.7 mb/d on average in 2017 and 1.4 mb/d next year.** Gains stem primarily from the US, which despite a recent reduction in the number of active drilling rigs, is expected to see continued expansion. Higher prices should support an acceleration in completion rates going into 2018, resulting in average US crude oil production growth of 370 kb/d this year and 790 kb/d in 2018.

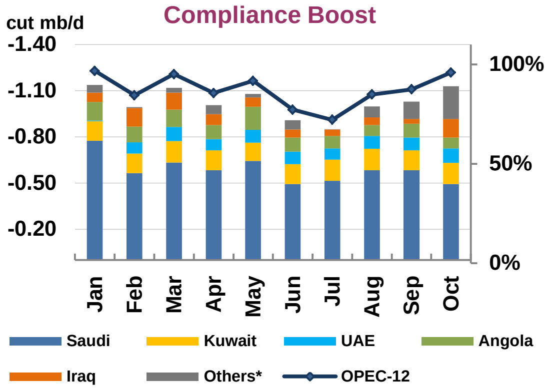
- **Adherence to agreed output cuts from the ten non-OPEC countries party to the supply cut deal reached 107% in October, down from an upwardly revised 142% in September.** Russian compliance slipped to 98% from 104% a month earlier. Mexican output rose from an exceptionally and unexpected low September level. Production problems at the Kashagan field likely saw Kazakhstan output move lower. Year-to-date, the group's compliance rate is estimated to have averaged 81%.

All world oil supply data for October discussed in this report are IEA estimates. Estimates for OPEC countries, Alaska, Azerbaijan, Mexico, Russia and Peru are supported by preliminary October supply data.

OPEC crude oil supply

OPEC supply declined 80 kb/d in October to 32.53 mb/d, the lowest in five months, as production fell in Iraq, Algeria and Nigeria. Compliance with supply cuts rose to 96%, the highest since the deal commenced in January, lifting the year-to-date performance rate to 87%. OPEC and non-OPEC participants meet on 30 November to discuss whether to extend cuts beyond March 2018, when the deal expires. Saudi Crown Prince Mohammed bin Salman, who has launched a high-profile anti-corruption drive, has thrown his weight behind an extension.





In the meantime, October data show Iraq, including the Kurdistan Regional Government (KRG), posting the biggest month-on-month (m-o-m) decline. Supplies from northern Iraq fell after Iraqi forces regained control over oil fields in and around Kirkuk from Kurdish fighters (see *Iraq reclaims northern fields from Kurds, exports fall*). Operations at the core fields of Bai Hassan and Avana have been suspended. Supply from the south, which pumps most of Iraq's crude, was increased to compensate for lower northern exports. The overall monthly decline was 90 kb/d, which raised Iraqi compliance in October to 58%, the highest this year.

In Algeria, output fell by 60 kb/d due to scheduled oil field maintenance, boosting compliance to 178%. Flows from Iran slipped by 30 kb/d as crude oil exports declined. Production in economically battered Venezuela drifted lower and was down 180 kb/d from January levels. Saudi Arabia pumped 80 kb/d more in October as higher crude shipments to world markets offset lower domestic consumption. Supply from Angola edged up to 1.68 mb/d, with tanker tracking data showing a surge in exports.

Combined output from Libya and Nigeria, both exempt from supply cuts, was slightly higher in October. Supply from Nigeria decreased by 50 kb/d due to lower shipments of Bonny Light crude and delayed loadings on other grades. Libyan flows, however, rose by 70 kb/d to 990 kb/d – within sight of July's four-year peak above 1 mb/d - due to steadier flows from the Sharara oil field. The two African producers have added a combined 700 kb/d from springtime lows, thus diluting the impact of OPEC's output reduction. Their recovery is fragile, however. Nigerian militants have called off a year-long ceasefire and threatened to resume oil sector attacks, while a security breach at Libya's Sharara may have threatened production.

Output from all 14 OPEC members was down 830 kb/d on a year ago, when the group's Middle East producers were pumping at the highest levels ever. The largest year-on-year (y-o-y) declines were posted by Saudi Arabia (510 kb/d), Venezuela (240 kb/d), Kuwait and the UAE (each down 230 kb/d). Libyan output was up 480 kb/d y-o-y, Angolan supply stood 170 kb/d higher while Nigerian flows were up 110 kb/d. As for the market balances, the call on OPEC crude declines to 32.6 mb/d in 4Q17, more than 0.1 mb/d above October's output. However, the requirement falls to 32 mb/d during the first quarter of next year.

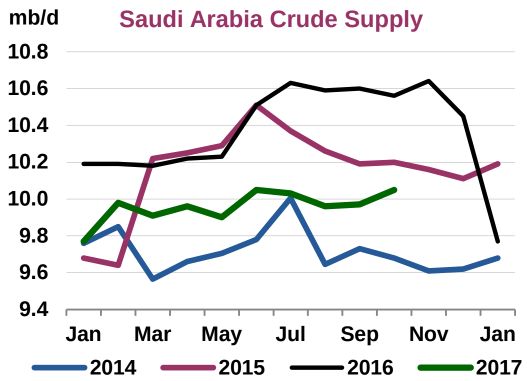
OPEC Crude Production

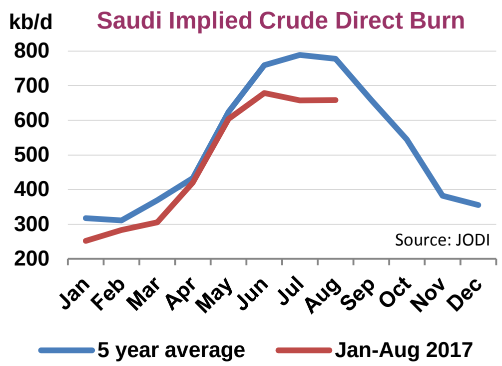
(million barrels per day)

	Sep 2017 Supply	Oct 2017 Supply	Supply Baseline[1]	Agreed Cut	October Actual Cut[2]	September Compliance	October Compliance	2017 Average Compliance
Algeria	1.06	1.00	1.09	-0.050	-0.09	58%	178%	74%
Angola	1.66	1.68	1.75	-0.078	-0.07	117%	91%	126%
Ecuador	0.54	0.54	0.55	-0.026	-0.01	31%	31%	62%
Equatorial Guinea	0.13	0.13	0.14	-0.012	-0.01	83%	83%	123%
Gabon	0.19	0.20	0.20	-0.009	0.00	133%	22%	39%
Iran[3]	3.84	3.81	3.71	0.090	0.10	NA	NA	NA
Iraq	4.53	4.44	4.56	-0.210	-0.12	15%	58%	34%
Kuwait	2.71	2.70	2.84	-0.131	-0.14	98%	105%	100%
Qatar	0.58	0.60	0.65	-0.030	-0.05	227%	160%	137%
Saudi Arabia	9.97	10.05	10.54	-0.486	-0.49	118%	102%	121%
UAE	2.93	2.92	3.01	-0.139	-0.09	60%	67%	53%
Venezuela	1.94	1.91	2.07	-0.095	-0.16	134%	165%	43%
Total OPEC 12	**30.08**	**29.98**	**31.11**	**-1.176**	**-1.13**	**87%**	**96%**	**87%**
Libya[4]	0.92	0.99						
Nigeria[4]	1.61	1.56						
Total OPEC	**32.61**	**32.53**						

1 Based on October 2016 OPEC secondary source figures, except Angola which is based on September 2016.
2 From OPEC supply baseline.
3 Iran was given a slight increase.
4 Libya and Nigeria are exempt from cuts.

Supply from **Saudi Arabia** rose 80 kb/d in October to 10.05 mb/d, as higher shipments to world markets more than offset lower internal demand. Exports typically rise in the fourth quarter after dropping during the summer when more oil is consumed in domestic power plants and as global refiners return from maintenance and purchase additional crude. Preliminary tanker tracking data show Saudi shipments climbing more than 200 kb/d m-o-m. Despite the higher exports, the Kingdom has stayed below its supply target since the OPEC cut commenced at the start of the year.





Latest official data from the Joint Organisations Data Initiative (JODI) show shipments of crude in August inched up 15 kb/d to 6.7 mb/d, holding at the lowest level in three years. Exports were about 7 mb/d during the first eight months of this year, 500 kb/d below the same period in 2016. Saudi Aramco has, for the most part, sustained supplies to customers in Asia but cut exports to the US to the bare minimum to stay below its OPEC supply target. It increased sharply the official selling price for December loadings of Arab Light for Asia but made only slight upward adjustments to the US.

On the domestic market, the amount of crude burned in power plants showed a lower year-on-year (y-o-y) trend, with 660 kb/d used in August compared to 740 kb/d a year ago. In 2016, about 630 kb/d of crude was used during the peak 2Q-3Q period.

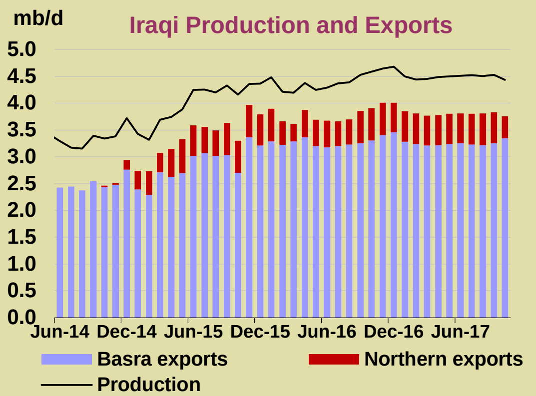
Crown Prince Mohammed bin Salman's anti-corruption drive has not affected Saudi supply and, based on recent statements, we do not expect a change in energy policy. The crown prince supports an extension of OPEC/non-OPEC supply cuts and insists the listing of part of Saudi Aramco is on track for next year.

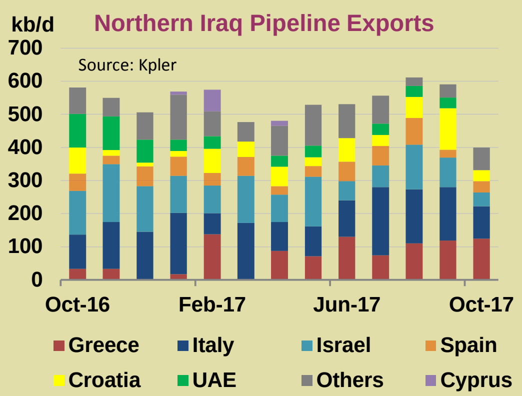
Output in neighbouring Gulf countries was relatively steady. Production in both **Kuwait** and the **UAE** dipped a touch to 2.7 mb/d and 2.92 mb/d, respectively. **Qatari** flows edged up 20 kb/d to 600 kb/d. In the UAE, the Abu Dhabi National Oil Co (Adnoc) is in final discussions with companies to manage the offshore fields run by the Abu Dhabi Marine Operation Co (Adma-Opco) concession, which expires in March 2018. Adnoc reportedly is mulling carving the concession, which accounts for roughly a quarter of the UAE's output, into individual fields.

Iraq reclaims northern fields from Kurds, exports fall

Production from Iraq fell by 90 kb/d in October to 4.44 mb/d after Iraqi forces regained control over the oil fields of Kirkuk in the middle of the month, leading to a sharp reduction in northern exports. Compliance with OPEC cuts consequently rose to 58%, the highest this year. Compared to a year ago, output was down 150 kb/d.

To help compensate for the reduction in northern flows, Baghdad raised shipments from the south by 100 kb/d in October to 3.35 mb/d, the highest rate since December 2016. Total crude exports were down 70 kb/d in October to 3.76 mb/d. Sales of northern crude via the KRG's pipeline to Turkey have fallen more than 300 kb/d since mid-October, when Iraqi federal forces reclaimed core oil fields that had made up almost half of KRG-controlled output since mid-2014. On average for October, roughly 410 kb/d was exported (down 170 kb/d m-o-m) after Baghdad halted operations at Bai Hassan and Avana ostensibly until an export deal can be reached with the KRG. Another 40 kb/d was trucked to Turkey. For a fourth straight month, there were no federal exports from Turkey's Ceyhan terminal. So far in November, shipments from the north are running at around 200 kb/d, according to tanker tracking data.





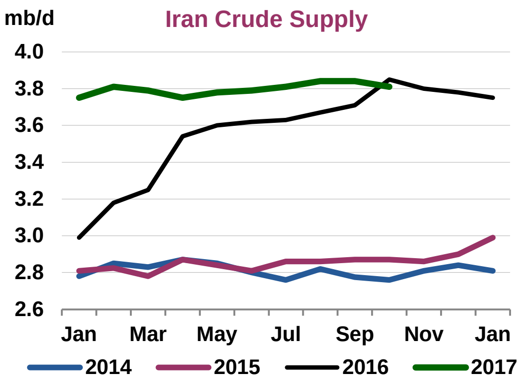
Iraqi oil ministry officials have suggested they are nearing a deal with the Kurds for the State Oil Marketing Organization (SOMO) to handle all northern oil sales. If such an agreement is reached, output from Bai Hassan and the Avana Dome of the Kirkuk oil field is expected to return to full capacity. Baghdad also plans to repair and reopen its oil pipeline from the fields of Kirkuk to Ceyhan in the hopes of bypassing Kurdistan. Iraq halted use of the route in 2014 after the so-called Islamic State swept through the region. Repairs are likely to take some time as the line has suffered extensive damage.

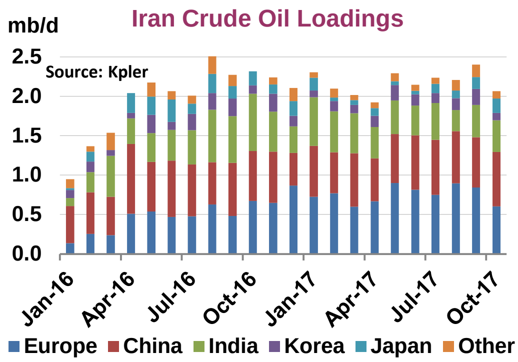
Iraq's military operation to regain disputed land and oil fields in and around Kirkuk from the KRG was triggered by Erbil's end-September independence referendum. Apart from the re-claimed Bai Hassan and Avana fields (with combined capacity of 280 kb/d), the federal North Oil Co (NOC) is producing about 150 kb/d from the Baba Dome of the Kirkuk field, as well as the fields of Jambour and Khabbaz. Much of that output has been moving to refineries in federal and Kurdish territory. The KRG's export stream is now sourced mostly from the 100 kb/d Khurmala dome of the Kirkuk field as well as Tawke and Taq Taq, which has been in sharp decline.

In southern Iraq, which provides most of the country's supply, export capacity has been raised to 4.6 mb/d with the addition of a new, 900 kb/d single point mooring (SPM).

Production in **Iran** slipped 30 kb/d in October to 3.81 mb/d, 40 kb/d below a year ago. Shipments of crude appeared to fall heavily, down more than 300 kb/d to around 2.1 mb/d, according to preliminary tanker tracking reports.

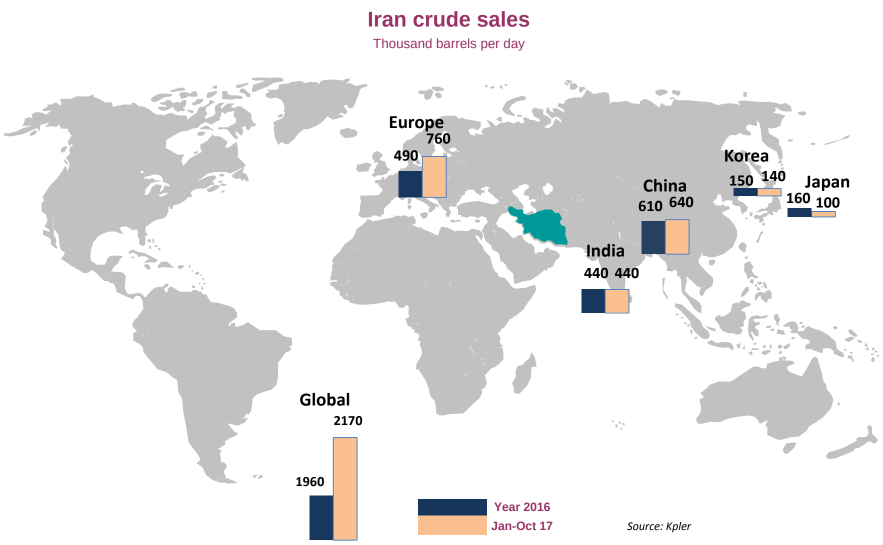
On the upstream front, Tehran is seeking to lure foreign investors into its oil and gas sector despite uncertainty over US sanctions policy. Total has already finalised a deal for the South Pars 11 project, and Tehran hopes to secure another 10 deals by the end of March 2018. Total has said it remains committed to the project despite the possibility of renewed sanctions. It hopes to have more clarity on the US position in the coming months before it lines up work for South Pars.





Iran is hoping to award a contract to develop the onshore Azadegan oil field by the middle of next year. International and Iranian companies are seeking to form consortia to bid for a project to boost production to around 650 kb/d. Pre-selected companies have until the end of January to submit bids for the field that straddles the border with Iraq's Majnoon. Also on the block will be the neighbouring fields of Yadavaran, Ab Teymour and Mansouri. Together with Azadegan, these fields in the southeastern Khuzestan province could produce 2 mb/d, according to Iranian officials.

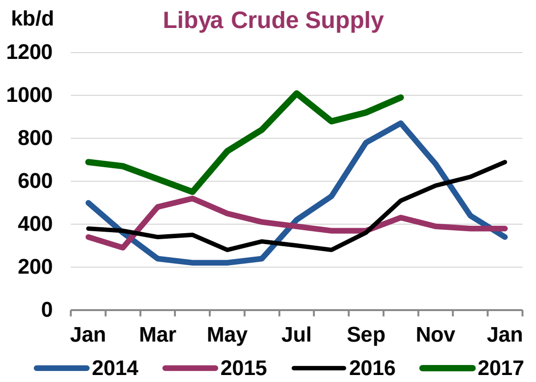
Tentative progress in the upstream sector was made after Rosneft and the National Iranian Oil Co (NIOC) agreed a preliminary deal, signed during President Vladimir Putin's trip to Tehran, to work on strategic projects worth up to $30 billion. The potential cooperation, which could result in production of more than 1 mb/d, would build up Rosneft's position in the Middle East, which was also bolstered by its acquisition of a majority stake in the KRG's oil pipeline.

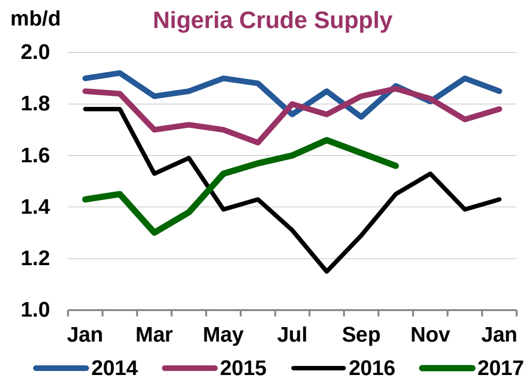


As for crude oil sales, shipments during October tumbled by more than 300 kb/d to around 2.1 mb/d as customers in Europe and Korea slowed their purchases, according to preliminary tanker tracking data. The amount of oil stored at sea declined by 1 mb to 2 mb – well down from 26 mb a year ago. Exports to Europe dropped by 240 kb/d and by 110 kb/d to Korea. Liftings to China rose by 50 kb/d and increased by 30 kb/d to Japan.

Average crude oil sales of 2.17 mb/d from January through October were 200 kb/d higher than the average for 2016. Shipments into Europe were up 260 kb/d to 760 kb/d, roughly the same level NIOC was supplying before tighter sanctions took effect in 2012. The most substantial decrease was to Japan, where exports fell by 60 kb/d to 100 kb/d.

Libyan production recovered further in October, rising 70 kb/d to 990 kb/d thanks to more stable flows from its largest field, Sharara. The field, which has been producing close to capacity at around 300 kb/d, has been shut on several occasions due to protests by armed groups. It remains vulnerable, however, on 5 November there was a security breach at the southern field. It was unclear whether production was affected.



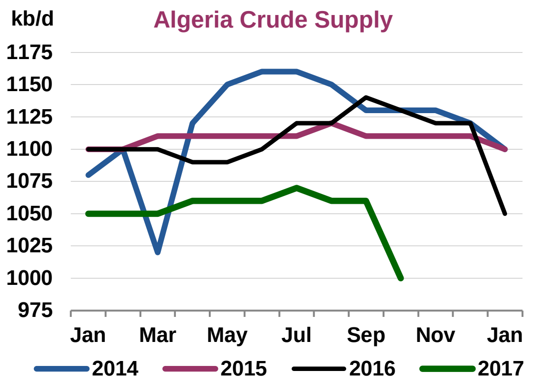


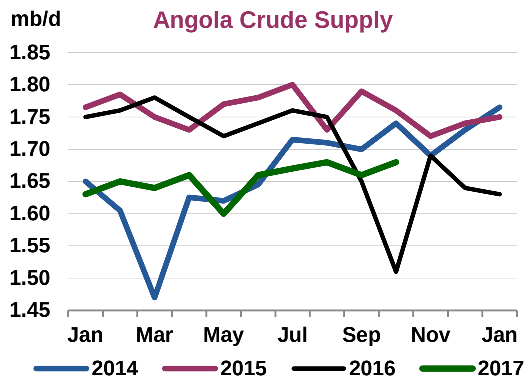
Ongoing security and technical challenges along with a shortage of cash will make it challenging to sustain production at July's rate of 1 mb/d. Libya's National Oil Corp (NOC) has received only a quarter of its 2017 budget, which is frustrating production plans, according to Chairman Mustafa Sanalla. That makes the end-year goal of pumping 1.25 mb/d "very difficult to achieve", he was reported as saying. Infrastructure issues are also dogging the sector: 12 out of 19 storage tanks at the port of Es Sider and half of the 19 tanks at Ras Lanuf are out of operation due to previous militant attacks.

Nigerian production slipped to 1.56 mb/d in October due to slower exports of Bonny Light and other grades. The recovery in production seen since the spring could be at risk after militants threatened to resume their attacks on oil facilities. A break in the violence has allowed flows to rise and to stand 110 kb/d above October 2016, when production was near a 30-year low. The oil minister was due to visit the Niger Delta in the hopes of preventing more attacks. President Muhammadu Buhari meanwhile presented a record 8.6 trillion naira ($28 billion) budget for 2018 to help spur growth in Africa's biggest economy as it comes out of its first recession in a quarter century.

Algerian production fell by 60 kb/d to 1 mb/d in October mostly due to scheduled maintenance at the El Merk oil field. The output decline boosted quota compliance to 178%, its best yet, but the average rate for 2017 of 74% is more indicative of Algeria's performance. Work at the 140 kb/d field, run by Sonatrach and Anadarko, is due to end in November. Crude oil production from **Gabon** inched up 10 kb/d in October to 200 kb/d, while supply from **Equatorial Guinea** held at 130 kb/d.

Output in **Angola** edged up 20 kb/d in October to 1.68 mb/d, which loosened compliance with OPEC cuts to 91%. On average, Angola has turned in strong compliance of 126% so far this year, mostly due to declines from ageing oil fields. October's slight increase in production – based on higher exports of crudes such as Olombendo, Saturno and CLOV – is unlikely to be repeated in November, when maintenance is scheduled. While tanker data suggest that October shipments may have risen to roughly 1.8 mb/d, the November loading schedule indicates exports of only around 1.5 mb/d. More than half of Angola's sweet, heavy crude oil exports are destined for China.

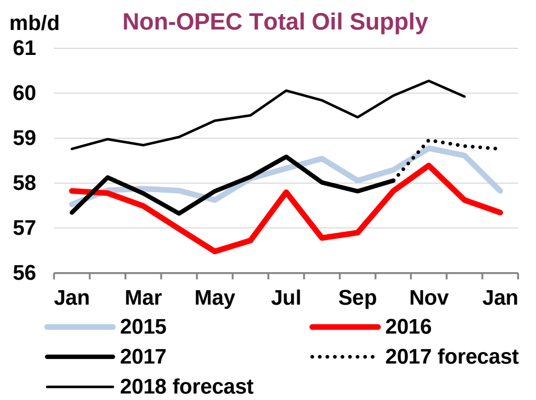


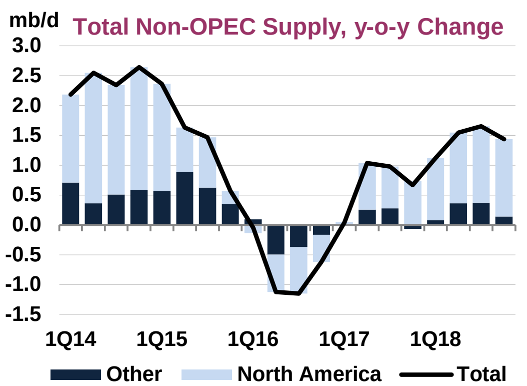


Output from **Venezuela** slipped 30 kb/d to 1.91 mb/d, close to a three-decade low, as cash-strapped Petroleos de Venezuela (PDVSA) finds it ever more challenging to import diluent for blending or to run heavy oil through its upgraders. Production in October was down 180 kb/d from January. Since US sanctions were tightened at the end of August, crude shipments have started to decline. Exports during the first eight months of the year were running at roughly 600 kb/d, but that volume was almost halved in September and October, according to tanker tracking data. Banks reportedly have grown more wary of financing deals involving PDVSA. Supply from **Ecuador** held steady at 540 kb/d.

Non-OPEC overview

Non-OPEC supplies rose 205 kb/d in October, to 58.05 mb/d. Gains came primarily from the North Sea and Mexico, where heavier than expected maintenance and weather related disruptions had curbed output in September. Total non-OPEC production stood 225 kb/d above a year ago, its lowest level of growth since the start of the year.





US crude oil production was once again disrupted during October, as Hurricane Nate, which slammed into the Gulf of Mexico on 8 October, shut in as much as 1.6 mb/d of production at its peak. For the month as a whole, Gulf of Mexico output was cut by 270 kb/d, compared with shutdowns caused by Hurricane Harvey of 80 kb/d in August and 15 kb/d in September. Rising onshore output and higher NGL production likely provided an offset, however. Extended outages also curbed Norwegian oil supply last month, as electrical faults at the Goliat field prevented Eni from restarting the facility after a planned maintenance shutdown. In Kazakhstan, flooding and technical issues related to the start-up of the gas injection program at the Kashagan field forced the cancellation of several scheduled loadings. Following the latest production problems and an announcement by the North Caspian Operating Company that it now expects the field to ramp up towards its 370 kb/d nameplate capacity during 2018, rather than by year-end as previously announced, we have lowered our projections for Kazakh oil production for the remainder of 2017 and 2018. Kazakhstan oil supply is nevertheless seen expanding by 165 kb/d on average this year and by 80 kb/d during 2018.

Non-OPEC Supply

(million barrels per day)

	2016	1Q17	2Q17	3Q17	4Q17	2017	1Q18	2Q18	3Q18	4Q18	2018
Americas	19.5	20.0	19.8	20.0	20.4	20.0	21.0	21.0	21.3	21.7	21.2
Europe	3.5	3.7	3.5	3.4	3.6	3.5	3.7	3.6	3.5	3.6	3.6
Asia Oceania	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Total OECD	23.4	24.0	23.7	23.8	24.4	24.0	25.1	25.0	25.2	25.7	25.3
Former USSR	14.2	14.5	14.4	14.3	14.3	14.4	14.4	14.4	14.3	14.4	14.4
Europe	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	3.9	3.8	3.8	3.9	3.8	3.7	3.7	3.7	3.7
Other Asia	3.6	3.5	3.5	3.4	3.4	3.5	3.4	3.3	3.3	3.3	3.3
Latin America	4.5	4.6	4.5	4.5	4.6	4.6	4.7	4.7	4.8	4.8	4.7
Middle East	1.3	1.2	1.2	1.2	1.3	1.2	1.3	1.3	1.3	1.3	1.3
Africa	1.7	1.7	1.7	1.8	1.8	1.7	1.8	1.8	1.8	1.8	1.8
Total Non-OECD	29.4	29.5	29.3	29.2	29.4	29.4	29.4	29.4	29.4	29.4	29.4
Processing Gains	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
Global Biofuels	2.3	1.9	2.5	2.8	2.5	2.4	2.0	2.6	2.9	2.6	2.5
Total Non-OPEC	57.4	57.7	57.8	58.1	58.6	58.1	58.8	59.3	59.8	60.0	59.5
Annual Chg (mb/d)	-0.7	0.0	1.0	1.0	0.7	0.7	1.1	1.5	1.6	1.4	1.4
Changes from last OMR (mb/d)	0.0	0.0	0.0	0.0	0.0	0.0	-0.2	-0.1	-0.1	-0.1	-0.1

Non-OPEC oil production is expected to see further gains through year-end and into 2018, with growth dominated by the US. Despite a recent reduction in active drilling rigs, led at least in part by companies' renewed focus on capital discipline, recent price gains should support an acceleration in completion rates going into 2018 and halt, if not reverse, the decline in oil rig deployment. Indeed, US producers brought back nine rigs in the week ending 10 November, the highest addition in a week since June.

In all, non-OPEC oil production is forecast to expand by 680 kb/d on average in 2017 and accelerate to 1.44 mb/d next year, of which US crude oil production accounts for roughly 55%. Canada, Brazil and the UK are other notable sources of growth.

Non-OPEC Supply Reduction Commitments

thousand barrels per day (kb/d)

Country	IEA September Oil Output	IEA October Oil Output[2]	IEA Supply Baseline[3]	Agreed Cut	Actual Cut[3]	September Compliance	October Compliance	2017 Average Compliance
Azerbaijan	793	806	815	-35	-9	61%	24%	90%
Kazakhstan	1,827	1,786	1,805	-20	-19	-111%	94%	-95%
Mexico	1,999	2,179	2,400	-100	-221	401%	221%	140%
Oman	983	989	1,020	-45	-31	80%	69%	92%
Russia	11,279	11,303	11,597	-300	-294	106%	98%	80%
Others[1]	1,202	1,209	1,223	-46	-14	46%	30%	20%
Total	**18,083**	**18,272**	**18,858**	**-546**	**-587**	**142%**	**107%**	**81%**

1 Bahrain, Brunei, Malaysia, Sudan and South Sudan

2 October total oil supply, based on market intellience sources and tanker tracking data. Azerbaijan, Mexico and Russia based on preliminary country statistics.

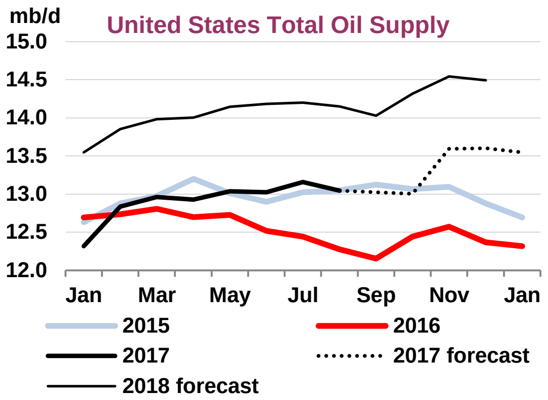
3 Based on IEA October total supply estimates. Kazkahstan November estimate.

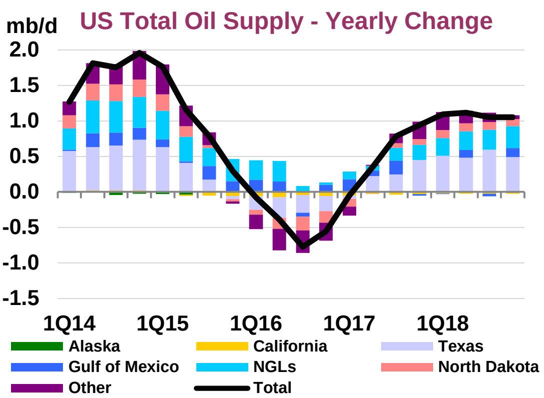
Adherence to agreed output cuts from the ten non-OPEC countries party to the deal reached 107% in October, down from an upwardly revised 142% in September. Russian compliance slipped to 98% from 104% a month earlier, while Mexican output rose from an exceptional and unexpected low September level. Production problems at the Kashagan field could have seen Kazakhstan in compliance with agreed cuts for the first time since January. For the year to date, the group's compliance is estimated to have averaged 81%.

OECD

North America

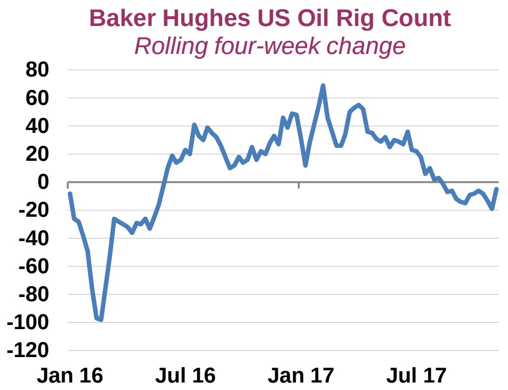
US – August actual: Total US oil production dropped by a smaller than expected 110 kb/d in August, to 13.04 mb/d, as the impact of Hurricane Harvey on Gulf of Mexico and onshore crude and NGLs output in Texas was in part offset by higher volumes from other key producing areas. Crude oil production fell by 31 kb/d, to 9.2 mb/d. Hurricane Harvey caused substantial shut-ins in the Eagle Ford and, to a lesser extent, the Permian, resulting in a 108 kb/d m-o-m decline in output in Texas. Production in North Dakota, Colorado and Oklahoma rose by 37 kb/d, 32 kb/d and 26 kb/d respectively, however, so that in all, Lower 48 onshore production was marginally higher than the previous month. Gulf of Mexico output dropped by 66 kb/d m-o-m as several platforms were shut due to the storm while NGL production fell by 50 kb/d due to the closure of a number of Gulf Coast gas processing plants.

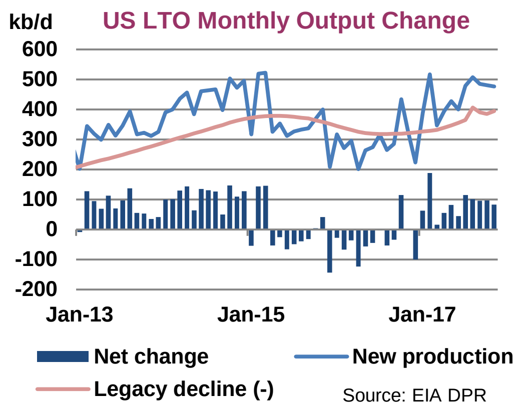




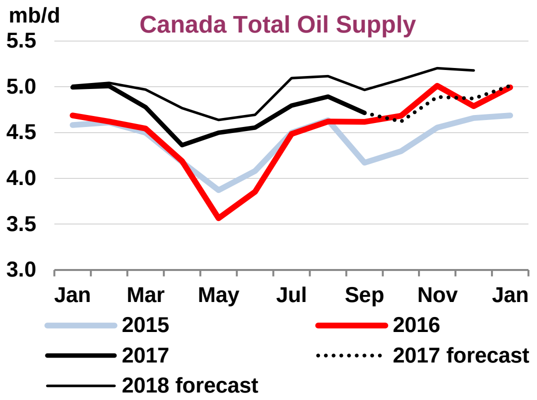
While offshore oil production had resumed normal operations by early September, the impact on onshore crude supply and NGLs from processing plants likely lingered for longer due to the extensive flooding and logistical problems. In October, offshore crude oil output was once again hit by hurricane shutdowns, as Hurricane Nate forced the closure of as much as 1.6 mb/d of output at its peak and 270 kb/d on average for the month. Output was back to normal by mid-month, however, underpinning an expected strong recovery in November supplies. Onshore, producers idled another 21 rigs during October, to leave 729 rigs operating at end month. That is still an increase of 62% from just one year ago and more than double the low point seen in May 2016.

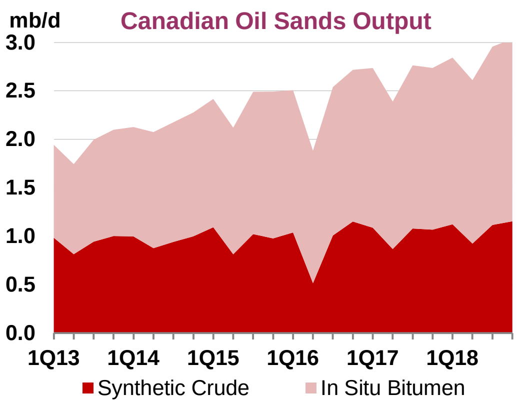
The Energy Information Administration's Drilling Productivity Report shows LTO production expanding by around 90 kb/d per month through November. Recent price gains should halt, if not reverse the decline in the rig count and support an acceleration in completion activity going into 2018. Indeed, US producers brought back nine oil rigs in the week ending 10 November, its highest addition in a week since June. Moreover, at least seven of the largest US shale companies expect to raise output by 10% or more during 4Q17, while delivering higher returns to shareholders at the same time. As such, US oil production is expected to resume its upward trajectory from November, to post average annual growth of 510 kb/d this year and 1.1 mb/d during 2018, of which 370 kb/d and 790 kb/d is crude oil, respectively.





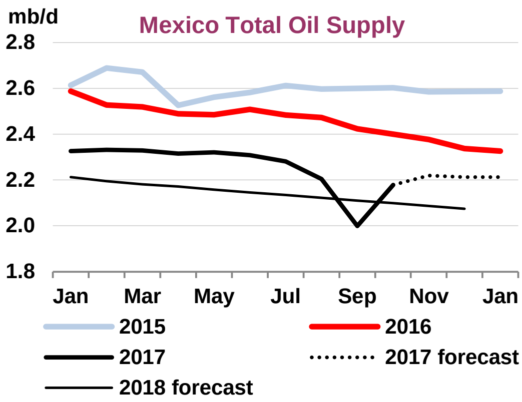
Canada – Newfoundland, Alberta September actual, others estimated: Canadian oil supplies dropped by 175 kb/d in September, to average 4.7 mb/d. Output of synthetic crude oil fell by 175 kb/d, to 1 mb/d, due to maintenance at the Horizon upgrader. Bitumen production declined by 37 kb/d to 1 69 mb/d. Total oil sands supply was nevertheless 100 kb/d higher than a year earlier. For the first nine months of 2017, Canadian oil output has posted average annual growth of 380 kb/d, albeit from a low base in 2016 when wildfires shut in a significant proportion of Albertan oil output. For 2017 as a whole, Canadian oil production is expected to expand by 275 kb/d, followed by a gain of around 235 kb/d in 2018.

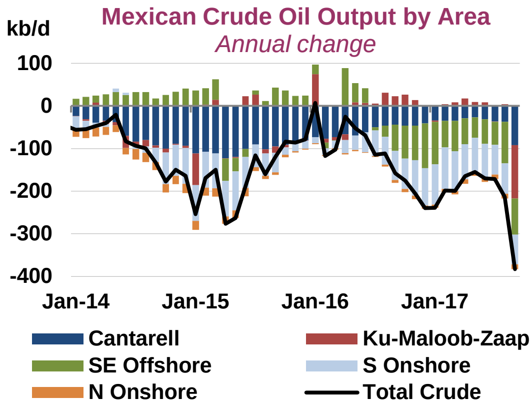




Mexico – September actual, October preliminary: Hurricanes Harvey and Katia, which slammed into the Gulf of Mexico in quick succession in late August and early September, led to a sharper than expected decline in output in September. Total oil supplies plunged by more than 200 kb/d from August, to hit 2 mb/d - its lowest level in more than 30 years and 400 kb/d (17%) below last October's level against which Mexico's output quota was set. According to preliminary data, production nearly recovered during October, rising 180 kb/d month on month, to 2.18 mb/d. While Hurricane Harvey had little direct impact on production, output fell as Pemex advanced planned maintenance at the Ku-Maloob-Zaap (KMZ) fields due to the storm. Output at KMZ dropped by 130 kb/d, while production at Cantarell dropped by 60 kb/d m-o-m. Katia, which hit the state of Veracruz in early September, also impacted output. Still, Pemex officials say higher-than-expected output in August means they will meet this year's crude oil target of 1.944 mb/d. Mexican oil supply is forecast to decline by a further 110 kb/d next year.

As a result of the hurricanes, and a major earthquake in September, Pemex made a net loss in the third quarter of $101.8 million albeit an improvement on the $118 million loss seen a year earlier. Pemex had posted years of consecutive losses, but following a major overhaul and project cuts it had returned to positive result in the first two quarters of 2017. Crude production was down 11.9% to 1.9 mb/d, while natural gas output also fell 14.8% to 4.857 billion cubic feet per day. In order to stem declines, the Mexican government announced it will apply new "fiscal benefits" to fields that are not profitable after taxes. Pemex is also making progress towards its next proposed farm-out areas, with its board having sent seven clusters of fields to regulators for consideration and possible later approval.

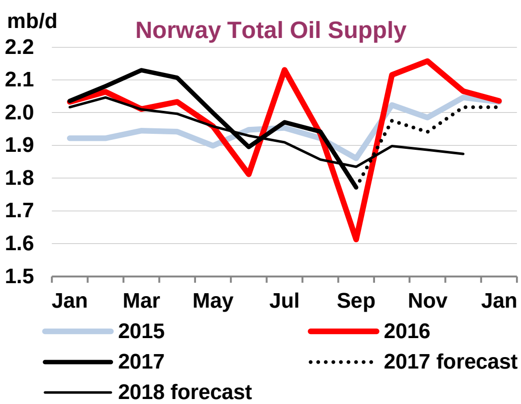


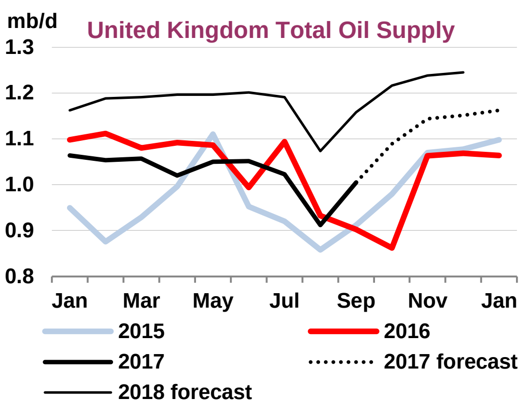


In a separate announcement, Pemex revealed a new onshore oil find in Veracruz in early November that it says might be its most important onshore discovery in 15 years. The accumulation is estimated to contain original volumes in place of up to 1.5 billion barrels of oil equivalent, which could represent recoverable resources of 350 million barrels of oil equivqlents. Due to its strategic advantage of being located near existing infrastructure, Pemex hopes production can start up “more quickly". The discovery comes on the heels of another two onshore finds recently revealed by new private operators in the country, the Zama-1 discovery by US independent Talos Energy and additional volumes found by Eni at the Amoca field.

North Sea

Norway – August actual, September provisional: Preliminary data published by the Norwegian Petroleum Directorate show that oil output dropped by a sharper-than-expected 180 kb/d in September to average 1.76 mb/d. Extensive maintenance at a number of fields, including the Arctic Goliat field, led the downturn. Output was nevertheless nearly 150 kb/d higher than a year earlier, which had seen even steeper cuts. Goliat restarted briefly in early October, but was forced to shut the next day by the Petroleum Safety Authority (PSA) due to a serious breach of safety regulations. The platform remained shut in early November and government officials said operator Eni would only be allowed to restart production once all faults in the electrical systems identified by the PSA have been repaired. Total output is nevertheless estimated to have rebounded from September’s low. Final data for August production was revised up by 24 kb/d, showing a 30 kb/d decline from the previous month.





UK – August actual, September preliminary: UK oil supply rose by 95 kb/d in September, to just over 1 mb/d, according to preliminary data. Output had dropped by 110 kb/d a month earlier due to maintenance at fields linked to the Forties stream. Scheduled Forties loadings slipped by 135 kb/d in August, to only 270 kb/d and its lowest level in three years. Forties loadings increased by 110 kb/d to 380 kb/d in September, with further gains seen in October and November schedules. In addition to higher Forties output, gains should come from BP's Schiehallion field and Enquest's Kraken development. Schiehallion, which started up in May, produced 38 kb/d in July, according to the latest monthly field level production data. Kraken, which reported first oil in June, had ramped up to 27 kb/d by July. Output from the two fields will reach 125 kb/d and 50 kb/d respectively at their peak.

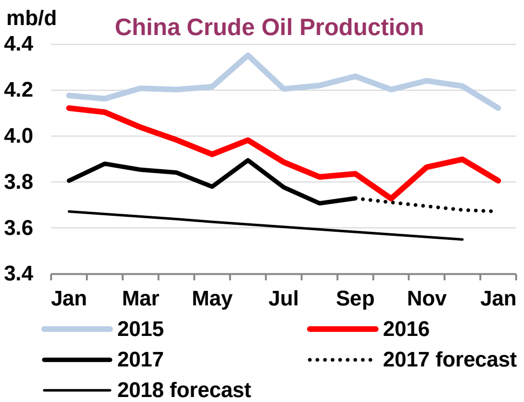
Non-OECD

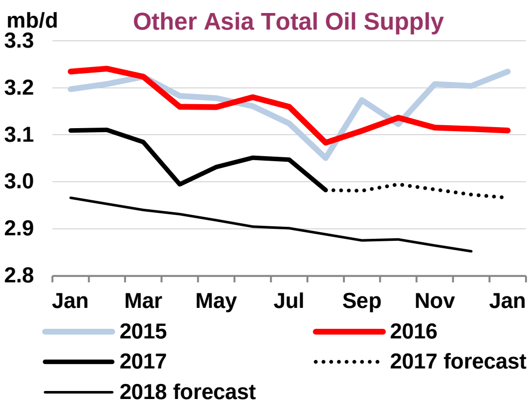
Africa

In Africa, the outlook for **Ghana** has been raised slightly since last month's *Report* after Tullow lifted its production guidance for the year following strong performance for both the TEN and Jubilee fields. Moreover, Tullow, which operates them, postponed maintenance work that was set to shut the Jubilee field for five to eight weeks in 4Q17 to 2018 and cut the expected shutdown time. In October, Ghana approved the Greater Jubilee Full Field Development (GJFFD) Plan, which permits infill drilling to commence on the Jubilee field and subsequent development of the Mahogany and Teak fields.

Asia

China – September actual: Chinese crude production inched up 22 kb/d in September, to 3.73 mb/d. Output was 107 kb/d lower than a year earlier, or 3%, compared with annual decline rates of 8% at the start of the year and 7% on average during 2016. CNOOC's Lufeng oil field in the Pearl River Delta, which was shut down in August, remains offline since August. The field produced around 25 kb/d prior to the shutdown. For the year as a whole, crude oil output is expected to average 3.8 mb/d, 155 kb/d lower than in 2016, before falling another 170 kb/d on average in 2018, to 3.6 mb/d. Output from coal-to-liquids plants is estimated to add an additional 90 kb/d next year, up from 70 kb/d during 2017.





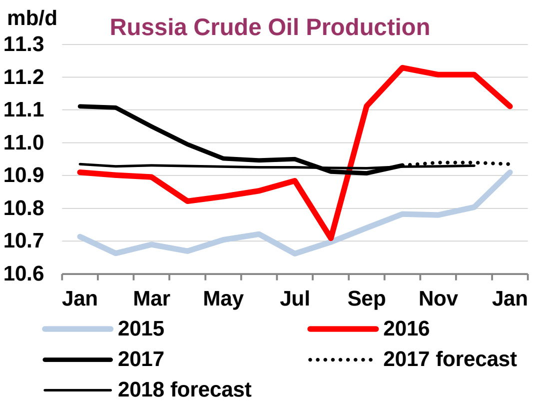
In Asia, declining supply is not restricted to China. Over the first nine months of 2017, total oil supply from 'Other Asia', declined by 120 kb/d y-o-y, or 3% on average. This follows relatively steady production overall in 2016, when gains in Indonesia, and to a lesser extent Malaysia and Thailand, offset declines elsewhere. This year, the declines are widespread, with all countries recording lower output. The largest declines are seen in Vietnam, Indonesia and Thailand.

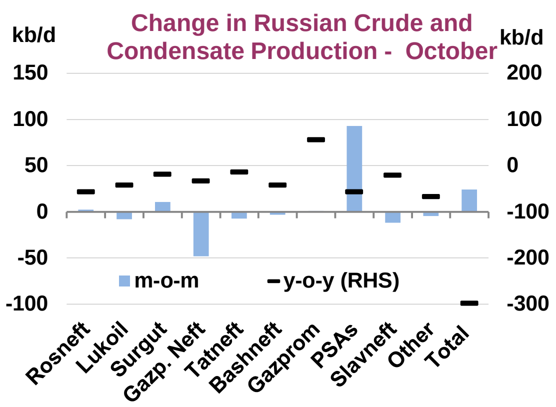
Vietnam's crude oil production has dropped by an average of roughly 30 kb/d, or 10%, this year to stand at 265 kb/d in October. During 2016, Vietnam's oil output fell by 9%. According to its upstream regulator, SKK Migas, **Indonesia** produced 797 kb/d of crude and condensates during the first nine months of the year, a 3% decline on the same period a year earlier. According to the Ministry of Energy and Mineral Resources, the government expects output to continue to decline, and has set an 800 kb/d output target for 2018, compared with 2017's 815 kb/d target. **Thailand's** crude and condensate output inched marginally higher in August, to 241 kb/d, from 237 kb/d a month earlier. Output was nevertheless 12 kb/d, or 5%, lower than a year ago. Over the first eight months of 2017, crude and condensate output slipped by an average of 21 kb/d, or 8%. Thailand also produces roughly 200 kb/d of NGLs.

Malaysia's crude and condensate output fell by 17 kb/d on average over the first eight months of 2017, compared to an output reduction of 20 kb/d agreed with fellow producers. During August, the last month for which monthly production data is available, output dropped by a sharp 38 kb/d to 619 kb/d, 11 kb/d below a year earlier. Output is forecast to decline by 18 kb/d in 2017 and 30 kb/d next year. Following steep declines during 2016, when crude oil output fell by 3%, **India** has managed to stabilise output this year. Output through September was unchanged from a year earlier, at 725 kb/d for crude oil, and 850 kb/d including NGLs.

Former Soviet Union

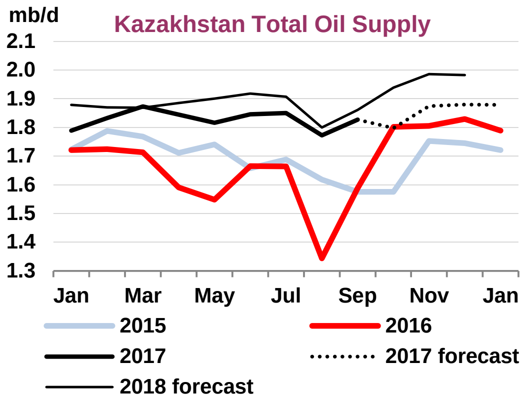
Russia – September actual, October provisional: Russian crude and condensate production inched up by 24 kb/d in October to 10.93 mb/d as maintenance in the Far East ended. Lower output from Gazprom Neft limited the monthly increase so that production nevertheless held 298 kb/d below a year earlier, which serves as the benchmark for which compliance with agreed output cuts is calculated. Year-to-date, compliance has averaged 80%. With the exception of Gazprom, all companies have scaled back production. Rosneft has cut output by an average 92 kb/d, Lukoil by 34 kb/d and Surgutneftegas by 24 kb/d. Gazprom's oil liquids output is up 54 kb/d so far this year compared with the October baseline. With output at the Sakhalin field set to rise a further 100 kb/d in November, additional output curbs will have to come from other producers if compliance is to be maintained.

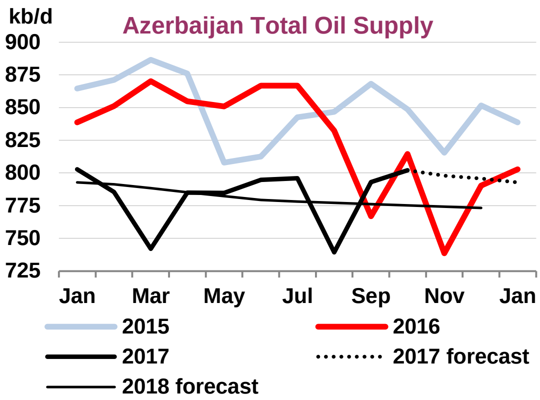




Kazakhstan – September actual: Kazakh crude and condensate production rose by 55 kb/d in September, to 1.79 mb/d, as a recovery in output from Tengiz offset lower flows from the Karachaganak gas condensate field. Production at Tengiz increased by nearly 100 kb/d in September, to 630 kb/d, after scheduled maintenance had cut supplies to a twelve-month low in August. Karachaganak production fell by 38 kb/d m-o-m, however, while supplies from Kashagan held steady at around 195 kb/d. Kazakh oil output likely dropped again in October. Loading schedules suggest output at both Tengiz and Karachagank eased, while Kashagan output dropped sharply on renewed production problems. According to trade reports, flooding and a power outage at the field resulted in the removal of several cargoes from the CPC Blend export programme since September. Tengiz and Karachaganak output was set to rise further in November, while the preliminary loading schedule for Kashagan was revised down by around 30% to 175 kb/d.

The forecast for Kazakhstan's oil output has been revised down by around 70 kb/d on average for the remainder of 2017 and 2018 following statements from the North Caspian Operating Company (NCOC) in early November that Kashagan would only reach its 370 kb/d capacity sometime in 2018, rather than by the end of this year, as previously announced. Production had been expected to benefit from raw gas re-injection, which started up in August. NCOC said that it was testing the systems and is gradually increasing and optimising the amount of gas being re-injected so that more oil can be produced from Kashagan.

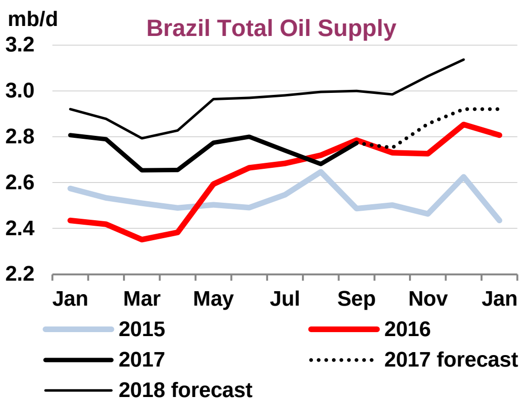


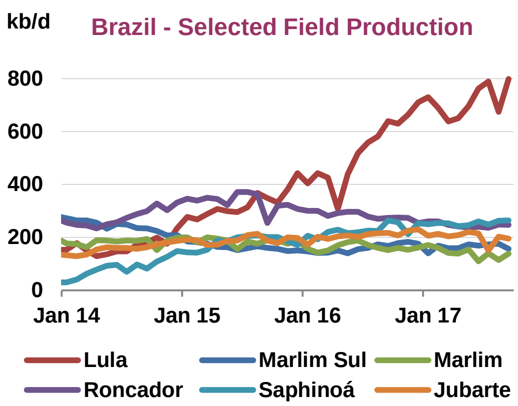


Azerbaijan – September actual, October preliminary: Azeri oil supply rebounded to 793 kb/d in September, 54 kb/d higher than a month earlier when maintenance had curbed output. Production was higher than a year ago for the first time in 2017, albeit due to a weak baseline last year. Preliminary data for October suggest output rose further, to 802 kb/d. Output was 13 kb/d lower than in October of last year, compared with a pledged cut of 35 kb/d. Due to sharp declines in March and August however, Azeri compliance averages 90% for the year-to date. For the first ten months of 2017 production was roughly 60 kb/d lower year-on-year, or 7%.

Latin America

Brazil – September actual: Brazilian oil supplies rose by 90 kb/d in September as output recovered from maintenance in August. The bulk of the gains stemmed from the Lula field, which increased output by 124 kb/d month-on-month to 799 kb/d – another record high. Output had been constrained in August due to maintenance at the FPSO Cidade De Maricá and FPSO Cidade De Itaguaí. Total Lula production was 159 kb/d higher than a year ago. Smaller gains came from the Marlim field, which increased by a combined 16 kb/d to 368 kb/d. At 2.77 mb/d, total oil production nevertheless stood 13 kb/d below a year earlier, posting a second consecutive month of year-on-year declines. Gains in the prolific pre-salt Santos Basin (185 kb/d) more than offset declines in the more mature Campos Basin (172 kb/d), though onshore production also fell by 22 kb/d from a year earlier.





Following robust growth over the first half of the year, however, Brazil is on track to lift output by 155 kb/d this year, with gains stemming mostly from the Lula field. Production should get a further boost in 2018 when the first of the Buzios units is installed and another two FPSO are connected in the Lula field. Petrobras also plans to commission a floater at its Berbigao Iara Noreste field sometime next year. In all, production is set to increase by 195 kb/d.

Majors enter Brazil's pre-salt

On 27 October, Brazil completed its second and third bid rounds in its coveted pre-salt area. They were the first production sharing contract rounds held since the pre-salt Round one in 2013. The Brazilian government achieved signature bonuses of 1.86 billion USD (6.15 billion BRL, below the maximum possible of 7.75 billion BRL), as two blocks did not receive any offers. Energy Minister Coelho stressed that Rounds two and three will leave higher shares of total profit oil to the state (52.8% and 58.5%, respectively) than Round one in 2013 (41.5%). In addition to Petrobras, now Shell and Statoil will also act as operators of pre-salt blocks. Further consortium partners entering the area include Exxon, Petrogal, Total, BP, Repsol, Sinopec and QPI Brazil (*see results table below*). Under the new rules, Petrobras did not have an automatic operating stake in all pre-salt fields, but continues to have a right of first refusal. The company chose to exercise this right and secured operatorship on three of six blocks.

2nd Production Sharing Bidding Round

Basin	Sector	Blocks	Winning company/consortium	Offered profit oil
Santos	SS-AUP2	Sul de Gato do Mato	Shell Brasil* (80%) and Total E&P do Brasil (20%)	12%
		Entorno de Sapinhoá	Petrobras* (45%), Shell Brasil (30%) and Repsol Sinopec (25%)	80%
		Norte de Carcará	Statoil Brasil O&G* (40%), Petrogal Brasil (20%) and ExxonMobil Brasil (40%)	67%

3rd Production Sharing Bidding Round

Basin	Sector	Blocks	Winning company/consortium	Offered profit oil
Santos	SS-AUP2	Peroba	Petrobras* (40%), CNODC Brasil (20%) and BP Energy (40%)	77%
	SS-AP1	Alto de Cabo Frio Oeste	Shell Brasil* (55%), CNOOC Petroleum (20%) and QPI Brasil (25%)	23%
Campos	SC-AP5	Alto de Cabo Frio Central	Petrobras* (50%) and BP Energy (50%)	76%

* Operator

Colombian crude production dropped marginally to 852 kb/d in September, from 858 kb/d a month earlier and 859 kb/d the previous year. In **Peru**, total oil output was largely unchanged from the previous month in October at around 125 kb/d, though 5% below a year ago. **Argentina,** meanwhile, saw its oil supply increase by 5 kb/d in September, to 586 kb/d, standing 28 kb/d below the previous year. For the first 9 months of 2017, Argentinian oil supplies declined 36 kb/d on average from the year prior. **Trinidad and Tobago** output declined marginally, to 98 kb/d, in August.

Middle East

Omani oil output rose by 8 kb/d in September, to 983 kb/d, so that compliance with agreed cuts slipped to 69% compared with 80% in August. Oman had pledged to reduce production by 45 kb/d and saw compliance average 92% through September. In **Bahrain**, the pipeline that delivers crude from Saudi Arabia on behalf of Bahrain came under attack and was briefly taken offline in November. Supplies have been held steady until further information becomes available.

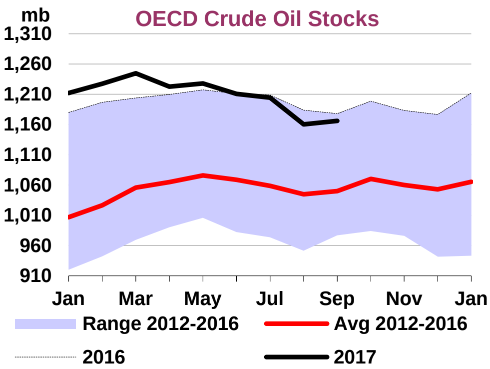
STOCKS

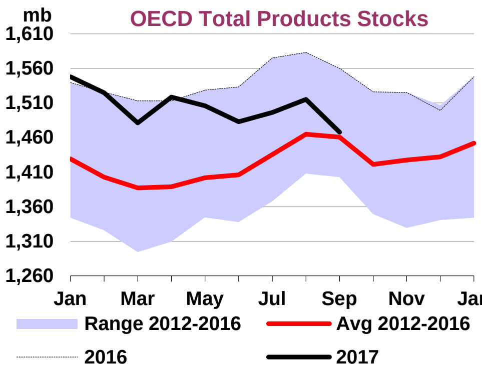
Summary

- **OECD commercial stocks decreased 40.3 mb (1.3 mb/d) in September to below the symbolic 3 000 mb mark** for the first time in almost two years. Hurricane Harvey, which caused disruption to US refineries, was a major factor. European stocks declined more steeply than in the Americas.

- **Global oil stocks dropped by an estimated 63.1 mb (690 kb/d) in 3Q17, only the second quarterly draw since oil prices crashed in 2014.** Implied net stock builds in China remained impressive, but slowed from 2Q17 and were not enough to offset draws in other locations (see *Global oil stocks drew 690 kb/d in 3Q17* in this section and *Global crude oil and product balances* in the refining section).

- **In October, stocks continued to draw sharply in the US and likely fell in China for the first time in a year.** However, stocks increased in most other reported locations. Estimated volumes of oil in transit went up sharply and these barrels will likely show up in onshore stocks during 4Q17.





Global Overview

OECD commercial oil stocks fell below the symbolic 3 000 mb mark at the end of September for the first time since November 2015, reaching 2 970 mb. They were down 40.3 mb (1.3 mb/d) against August levels with sharp draws in oil products registered in the Americas and Europe as a result of the refinery shutdowns that followed Hurricane Harvey. In Europe, stocks declined even more than in the Americas, helped by large oil product exports to the US and Latin America. Outside the OECD, floating storage, oil in transit, as well as commercial stocks held in China, Fujairah and Singapore all drew, bringing the total drop in visible oil stocks globally during the month – excluding China's implied net builds – to 87 mb, or 2.9 mb/d, by far the largest monthly drop so far in 2017. Overall, over 3Q17, our data shows that commercial and government stocks in the OECD fell 57.2 mb, and that they fell in most other locations. Chinese refiners increased runs substantially during the quarter, thus reducing implied net builds in crude stocks to below those seen in 2Q17. We estimate that China's net builds were not enough to offset reductions in inventories in other parts of the world. It is likely that stock draws took a breather in October as, despite a large drop in the US and the first likely reduction in Chinese inventories in a year, stocks in other locations increased. Oil in transit, in particular, has gone up in the last few weeks due to increased exports from some OPEC countries as well as the US, Russia and Brazil. These volumes will meet demand but also end up into onshore stocks during 4Q17.

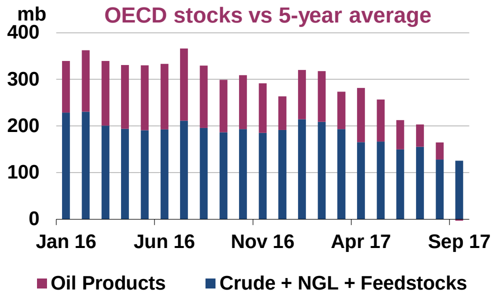
Sep17 v Aug17 Stock Estimate

	mb	mb/d
Americas Commercial	-16.8	-0.6
Asia Oceania Commercial	-5.0	-0.2
Europe Commercial	-18.5	-0.6
Government Stocks	-5.4	-0.2
Total OECD	**-45.7**	**-1.5**
Floating Storage	-12.4	-0.4
Oil in Transit	-14.0	-0.5
Fujairah (FEDCom/S&P Global Platts)	-2.3	-0.1
Singapore (International Enterprise)	-6.3	-0.2
China Commercial Stocks (OGP)	-6.3	-0.2
Total	**-87.0**	**-2.9**

OECD inventory position at end-Sep and revisions to preliminary data

OECD commercial stocks fell counter-seasonally in September by 40.3 mb to 2 970 mb, their lowest level in almost two years – when taking into account baseline stock adjustments in Australia, Belgium and Sweden made at the start of 2017. There were draws recorded in the Americas (16.8 mb) following Hurricane Harvey, which led to significant shutdowns of US refining capacity and redirected crude cargoes away from the US. Interestingly, stocks fell more sharply in Europe (18.5 mb) than in the Americas following the hurricane, as refiners drew local oil product stocks to supply the US, Mexico and Latin America with extra gasoline and diesel. OECD Asia Pacific stocks also fell 5 mb during the month, but the region was less impacted than Europe by the consequences of Harvey. The surplus of OECD stocks to the five-year average – taking into account the stock adjustments in Australia, Belgium and Sweden – declined for the fifth straight month, to 119 mb. On the basis of forward demand, commercial stocks covered 62.2 days at the end of September, the lowest level since July 2015.

Crude stockpiles increased in line with seasonal patterns during September, with gains registered in the Americas (1.3 mb) and Asia Pacific (7.1 mb) due to lower refining activity, whereas in Europe crude stocks fell 2.5 mb. Oil product stockpiles drew by a significant 47 mb during the month, the result of lower refinery output in the US following the hurricane and higher product exports in Europe. The draw in middle distillate inventories (24.9 mb) was particularly sharp. It meant OECD middle distillate stocks fell below their five-year average for the first time since April 2015. Other product stocks – a large portion of which is LPG held in the US – also drew unseasonably following Hurricane Harvey. OECD gasoline stocks (9.5 mb) fell and fuel oil stocks reduced 1.2 mb to reach a fresh all-time low of 121 mb. The picture for fuel oil stocks in the OECD is in stark contrast to stocks held in the bunkering hubs of Amsterdam-Rotterdam-Antwerp, Fujairah and Singapore, which have tended to increase since the end of August, suggesting that traders are prioritising supplies to those hubs.



Note: Adjustments in Australian, Belgian and Swedish stocks dating January 2017 have been excluded.

Preliminary data for October show oil stocks drawing in the US (33.3 mb), but rising in Europe (5.3 mb) and Japan (4.2 mb). Floating storage fell further during the month, but this was more than offset by a rise in oil in transit volumes brought about by higher crude exports from the US, Russia and certain OPEC countries (See *Global oil stocks drew 690 kb/d in 3Q17*).

Preliminary Industry Stock Change in September 2017 and Third Quarter 2017

	September 2017 (preliminary) (million barrels)				(million barrels per day)				Third Quarter 2017 (million barrels per day)			
	Am	Europe	As. Ocean	Total	Am	Europe	As. Ocean	Total	Am	Europe	As. Ocean	Total
Crude Oil	**1.3**	**-2.5**	**7.1**	**5.9**	**0.04**	**-0.08**	**0.24**	**0.20**	**-0.39**	**-0.23**	**0.14**	**-0.48**
Gasoline	-6.8	-1.5	-1.1	-9.5	-0.23	-0.05	-0.04	-0.32	-0.22	-0.04	-0.01	-0.27
Middle Distillates	-8.4	-13.0	-3.5	-24.9	-0.28	-0.43	-0.12	-0.83	-0.17	0.00	0.03	-0.14
Residual Fuel Oil	2.3	-2.5	-1.1	-1.2	0.08	-0.08	-0.04	-0.04	0.03	-0.07	-0.02	-0.06
Other Products	-8.8	1.0	-3.6	-11.4	-0.29	0.03	-0.12	-0.38	0.19	0.07	0.04	0.30
Total Products	**-21.7**	**-16.0**	**-9.4**	**-47.0**	**-0.72**	**-0.53**	**-0.31**	**-1.57**	**-0.17**	**-0.03**	**0.03**	**-0.16**
Other Oils[1]	3.5	0.0	-2.7	0.8	0.12	0.00	-0.09	0.03	0.17	-0.01	-0.02	0.14
Total Oil	**-16.8**	**-18.5**	**-5.0**	**-40.3**	**-0.56**	**-0.62**	**-0.17**	**-1.34**	**-0.38**	**-0.27**	**0.15**	**-0.51**

1 Other oils includes NGLs, feedstocks and other hydrocarbons.

OECD oil inventories were revised down 4.9 mb in August and up 0.9 mb in July as new figures emerged. The August revision was largely down to lower crude stocks in the Americas and Europe.

Revisions versus October 2017 Oil Market Report

(million barrels)

	Americas		Europe		Asia Oceania		OECD	
	Jul-17	Aug-17	Jul-17	Aug-17	Jul-17	Aug-17	Jul-17	Aug-17
Crude Oil	**0.0**	**-10.4**	**-1.7**	**-9.2**	**-0.4**	**2.4**	**-2.1**	**-17.2**
Gasoline	0.0	-3.7	0.0	-0.7	0.0	0.9	0.0	-3.5
Middle Distillates	0.0	-2.1	0.2	5.5	0.0	1.1	0.2	4.4
Residual Fuel Oil	0.0	0.8	0.1	-0.1	0.0	-0.6	0.1	0.1
Other Products	0.0	-4.6	2.7	7.5	0.0	0.0	2.7	2.9
Total Products	**0.0**	**-9.6**	**3.1**	**12.1**	**0.0**	**1.4**	**3.1**	**3.9**
Other Oils[1]	0.0	10.9	0.0	-2.2	0.0	-0.3	0.0	8.3
Total Oil	**0.0**	**-9.1**	**1.4**	**0.7**	**-0.4**	**3.5**	**0.9**	**-4.9**

1 Other oils includes NGLs, feedstocks and other hydrocarbons.

Global oil stocks drew 690 kb/d in 3Q17

Visible crude and oil product stocks drew by a combined 63.1 mb (690 kb/d) in 3Q17 versus 2Q17, only the second quarterly draw since oil prices crashed in 2014. Oil stocks in the OECD Americas and Europe declined sharply, whereas they increased moderately in Asia Pacific. Oil demand rose and hurricane Harvey forced traders to redirect crude shipments away from the US and curbed refinery output from late August onwards, incentivising suppliers to draw down existing stockpiles. In all, OECD commercial and government stocks fell 57.2 mb (620 kb/d) during the quarter, the largest quarterly drop since 4Q16.

Other standout figures during the quarter were volumes of crude in floating storage and in transit, which decreased by 66.5 mb (720 kb/d) as global refiners increased runs to a fresh quarterly record, and as countries such as Saudi Arabia and Russia curbed crude exports. They have fallen for three quarters in a row.

3Q17 v 2Q17 Stock Estimate

	mb	mb/d
Americas Commercial	-35.0	-0.4
Asia Oceania Commercial	13.4	0.1
Europe Commercial	-25.0	-0.3
Government Stocks	-10.6	-0.1
Total OECD	**-57.2**	**-0.6**
Floating Storage	-39.5	-0.4
Oil in Transit	-27.0	-0.3
Fujairah (FEDCom/S&P Global Platts)	-4.1	0.0
Singapore (International Enterprise)	1.6	0.0
China Commercial Stocks (OGP)	-21.5	-0.2
Total exc China Balance	**-147.7**	**-1.6**
China Crude Balance	59.8	0.6
China Product Balance	24.8	0.3
Total	**-63.1**	**-0.7**

In our balances, supply and demand are almost equal to each other during 3Q17 (See *Table 1*), whereas, as highlighted above, oil stocks in the OECD and elsewhere drew visibly. The Miscellaneous to Balance part of the calculation – which tracks the amount of oil barrels unaccounted for – stands at 1.2 mb/d. So, could non-OECD stocks explain this discrepancy?

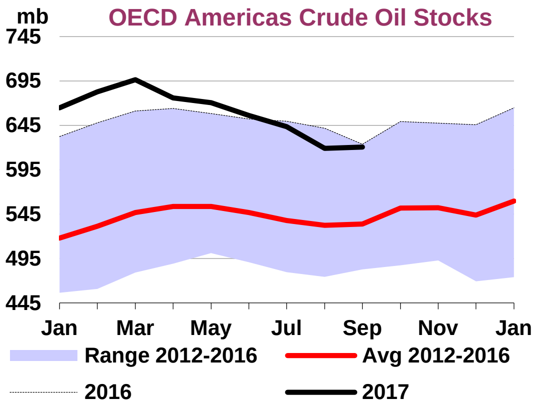
At the time of writing, there is no finalised data available for countries such as Saudi Arabia and India in the JODI database, but figures for July-August show a negligible build. Commercial crude and oil product stocks held by Chinese oil majors fell by a significant 21.5 mb (230 kb/d), but this was more than offset by imports, which stayed high. The country's crude oil balance, the difference between net imports, refinery runs and direct crude use, amounted to 59.8 mb during the quarter, down more than a third from 2Q17. Chinese refiners increased throughput to a record and new refineries began operations. On top of the crude balance, we have also added an assumption for volumes of oil products going into storage (See *Demand*) of 24.8 mb. When taking into account these items, the 'miscellaneous' item falls to 300 kb/d in 3Q17.

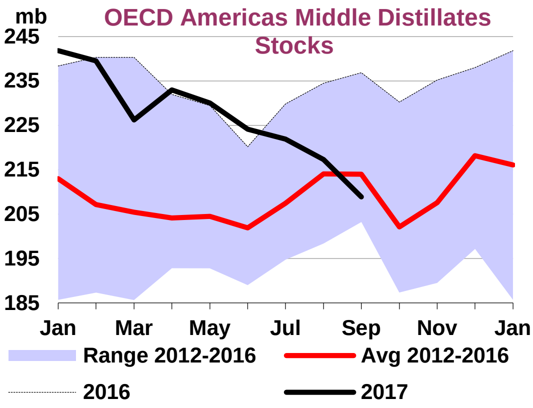
Preliminary data for October show that onshore oil stocks continued to draw sharply, especially in the US, which ramped up exports of crude and oil products. Chinese imports also fell in October as independent refiners used oil imported previously and we estimate that this could lead to the first monthly draw in overall Chinese oil stocks since October 2016. However, the significant increase in exports from Angola and Saudi Arabia, as well as non-OPEC producers ranging from the US, to Russia and Brazil during October, boosted the volume of crude in transit. These could find their way into onshore stocks during 4Q17.

Recent OECD industry stock changes

OECD Americas

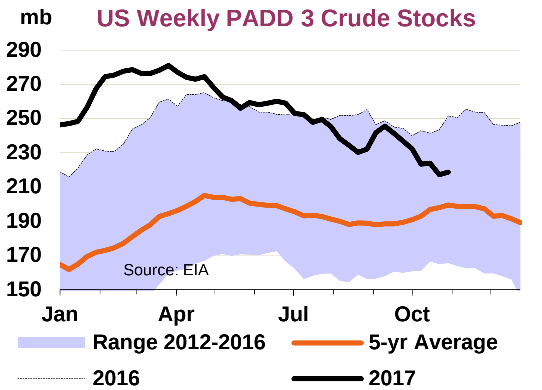
Commercial stocks in the OECD Americas fell 16.8 mb in September to reach 1 560 mb, their lowest level since October 2015. By end-month, inventories stood 104 mb above the five-year average, down from 128 mb the previous month. Hurricane Harvey had a major impact on the region's stocks as it forced the closure of a significant portion of US refining capacity during a large part of September and into October. This helped crude stocks in the OECD Americas build by 1.3 mb during the month and oil product inventories draw 21.7 mb.

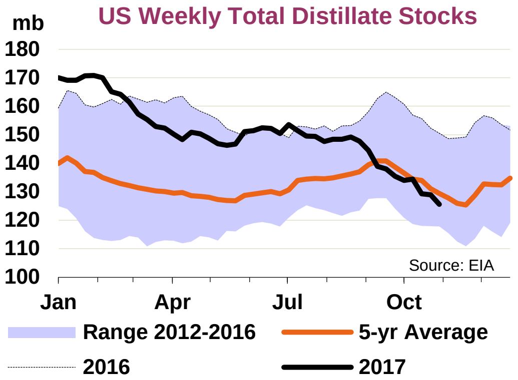




OECD Americas crude stocks were up 1.3 mb to 621 mb at end-September, but remained 76 mb below the historical record reached in March 2017. As discussed in last month's *Report*, US crude stocks would have built much more significantly following the Hurricane without the fall in imports and increase in exports seen during September. US crude exports increased from an average 770 kb/d in August to 1.5 mb/d in September. Exports to Canada rose 90 kb/d to 340 kb/d and exports to China rose 110 kb/d to 250 kb/d during the month. Oil product stocks fell by a significant 21.7 mb with a counter-seasonal drop in 'other products' (-8.8 mb) linked to the hurricane, as well as lower gasoline (-6.8 mb) and middle distillate stocks (-8.4 mb). Bucking the trend, fuel oil stocks rose 2.3 mb to 44 mb. This could be due to the impact of Hurricane Harvey on shipping activity in the Gulf of Mexico.

Overall, in 3Q17, oil stocks in the OECD Americas reduced by 35 mb, driven largely by higher runs at US refineries and exports to Latin America. Crude stocks decreased 35.6 mb with the falls occurring entirely in the July-August period, before Hurricane Harvey hit. Oil product stocks fell 15.3 mb, whereas NGL stocks increased seasonally by 15.9 mb. The overall drop in OECD Americas stocks during 3Q17 compares with a 9.8 mb build during the same quarter last year.



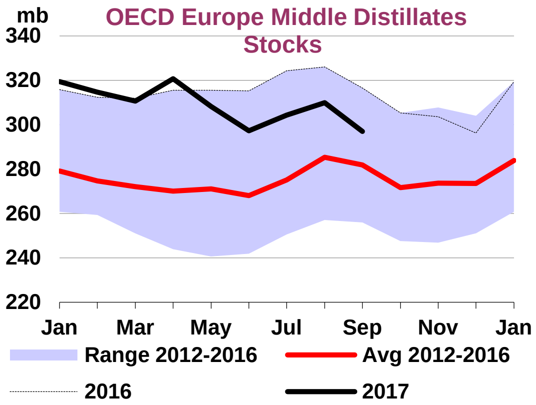


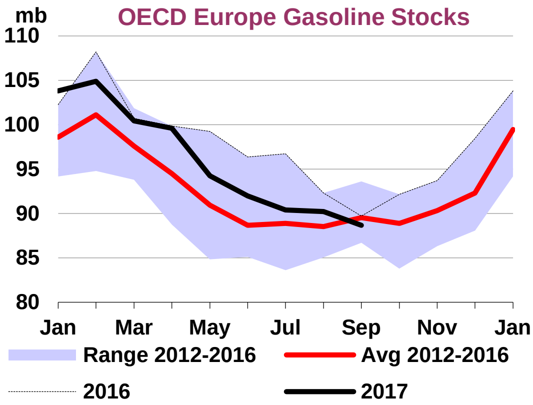
Preliminary data from the *Energy Information Administration* (EIA) for October show US oil stocks falling across all major categories, as refinery runs and exports of crude and oil products increased substantially. Crude stocks were down 8.4 mb on the month to their lowest level since December 2015, due to a combination of factors. On the one hand, Hurricane Nate shut a substantial portion of US offshore crude production for several days in early October, and on the other, refinery runs continued their post-Harvey recovery, increasing by some 600 kb/d, while crude exports pushed higher from September's high level. In the week ended 27 October, US crude exports reached a fresh all-time high of 2.1 mb/d. This sudden export burst ended in early November as US crudes became increasingly more expensive versus global benchmarks. PADD 3 Gulf Coast crude stocks declined more than elsewhere: they normally build in October. Stocks in Cushing, OK, home of the WTI futures contract, increased by a further 1.6 mb in October, the result of refinery maintenance and ongoing gains in onshore crude production.

US oil product stocks dropped by a combined 24.9 mb in October, despite higher refinery runs, on much stronger exports of diesel, propane and gasoline following the return to normal operations of Gulf Coast ports. Diesel and heating oil stocks were down 8.2 mb on the month, while gasoline stockpiles fell 8.3 mb and propane inventories declined 0.4 mb. Diesel and gasoil exports averaged 1.5 mb/d in October, up nearly 500 kb/d on the month, and gasoline exports rose 100 kb/d to under 700 kb/d. US East Coast heating oil stocks were just 5.3 mb at the end of October, considerably less than usual for the start of the winter period. Heating oil demand has fallen in recent years, reducing the region's reliance on stocks, but they look tight nonetheless. The first draw in LPG stocks this season was linked to higher heating and crop drying demand in the US Midcontinent.

OECD Europe

OECD Europe commercial stocks fell more than usual in September, by 18.5 mb to 972 mb, thus reaching their lowest level in more than two years. The decrease was larger than that seen in the OECD Americas, despite the fact that Hurricane Harvey affected refineries situated in Texas. Rising oil product exports from Europe to the Americas in the aftermath of the hurricane was a major factor. When taking into account the upward revision made to Belgian and Swedish baseline stock figures in January, total oil stocks in the OECD Europe region stood a mere 16 mb above the five-year average, down from 29 mb the previous month. Crude stocks fell 2.5 mb on the month in September to 343 mb, on lower crude imports. Refining throughputs declined due to seasonal maintenance at some plants. Figures from *Kpler*, the cargo tracking company, showed crude imports falling 5 mb to 330 mb in September and then recovering to 344 mb in October.





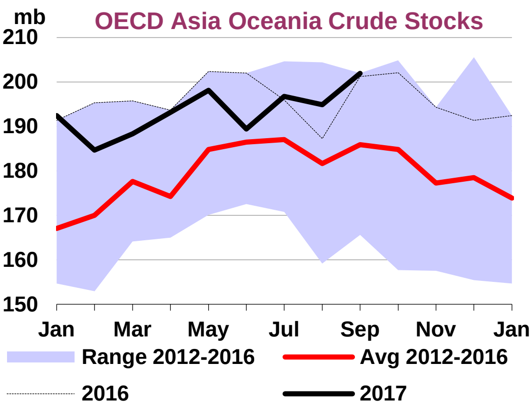
Oil product stocks reduced more than is usually the case at this time of year, by 16 mb to 557 mb at end-month. The largest draws were seen for middle distillates (13 mb), then gasoline (1.5 mb) and fuel oil (2.5 mb). By contrast, 'other' product stocks increased 1 mb on the month. Refiners sent large volumes of diesel and gasoil to Latin America as well as gasoline to the US in response to Hurricane Harvey, contributing to these large stock draws. European diesel, gasoil and kerosene cargo exports to Latin America amounted to 2.5 mb in September, the largest flow in at least two years, data from *Thomson Reuters* showed. Exports of gasoline and blending components to the US and Mexico were 12.8 mb, also the largest volume in two years, the same data showed. Overall, over 3Q17, oil stocks in OECD Europe dropped 25 mb, with draws recorded in crude (21.3 mb), oil products (2.7 mb) and NGLs (1 mb).

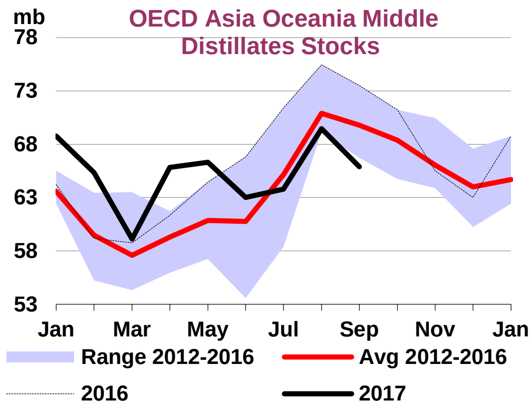
Preliminary data from Euroilstock showed most product categories building during October. Crude stocks went up 0.2 mb, while gasoline rose 2.2 mb, fuel oil increased 1 mb and naphtha rose 2.2 mb. Middle distillate stocks fell another 0.2 mb, however, likely bringing them further towards the five-year average metric in the region. Diesel and gasoil stocks held in independent storage in Amsterdam, Rotterdam and Antwerp reportedly fell to their lowest level in more than three years in early November.

OECD Asia Oceania

Commercial stocks in OECD Asia Oceania fell counter-seasonally, by 5 mb, in September to reach 437 mb. Unlike in Europe and the Americas, inventories have been stable or on the rise this year, helped by steady crude inflows into Asia. However, at the same time, the region had not built excess inventories of the kind seen in the Americas and Europe in recent years. When taking into account the upward revision made to Australian baseline stock figures in January , total oil stocks in OECD Asia Oceania stood 1 mb below the five-year average.

Crude stocks gained 7.1 mb in September to 202 mb, helped by lower refining throughputs in Japan and South Korea linked to maintenance. Figures from *Kpler* showed crude imports into Australia, Israel, Japan, New Zealand and South Korea falling by a combined 16 mb to 204 mb and staying unchanged in October. Oil product stocks drew by 9.4 mb to 173 mb, with falls seen for gasoline (1.1 mb), middle distillates (3.5 mb), fuel oil (1.1 mb) and other products (3.6 mb). Exports to the US and Latin America in the wake of Hurricane Harvey and lower refining throughputs helped contribute to stock draws. Overall, over 3Q17, oil stocks in the region built by 13.4 mb, with higher crude stocks (12.5 mb), a rise in oil product holdings (3.2 mb) and a fall in NGLs (2.3 mb).





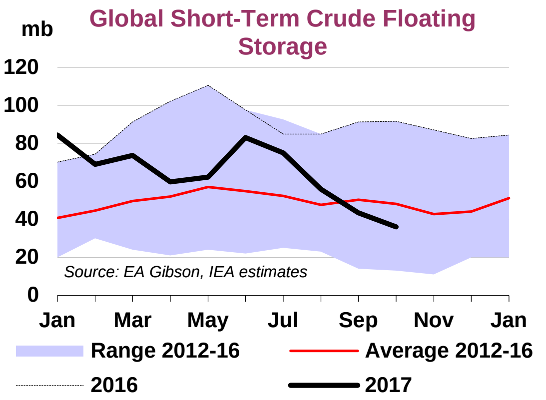
Preliminary data from the *Petroleum Association of Japan* (PAJ) show total oil stocks increasing by 4.2 mb in October, with a large 3.3 mb build in crude stocks and a smaller 0.9 mb gain in product stocks. The crude stock build came as a large increase in imports in the last week of September eventually made its way into crude stockpiles during October. Kerosene stocks built seasonally by 1.1 mb, helped by warmer-than-normal temperatures in Japan. However, outright kerosene stocks remain below last year's level as refiners have cut capacity, reducing national production.

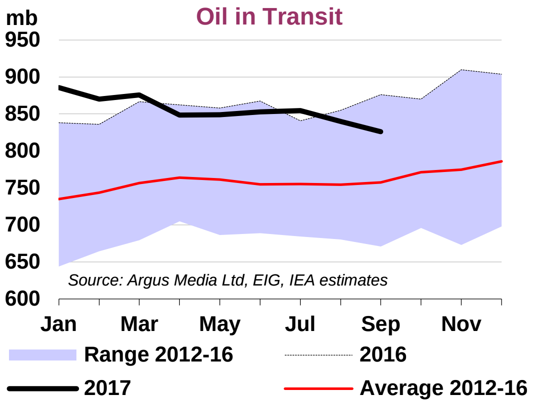
Other stock developments

In the 18 non-OECD countries that have submitted figures to JODI for August, total oil stocks built by a modest 3 mb relative to July. There were builds recorded in Angola (2.1 mb), Algeria (1.9 mb), Nigeria (1.3 mb) and India (1.2 mb), among others, whereas stocks continued to fall in Saudi Arabia (1.4 mb) and reduced in Iraq (1.1 mb) and Qatar (0.8 mb). Overall, stocks in these countries have fallen by a combined 33.1 mb in the December 2016-August 2017 period, following OPEC's decision to curb production, with around two-thirds of the reduction found in crude stocks and the rest in oil products. This differs from the OECD, where the bulk of stock draws this year have been in oil products.

Oil held in floating storage fell by 39.5 mb (430 kb/d) in 3Q17 to 44 mb at the end of September, according to *EA Gibson.* This came as the surplus of crude held offshore in areas such as the North Sea and the Malacca Straits was progressively reduced thanks to higher refinery imports amid tightening global crude markets. In October, floating storage fell by a further 7.4 mb (240 kb/d) to 36 mb, its lowest level since December 2014. Crude in transit, which is harder to measure precisely as it encompasses a bigger oil flow, is likely to have fallen too in 3Q17 as countries such as Saudi Arabia and Russia curbed exports. Overall, we estimate that floating storage and oil in transit fell for the third straight quarter, this time by a combined 720 kb/d.

Data from *China Oil, Gas and Petrochemicals* (China OGP) covering Chinese oil majors indicate that commercial stocks fell 6.3 mb in September, the third straight monthly fall. Crude stocks were unchanged but there was a large seasonal drop in diesel and gasoil stocks (7 mb) linked to higher industrial activity. Gasoline stocks went up 1.5 mb, whereas kerosene stocks fell 0.8 mb. We estimate that other Chinese product stocks not accounted for by OGP data went up during the month (See *Demand*). Crude imports rose sharply to 9 mb/d, the second highest volume ever recorded, and refinery runs also increased to 11.9 mb/d. All told, we estimate that net stock builds (defined as net imports plus crude production minus refinery intake) amounted to 600 kb/d in 3Q17, down from 1 mb/d in 2Q17, as new refineries started up and existing refineries increased runs. In October, preliminary customs data points to a fall in crude imports to 7.3 mb/d, implying the first Chinese stock draw in a year.

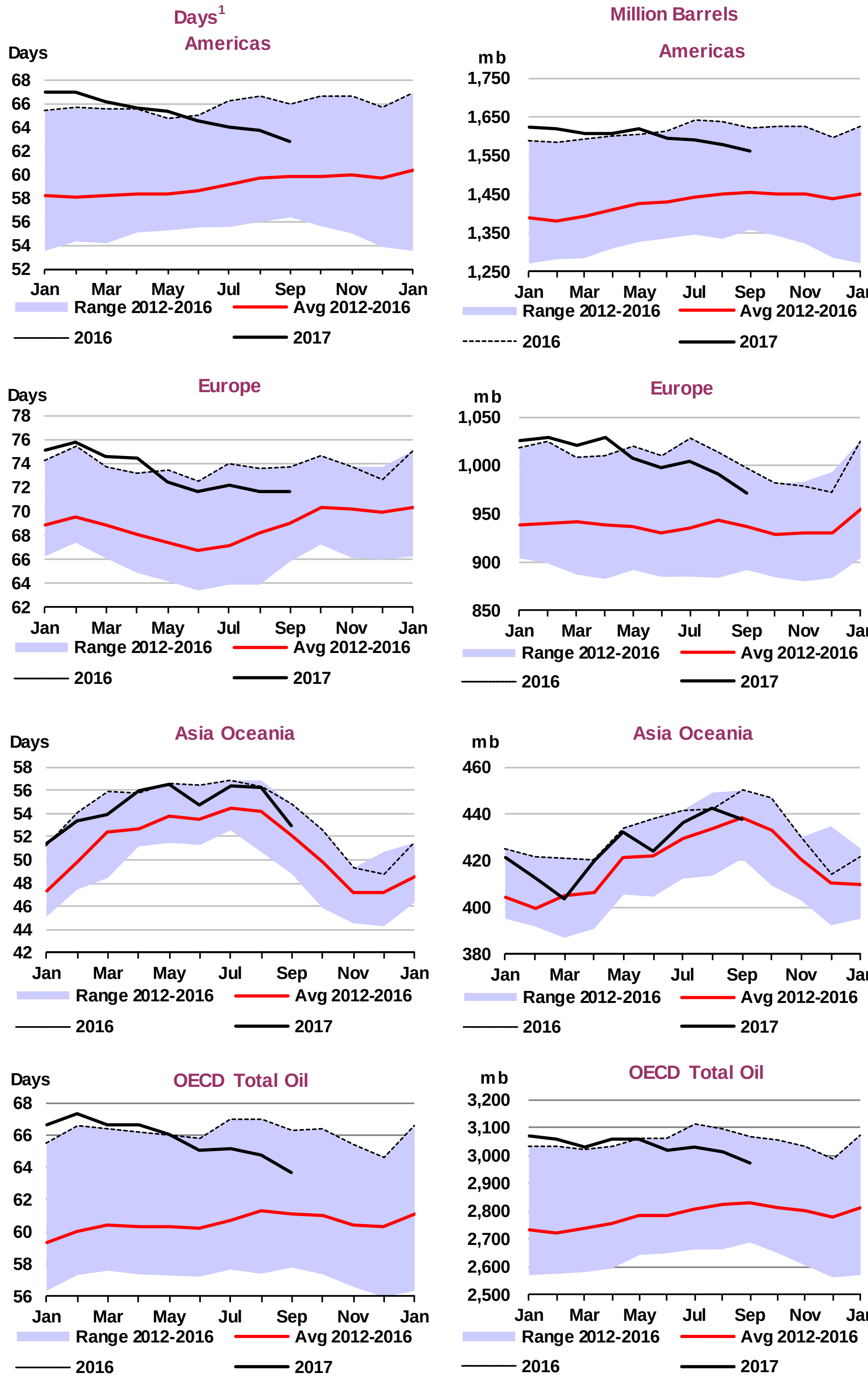




Oil inventories in Fujairah fell in October for the fourth straight month, by 1.5 mb to 15.8 mb, reaching their lowest level since data was first published at the start of 2017. There were falls across all major product categories, including light, middle and heavy distillates. By contrast, Singaporean stocks gained in October, by 3.8 mb to 49 mb, with increases in middle distillates (1.4 mb) and fuel oil and residue stocks (2.4 mb), driven by higher imports from Russia and the Middle East. Oil product stocks in Singapore remain slightly higher than a year ago and above the five-year average.

Regional OECD End-of-Month Industry Stocks

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



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

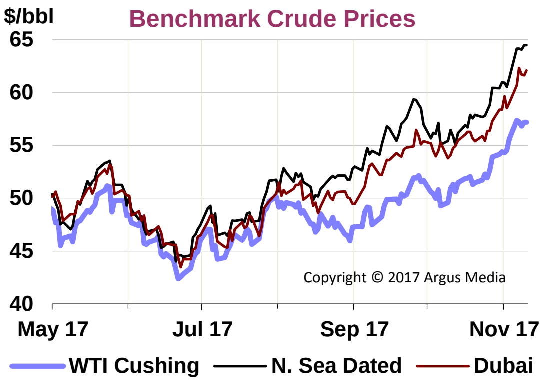
PRICES

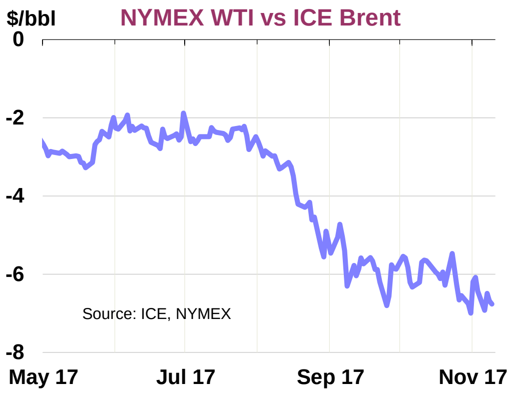
Summary

- **Benchmark crude prices rose by $1-2/bbl in October versus September and pushed even higher in early November**, buoyed by rising political tensions in the Middle East.

- **Money managers boosted net long positions in crude futures to a near record.** Short positions held by swap dealers also rose, reflecting increased hedging activity from producers.

- **Oil product markets weakened relative to crude on improved supplies** following the return of US refineries to production. Naphtha rose with higher petrochemical demand. Crude tanker freight rates increased from September's very low levels due to higher import and export movements.





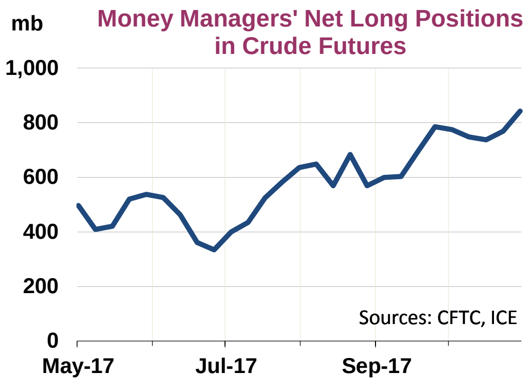
Market overview

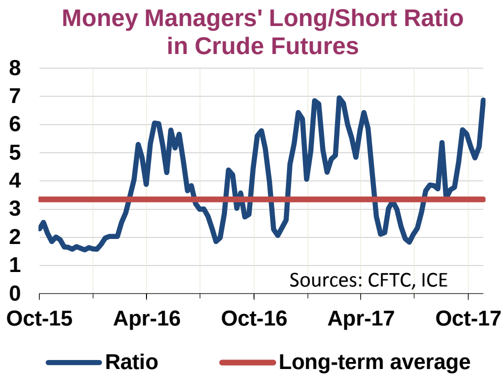
Outright oil prices reached new two-year highs in October and early November, boosted by rising geopolitical tensions in the Middle East. Brent prices are now nearly $20/bbl higher than a year ago, before OPEC agreed to cut production. The price rise has gone hand in hand with one of the largest builds in financial positions in history. Net long positions held by money managers amounted to 840 mb at the end of October, the largest volume since March's all-time high. While this is partly the result of the continued development of global oil markets and increased liquidity, it no doubt also reflects the current level of optimism amongst oil traders looking for higher prices. Physical crude markets tracked outright futures prices higher, but light sweet crudes failed to continue the momentum seen in August-September. US crude prices recovered strongly as gains in crude differentials more than offset the wider Brent-WTI price spread, helped by higher demand from US refiners and record exports from the US Gulf during October. Most oil product prices also gained, but less than for crude oil due to lower demand seasonally and the expected return to production of many refineries in November.

Futures markets

Crude futures in October increased for the fourth straight month. There was not a single dominant factor behind the price rise, but political tensions in Iraq, continuing oil stock draws globally and declarations from OPEC ministers that supply cuts are likely to continue next year all contributed. In early November, high profile arrests in Saudi Arabia as part of an anti-corruption drive, the unexpected resignation of the Lebanese Prime Minister and accusations by Saudi Arabia against Iran regarding a missile launched from Yemen, pushed prices even higher. Front-month Brent futures were trading at $63.50/bbl at the time of writing, close to their highest level since July 2015.

In parallel, money managers grew increasingly optimistic about the outlook for oil prices as they built ever-larger bullish positions in crude futures. Net long positions held by this category of traders amounted to 840 mb at the end of October, the largest volume since March's all-time high. Net long positions in Brent were at a record, whereas for WTI they were only 90 mb below March's high. It was also noticeable that short positions held by banks and swap dealers increased during October, potentially highlighting large-scale hedging activity from producers at current elevated oil prices.





The Month 1-Month 2 ICE Brent futures spread stayed in backwardation, moving in a range of $0.10-0.43/bbl throughout October. Meanwhile, longer-dated spreads strengthened a little further and the Brent curve was, at the time of writing, fully backwardated until January 2021.

The Brent-WTI futures spread widened a little, from an average $+5.63/bbl in September to $+6.06/bbl in October, thus helping to incentivise record crude exports out of the US Gulf Coast. The higher spread was the result of growing crude stockpiles in Cushing, OK, thanks to higher US LTO production and constrained pipeline capacity. The Brent-Dubai Exchange of Futures for Physical (EFP) spread continued to rise and spent most of October above $2/bbl, reducing – but not eliminating – the incentive to export crude from the Atlantic Basin to Asia. At $2.65/bbl at the time of writing, the EFP was trading at higher levels to the same time a year ago, just before OPEC agreed to cut output.

Prompt Month Oil Futures Prices

(monthly and weekly averages, $/bbl)

	Aug	Sep	Oct	Oct-Sep Avg Chg	% Chg	Week Commencing: 09 Oct	16 Oct	23 Oct	30 Oct	06 Nov
NYMEX										
Light Sweet Crude Oil	48.06	49.88	51.59	1.71	3.4	50.77	51.71	52.62	54.60	57.05
RBOB	69.84	69.85	69.19	-0.66	-0.9	66.91	68.99	72.64	74.32	76.43
ULSD	68.51	75.21	75.55	0.34	0.5	74.33	75.66	76.75	78.67	81.21
ULSD ($/mmbtu)	12.08	13.27	13.33	0.06	0.5	13.11	13.34	13.54	13.87	14.32
Henry Hub Natural Gas ($/mmbtu)	2.91	3.01	2.91	-0.09	-3.1	2.92	2.91	2.91	2.94	3.18
ICE										
Brent	51.87	55.51	57.65	2.14	3.9	56.55	57.77	58.78	61.09	63.78
Gasoil	64.68	71.33	71.55	0.23	0.3	70.82	71.74	71.75	73.66	76.03
Prompt Month Differentials										
NYMEX WTI - ICE Brent	-3.81	-5.63	-6.06	-0.43		-5.78	-6.06	-6.16	-6.49	-6.73
NYMEX ULSD - WTI	20.45	25.33	23.96	-1.37		23.56	23.95	24.13	24.07	24.16
NYMEX RBOB - WTI	21.78	19.97	17.60	-2.37		16.14	17.28	20.02	19.72	19.38
NYMEX 3-2-1 Crack (RBOB)	21.34	21.76	19.72	-2.04		18.61	19.50	21.39	21.17	20.97
NYMEX ULSD - Natural Gas ($/mmbtu)	9.18	10.26	10.41	0.15		10.19	10.43	10.63	10.94	11.15
ICE Gasoil - ICE Brent	12.81	15.82	13.90	-1.91		14.27	13.97	12.97	12.57	12.25

Source: ICE, NYMEX.

In oil products, the Month 1-Month 2 ICE low sulphur gasoil futures curve traded in backwardation at similar levels to September, helped by ongoing maintenance work at some European refineries and lower scheduled diesel exports from Russia in November. The Month 1-Month 2 NYMEX diesel futures spread eased from the highs recorded in September following Hurricane Harvey, and even traded in contango between 19-26 September. The Month 1-Month 2 NYMEX Reformulated Gasoline Blendstock for Oxygen Blending (RBOB) spread increased throughout October as European gasoline exports were diverted to the Middle East and Asia, where prices were higher. However, it fell in late October and was $+0.68/bbl at the time of writing, up from a year ago.

Spot crude oil prices

Global crude oil prices rose for the fourth straight month in October, bolstered by lower supplies in certain parts of the world and steady demand from refiners. Light sweet crudes, which had increased more quickly than sour grades in August-September, failed to continue that momentum. US crude prices recovered strongly as gains in crude differentials more than offset the wider Brent-WTI price spread. US crude prices were buoyed by higher demand from refiners, record exports from the Gulf Coast as well as reduced Gulf of Mexico production at the start of October.

Spot Crude Oil Prices and Differentials

(monthly and weekly averages, $/bbl)

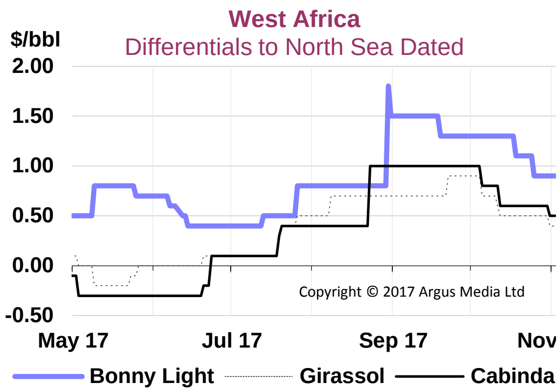
	Aug	Sep	Oct	Oct-Sep Avg Chg	%	Week Commencing: 09 Oct	16 Oct	23 Oct	30 Oct	06 Nov
Crudes										
North Sea Dated	51.64	56.07	57.28	1.21	2.2	55.78	57.38	58.59	60.84	64.24
Brent (Asia) Mth 1	52.08	55.73	57.86	2.13	3.8	56.83	58.16	58.56	61.07	63.98
WTI (Cushing) Mth 1	48.03	49.83	51.57	1.74	3.5	50.77	51.71	52.49	54.60	57.05
Urals (Mediterranean)	51.29	54.89	56.81	1.92	3.5	55.37	56.63	58.05	60.64	64.24
Dubai	50.24	53.71	55.60	1.89	3.5	54.60	55.83	56.26	58.77	61.67
Tapis (Dated)	53.54	58.40	60.07	1.66	2.8	58.78	60.25	61.59	63.84	67.24
Differential to North Sea Dated										
WTI (Cushing)	-3.61	-6.24	-5.72	0.53		-5.01	-5.67	-6.11	-6.24	-7.18
Urals (Mediterranean)	-0.34	-1.18	-0.48	0.70		-0.41	-0.75	-0.54	-0.20	0.00
Dubai	-1.40	-2.36	-1.68	0.68		-1.19	-1.56	-2.34	-2.07	-2.57
Tapis (Dated)	1.90	2.33	2.78	0.45		3.00	2.87	3.00	3.00	3.00
Prompt Month Differential										
Forward Cash Brent Mth1-Mth2	0.16	0.32	0.37	0.05		0.32	0.50	0.30	0.27	0.23
Forward WTI Cushing Mth1-Mth2	-0.23	-0.43	-0.28	0.15		-0.31	-0.26	-0.21	-0.22	-0.23
Forward Dubai Mth1-Mth2	-0.07	0.07	0.23	0.17		0.28	0.33	0.21	0.18	0.43

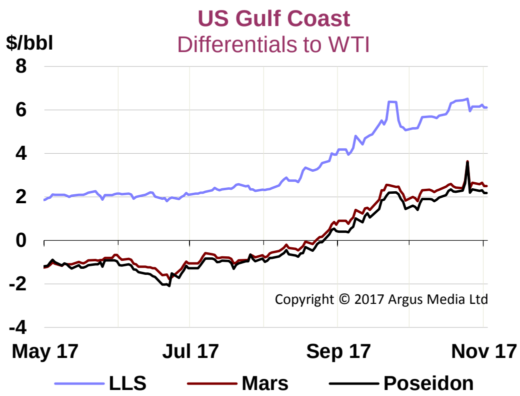
North Sea crude prices gained less than other global crudes in October, erasing part of the premium built over the July-September period. North Sea Dated averaged $57.28/bbl, up $1.21/bbl on the month. Rising production in Libya and Nigeria, and higher exports of light sweet crude from the US to Europe, helped keep a lid on price gains. The Forties differential to North Sea Dated fell from $+1.05/bbl in late September to as low as $-0.78/bbl on 12 October, before rebounding later in the month. Unlike Brent futures, the short-term North Sea contract-for-difference swaps curve traded in contango for large parts of October. By the end of the month, however, prices had started recovering with lower expected loadings in November, higher gasoline cracks and strong demand from Asian refiners. A record six Very Large Crude Carriers (VLCCs) laden with Forties crude sailed to Asia in October, of which several had previously been used for floating storage. One ship turned around and returned to the North Sea in late October. Two VLCCs of Ekofisk crude also departed for China, while several more Forties cargoes could leave Europe during November, according to market sources.

West African crude prices were some of the worst performers amongst global crudes in October after they had risen the most in previous months. Forcados was up $0.94/bbl on average to $58.70/bbl, while

Bonny Light rose $0.96/bbl to $58.45/bbl. Physical premiums to North Sea Dated came under pressure across the board, reflecting stronger competition from US crudes exported to the Atlantic Basin and higher expected loadings of Nigerian crude over November-December. Nigerian exports are expected to reach 2.1 mb/d in December, their highest in a year, as oil fields and associated infrastructure progressively return following sabotage earlier in the year. In October, the Nembe Creek Trunk line, which transports Bonny Light crude, was repaired and force majeure on the grade lifted. However, there were delays of 4-5 days for Forcados cargo loadings. By late October, there were still many unsold Nigerian crude cargoes from the November loading programme, a clear sign of oversupply. Angolan grades fell even more than Nigerian crude during October due to a lull in Chinese demand.

Russian Urals crude rose in October, supported by higher outright oil prices and lower supplies available for exports. Urals for delivery in Northwest Europe averaged $55.91/bbl, up $1.54/bbl, while Urals delivered in the Mediterranean rose even more, by $1.92/bbl to $56.81/bbl, due to weather disruptions. The Sheskharis terminal at Russia's Novorossiysk port closed for nearly 10 days in late September and early October due to bad weather, forcing the cancellation of six cargo loadings. The situation went back to normal in the middle of October. Overall Russian crude loadings are scheduled to reduce in November with the return from maintenance of refineries and the completion of works to a pipeline in the north. Relative to North Sea Dated, Urals for delivery in Northwest Europe strengthened until 20 October, before narrowing later in the month. The price differential for light sweet grades delivered in the Mediterranean, such as Azeri Light, eased in the first part of the month on competition from US crudes, before rebounding on stronger demand from Asian refiners. A second production issue at the Kashagan field in the space of a few weeks boosted the price of CPC Blend in late October.





Middle Eastern crudes recovered in October after they had struggled in August-September, helped by higher interest from Asian refiners for year-end supplies and output curbs. Sour grade Dubai averaged $55.60/bbl, up $1.89/bbl on the month, and it traded in an implied backwardation and at a higher premium relative to swaps than in September. In late October, Dubai weakened once again amid selling by Chinese refiners. Qatar's Al Shaheen was boosted by lower production and subsequent cargo deferrals, rising from a premium of $+0.37/bbl over Dubai in late September to $+0.90/bbl in late October. Light grade Murban also gained from parity with Dubai in late September to a $+0.50/bbl premium in late October, with strong demand from Asian refiners. Basrah Light and Heavy crudes fell in late October following news that Iraq would boost exports from the south by 200 kb/d in response to lower output in the north, and with lower demand from US refiners amid strong competition from crudes such as Mexico's Maya. Basrah Light was trading at a discount to Dubai of $0.40/bbl at the time of writing, down from a premium of $0.13/bbl earlier in the month.

US crude prices rose strongly in October, reflecting record high exports to Europe and Asia, the ongoing recovery in US refinery runs following Hurricane Harvey as well as reduced production in the Gulf of Mexico at the start of October. Light Louisiana Sweet was up $2.62/bbl on average to $57.46/bbl and sour grade Mars gained $2.41/bbl to $53.99/bbl. While the price spread between WTI and other global crudes widened a little during the month, US crude differentials pushed higher. Mars traded at a premium over WTI of $3.68/bbl in late October, it's widest since May 2015. By contrast, the price differential for WTI delivered in Midland, Texas, eased in the second half of October following the partial shutdown of a pipeline and as capacity out of the shale producing region was constrained. Bakken crude remained elevated throughout most of the month as a result of extended maintenance at Canadian Natural Resources' Horizon upgrader and following the closure of a pipeline carrying crude from the Permian Basin to Cushing.

Spot product prices

Global oil product prices moved mostly higher in October, except for gasoline, which underwent a seasonal switch to cheaper specifications in the northern hemisphere. Most oil product price gains were, however, more limited than for crude oil due to lower demand seasonally and the expected return to production of many refineries in Asia, Europe and the US. Naphtha rose more strongly than any other oil product, boosted by strong demand from Asian petrochemical facilities.

Spot Product Prices

(monthly and weekly averages, $/bbl)

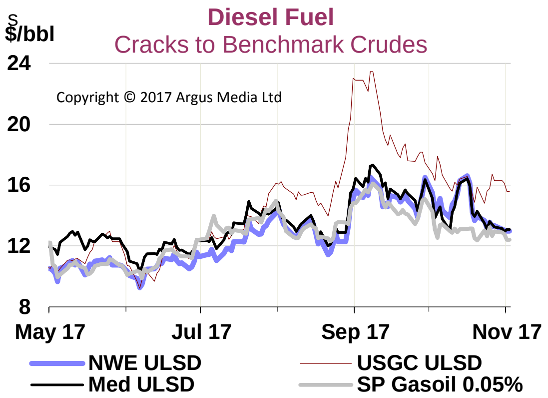
	Aug	Sep	Oct	Oct-Sep		Week Commencing:					Aug	Sep	Oct	Chg
				Chg	%	09 Oct	16 Oct	23 Oct	30 Oct	06 Nov				
Rotterdam, Barges FOB											**Differential to North Sea Dated**			
Premium Unl 10 ppm	65.64	70.04	66.56	-3.48	-5.0	65.69	66.11	67.89	71.95	76.25	14.00	13.97	9.28	-4.69
Naphtha	51.57	56.39	58.10	1.71	3.0	56.88	57.97	59.49	62.48	65.01	-0.06	0.31	0.81	0.50
Jet/Kerosene	64.93	69.78	69.93	0.16	0.2	68.63	69.88	70.96	73.68	76.54	13.29	13.71	12.65	-1.06
ULSD 10ppm	64.70	71.33	71.69	0.36	0.5	70.83	72.30	72.00	73.70	76.12	13.06	15.26	14.40	-0.86
Gasoil 0.1%	62.25	68.89	68.65	-0.24	-0.4	67.53	69.22	68.91	71.65	74.74	10.61	12.82	11.36	-1.46
LSFO 1%	46.75	49.80	50.78	0.98	2.0	50.37	50.81	51.36	54.30	57.24	-4.89	-6.28	-6.50	-0.23
HSFO 3.5%	45.40	48.44	48.79	0.35	0.7	48.10	48.97	49.33	52.45	54.76	-6.23	-7.63	-8.49	-0.86
Mediterranean, FOB Cargoes											**Differential to Urals**			
Premium Unl 10 ppm	66.13	70.24	67.34	-2.90	-4.1	66.54	66.95	68.74	71.88	75.73	14.84	15.35	10.53	-4.82
Naphtha	50.46	54.97	56.67	1.70	3.1	55.29	56.66	58.30	61.33	63.90	-0.84	0.08	-0.14	-0.22
Jet Aviation fuel	64.36	68.78	68.94	0.17	0.2	67.45	69.00	70.18	72.94	75.85	13.06	13.88	12.13	-1.75
ULSD 10ppm	64.79	70.72	71.03	0.30	0.4	70.07	71.59	71.43	73.48	76.05	13.50	15.83	14.22	-1.61
Gasoil 0.1%	62.38	68.53	68.64	0.11	0.2	67.41	69.42	69.19	71.20	73.87	11.08	13.64	11.83	-1.80
LSFO 1%	47.09	50.39	51.94	1.55	3.1	51.56	51.93	52.56	55.66	58.63	-4.20	-4.51	-4.87	-0.37
HSFO 3.5%	45.99	49.23	50.03	0.80	1.6	49.44	50.20	50.58	53.80	56.13	-5.30	-5.66	-6.78	-1.12
US Gulf, FOB Pipeline											**Differential to LLS**			
Super Unleaded	75.90	84.01	74.66	-9.35	-11.1	71.16	73.12	81.78	79.37	80.98	24.82	29.17	17.20	-11.97
Unleaded	70.77	72.51	69.29	-3.23	-4.5	67.69	69.02	71.87	74.24	76.50	19.68	17.67	11.83	-5.85
Jet/Kerosene	66.44	73.33	69.53	-3.80	-5.2	68.41	69.61	70.18	71.70	74.74	15.35	18.49	12.07	-6.42
ULSD 10ppm	67.31	74.42	73.62	-0.80	-1.1	72.45	73.66	74.63	76.32	78.43	16.23	19.58	16.16	-3.42
Heating Oil	59.51	65.82	65.58	-0.24	-0.4	63.68	65.69	67.28	69.94	71.60	8.43	10.98	8.12	-2.86
No. 6 3%*	44.85	47.56	48.32	0.75	1.6	47.27	48.52	49.49	53.08	55.86	-6.23	-7.28	-9.14	-1.86
Singapore, FOB Cargoes											**Differential to Dubai**			
Premium Unleaded	67.51	70.43	70.04	-0.39	-0.6	69.05	70.64	70.64	73.49	76.71	17.27	16.72	14.43	-2.28
Naphtha	50.58	55.20	57.79	2.58	4.7	56.47	57.78	59.43	62.43	65.39	0.34	1.49	2.18	0.69
Jet/Kerosene	63.11	68.08	68.36	0.28	0.4	66.93	68.40	69.22	71.49	74.42	12.87	14.37	12.76	-1.61
Gasoil 0.05%	63.51	68.49	68.61	0.11	0.2	67.60	68.61	69.16	71.01	72.80	13.27	14.78	13.00	-1.78
LSWR Cracked	49.28	52.55	53.59	1.04	2.0	52.55	53.78	54.29	57.00	59.20	-0.96	-1.16	-2.01	-0.85
HSFO 180 CST	48.35	51.94	53.18	1.24	2.4	52.02	53.36	53.99	56.82	59.14	-1.89	-1.77	-2.42	-0.65
HSFO 380 CST 4%	47.84	51.37	52.56	1.19	2.3	51.48	52.73	53.25	56.19	58.75	-2.40	-2.34	-3.04	-0.70

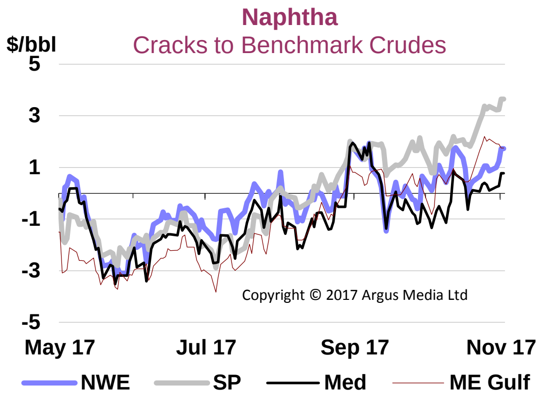
 * Waterborne

Diesel prices were up a little in Asia and Europe in October, and they fell in the US, as buying requirements to replace output lost to Hurricane Harvey progressively faded. Rotterdam diesel barges averaged $71.69/bbl, up $0.36/bbl on the month, and US Gulf Coast diesel pipeline prices reduced $0.80/bbl to $73.62/bbl. US Gulf Coast diesel exports increased progressively during the month, reaching their highest level of the year in late October. A large portion of the extra US diesel went to Latin America, while Europe was supplied by a rising flow of products from the East. Up to 13 mb of diesel was scheduled to leave Asia and the Middle East for Europe in November, according to market sources.

Russian diesel exports are forecast to remain below capacity in November. European physical diesel differentials eased throughout the month in line with improved supplies. In Asia, physical premiums eased as refineries returned from maintenance, but previously high exports to Europe meant the arbitrage window had become unworkable in late October. Indian refiners stepped up exports even as the Monsoon season – which typically leads to lower demand and higher exports – ended.

Gasoline prices fell seasonally in October in line with the switch to the cheaper winter specification in the northern hemisphere, however they remained supported by strong demand in Asia and the Middle East. Rotterdam premium unleaded gasoline barges fell $3.48/bbl on the month to average $66.56/bbl in October, and Singapore premium unleaded gasoline cargoes fell $0.39/bbl to $70.04/bbl. A total of 10 mb of gasoline and blending components was exported from Europe to Asia and the Middle East in October in response to lower production in those regions, the highest volume in two years. Exports of mixed aromatics from Europe to China, which had surged in September, reduced in October. The arbitrage between Europe and the US remained largely uneconomic. US gasoline prices fell both in outright terms and against their relative benchmarks, reflecting lower seasonal demand and the return of refinery capacity following Hurricane Harvey.





Naphtha prices increased more than any other oil product in October due to strong demand from petrochemical facilities. Singapore naphtha cargo prices averaged $57.79/bbl, up $2.58/bbl on the month. Nearly 12 mb of naphtha left Northwest Europe and the Mediterranean basin for Asia in October, the highest volume this year, underscoring strong demand from crackers in Asia. In addition, exports from Europe to Brazil also increased to 3-4 mb during the month. Singapore physical naphtha cargoes traded at a $0.94/bbl premium to swaps in late October, the highest premium recorded since April, while in Europe physical premiums also rose. Continuing high LPG prices following Hurricane Harvey and the onset of winter in the northern hemisphere supported the naphtha complex by making LPG substitution uneconomic. However, by late October, LPG prices in Europe, the Middle East and Asia had started to weaken in response to warmer-than-usual temperatures and lower demand.

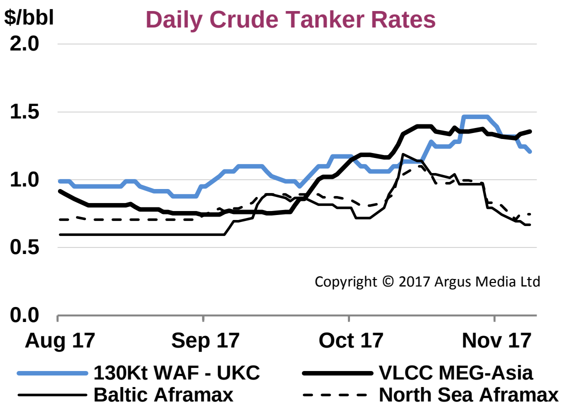
Fuel oil prices rose modestly in October, supported by firm demand for bunker fuel and lower Russian fuel oil exports. Singapore 380-centistoke fuel oil cargo prices rose $1.19/bbl on the month to average $52.56/bbl, and Rotterdam 3.5% fuel oil barge prices were up $0.35/bbl to $48.79/bbl. Fuel oil exports from Europe to Asia fell in October, but were replaced by higher cargo exports from the Middle East. In late October, the Europe to Asia arbitrage appeared largely unworkable as Asian fuel oil stocks rose to their highest level in several months. In September, Russian fuel oil exports reached a historical low, helping to support the fuel oil complex. Asian 180 centistoke fuel oil prices were more supported than higher viscosity fuel oils during the month, highlighting a relative lack of lighter blendstocks.

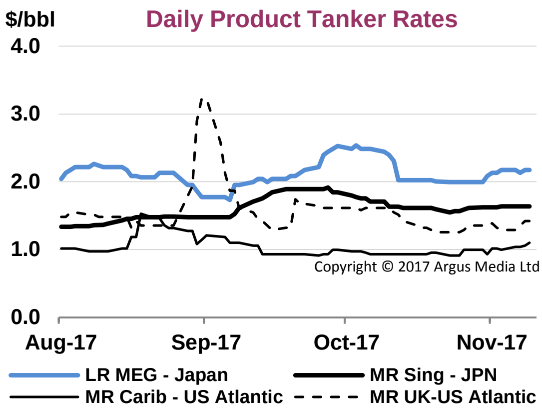
Freight

Freight for **VLCCs** on the Middle East Gulf (MEG) to Asia route increased in the first half of October before maintaining previously held levels in the second half of the month. On average, the rate went from $0.83/bbl in September to $1.29/bbl in October, with increasing demand from Asian refiners for cargoes. However, it remained below year-ago levels because of lower exports from the Middle East.

Suezmax and VLCC rates on the West Africa to Northwest Europe route also increased from $1.06/bbl in September to $1.21/bbl in October with higher Nigerian loadings following the return of most pipelines and associated infrastructure to full capacity and with steady demand from European refiners. Higher prices in the Aframax segment and weather-related disruptions in the Mediterranean also contributed.

Baltic **Aframax** rates rose $0.16/bbl on the month to $0.94/bbl with higher demand from refiners and higher prices in the Mediterranean. Higher cargo loadings from Libya and weather delays in the Bosphorus and the wider Mediterranean helped tighten ship availability.





Clean product freight on the UK Continent-US Atlantic Coast route fell $0.29/bbl to average $1.43/bbl in October as the arbitrage for shipping gasoline between Europe and the US stayed mostly closed. Medium-Range and Long-Range 1 rates in Asia and the Caribbean also eased as a general oversupply of ships weighed on prices. MRs exporting clean refined products from the US Gulf Coast continued to see depressed rates even as shipments recovered after Hurricane Harvey.

East of Suez, the Long Range MEG-Japan rate stayed high in the first half of October before easing later in the month. Rising naphtha exports from Europe to Asia and a pickup in Europe's diesel imports helped strengthen freight rates in the final days of October and in early November.

REFINING

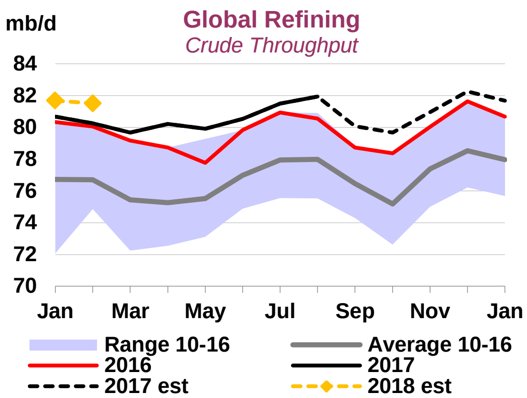
Summary

- **Our estimate for 3Q17 global refinery intake is revised up by 0.2 mb/d to 81.1 mb/d,** on strong growth in China and Europe. Runs increased by 0.9 mb/d quarter on quarter (q-o-q).

- **The forecast for 4Q17 throughput has been revised down by 0.1 mb/d, to 80.8 mb/d, growing by 0.9 mb/d year on year (y-o-y).** Annual growth is expected to accelerate in January and February 2018, with runs up about 1 mb/d y-o-y.
.
- **Global refined product and crude oil balances show dramatic changes behind the nominally similar headline oil balances for 3Q17 and 4Q17.** After continued refined product and crude oil stock draws in 3Q17, both refined products and crude markets are forecast to be in oversupply, while the draws come from seasonal LPG use for heating.

Global refinery overview

Our estimate for global 3Q17 refinery throughput has been revised up by 0.2 mb/d since last month's *Report* on higher finalised European data for August and strong growth in China in September. Runs averaged 81.1 mb/d, up 1.1 mb/d y-o-y. China alone accounted for over two thirds of the global growth, with Europe contributing the rest.



Our forecast for 4Q17 throughput is lower by 0.1 mb/d following a downward revision of demand. Refinery intake levels decline by 0.2 mb/d from 3Q17, but remain 0.9 mb/d higher y-o-y. Refined product stocks are expected to increase by 0.3 mb/d, after draws in two consecutive quarters (See *Global crude oil and refined product balances*).

In January and February 2018 y-o-y growth is expected to accelerate even further, to 1.1 mb/d, expanding slightly faster than refined product demand, which results in a small net build in refined product inventories.

Global Refinery Crude Throughput[1]
(million barrels per day)

	2016	2Q17	Sep 17	3Q17	Oct 17	Nov 17	Dec 17	4Q17	2017	Jan 18	Feb 18
Americas	**18.9**	**20.0**	17.8	**19.1**	18.4	19.3	19.4	**19.0**	**19.2**	19.2	19.0
Europe	**11.9**	**12.0**	12.5	**12.6**	12.2	12.5	12.7	**12.5**	**12.3**	12.4	12.1
Asia Oceania	**6.9**	**6.6**	6.7	**7.0**	6.6	7.0	7.3	**7.0**	**7.0**	7.3	7.3
Total OECD	**37.8**	**38.6**	37.1	**38.7**	37.1	38.9	39.4	**38.5**	**38.5**	38.9	38.4
FSU	**6.8**	**6.7**	6.5	**6.8**	6.8	6.9	7.0	**6.9**	**6.8**	6.9	6.9
Non-OECD Europe	**0.5**	**0.5**	0.6	**0.6**	0.5	0.6	0.6	**0.6**	**0.5**	0.6	0.6
China	**10.8**	**11.0**	11.9	**11.3**	11.6	11.4	11.3	**11.4**	**11.2**	11.3	11.3
Other Asia	**10.2**	**10.2**	10.6	**10.4**	10.3	10.3	10.5	**10.4**	**10.3**	10.5	10.6
Latin America	**4.2**	**3.8**	3.9	**3.8**	3.9	3.9	4.0	**3.9**	**3.9**	3.9	3.9
Middle East	**7.2**	**7.3**	7.4	**7.4**	7.3	6.9	7.3	**7.2**	**7.2**	7.4	7.7
Africa	**2.0**	**2.0**	2.0	**2.1**	2.0	2.0	2.1	**2.0**	**2.0**	2.1	2.1
Total Non-OECD	**41.8**	**41.5**	42.9	**42.3**	42.4	42.0	42.7	**42.4**	**42.1**	42.7	43.1
Total	**79.6**	**80.1**	80.0	**81.1**	79.6	80.9	82.2	**80.8**	**80.5**	81.6	81.4
Year-on-year change	*0.5*	*1.5*	*1.3*	*1.1*	*1.3*	*0.9*	*0.6*	*0.9*	*1.0*	*1.0*	*1.3*

[1] Preliminary and estimated runs based on capacity, know n outages, economic runcuts and global demand forecast

Global crude oil and product balances

Global oil markets in 3Q17 showed a small 0.2 mb/d negative balance according to our latest estimates of supply and demand *(see Table 1).* The breakdown of the headline number reveals a slowdown in the pace of refined product stock draws to just 0.1 mb/d in 3Q17. OECD refined product inventory data showed a decrease of 0.4 mb/d, largely due to Hurricane Harvey. This implies a build of 0.3 mb/d for non-OECD product stocks (the assumed build in Chinese product stocks discussed in *Demand* is inherently included in this number).

Crude Oil and Product Balances

(million barrels per day)

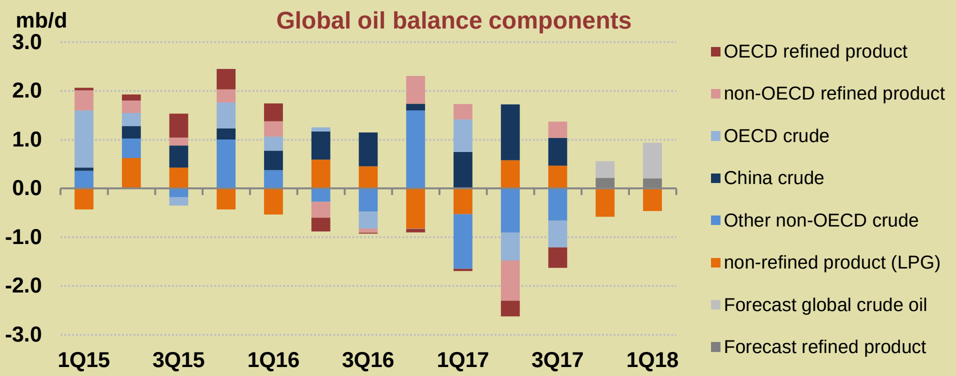
	2015	1Q16	2Q16	3Q16	4Q16	**2016**	1Q17	2Q17	3Q17	4Q17	**2017**	1Q18
World balance[1]	**1.7**	1.2	0.4	0.2	1.4	**0.8**	0.1	-0.9	-0.2	-0.1	**-0.3**	0.6
Refined product balance	**0.5**	0.7	-0.6	-0.1	0.5	**0.1**	0.3	-1.1	-0.1	0.2	**-0.2**	0.2
of which												
OECD refined product actual stock change[2]	*0.3*	*0.4*	*-0.3*	*0.0*	*-0.1*	***0.0***	*0.0*	*-0.3*	*-0.4*			
Non-OECD refined product implied stock change	*0.3*	*0.3*	*-0.3*	*-0.1*	*0.6*	***0.1***	*0.3*	*-0.8*	*0.3*			
Crude oil balance	**1.1**	1.1	0.4	-0.1	1.7	**0.8**	0.3	-0.3	-0.6	0.3	**-0.1**	0.7
of which												
OECD crude oil actual stock change	**0.4**	0.3	0.1	-0.3	0.0	**0.0**	0.7	-0.6	-0.5			
Non-OECD crude oil implied stock change	**0.7**	0.8	0.3	0.2	1.7	**0.8**	-0.4	0.2	-0.1			
China crude oil balance	**0.3**	0.4	0.6	0.7	0.1	**0.5**	0.7	1.1	0.6			
Other Non-OECD crude oil stock change	**0.4**	0.4	-0.3	-0.5	1.6	**0.3**	-1.1	-0.9	-0.7			
OECD non-refined product stock change[3]	**0.0**	-0.5	0.6	0.5	-0.8	**-0.1**	-0.5	0.6	0.5	-0.6	**0.0**	-0.5

[1] 4Q17 and 1Q18 OPEC crude oil output assumed flat from October levels

[2] Refined product inventories include gasoline, middle distillates and fuel oil. See *Stocks* for detailed discussion of observed stock changes

[3] Based on OECD LPG stock draws until August 2017, and a seasonal average stock change expectation for the forecast period

Crude oil markets in 3Q17 were undersupplied by 0.6 mb/d as demand from refining and power generation ramped up faster than output. This was the largest negative gap between supply and demand since 3Q13. For the second quarter in a row, OECD crude oil stocks declined, by 0.5 mb/d in 3Q17. China's crude oil balances continued to build, although the rate was halved to 0.6 mb/d. Removing the OECD crude oil stock changes and the Chinese crude balance suggests continued stock draws for the rest of the world. This balancing item includes all other non-OECD countries, as well as oil in transit and floating storage changes. It is interesting to note that, here, the 1.6 mb/d excess from 4Q16's hugely oversupplied crude oil market has eroded completely in the first three quarters of this year. And lastly, non-refined products (LPG) stocks built seasonally by 0.5 mb/d.



While our estimated 4Q17 global balance is rather similar to 3Q17 - a 0.1 mb/d draw (assuming unchanged OPEC crude oil production), its components change dramatically. We expect refined product stocks to return to growth, increasing by 0.2 mb/d as refined product demand declines seasonally. The crude oil market also returns to oversupply, showing a 0.3 mb/d stockbuild. Refinery demand and direct crude use decline seasonally, while global output of crude and condensate increases.

The biggest change is expected to come from non-refined product stocks, which consist primarily of LPG. In 4Q17, LPG stocks are forecast to draw by about 0.6 mb/d, in line with seasonal average, led by winter demand in the northeastern United States and Japan. LPG stocks tend to have a strong seasonal cycle (builds in 2Q/3Q, draws for use in heating in 1Q/4Q), and separating them from global refined product and crude balances allows a better understanding of the eventual call on crude to satisfy product demand.

Margins

Margins in October continued to decline from September's hurricane-inflicted peak, losing about $2/bbl month-on-month (m-o-m) in Europe and $1/bbl in Singapore. US Gulf Coast margins lost a more significant $4.5/bbl, a combined effect of the normalisation of the run rates in the affected refineries and the gasoline crack seasonally moving lower in winter. We saw the opposite development in the US Midcontinent, where margins increased. Here, October gasoline and diesel cracks surged about $3/bbl from September levels as refinery throughputs declined due to maintenance in major refineries. Repairs on a pipeline carrying oil products from Texas refineries also contributed to price increases. Weekly stock data show PADD 2 (US Midcontinent) diesel and gasoline stocks declining to their lowest levels in the last two years.

Overall, global margins remain above 2016 levels. It remains to be seen, though, if the downward pressure will resume during the lull in refined product demand in 4Q17, just after summer but before the heating demand kicks in earnest in 1Q18. In the meantime, the strength in fuel oil observed for most of this year continues to dissipate with cracks moving lower month-on-month in all regions.

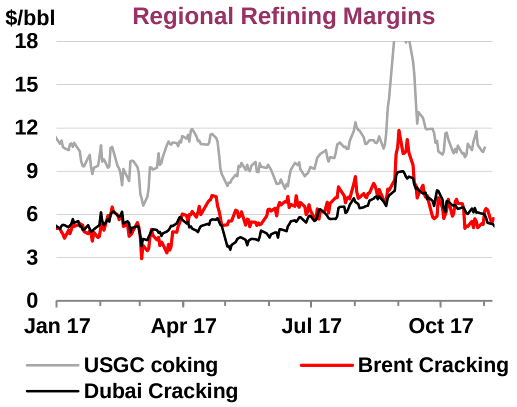
IEA/KBC Global Indicator Refining Margins[1]

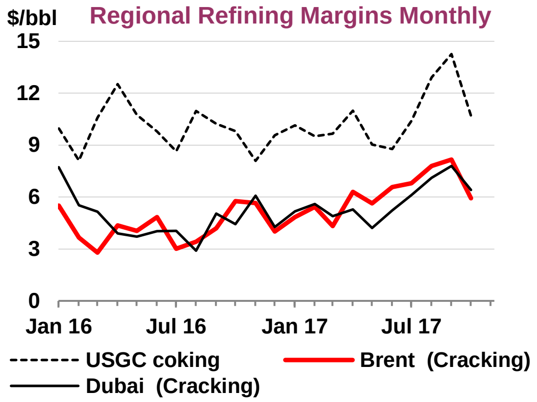
($/bbl)

	Monthly Average				Change		Average for week ending:				
	Jul 17	Aug 17	Sep 17	Oct 17	Oct 17-Sep 17		13 Oct	20 Oct	27 Oct	03 Nov	10 Nov
NW Europe											
Brent (Cracking)	6.80	7.79	8.17	5.92	↓	-2.25	6.53	5.71	5.38	5.93	5.70
Urals (Cracking)	6.90	7.54	9.09	6.85	↓	-2.24	7.33	7.27	6.23	6.23	5.65
Brent (Hydroskimming)	3.30	3.57	3.52	1.94	↓	-1.59	2.67	1.81	1.25	1.71	1.32
Urals (Hydroskimming)	2.98	2.95	3.98	2.26	↓	-1.72	2.80	2.77	1.52	1.54	0.66
Mediterranean											
Es Sider (Cracking)	8.33	8.66	8.79	7.18	↓	-1.61	7.68	7.13	6.65	6.93	6.55
Urals (Cracking)	7.54	7.80	9.14	6.99	↓	-2.15	7.60	7.28	6.37	6.17	5.22
Es Sider (Hydroskimming)	5.28	4.98	4.67	3.47	↓	-1.20	4.09	3.41	2.91	3.34	2.97
Urals (Hydroskimming)	3.63	3.17	3.95	2.10	↓	-1.85	2.80	2.41	1.45	1.48	0.40
US Gulf Coast											
50/50 HLS/LLS (Cracking)	10.48	13.37	14.38	9.27	↓	-5.12	8.94	8.65	9.77	10.10	10.12
Mars (Cracking)	7.98	9.56	9.92	5.89	↓	-4.03	5.64	5.66	6.22	6.89	6.68
ASCI (Cracking)	7.63	9.14	9.53	5.53	↓	-3.99	5.29	5.31	5.87	6.55	6.40
50/50 HLS/LLS (Coking)	12.00	15.30	16.53	11.17	↓	-5.36	10.88	10.56	11.69	11.79	11.74
50/50 Maya/Mars (Coking)	10.40	12.90	14.25	10.68	↓	-3.56	10.47	10.30	11.10	10.63	10.08
ASCI (Coking)	11.65	14.21	15.48	10.81	↓	-4.67	10.56	10.50	11.15	11.18	10.71
US Midcon											
WTI (Cracking)	14.43	16.84	17.86	18.97	↑	1.11	17.78	19.13	20.66	24.72	21.02
30/70 WCS/Bakken (Cracking)	12.92	15.09	14.98	15.59	↑	0.61	13.99	15.45	17.66	21.88	18.54
Bakken (Cracking)	14.72	17.30	16.75	17.17	↑	0.42	15.39	17.17	19.50	23.47	19.38
WTI (Coking)	16.15	18.92	20.02	21.41	↑	1.38	20.19	21.64	23.19	27.32	23.23
30/70 WCS/Bakken (Coking)	15.54	18.40	18.62	19.64	↑	1.02	18.00	19.62	21.81	25.88	21.86
Bakken (Coking)	15.41	18.16	17.59	18.18	↑	0.59	16.39	18.21	20.55	24.59	20.27
Singapore											
Dubai (Hydroskimming)	2.58	2.89	3.38	2.09	↓	-1.29	2.17	1.93	2.01	1.88	1.37
Tapis (Hydroskimming)	3.97	3.96	3.22	2.60	↓	-0.63	3.10	2.78	1.90	1.61	0.89
Dubai (Hydrocracking)	6.12	7.11	7.80	6.41	↓	-1.39	6.55	6.26	6.25	5.85	5.27
Tapis (Hydrocracking)	6.52	7.28	6.77	6.15	↓	-0.62	6.68	6.36	5.41	4.99	4.32

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.

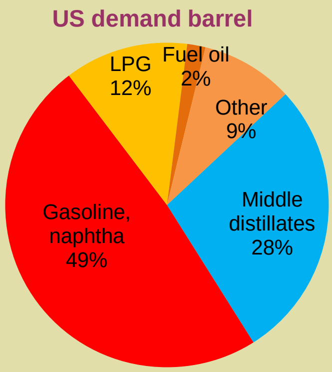
Source: IEA, KBC Advanced Technologies (KBC)

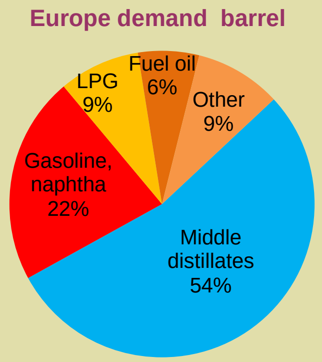




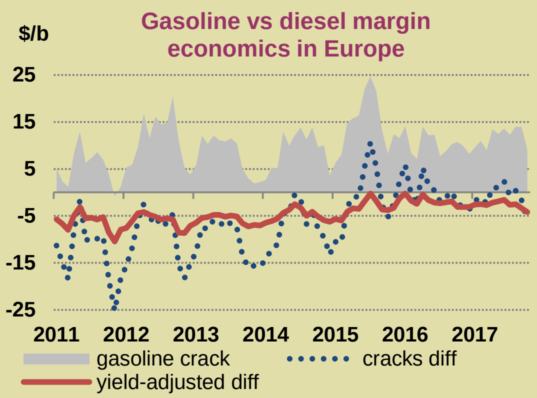
Gasoline and diesel – rivalry on the margins

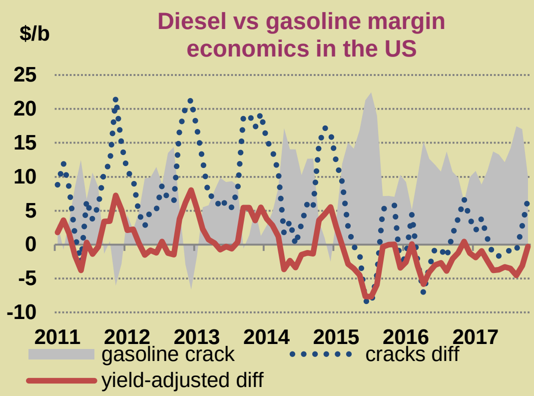
The structure of oil demand either side of the Atlantic has both striking similarities and differences. The US and OECD Europe as a whole, which remain the world's two largest oil product markets, are both structurally biased towards one oil product, which accounts for about 43% of total oil demand in each region. While in the US it is gasoline, in Europe, it is diesel (net of blended biofuels in both cases). This difference arises from historical circumstances and policy decisions, but it is interesting to see how refiners and markets have responded to this.





European refineries are well equipped to produce diesel. In fact, their middle distillate yields (diesel plus kerosene) are amongst the highest in the world, at 50%, while light distillate yields (gasoline and naphtha) are kept relatively low under 30%. Similarly, in the US, refiners have very high yields for the most demanded local fuel – at about 50% for light distillates, and about 38% for diesel and kerosene combined. Europe is the largest net exporter of gasoline and the largest net importer of diesel. The US is the largest net exporter of diesel and is also turning into a net exporter of gasoline.

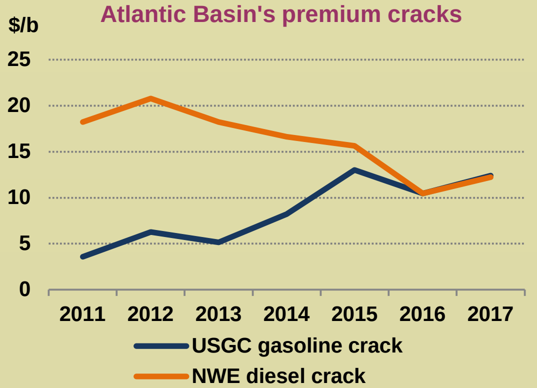


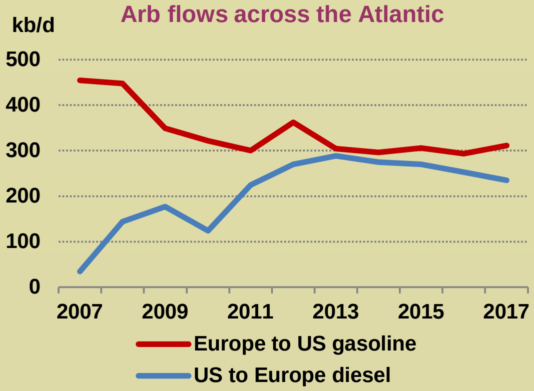


Gasoline and diesel – rivalry on the margins (continued)

Thus, European margins are largely driven by diesel cracks, while the US margins are driven by gasoline cracks. The charts above display some interesting observations on the relative performance of diesel and gasoline cracks in the two regions. In Europe, even if in recent years gasoline cracks have occasionally exceeded diesel cracks due to diesel oversupply, their contribution to refinery margins has at best been on a par with diesel's and never above, on a monthly average basis. This is what the yield-adjusted diff line on the charts show. This is calculated as the difference between gasoline and diesel cracks, each weighted by their respective yield. Because diesel yields are almost twice as high as gasoline yields in Europe, for the gasoline crack to be the main contributor to the margins and drive throughput decisions, it needs to be at least double the diesel crack. However, it seems that European gasoline cracks retreat as soon as they reach parity with diesel on a yield-adjusted basis, which is a normal phenomenon in a gasoline-exporting region.

Similarly, in the US, it seems that diesel cracks do not manage to stay above gasoline cracks for long on a yield-adjusted basis. However, this development is relatively new. Prior to 2015, diesel cracks supported US refinery margins in winter when gasoline cracks were actually negative. What changed the situation is the resumption of gasoline demand growth in the US in response to lower oil prices, the growing oversupply of diesel in global markets and increased gasoline shortages in Latin America.



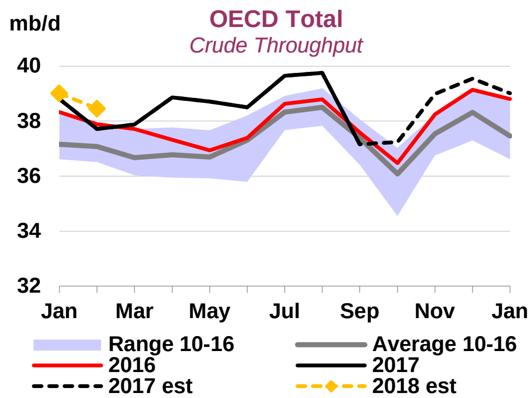


Yet another interesting development is how the premium product cracks across the Atlantic Basin (more specifically, the USGC gasoline crack and North West Europe diesel crack), converged around the same values in the last two years. Obviously, seasonal differences still exist, but on an annual average basis, they have been at very similar levels. At the same time, arbitrage flows between the US and Europe, with gasoline being exported from Europe to the US and diesel the other way, are now similar in volume terms. However, Europe depends on the US market more, sending more than a quarter of its gasoline exports there, but US diesel imports into Europe are at a more modest proportion of its total diesel exports – about a sixth.

Thus, gasoline and diesel cracks in the Atlantic Basin are increasingly reflecting not only their respective market fundamentals, but, due to their influence on regional refining margins, throughput levels and resulting arbitrage interflows, they have become rather mutually dependent.

OECD refinery throughput

Finalised numbers for August show throughput in Europe even higher than the preliminary numbers, resulting in a 0.2 mb/d upward revision. September preliminary figures, on the contrary, came 0.1 mb/d below our expectations due to OECD Asia data. Given the massive impact of Hurricane Harvey, the y-o-y growth rate in 3Q17 of about 0.5 mb/d was entirely driven by Europe and OECD Asia. Our forecast for 4Q17 is essentially unchanged, albeit includes higher



European and lower Americas throughput. In 2017, OECD total runs are forecast to grow by 0.7 mb/d, accounting for most of the global growth at 1 mb/d. In January and February 2018, OECD throughput is expected to decline seasonally and y-o-y growth to moderate slightly to 0.5 mb/d as global refined product inventories start building seasonally.

Refinery Crude Throughput and Utilisation in OECD Countries
(million barrels per day)

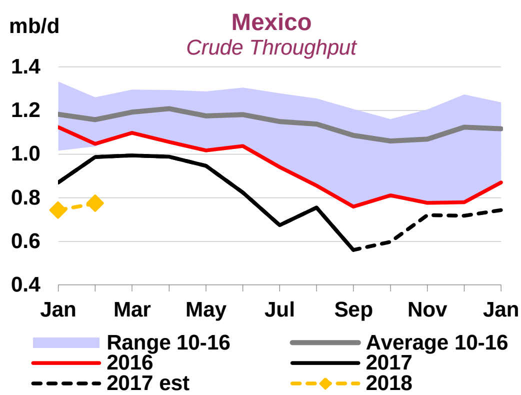
	Apr 17	May 17	Jun 17	Jul 17	Aug 17	Sep 17	Change from Aug 17	Change from Sep 16	Utilisation rate[1] Sep 17	Utilisation rate[1] Sep 16
US[2]	16.97	17.21	17.21	17.32	16.98	15.36	-1.62	-0.99	85%	91%
Canada	1.68	1.77	1.81	1.78	1.78	1.70	-0.08	0.15	88%	80%
Chile	0.16	0.19	0.20	0.18	0.18	0.19	0.01	0.02	85%	78%
Mexico	0.98	0.94	0.81	0.67	0.75	0.55	-0.20	-0.20	33%	45%
OECD Americas[3]	**19.78**	**20.10**	**20.02**	**19.94**	**19.69**	**17.80**	**-1.89**	**-1.02**	**81%**	**86%**
France	1.15	1.11	1.16	1.19	1.23	1.23	0.00	0.03	99%	86%
Germany	1.95	1.74	1.77	1.89	1.99	1.96	-0.03	-0.03	97%	98%
Italy	1.33	1.29	1.41	1.48	1.51	1.45	-0.06	0.06	83%	79%
Netherlands	1.19	1.13	1.03	1.06	0.96	1.01	0.05	-0.12	79%	88%
Spain	1.36	1.25	1.23	1.39	1.43	1.41	-0.02	0.10	98%	91%
United Kingdom	1.12	1.08	1.13	1.09	1.15	1.15	0.00	0.02	91%	82%
Other OECD Europe	4.05	4.24	4.30	4.45	4.52	4.32	-0.20	0.40	89%	80%
OECD Europe	**12.14**	**11.83**	**12.03**	**12.55**	**12.78**	**12.52**	**-0.26**	**0.47**	**90%**	**85%**
Japan	3.18	2.91	2.76	3.15	3.33	3.13	-0.20	0.13	91%	81%
South Korea	2.88	2.95	2.79	3.10	3.11	2.89	-0.22	0.06	91%	92%
Other Asia Oceania	0.78	0.81	0.80	0.81	0.74	0.71	-0.03	-0.06	81%	89%
OECD Asia Oceania	**6.84**	**6.67**	**6.35**	**7.06**	**7.18**	**6.73**	**-0.45**	**0.13**	**90%**	**87%**
OECD Total	**38.77**	**38.61**	**38.40**	**39.55**	**39.65**	**37.05**	**-2.59**	**-0.43**	**86%**	**86%**

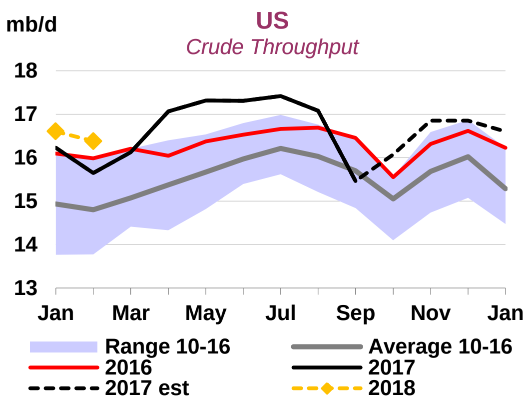
1 Expressed as a percentage, based on crude throughput and current operable refining capacity

2 US50

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

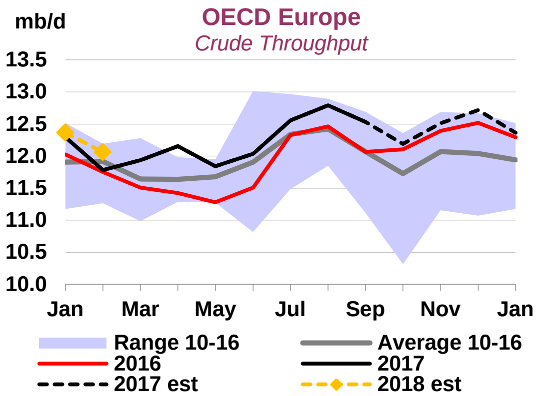
August throughput in the **US** was finalised 100 kb/d higher, and we carried this upward adjustment to September's assessment based on weekly data. In October, the weekly data showed the expected rebound by 0.6 mb/d to 16 mb/d. Even while PADD 3 throughput has largely normalised, seasonal maintenance elsewhere kept overall utilisation rates low. The 0.9 mb/d growth in 2Q17 was decimated to just 40 kb/d increase in 3Q17. Growth resumes in 4Q17, as refinery runs are forecast to rebound to 16.8 mb/d in November-December, below the peak rates seen in the summer. Throughput then is expected to decline seasonally into January-February 2018, but grows by almost 0.6 mb/d y-o-y.

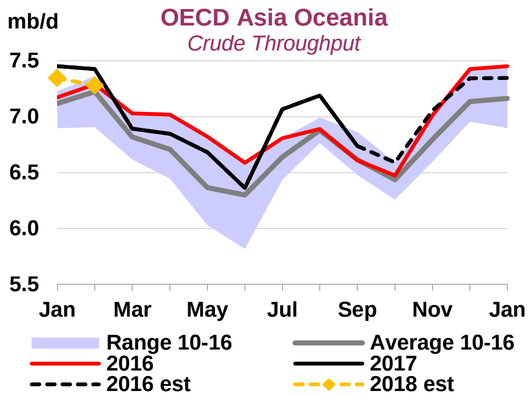




Our forecast for very low refinery throughput in **Mexico** in September was confirmed by preliminary data. Runs dropped to the lowest monthly level in the observable past – just 550 kb/d - as major refineries remained shut for long-term repairs or due to earthquake disruption. Runs should see a rebound in November as the Salina Cruz refinery is expected to restart at the end of the month. We forecast Mexico's throughput to remain below 800 kb/d until February.

European refiners were incentivised to increase runs on the continued strength of global refined products markets in 3Q17. The August throughput was finalised 210 kb/d higher than the preliminary data. September preliminary data confirmed even higher y-o-y growth of almost 0.5 mb/d. Growth slows down as we move into the northern hemisphere winter months, to an average of 150 kb/d y-o-y, but this is largely due to last year's relatively strong base.

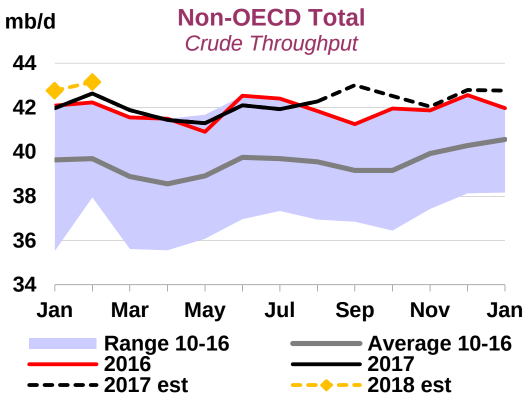


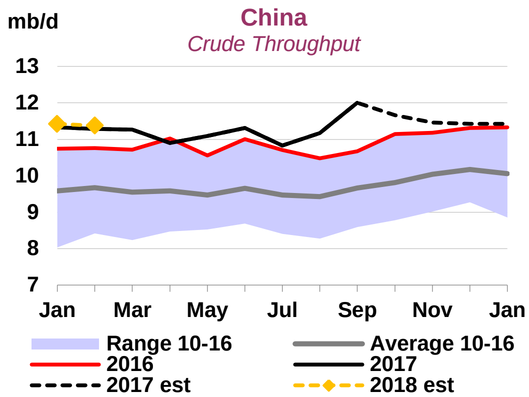


Preliminary September numbers for **OECD Asia** were 140 kb/d below our estimate due to unexpected maintenance in South Korea. Japanese refiners drove regional runs 130 kb/d higher y-o-y. In 4Q17, throughput is expected to stay flat both q-o-q and y-o-y.

Non-OECD refinery throughput

Our August throughput assessment for non-OECD countries remains unchanged on aggregate, but higher actual data from Chinese Taipei and Egypt are offset by lower runs in the Middle East. For September, throughput was revised up by 0.7 mb/d on higher than expected Chinese, Indian and Brazil runs. For 3Q17, throughput is now estimated at 42.3 mb/d, down 0.2 mb/d q-o-q, but up by a massive 1.6 mb/d y-o-y. The last time we saw a similar growth rate was in October 2016. In 4Q17, throughput is forecast to grow marginally, and to remain at elevated levels in January-February.





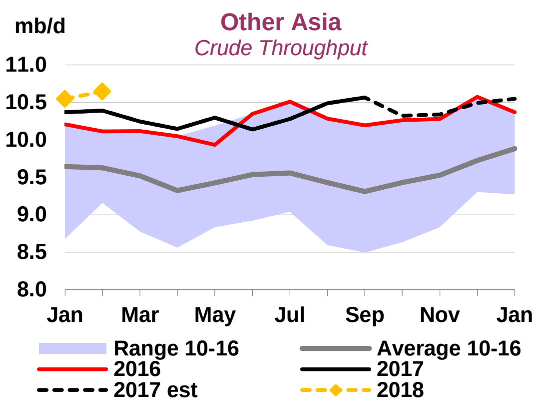
Chinese refinery throughput surged to 11.9 mb/d in September, 0.8 mb/d higher m-o-m, and 1.3 mb/d higher y-o-y. Although similar growth rates have been observed in the past, it nevertheless came as a surprise as it was thought that the start-up of two new refineries (PetroChina's Anning and CNOOC's Huizhou phase 2) would force other refiners to cut run rates. This did not happen. Almost all provinces registered throughput growth, but the bulk of the m-o-m growth came from just four of them. New capacity start-ups in Yunnan and Guangdong contributed 350 kb/d.

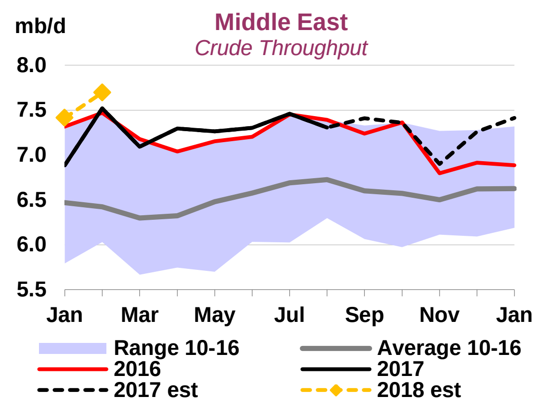
Ningxia province added 100 kb/d in a rather interesting development. Here, there are only two similarly sized petroleum refineries, owned by PetroChina and Nignxia Baota, a large independent. Judging by historical throughput numbers for the province, Ningxia Baota had previously ran crude at very low utilisation rates, of under 20%. Indeed, while the company has a refining quota for 120 kb/d, its import license was only 12 kb/d. In the landlocked province of Ningxia, finding alternative crudes would have been difficult. It seems that the company could have accumulated the imported crude for several months. Also, the very high run rate in September coincided with the company becoming the first target of the National Development and Reform Commission's (NDRC) formal action to address the failure of independents in meeting their pledges under the quota system. Ningxia Baota was expected to build a 200 mln cubic metres of gas storage facility by end-August, but had failed to do so. NDRC slashed the imported crude processing quota from 120 kb/d to 45 kb/d (which is still higher than the average throughput rates of the company). The previous quota will be restored if the company builds the facility within two years. Several other independents had reportedly met their pledges of either redundant capacity closure or investments into storage sites.

Shandong refiners, which are mostly independent refining companies, also ramped up runs by 280 kb/d m-o-m, either to use up quotas before the year-end, or to stock products before the mid-Autumn holiday in October, and also, likely ahead of restrictions on industrial activity during the winter heating months. This consideration is included in our total China throughput forecast for 4Q17, where we see processing levels declining from the peak seen in September, but quarterly average run rates nevertheless gain 200 kb/d from 3Q17. Early November, NDRC announced plans to increase the volume of import licenses for the independents – from 1.75 mb/d to 2.8 mb/d.

In October, two separate sources published alternative views on the Chinese refinery throughput numbers. Part of the analytical community thinks that the official Chinese statistics do not capture some independent activity, which leads to an overestimate in the Chinese implied crude balances. Argus Media analysts argued that their own survey of August maintenance plans by Shandong independents, covering 1.3 mb/d of capacity, suggested a higher throughput rate nationally, if extrapolated to cover the whole country. In our experience, though, maintenance plans are only indicative and cannot be fully relied upon for refinery runs forecasts as the actual maintenance scope and duration can differ significantly from the plans. Also, extrapolating maintenance surveys may result in a large bias in the total offline capacity estimate.

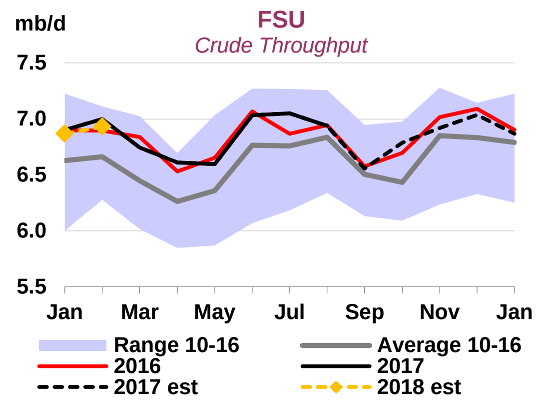
Another view was published by the joint research team of two companies, specialising in ship tracking and satellite observations of storage sites, ClipperData and URSA, respectively. Despite the limitations in coverage, which does not include a certain proportion of the above-the-ground storage tanks and all of the underground storage, the assessment of Chinese refinery runs between May and September this year (the only period for which the assessment was published) matched the official data almost exactly with the exception of August. In August, they show implied refinery runs 2 mb/d higher than the NBS data. We think it is unlikely that refinery runs could ramp up 2 mb/d in August, and fall back by 1 mb/d in September. Rather, the one-month anomaly is likely explained by stock builds that cannot be observed by satellite-based technology – such as the Myanmar crude oil pipeline that continued the line fill in August, several pipeline branches in Shandong province, but also, movements into underground storage.

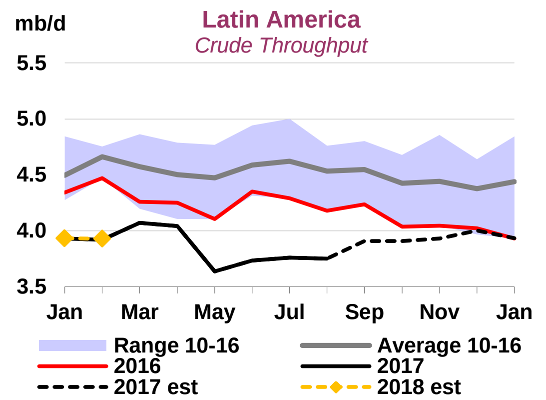




Indian refinery throughput in September was 110 kb/d higher than expected, but the forecast for 4Q17 remains unchanged at just under 5 mb/d. Runs in Chinese Taipei surged to almost 1 mb/d in August, for the first time in more than four years.

August throughput in the **Middle East** is revised down by 150 kb/d to 7.3 mb/d. Our 4Q17 forecast is also revised down, by 150 kb/d, due to new maintenance programmes, although throughput is still expected to grow y-o-y by 150 kb/d.





Our 3Q17 throughput assessment for the **FSU** is revised down by a small 30 kb/d, with higher August volumes in Belarus and Kazakhstan but lower September final data for Russia. After a modest 50 kb/d y-o-y growth, throughput is flat y-o-y in 4Q17, but higher q-o-q by 70 kb/d.

September throughput in **Latin America** rebounded by 160 kb/d m-o-m on stronger Brazilian throughput. Brazil had been increasingly importing light and middle distillates products this year. Most likely, the disruption in import flows caused by the Hurricane Harvey prompted more domestic fuel production. Total regional throughput is expected to return to the 4 mb/d mark in December, but 4Q throughput is expected to be 100 kb/d lower y-o-y.

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

	2014	2015	1Q16	2Q16	3Q16	4Q16	2016	1Q17	2Q17	3Q17	4Q17	2017	1Q18	2Q18	3Q18	4Q18	2018
OECD DEMAND																	
Americas	24.2	24.6	24.6	24.5	25.1	24.8	24.7	24.5	25.0	24.9	25.1	24.9	24.7	25.0	25.2	25.2	25.0
Europe	13.5	13.8	13.6	13.9	14.4	14.2	14.0	13.9	14.2	14.6	14.2	14.2	13.8	14.2	14.7	14.3	14.2
Asia Oceania	8.1	8.1	8.6	7.7	7.8	8.4	8.1	8.6	7.8	7.9	8.3	8.1	8.4	7.6	7.7	8.2	8.0
Total OECD	45.8	46.4	46.8	46.1	47.3	47.4	46.9	46.9	47.0	47.4	47.6	47.2	46.9	46.8	47.6	47.6	47.2
NON-OECD DEMAND																	
FSU	4.6	4.5	4.6	4.6	4.9	4.9	4.8	4.6	4.7	5.0	4.9	4.8	4.7	4.8	5.1	5.0	4.9
Europe	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.8	0.8	0.7	0.7	0.8	0.8	0.8	0.8
China	10.8	11.6	11.8	12.1	11.6	11.9	11.9	12.5	12.6	12.2	12.3	12.4	12.8	12.9	12.5	12.8	12.7
Other Asia	11.8	12.4	13.0	13.0	12.7	13.0	12.9	13.1	13.5	13.1	13.6	13.3	13.7	13.9	13.5	14.2	13.8
Americas	6.9	6.7	6.5	6.6	6.7	6.5	6.6	6.4	6.6	6.7	6.6	6.6	6.5	6.7	6.8	6.7	6.7
Middle East	8.4	8.4	7.9	8.4	8.7	8.1	8.3	7.9	8.5	8.7	8.2	8.3	8.1	8.6	8.9	8.3	8.5
Africa	3.9	4.1	4.2	4.2	4.0	4.1	4.1	4.3	4.2	4.1	4.3	4.2	4.5	4.3	4.2	4.4	4.3
Total Non-OECD	47.1	48.4	48.6	49.5	49.4	49.3	49.2	49.6	50.8	50.6	50.6	50.4	51.0	52.0	51.8	52.1	51.7
Total Demand[1]	**92.9**	**94.8**	**95.4**	**95.6**	**96.7**	**96.8**	**96.1**	**96.6**	**97.8**	**98.0**	**98.2**	**97.7**	**97.9**	**98.7**	**99.4**	**99.7**	**98.9**
OECD SUPPLY																	
Americas[4]	19.1	20.0	19.9	19.0	19.3	19.7	19.5	20.0	19.8	20.0	20.4	20.0	21.0	21.0	21.3	21.7	21.2
Europe	3.3	3.5	3.6	3.4	3.3	3.6	3.5	3.7	3.5	3.4	3.6	3.5	3.7	3.6	3.5	3.6	3.6
Asia Oceania	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Total OECD	22.9	23.9	24.0	22.9	23.1	23.7	23.4	24.0	23.7	23.8	24.4	24.0	25.1	25.0	25.2	25.7	25.3
NON-OECD SUPPLY																	
FSU	13.9	14.1	14.3	14.1	14.0	14.6	14.2	14.5	14.4	14.3	14.3	14.4	14.4	14.4	14.3	14.4	14.4
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	4.2	4.3	4.1	4.0	3.9	3.9	4.0	3.9	3.9	3.8	3.8	3.9	3.8	3.7	3.7	3.7	3.7
Other Asia[2]	3.5	3.6	3.7	3.6	3.5	3.5	3.6	3.5	3.5	3.4	3.4	3.5	3.4	3.3	3.3	3.3	3.3
Americas[2,4]	4.4	4.6	4.3	4.4	4.6	4.6	4.5	4.6	4.5	4.5	4.6	4.6	4.7	4.7	4.8	4.8	4.7
Middle East	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.2	1.2	1.2	1.3	1.2	1.3	1.3	1.3	1.3	1.3
Africa[2]	1.8	1.8	1.7	1.6	1.7	1.7	1.7	1.7	1.7	1.8	1.8	1.7	1.8	1.8	1.8	1.8	1.8
Total Non-OECD	29.3	29.7	29.5	29.1	29.1	29.7	29.4	29.5	29.3	29.2	29.4	29.4	29.4	29.4	29.4	29.4	29.4
Processing gains[3]	2.2	2.2	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
Global Biofuels	2.2	2.3	1.9	2.5	2.7	2.3	2.3	1.9	2.5	2.8	2.5	2.4	2.0	2.6	2.9	2.6	2.5
Total Non-OPEC Supply	56.6	58.1	57.7	56.7	57.2	57.9	57.4	57.7	57.8	58.1	58.6	58.1	58.8	59.3	59.8	60.0	59.5
OPEC																	
Crude	30.7	31.8	32.3	32.5	32.9	33.4	32.8	32.1	32.3	32.7							
NGLs	6.4	6.6	6.6	6.8	6.9	6.8	6.8	6.8	6.9	7.0	6.9	6.9	7.0	7.1	7.1	7.1	7.1
Total OPEC	37.0	38.4	38.9	39.3	39.8	40.2	39.6	38.9	39.2	39.7							
Total Supply[4]	**93.7**	**96.5**	**96.6**	**96.1**	**96.9**	**98.2**	**97.0**	**96.6**	**97.0**	**97.8**							
STOCK CHANGES AND MISCELLANEOUS																	
Reported OECD																	
Industry	0.4	0.8	0.4	0.4	0.1	-0.9	0.0	0.3	-0.2	-0.5							
Government	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	-0.1	-0.1							
Total	0.4	0.8	0.4	0.4	0.1	-0.9	0.0	0.3	-0.3	-0.6							
Floating storage/Oil in transit	0.0	0.3	0.2	0.3	-0.2	0.2	0.1	-0.3	-0.3	-0.7							
Miscellaneous to balance[5]	0.4	0.6	0.6	-0.3	0.3	2.0	0.7	0.1	-0.2	1.2							
Total Stock Ch. & Misc	**0.8**	**1.7**	**1.2**	**0.4**	**0.2**	**1.4**	**0.8**	**0.1**	**-0.9**	**-0.2**							
Memo items:																	
Call on OPEC crude + Stock ch.[6]	29.9	30.1	31.1	32.1	32.7	32.0	32.0	32.0	33.2	32.9	32.7	32.7	32.0	32.4	32.6	32.6	32.4

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 Other Asia includes Indonesia throughout. Latin America excludes Ecuador throughout. Africa excludes Angola, Gabon and Equatorial Guinea throughout.
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)

	2014	2015	1Q16	2Q16	3Q16	4Q16	2016	1Q17	2Q17	3Q17	4Q17	2017	1Q18	2Q18	3Q18	4Q18	2018
OECD DEMAND																	
Americas	-	-	-	-	-	-	-	-	-	-0.1	-0.1	-	-	-0.1	-0.1	-	-
Europe	-	-	-	-	-	-	-	-	-	-	-0.1	-	-	-0.1	-	-0.1	-0.1
Asia Oceania	-	-	-	-	-	-	-	-	-	0.1	-	-	-	-	-	-	-
Total OECD	-	-	-	-	-	-	-	-	-	-	-0.2	-	-	-0.2	-0.1	-0.1	-0.1
NON-OECD DEMAND																	
FSU	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Europe	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
China	-	-	-	-	-	-	-	-	-	0.1	-	-	-	-0.1	-	-	-
Other Asia	-	-	-	-	-	-	-	-	-	0.1	-	-	-0.1	-0.1	-	-0.1	-0.1
Americas	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Middle East	-	-	-	-	-	-	-	-	-	-	-0.1	-	-	-	-	-0.1	-
Africa	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Non-OECD	-	-	-	-	-	-	-	-0.1	-	0.1	-0.1	-	-0.1	-0.2	-	-0.1	-0.1
Total Demand	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-0.1**	**-**	**0.2**	**-0.3**	**-0.1**	**-**	**-0.4**	**-0.1**	**-0.2**	**-0.2**
OECD SUPPLY																	
Americas	-	-	-	-	-	-	-	-	-	0.1	-	-	-	-	-	-	-
Europe	-	-	-	-	-	-	-	-	-	-0.1	-	-	-	-	-	-0.1	-
Asia Oceania	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total OECD	-	-	-	-	-	-	-	-	-	0.1	-	-	-	-	0.1	-0.1	-
NON-OECD SUPPLY																	
FSU	-	-	-	-	-	-	-	-	-	-	-0.1	-	-0.1	-0.1	-	-	-0.1
Europe	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
China	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Asia	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Americas	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-0.1	-
Middle East	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Africa	-	-	-	-	-	-	-	-	-	-	0.1	-	-	-	-	-	-
Total Non-OECD	-	-	-	-	-	-	-	-	-	-	-	-	-0.1	-0.1	-	-	-0.1
Processing gains	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Global Biofuels	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-0.1	-	-
Total Non-OPEC Supply	-	-	-	-	-	-	-	-	-	-	-	-	-0.2	-0.1	-0.1	-0.1	-0.1
OPEC																	
Crude	-	-	-	-	-	-	-	-	-	-							
NGLs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total OPEC	-	-	-	-	-	-	-	-	-	-							
Total Supply	**-0.1**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**0.1**							
STOCK CHANGES AND MISCELLANEOUS																	
REPORTED OECD																	
Industry	-	-	-	-	-	-	-	-	-								
Government	-	-	-	-	-	-	-	-	-								
Total	-	-	-	-	-	-	-	-	-								
Floating storage/Oil in transit	-	-	-	-	-	-	-	-	-								
Miscellaneous to balance	-0.1	-	-	-	-	-	-	-	-								
Total Stock Ch. & Misc	**-0.1**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-0.1**							
Memo items:																	
Call on OPEC crude + Stock ch.	0.1	-	-	-	-	-	-	-	-	0.1	-0.3	-0.1	0.1	-0.3	-0.1	-0.1	-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

	2015	1Q16	2Q16	3Q16	4Q16	2016	1Q17	2Q17	3Q17	4Q17	2017	1Q18	2Q18	3Q18	4Q18	2018
Demand (mb/d)																
Americas	24.55	24.59	24.47	25.05	24.85	24.74	24.47	24.97	24.89	25.09	24.86	24.67	24.98	25.24	25.16	25.02
Europe	13.83	13.61	13.92	14.44	14.19	14.04	13.89	14.24	14.63	14.19	14.24	13.81	14.20	14.67	14.25	14.23
Asia Oceania	8.06	8.57	7.70	7.84	8.38	8.12	8.56	7.76	7.89	8.30	8.13	8.43	7.59	7.72	8.19	7.98
Total OECD	46.44	46.78	46.10	47.33	47.42	46.91	46.93	46.97	47.41	47.58	47.22	46.91	46.76	47.63	47.61	47.23
Asia	23.96	24.82	25.08	24.34	24.90	24.79	25.63	26.11	25.28	25.94	25.74	26.52	26.81	26.07	26.96	26.59
Middle East	8.37	7.87	8.40	8.70	8.12	8.27	7.92	8.46	8.75	8.19	8.33	8.09	8.61	8.91	8.32	8.48
Americas	6.71	6.46	6.58	6.66	6.53	6.56	6.45	6.57	6.67	6.55	6.56	6.51	6.66	6.77	6.68	6.66
FSU	4.55	4.59	4.56	4.92	4.93	4.75	4.60	4.75	5.03	4.92	4.82	4.66	4.79	5.07	4.99	4.88
Africa	4.09	4.20	4.18	4.02	4.14	4.14	4.35	4.22	4.12	4.27	4.24	4.45	4.32	4.19	4.40	4.34
Europe	0.69	0.69	0.72	0.72	0.71	0.71	0.70	0.74	0.75	0.75	0.74	0.73	0.76	0.76	0.76	0.75
Total Non-OECD	48.37	48.63	49.53	49.36	49.34	49.22	49.64	50.85	50.60	50.62	50.43	50.96	51.95	51.77	52.10	51.70
World	**94.81**	**95.41**	**95.63**	**96.70**	**96.76**	**96.13**	**96.57**	**97.82**	**98.00**	**98.20**	**97.65**	**97.88**	**98.72**	**99.41**	**99.71**	**98.93**
of which: US50	19.53	19.54	19.50	19.94	19.77	19.69	19.49	20.01	19.87	19.99	19.84	19.69	20.02	20.20	20.08	20.00
Europe 5*	8.13	8.09	8.14	8.34	8.21	8.19	8.24	8.28	8.42	8.22	8.29	8.14	8.21	8.43	8.26	8.26
China	11.56	11.80	12.07	11.63	11.91	11.85	12.48	12.64	12.20	12.32	12.41	12.81	12.86	12.52	12.78	12.74
Japan	4.12	4.44	3.70	3.79	4.18	4.03	4.33	3.64	3.69	4.04	3.92	4.19	3.43	3.53	3.90	3.76
India	4.24	4.65	4.60	4.39	4.55	4.55	4.60	4.73	4.47	4.79	4.65	4.90	4.99	4.73	5.09	4.93
Russia	3.41	3.52	3.41	3.75	3.69	3.59	3.49	3.57	3.83	3.69	3.64	3.53	3.60	3.85	3.76	3.69
Brazil	3.18	3.02	3.07	3.13	3.07	3.07	3.01	3.05	3.17	3.08	3.08	3.04	3.11	3.22	3.16	3.13
Saudi Arabia	3.42	3.02	3.39	3.53	3.11	3.26	2.88	3.35	3.54	3.12	3.22	3.00	3.41	3.55	3.16	3.28
Canada	2.37	2.33	2.32	2.46	2.40	2.38	2.35	2.34	2.48	2.40	2.39	2.36	2.35	2.47	2.42	2.40
Korea	2.47	2.66	2.55	2.60	2.72	2.63	2.69	2.56	2.64	2.73	2.65	2.70	2.58	2.60	2.74	2.66
Mexico	2.01	2.05	2.02	2.01	2.03	2.03	1.96	1.98	1.90	2.04	1.97	1.95	1.96	1.92	2.01	1.96
Iran	1.84	1.84	1.82	1.79	1.82	1.82	1.84	1.82	1.79	1.81	1.82	1.83	1.86	1.82	1.83	1.83
Total	**66.27**	**66.96**	**66.59**	**67.35**	**67.45**	**67.09**	**67.36**	**67.97**	**67.99**	**68.23**	**67.89**	**68.13**	**68.40**	**68.86**	**69.18**	**68.64**
% of World	69.9%	70.2%	69.6%	69.7%	69.7%	69.8%	69.8%	69.5%	69.4%	69.5%	69.5%	69.6%	69.3%	69.3%	69.4%	69.4%
Annual Change (% per annum)																
Americas	1.6	0.7	0.5	0.4	1.5	0.8	-0.5	2.0	-0.6	1.0	0.5	0.8	0.0	1.4	0.3	0.6
Europe	2.2	0.6	1.9	1.1	2.5	1.5	2.0	2.3	1.3	0.0	1.4	-0.6	-0.3	0.3	0.4	0.0
Asia Oceania	0.1	-1.3	1.1	1.2	2.1	0.8	-0.1	0.8	0.6	-1.0	0.0	-1.5	-2.2	-2.1	-1.3	-1.8
Total OECD	1.5	0.3	1.0	0.8	1.9	1.0	0.3	1.9	0.2	0.3	0.7	0.0	-0.4	0.5	0.1	0.0
Asia	5.9	6.0	3.8	1.4	2.8	3.5	3.2	4.1	3.8	4.2	3.8	3.5	2.7	3.1	3.9	3.3
Middle East	-0.6	1.1	-1.4	-1.5	-2.6	-1.2	0.6	0.7	0.6	0.8	0.7	2.2	1.7	1.9	1.5	1.8
Americas	-2.1	-2.5	-2.3	-1.8	-2.7	-2.3	-0.3	-0.1	0.3	0.3	0.0	0.9	1.5	1.5	2.0	1.5
FSU	-1.9	7.7	-0.1	4.3	6.2	4.4	0.3	4.1	2.2	-0.2	1.6	1.3	0.8	0.7	1.4	1.1
Africa	4.0	2.4	2.5	0.2	-0.6	1.1	3.5	0.9	2.4	3.0	2.5	2.4	2.3	1.8	3.1	2.4
Europe	3.9	4.2	5.9	2.9	2.0	3.7	1.5	2.0	4.4	5.6	3.4	3.9	3.3	1.3	1.0	2.2
Total Non-OECD	2.6	3.8	1.6	0.7	1.1	1.7	2.1	2.7	2.5	2.6	2.5	2.7	2.2	2.3	2.9	2.5
World	**2.1**	**2.1**	**1.3**	**0.7**	**1.5**	**1.4**	**1.2**	**2.3**	**1.4**	**1.5**	**1.6**	**1.4**	**0.9**	**1.4**	**1.5**	**1.3**
Annual Change (mb/d)																
Americas	0.39	0.18	0.11	0.11	0.36	0.19	-0.12	0.49	-0.16	0.24	0.11	0.20	0.01	0.35	0.08	0.16
Europe	0.29	0.09	0.26	0.16	0.35	0.21	0.28	0.32	0.18	0.00	0.20	-0.08	-0.04	0.04	0.06	-0.01
Asia Oceania	0.01	-0.11	0.09	0.09	0.17	0.06	-0.01	0.06	0.05	-0.08	0.00	-0.13	-0.17	-0.17	-0.11	-0.14
Total OECD	0.69	0.16	0.46	0.36	0.89	0.47	0.15	0.87	0.07	0.16	0.31	-0.01	-0.21	0.23	0.03	0.01
Asia	1.33	1.40	0.91	0.34	0.68	0.83	0.81	1.03	0.94	1.04	0.95	0.89	0.70	0.79	1.02	0.85
Middle East	-0.05	0.09	-0.12	-0.13	-0.22	-0.10	0.05	0.06	0.05	0.07	0.06	0.18	0.15	0.16	0.12	0.15
Americas	-0.14	-0.16	-0.15	-0.12	-0.18	-0.16	-0.02	-0.01	0.02	0.02	0.00	0.06	0.10	0.10	0.13	0.10
FSU	-0.09	0.33	0.00	0.20	0.29	0.20	0.01	0.19	0.11	-0.01	0.07	0.06	0.04	0.04	0.07	0.05
Africa	0.16	0.10	0.10	0.01	-0.02	0.04	0.15	0.04	0.10	0.12	0.10	0.10	0.10	0.07	0.13	0.10
Europe	0.03	0.03	0.04	0.02	0.01	0.03	0.01	0.01	0.03	0.04	0.02	0.03	0.02	0.01	0.01	0.02
Total Non-OECD	1.23	1.78	0.77	0.32	0.56	0.85	1.01	1.32	1.24	1.28	1.21	1.32	1.10	1.17	1.48	1.27
World	**1.92**	**1.94**	**1.23**	**0.68**	**1.44**	**1.31**	**1.16**	**2.19**	**1.31**	**1.44**	**1.53**	**1.31**	**0.90**	**1.40**	**1.51**	**1.28**
Revisions to Oil Demand from Last Month's Report (mb/d)																
Americas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.08	-0.08	-0.04	0.04	-0.09	-0.09	0.03	-0.03
Europe	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	-0.10	-0.01	-0.01	-0.10	-0.04	-0.12	-0.07
Asia Oceania	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.02	0.02	0.00	0.01	0.04	-0.01	0.01
Total OECD	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	-0.17	-0.04	0.03	-0.17	-0.08	-0.11	-0.08
Asia	0.00	-0.01	-0.01	-0.01	-0.04	-0.02	-0.07	0.00	0.15	-0.06	0.01	-0.03	-0.14	0.02	-0.02	-0.04
Middle East	0.00	0.01	0.01	0.02	0.03	0.02	0.01	0.02	-0.04	-0.07	-0.02	-0.02	-0.02	-0.02	-0.07	-0.03
Americas	0.00	0.00	0.00	-0.01	-0.01	0.00	0.00	0.00	-0.01	-0.05	-0.02	-0.01	-0.03	-0.03	-0.04	-0.03
FSU	0.00	0.00	0.00	0.00	0.00	0.00	0.01	-0.01	0.01	-0.02	0.00	-0.01	-0.03	0.00	-0.02	-0.02
Africa	0.00	0.01	0.01	0.00	0.00	0.01	-0.01	0.00	0.00	0.04	0.01	0.00	-0.02	0.00	0.04	0.01
Europe	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.01	0.01	0.01	0.01	0.01	0.00	0.01
Total Non-OECD	0.00	0.01	0.01	0.00	-0.02	0.00	-0.06	0.01	0.13	-0.14	-0.02	-0.05	-0.23	-0.01	-0.12	-0.10
World	**0.00**	**0.01**	**0.01**	**0.00**	**-0.02**	**0.00**	**-0.06**	**0.01**	**0.15**	**-0.31**	**-0.05**	**-0.02**	**-0.40**	**-0.10**	**-0.22**	**-0.19**
Revisions to Oil Demand Growth from Last Month's Report (mb/d)																
World	0.00	0.00	0.01	0.00	-0.01	0.00	-0.07	0.00	0.15	-0.29	-0.05	0.04	-0.41	-0.25	0.09	-0.13

* France, Germany, Italy, Spain and UK

Table 2a
OECD REGIONAL OIL DEMAND[1]
(million barrels per day)

	2015	2016	3Q16	4Q16	1Q17	2Q17	Jun 17	Jul 17	Aug 17 [2]	Latest month vs. Jul 17	Latest month vs. Aug 16
Americas											
LPG and ethane	3.25	3.27	3.10	3.32	3.50	3.07	3.14	3.21	2.82	-0.39	-0.28
Naphtha	0.34	0.35	0.34	0.34	0.35	0.36	0.37	0.36	0.34	-0.02	-0.01
Motor gasoline	10.89	11.10	11.40	11.00	10.64	11.30	11.60	11.38	11.60	0.22	0.08
Jet and kerosene	1.82	1.90	1.99	1.92	1.89	1.97	2.06	2.06	2.07	0.01	0.04
Gasoil/diesel oil	5.22	5.07	5.00	5.20	5.14	5.10	5.22	4.88	5.16	0.29	0.06
Residual fuel oil	0.55	0.60	0.61	0.60	0.67	0.69	0.75	0.57	0.61	0.04	-0.02
Other products	2.47	2.44	2.60	2.47	2.28	2.48	2.49	2.66	2.60	-0.05	-0.19
Total	**24.55**	**24.74**	**25.05**	**24.85**	**24.47**	**24.97**	**25.61**	**25.11**	**25.20**	**0.09**	**-0.33**
Europe											
LPG and ethane	1.17	1.21	1.20	1.25	1.25	1.14	1.08	1.14	1.05	-0.08	-0.18
Naphtha	1.11	1.11	1.12	1.09	1.27	1.11	1.11	1.18	1.21	0.03	0.05
Motor gasoline	1.89	1.90	2.01	1.86	1.79	1.99	2.07	2.00	2.06	0.06	0.03
Jet and kerosene	1.33	1.37	1.54	1.32	1.29	1.45	1.54	1.64	1.59	-0.06	0.04
Gasoil/diesel oil	6.21	6.29	6.30	6.52	6.32	6.42	6.62	6.41	6.45	0.04	0.10
Residual fuel oil	0.89	0.88	0.90	0.87	0.89	0.87	0.89	0.90	0.88	-0.02	-0.05
Other products	1.24	1.28	1.38	1.29	1.09	1.28	1.38	1.34	1.27	-0.07	-0.10
Total	**13.83**	**14.04**	**14.44**	**14.19**	**13.89**	**14.24**	**14.69**	**14.61**	**14.51**	**-0.11**	**-0.12**
Asia Oceania											
LPG and ethane	0.77	0.83	0.83	0.85	0.89	0.77	0.74	0.74	0.76	0.01	-0.08
Naphtha	1.98	1.96	1.91	2.04	2.14	1.98	1.97	2.01	2.09	0.07	0.13
Motor gasoline	1.54	1.55	1.63	1.56	1.47	1.53	1.53	1.63	1.67	0.04	-0.06
Jet and kerosene	0.86	0.90	0.69	1.02	1.17	0.73	0.69	0.70	0.71	0.01	0.02
Gasoil/diesel oil	1.81	1.84	1.78	1.92	1.90	1.90	1.95	1.90	1.85	-0.06	0.05
Residual fuel oil	0.64	0.65	0.60	0.65	0.64	0.51	0.48	0.54	0.52	-0.02	-0.06
Other products	0.46	0.40	0.40	0.34	0.35	0.34	0.31	0.31	0.36	0.05	-0.06
Total	**8.06**	**8.12**	**7.84**	**8.38**	**8.56**	**7.76**	**7.67**	**7.84**	**7.95**	**0.11**	**-0.07**
OECD											
LPG and ethane	5.19	5.31	5.13	5.41	5.64	4.98	4.97	5.09	4.63	-0.46	-0.54
Naphtha	3.43	3.42	3.37	3.47	3.76	3.44	3.45	3.56	3.64	0.08	0.17
Motor gasoline	14.32	14.55	15.05	14.42	13.90	14.82	15.20	15.01	15.33	0.32	0.04
Jet and kerosene	4.01	4.16	4.22	4.27	4.34	4.15	4.29	4.40	4.36	-0.04	0.09
Gasoil/diesel oil	13.24	13.20	13.08	13.64	13.36	13.42	13.78	13.19	13.46	0.26	0.20
Residual fuel oil	2.09	2.14	2.11	2.12	2.20	2.06	2.11	2.01	2.00	0.00	-0.12
Other products	4.17	4.12	4.37	4.10	3.72	4.10	4.17	4.31	4.24	-0.07	-0.36
Total	**46.44**	**46.91**	**47.33**	**47.42**	**46.93**	**46.97**	**47.97**	**47.56**	**47.66**	**0.10**	**-0.51**

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 COUNTRIES[1]
(million barrels per day)

	2015	2016	3Q16	4Q16	1Q17	2Q17	Jun 17	Jul 17	Aug 17 [2]	Latest month vs. Jul 17	Latest month vs. Aug 16
United States[3]											
LPG and ethane	2.45	2.47	2.32	2.51	2.69	2.36	2.42	2.45	2.07	-0.38	-0.19
Naphtha	0.22	0.22	0.21	0.22	0.24	0.24	0.25	0.22	0.22	0.00	0.00
Motor gasoline	9.18	9.32	9.58	9.20	8.95	9.54	9.77	9.57	9.77	0.20	0.08
Jet and kerosene	1.55	1.62	1.70	1.65	1.61	1.69	1.76	1.73	1.77	0.04	0.05
Gasoil/diesel oil	4.00	3.88	3.80	3.99	3.95	3.91	3.97	3.71	3.99	0.29	0.11
Residual fuel oil	0.26	0.33	0.33	0.32	0.37	0.37	0.42	0.27	0.34	0.06	0.02
Other products	1.87	1.86	1.99	1.88	1.69	1.91	1.91	2.07	2.01	-0.07	-0.18
Total	**19.53**	**19.69**	**19.94**	**19.77**	**19.49**	**20.01**	**20.49**	**20.02**	**20.16**	**0.14**	**-0.11**
Japan											
LPG and ethane	0.44	0.44	0.43	0.44	0.50	0.40	0.37	0.37	0.38	0.01	-0.04
Naphtha	0.79	0.76	0.71	0.80	0.83	0.75	0.73	0.70	0.78	0.08	0.05
Motor gasoline	0.89	0.90	0.96	0.90	0.82	0.87	0.87	0.95	0.99	0.04	-0.04
Jet and kerosene	0.49	0.50	0.32	0.59	0.73	0.36	0.32	0.31	0.32	0.01	0.01
Diesel	0.43	0.43	0.45	0.45	0.43	0.41	0.42	0.43	0.40	-0.02	-0.02
Other gasoil	0.34	0.35	0.30	0.37	0.39	0.32	0.33	0.31	0.30	-0.01	0.00
Residual fuel oil	0.37	0.34	0.32	0.34	0.33	0.27	0.24	0.28	0.27	-0.01	-0.04
Other products	0.37	0.31	0.31	0.30	0.30	0.27	0.25	0.28	0.30	0.02	-0.03
Total	**4.12**	**4.03**	**3.79**	**4.18**	**4.33**	**3.64**	**3.52**	**3.64**	**3.75**	**0.11**	**-0.11**
Germany											
LPG and ethane	0.10	0.10	0.10	0.09	0.11	0.10	0.08	0.09	0.09	0.00	-0.01
Naphtha	0.39	0.38	0.39	0.39	0.44	0.36	0.32	0.40	0.39	-0.01	0.00
Motor gasoline	0.42	0.42	0.44	0.42	0.41	0.45	0.46	0.43	0.45	0.01	0.01
Jet and kerosene	0.18	0.20	0.23	0.20	0.20	0.21	0.22	0.23	0.22	-0.01	-0.01
Diesel	0.74	0.76	0.80	0.76	0.75	0.78	0.80	0.78	0.80	0.01	0.02
Other gasoil	0.36	0.36	0.27	0.39	0.39	0.36	0.36	0.35	0.33	-0.02	0.01
Residual fuel oil	0.11	0.09	0.09	0.10	0.10	0.07	0.07	0.08	0.08	0.00	-0.01
Other products	0.06	0.10	0.11	0.10	0.08	0.11	0.10	0.12	0.11	-0.01	-0.01
Total	**2.37**	**2.41**	**2.42**	**2.44**	**2.49**	**2.43**	**2.42**	**2.48**	**2.45**	**-0.02**	**0.00**
Italy											
LPG and ethane	0.11	0.11	0.10	0.12	0.13	0.10	0.09	0.10	0.10	0.00	0.01
Naphtha	0.08	0.09	0.09	0.08	0.11	0.11	0.13	0.12	0.11	-0.01	0.01
Motor gasoline	0.18	0.18	0.19	0.17	0.16	0.18	0.20	0.19	0.19	0.00	0.00
Jet and kerosene	0.09	0.10	0.11	0.09	0.08	0.11	0.13	0.13	0.13	0.00	0.01
Diesel	0.47	0.46	0.47	0.45	0.45	0.47	0.50	0.48	0.45	-0.03	0.00
Other gasoil	0.09	0.09	0.10	0.10	0.08	0.08	0.09	0.09	0.08	0.00	-0.01
Residual fuel oil	0.08	0.06	0.07	0.06	0.07	0.06	0.07	0.08	0.08	0.00	0.01
Other products	0.18	0.16	0.16	0.18	0.15	0.16	0.16	0.17	0.14	-0.02	0.01
Total	**1.27**	**1.25**	**1.29**	**1.24**	**1.23**	**1.28**	**1.37**	**1.35**	**1.28**	**-0.07**	**0.03**
France											
LPG and ethane	0.13	0.12	0.11	0.12	0.14	0.10	0.09	0.09	0.10	0.01	-0.01
Naphtha	0.12	0.10	0.11	0.07	0.12	0.10	0.10	0.11	0.12	0.01	0.00
Motor gasoline	0.16	0.17	0.19	0.17	0.16	0.19	0.20	0.19	0.20	0.01	0.01
Jet and kerosene	0.15	0.15	0.17	0.14	0.15	0.16	0.17	0.19	0.18	-0.01	0.01
Diesel	0.71	0.70	0.72	0.71	0.71	0.73	0.75	0.72	0.71	-0.01	0.01
Other gasoil	0.26	0.25	0.24	0.28	0.28	0.21	0.21	0.23	0.23	0.00	0.00
Residual fuel oil	0.04	0.04	0.04	0.05	0.06	0.05	0.05	0.06	0.06	0.00	0.02
Other products	0.12	0.12	0.13	0.10	0.09	0.14	0.17	0.13	0.11	-0.02	-0.02
Total	**1.69**	**1.66**	**1.71**	**1.63**	**1.72**	**1.68**	**1.75**	**1.73**	**1.71**	**-0.02**	**0.01**
United Kingdom											
LPG and ethane	0.14	0.16	0.16	0.16	0.16	0.14	0.15	0.13	0.13	0.00	-0.03
Naphtha	0.03	0.03	0.03	0.03	0.03	0.04	0.04	0.04	0.03	-0.01	0.00
Motor gasoline	0.29	0.29	0.29	0.29	0.28	0.30	0.30	0.28	0.29	0.01	0.00
Jet and kerosene	0.31	0.31	0.32	0.31	0.32	0.31	0.31	0.33	0.31	-0.02	-0.01
Diesel	0.50	0.52	0.51	0.53	0.49	0.53	0.53	0.52	0.51	-0.01	0.00
Other gasoil	0.13	0.13	0.15	0.12	0.12	0.14	0.14	0.14	0.15	0.01	-0.01
Residual fuel oil	0.03	0.03	0.03	0.03	0.03	0.02	0.03	0.03	0.03	0.00	0.00
Other products	0.11	0.11	0.11	0.11	0.11	0.12	0.12	0.12	0.13	0.00	0.01
Total	**1.55**	**1.59**	**1.60**	**1.58**	**1.53**	**1.59**	**1.63**	**1.59**	**1.57**	**-0.02**	**-0.04**
Canada											
LPG and ethane	0.35	0.37	0.36	0.39	0.39	0.32	0.32	0.37	0.37	0.00	-0.05
Naphtha	0.09	0.10	0.10	0.10	0.09	0.09	0.10	0.11	0.10	-0.01	0.00
Motor gasoline	0.81	0.85	0.88	0.84	0.80	0.86	0.90	0.90	0.89	-0.01	0.00
Jet and kerosene	0.13	0.14	0.15	0.13	0.13	0.14	0.14	0.18	0.14	-0.04	-0.03
Diesel	0.31	0.30	0.30	0.29	0.30	0.29	0.29	0.28	0.29	0.01	0.01
Other gasoil	0.26	0.24	0.26	0.27	0.26	0.26	0.30	0.28	0.25	-0.03	-0.03
Residual fuel oil	0.05	0.04	0.04	0.04	0.05	0.06	0.06	0.04	0.04	0.01	0.00
Other products	0.36	0.34	0.36	0.35	0.33	0.32	0.33	0.38	0.37	0.00	0.02
Total	**2.37**	**2.38**	**2.46**	**2.40**	**2.35**	**2.34**	**2.45**	**2.52**	**2.45**	**-0.07**	**-0.08**

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)

	2016	2017	2018	2Q17	3Q17	4Q17	1Q18	2Q18	Aug 17	Sep 17	Oct 17
OPEC											
Crude Oil											
Saudi Arabia	10.42			9.97	9.99				9.96	9.97	10.05
Iran	3.55			3.77	3.83				3.84	3.84	3.81
Iraq	4.42			4.50	4.52				4.51	4.53	4.44
UAE	3.05			2.93	2.93				2.93	2.93	2.92
Kuwait	2.88			2.71	2.70				2.70	2.71	2.70
Neutral Zone	0.00			0.00	0.00				0.00	0.00	0.00
Qatar	0.65			0.62	0.60				0.60	0.58	0.60
Angola	1.71			1.64	1.67				1.68	1.66	1.68
Nigeria	1.47			1.49	1.62				1.66	1.61	1.56
Libya	0.39			0.71	0.94				0.88	0.92	0.99
Algeria	1.11			1.06	1.06				1.06	1.06	1.00
Equatorial Guinea	0.14			0.12	0.12				0.12	0.13	0.13
Ecuador	0.55			0.53	0.54				0.54	0.54	0.54
Venezuela	2.24			2.05	1.99				1.99	1.94	1.91
Gabon	0.23			0.20	0.20				0.18	0.19	0.20
Total Crude Oil	32.80			32.31	32.71				32.65	32.61	32.53
Total NGLs[1]	6.78	6.91	7.06	6.90	6.97	6.94	7.04	7.06	6.97	6.97	6.94
Total OPEC[2]	**39.58**			**39.21**	**39.68**				**39.62**	**39.58**	**39.47**
NON-OPEC[2,3]											
OECD											
Americas	19.48	20.05	21.25	19.79	20.04	20.40	21.00	20.97	20.14	19.74	19.80
United States	12.53	13.04	14.12	13.00	13.08	13.40	13.79	14.11	13.04	13.02	13.00
Mexico	2.47	2.25	2.14	2.31	2.16	2.20	2.20	2.16	2.20	2.00	2.18
Canada	4.47	4.75	4.98	4.47	4.80	4.79	5.01	4.70	4.89	4.72	4.62
Chile	0.01	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.01	0.00	0.00
Europe	3.52	3.53	3.60	3.49	3.36	3.60	3.69	3.64	3.35	3.27	3.57
UK	1.03	1.05	1.19	1.04	0.98	1.13	1.18	1.20	0.91	1.01	1.09
Norway	1.99	1.99	1.93	2.00	1.89	1.97	2.02	1.96	1.94	1.76	1.97
Others	0.49	0.49	0.48	0.45	0.49	0.50	0.49	0.49	0.50	0.50	0.51
Asia Oceania	0.43	0.41	0.43	0.40	0.42	0.42	0.42	0.43	0.42	0.41	0.42
Australia	0.35	0.33	0.36	0.32	0.34	0.35	0.35	0.35	0.34	0.34	0.34
Others	0.08	0.07	0.07	0.08	0.07	0.07	0.07	0.07	0.08	0.07	0.07
Total OECD	**23.42**	**23.98**	**25.28**	**23.68**	**23.82**	**24.42**	**25.12**	**25.04**	**23.92**	**23.42**	**23.79**
NON-OECD											
Former USSR	14.24	14.36	14.39	14.35	14.28	14.34	14.39	14.37	14.19	14.29	14.28
Russia	11.34	11.35	11.30	11.34	11.29	11.31	11.30	11.30	11.28	11.28	11.30
Others	2.90	3.01	3.09	3.02	2.99	3.03	3.08	3.07	2.91	3.01	2.98
Asia[2]	7.57	7.32	7.05	7.37	7.27	7.20	7.14	7.07	7.21	7.24	7.23
China	3.99	3.86	3.71	3.91	3.83	3.79	3.75	3.73	3.79	3.82	3.81
Malaysia	0.71	0.69	0.66	0.69	0.68	0.68	0.67	0.66	0.67	0.67	0.68
India	0.85	0.85	0.83	0.85	0.86	0.84	0.84	0.83	0.85	0.85	0.84
Indonesia	0.88	0.84	0.81	0.84	0.84	0.83	0.82	0.81	0.84	0.83	0.83
Others	1.15	1.08	1.04	1.07	1.07	1.06	1.05	1.04	1.07	1.06	1.07
Europe	0.14	0.13	0.12	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
Americas[2]	4.49	4.57	4.74	4.54	4.54	4.65	4.66	4.71	4.51	4.58	4.55
Brazil	2.61	2.77	2.96	2.74	2.73	2.84	2.86	2.92	2.68	2.77	2.75
Argentina	0.61	0.58	0.58	0.56	0.58	0.58	0.58	0.58	0.58	0.59	0.58
Colombia	0.88	0.86	0.84	0.86	0.86	0.86	0.85	0.85	0.86	0.86	0.86
Others	0.38	0.37	0.36	0.37	0.37	0.37	0.36	0.36	0.38	0.36	0.36
Middle East[2,4]	1.26	1.25	1.29	1.24	1.25	1.26	1.27	1.28	1.24	1.25	1.26
Oman	1.01	0.98	1.00	0.98	0.98	0.99	0.99	0.99	0.98	0.98	0.99
Syria	0.03	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Yemen	0.02	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Others	0.20	0.22	0.24	0.22	0.22	0.22	0.24	0.24	0.22	0.22	0.22
Africa	1.66	1.73	1.80	1.69	1.77	1.82	1.79	1.82	1.77	1.79	1.81
Egypt	0.67	0.63	0.61	0.64	0.64	0.63	0.62	0.62	0.64	0.63	0.63
Others	1.00	1.10	1.19	1.06	1.13	1.18	1.17	1.20	1.12	1.15	1.18
Total Non-OECD	**29.36**	**29.36**	**29.39**	**29.33**	**29.24**	**29.38**	**29.38**	**29.37**	**29.05**	**29.28**	**29.26**
Processing gains[5]	2.27	2.29	2.32	2.29	2.29	2.29	2.32	2.32	2.29	2.29	2.29
Global Biofuels	2.34	2.42	2.50	2.45	2.79	2.51	2.03	2.56	2.74	2.85	2.71
TOTAL NON-OPEC	**57.38**	**58.06**	**59.50**	**57.75**	**58.14**	**58.60**	**58.85**	**59.30**	**58.00**	**57.84**	**58.05**
TOTAL SUPPLY	**96.96**			**96.96**	**97.82**				**97.62**	**97.42**	**97.52**

1 Includes condensates reported by OPEC countries, oil from non-conventional sources, e.g. Venezuelan Orimulsion (but not Orinoco extra-heavy oil), and non-oil inputs to Saudi Arabian MTBE.
2 Latin America excludes Ecuador throughout. Africa excludes Angola, Gabon and Equatorial Guinea throughout. Asia includes Indonesia throughout.
3 Comprises crude oil, condensates, NGLs and oil from non-conventional sources
4 Includes small amounts of production from Jordan and Bahrain.
5 Net volumetric gains and losses in refining and marine transportation losses.

Table 4
OECD INDUSTRY STOCKS[1] AND QUARTERLY STOCK CHANGES

	RECENT MONTHLY STOCKS[2] in Million Barrels					PRIOR YEARS' STOCKS[2] in Million Barrels			STOCK CHANGES in mb/d			
	May2017	Jun2017	Jul2017	Aug2017	Sep2017*	Sep2014	Sep2015	Sep2016	4Q2016	1Q2017	2Q2017	3Q2017
OECD Americas												
Crude	670.6	656.3	643.8	619.4	620.7	483.1	585.0	623.9	0.24	0.56	-0.44	-0.39
Motor Gasoline	275.1	268.7	262.9	255.2	248.4	245.7	257.6	259.8	0.11	0.02	-0.03	-0.22
Middle Distillate	230.3	224.4	222.2	217.5	209.2	203.5	220.4	237.1	0.01	-0.13	-0.02	-0.16
Residual Fuel Oil	45.9	41.1	39.9	41.5	43.9	44.4	47.4	45.2	0.03	0.00	-0.08	0.03
Total Products[3]	761.9	753.2	756.2	759.6	737.9	721.6	765.5	801.5	-0.29	-0.43	0.19	-0.17
Total[4]	1619.4	1595.3	1589.5	1577.1	1560.3	1384.6	1542.4	1620.9	-0.24	0.10	-0.13	-0.38
OECD Europe												
Crude	359.3	364.7	364.0	345.9	343.4	315.8	339.7	352.8	-0.15	0.18	0.05	-0.23
Motor Gasoline	94.5	92.2	90.7	90.5	88.9	87.0	89.5	90.0	0.09	0.02	-0.09	-0.04
Middle Distillate	308.4	297.5	304.5	310.2	297.3	267.1	304.3	316.8	-0.22	0.06	-0.15	0.00
Residual Fuel Oil	63.7	64.7	63.1	61.2	58.7	61.8	69.5	68.7	-0.01	-0.03	-0.02	-0.07
Total Products[3]	574.6	560.1	564.8	573.4	557.4	513.4	560.2	572.0	-0.11	0.16	-0.33	-0.03
Total[4]	1007.9	997.1	1004.2	990.6	972.1	898.8	969.6	997.3	-0.27	0.33	-0.26	-0.27
OECD Asia Oceania												
Crude	198.4	189.7	197.0	195.1	202.2	178.3	202.2	201.5	-0.11	-0.03	0.01	0.14
Motor Gasoline	26.2	25.1	22.8	24.9	23.7	22.8	23.5	24.0	0.00	-0.01	0.02	-0.01
Middle Distillate	66.6	63.3	64.1	69.7	66.2	70.3	67.0	73.7	-0.11	-0.05	0.04	0.03
Residual Fuel Oil	20.6	20.9	21.6	20.0	18.9	22.8	22.4	19.2	-0.02	0.01	0.03	-0.02
Total Products[3]	169.5	169.7	175.6	182.2	172.8	183.3	175.7	186.8	-0.27	-0.08	0.16	0.03
Total[4]	432.4	424.1	436.5	442.5	437.5	435.9	444.7	450.0	-0.39	-0.13	0.23	0.15
Total OECD												
Crude	1228.3	1210.7	1204.7	1160.4	1166.3	977.2	1126.9	1178.1	-0.01	0.71	-0.38	-0.48
Motor Gasoline	395.7	386.0	376.4	370.6	361.1	355.4	370.6	373.8	0.20	0.03	-0.10	-0.27
Middle Distillate	605.3	585.1	590.7	597.4	572.6	540.8	591.7	627.7	-0.32	-0.12	-0.13	-0.14
Residual Fuel Oil	130.2	126.7	124.6	122.7	121.5	129.0	139.2	133.1	0.01	-0.02	-0.07	-0.06
Total Products[3]	1506.0	1483.0	1496.6	1515.2	1468.2	1418.3	1501.3	1560.2	-0.66	-0.35	0.02	-0.16
Total[4]	3059.7	3016.4	3030.2	3010.1	2969.8	2719.3	2956.7	3068.2	-0.90	0.31	-0.17	-0.51

OECD GOVERNMENT-CONTROLLED STOCKS[5] AND QUARTERLY STOCK CHANGES

	RECENT MONTHLY STOCKS[2] in Million Barrels					PRIOR YEARS' STOCKS[2] in Million Barrels			STOCK CHANGES in mb/d			
	May2017	Jun2017	Jul2017	Aug2017	Sep2017*	Sep2014	Sep2015	Sep2016	4Q2016	1Q2017	2Q2017	3Q2017
OECD Americas												
Crude	684.5	679.2	678.9	678.8	673.5	691.0	695.1	695.1	0.00	-0.04	-0.14	-0.06
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	206.2	208.4	208.3	208.1	208.1	207.4	208.1	206.3	-0.01	0.00	0.03	0.00
Products	273.0	272.2	268.4	267.9	267.7	258.2	256.2	268.8	0.05	0.02	-0.03	-0.05
OECD Asia Oceania												
Crude	385.0	385.0	385.0	385.0	385.0	385.7	381.4	385.4	-0.01	0.00	0.01	0.00
Products	38.0	38.0	38.0	38.0	38.0	31.0	33.7	35.9	0.01	0.01	0.00	0.00
Total OECD												
Crude	1275.7	1272.6	1272.2	1271.9	1266.6	1284.0	1284.6	1286.8	-0.02	-0.04	-0.09	-0.07
Products	313.0	312.2	308.4	307.8	307.8	291.2	291.9	306.6	0.06	0.03	-0.03	-0.05
Total[4]	1592.6	1588.5	1583.9	1583.2	1577.9	1580.3	1580.8	1595.7	0.04	0.00	-0.12	-0.12

* estimated
1 Stocks are primary national territory stocks on land (excluding utility stocks and including pipeline and entrepot 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 5
TOTAL STOCKS ON LAND IN OECD COUNTRIES[1]
('millions of barrels' and 'days')

	End September 2016		End December 2016		End March 2017		End June 2017		End September 2017 [3]	
	Stock Level	Days Fwd[2] Demand	Stock Level	Days Fwd Demand	Stock Level	Days Fwd Demand	Stock Level	Days Fwd Demand	Stock Level	Days Fwd Demand
OECD Americas										
Canada	184.8	77	183.3	78	184.9	79	182.7	-	-	-
Chile	12.2	37	11.2	33	11.9	35	11.2	-	-	-
Mexico	45.7	23	47.3	24	47.5	24	49.2	-	-	-
United States[4]	2053.2	104	2031.6	104	2034.5	102	2011.2	-	-	-
Total[4]	2318.0	93	2295.5	94	2301.0	92	2276.4	92	2235.7	90
OECD Asia Oceania										
Australia	36.7	33	33.9	30	33.3	28	35.4	-	-	-
Israel	-	-	-	-	-	-	-	-	-	-
Japan	586.6	140	562.5	130	546.3	150	566.3	-	-	-
Korea	239.3	88	230.3	86	237.8	93	236.4	-	-	-
New Zealand	8.7	50	8.9	48	8.2	48	9.0	-	-	-
Total	871.3	104	835.6	98	825.6	106	847.1	109	860.5	104
OECD Europe[5]										
Austria	21.6	81	22.8	88	24.3	94	21.8	-	-	-
Belgium	50.5	74	47.4	71	47.8	76	46.6	-	-	-
Czech Republic	22.9	111	21.9	117	22.5	102	21.4	-	-	-
Denmark	29.7	187	30.5	201	27.2	169	27.3	-	-	-
Estonia	2.4	81	2.4	72	2.6	94	2.7	-	-	-
Finland	44.9	219	42.3	220	44.8	224	43.4	-	-	-
France	166.9	102	162.2	94	167.7	100	165.4	-	-	-
Germany	285.0	117	285.4	115	280.7	115	277.3	-	-	-
Greece	30.8	99	33.9	115	35.1	118	32.4	-	-	-
Hungary	23.6	148	24.5	151	24.3	144	25.2	-	-	-
Ireland	11.7	74	11.8	78	12.8	86	12.1	-	-	-
Italy	127.4	102	124.3	101	134.4	105	133.7	-	-	-
Latvia	4.4	118	2.4	69	2.4	58	3.3	-	-	-
Luxembourg	0.7	12	0.7	12	0.7	12	0.7	-	-	-
Netherlands	154.2	158	152.6	155	154.7	157	154.5	-	-	-
Norway	23.2	96	22.9	113	22.9	107	22.0	-	-	-
Poland	68.4	113	67.4	116	69.8	110	69.5	-	-	-
Portugal	24.3	107	22.7	101	26.5	110	24.0	-	-	-
Slovak Republic	11.3	138	12.1	147	12.8	151	13.0	-	-	-
Slovenia	4.4	81	4.5	96	4.9	94	5.1	-	-	-
Spain	139.4	107	129.0	101	136.5	106	128.7	-	-	-
Sweden	35.7	109	33.5	107	51.5	159	52.0	-	-	-
Switzerland	36.5	156	35.2	158	35.5	162	34.5	-	-	-
Turkey	76.5	81	79.1	100	81.4	83	84.0	-	-	-
United Kingdom	78.1	49	82.3	54	81.2	51	81.0	-	-	-
Total	1474.6	104	1453.8	105	1505.1	106	1481.4	106	1451.4	107
Total OECD	**4663.9**	**98**	**4584.9**	**98**	**4631.7**	**99**	**4604.9**	**99**	**4547.7**	**97**
DAYS OF IEA Net Imports[6]	**-**	**202**	**-**	**200**	**-**	**203**	**-**	**197**	**-**	**-**

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 2017 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	Industry	Total	Government[1] controlled	Industry
		Millions of Barrels			*Days of Fwd. Demand[2]*	
3Q2014	4300	1580	2719	93	34	59
4Q2014	4288	1582	2706	92	34	58
1Q2015	4377	1584	2792	96	35	61
2Q2015	4467	1587	2880	95	34	61
3Q2015	4538	1581	2957	98	34	64
4Q2015	4577	1588	2989	98	34	64
1Q2016	4616	1595	3021	100	35	66
2Q2016	4652	1592	3060	98	34	65
3Q2016	4664	1596	3068	98	34	65
4Q2016	4585	1600	2985	98	34	64
1Q2017	4632	1600	3032	99	34	65
2Q2017	4605	1588	3016	99	34	65
3Q2017	4548	1578	2970	97	34	64

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 3Q2017 (when latest forecasts are used).

Table 6
IEA MEMBER COUNTRY DESTINATIONS OF SELECTED CRUDE STREAMS[1]
(million barrels per day)

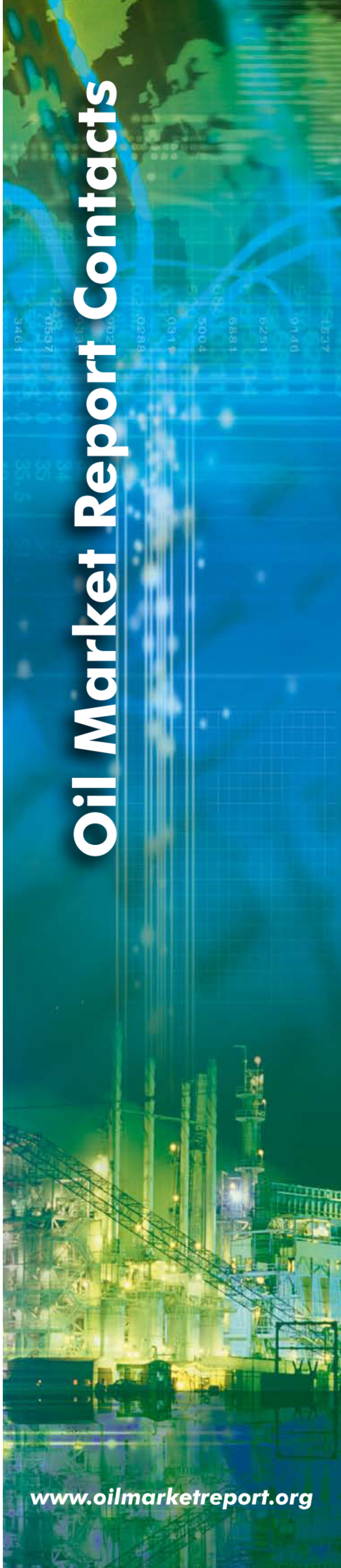
											Year Earlier	
	2014	2015	2016	3Q16	4Q16	1Q17	2Q17	Jun 17	Jul 17	Aug 17	Aug 16	change
Saudi Light & Extra Light												
Americas	0.65	0.63	0.69	0.69	0.62	0.70	0.75	0.71	0.57	0.38	0.70	-0.32
Europe	0.84	0.78	0.79	0.78	0.87	0.64	0.78	0.74	0.70	0.62	0.90	-0.28
Asia Oceania	1.17	1.25	1.40	1.22	1.56	1.65	1.49	1.27	1.66	1.62	1.18	0.44
Saudi Medium												
Americas	0.36	0.37	0.44	0.44	0.48	0.43	0.35	0.31	0.31	0.29	0.41	-0.12
Europe	0.03	0.03	0.01	0.03	0.01	0.01	0.00	-	-	0.00	0.02	-0.02
Asia Oceania	0.45	0.44	0.41	0.42	0.34	0.33	0.33	0.35	0.37	0.35	0.39	-0.04
Canada Heavy												
Americas	1.71	1.90	2.04	2.12	2.07	2.31	2.25	2.28	2.15	2.24	2.22	0.02
Europe	0.00	0.01	0.01	0.02	0.01	0.01	-	-	0.04	0.02	-	-
Asia Oceania	0.00	-	-	-	-	-	-	-	-	-	-	-
Iraqi Basrah Light[2]												
Americas	0.35	0.17	0.42	0.47	0.55	0.53	0.67	0.63	0.63	0.50	0.55	-0.05
Europe	0.50	0.72	0.81	0.90	0.67	0.76	0.84	0.87	0.73	0.69	0.92	-0.23
Asia Oceania	0.24	0.41	0.46	0.44	0.41	0.42	0.39	0.46	0.52	0.43	0.46	-0.03
Kuwait Blend												
Americas	0.27	0.13	0.14	0.18	0.14	0.19	0.18	0.30	0.13	-	-	-
Europe	0.09	0.13	0.19	0.22	0.26	0.20	0.22	0.22	0.27	0.23	0.25	-0.02
Asia Oceania	0.62	0.65	0.66	0.68	0.60	0.71	0.68	0.61	0.67	0.68	0.61	0.07
Iranian Light												
Americas	-	-	-	-	-	-	-	-	-	-	-	-
Europe	0.10	0.09	0.21	0.33	0.24	0.38	0.25	0.21	0.22	0.28	0.36	-0.08
Asia Oceania	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.01	0.01	-	-	-
Iranian Heavy[3]												
Americas	-	-	-	-	-	-	-	-	-	-	-	-
Europe	0.01	0.02	0.21	0.27	0.38	0.41	0.52	0.71	0.68	0.52	0.20	0.33
Asia Oceania	0.28	0.27	0.52	0.58	0.59	0.73	0.43	0.44	0.52	0.51	0.51	0.00
BFOE												
Americas	0.01	0.01	0.02	0.02	0.03	0.02	0.01	0.00	0.02	0.02	0.03	-0.02
Europe	0.56	0.49	0.44	0.48	0.42	0.39	0.41	0.47	0.49	0.56	0.68	-0.12
Asia Oceania	0.07	0.06	0.05	-	0.08	0.09	0.06	0.14	0.10	0.07	-	-
Kazakhstan												
Americas	0.01	0.00	0.01	0.02	-	-	-	-	-	-	-	-
Europe	0.64	0.64	0.70	0.70	0.62	0.76	0.78	0.76	0.69	0.81	0.59	0.22
Asia Oceania	0.02	0.06	0.03	0.01	0.04	0.05	0.09	0.07	0.07	0.21	0.03	0.17
Venezuelan 22 API and heavier												
Americas	0.64	0.67	0.63	0.65	0.66	0.52	0.61	0.61	0.42	0.48	0.59	-0.10
Europe	0.08	0.09	0.05	0.04	0.05	0.06	0.04	0.05	0.01	0.10	0.03	0.06
Asia Oceania	-	-	-	-	-	-	-	-	-	-	-	-
Mexican Maya												
Americas	0.66	0.50	0.53	0.52	0.53	0.54	0.63	0.68	0.61	0.47	0.55	-0.08
Europe	0.14	0.15	0.17	0.17	0.20	0.20	0.18	0.12	0.20	0.16	0.20	-0.03
Asia Oceania	-	0.01	0.05	0.06	0.07	0.06	0.07	0.06	0.06	0.11	0.04	0.07
Russian Urals												
Americas	-	-	-	-	-	-	-	-	-	0.02	-	-
Europe	1.58	1.61	1.72	1.73	1.77	1.64	1.57	1.65	1.73	1.61	1.65	-0.05
Asia Oceania	-	-	-	-	-	-	0.02	0.02	0.03	0.03	-	-
Cabinda and Other Angola												
North America	0.04	0.06	0.16	0.20	0.13	0.04	-	-	0.16	0.22	0.13	0.09
Europe	0.33	0.42	0.27	0.43	0.16	0.09	0.07	0.10	0.16	0.16	0.38	-0.22
Pacific	0.01	0.02	0.01	-	-	-	0.01	-	0.03	-	-	-
Nigerian Light[4]												
Americas	0.00	0.02	0.07	0.08	0.07	0.02	0.04	-	0.13	0.03	0.17	-0.14
Europe	0.55	0.57	0.39	0.33	0.31	0.36	0.46	0.41	0.38	0.40	0.31	0.09
Asia Oceania	0.02	-	0.01	0.01	0.03	0.02	0.03	0.03	0.03	0.02	0.03	-0.01
Libya Light and Medium												
Americas	-	-	-	-	-	-	-	-	0.10	-	-	-
Europe	0.31	0.22	0.20	0.17	0.30	0.41	0.37	0.43	0.60	0.76	0.11	0.65
Asia Oceania	0.02	0.01	0.02	0.03	0.01	0.04	0.04	0.04	-	0.02	0.03	-0.01

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)

	2014	2015	2016	3Q16	4Q16	1Q17	2Q17	Jun 17	Jul 17	Aug 17	Year Earlier	
											Aug 16	% change
Crude Oil												
Americas	4201	4026	4542	4867	4288	4558	4664	4725	4400	4869	4810	1%
Europe	8679	9505	9253	9647	9566	9473	9606	9697	9948	9634	9433	2%
Asia Oceania	6366	6573	6669	6599	6664	7006	6450	5934	7026	7116	6495	10%
Total OECD	19246	20103	20464	21112	20518	21038	20719	20356	21374	21619	20739	4%
LPG												
Americas	12	10	20	23	18	23	16	11	11	19	25	-21%
Europe	433	418	444	469	468	499	417	399	439	424	436	-3%
Asia Oceania	531	518	566	547	551	603	586	584	549	482	574	-16%
Total OECD	975	947	1030	1039	1036	1126	1020	995	998	925	1035	-11%
Naphtha												
Americas	20	14	10	4	18	19	19	14	12	9	2	300%
Europe	352	345	348	388	354	392	365	340	309	390	388	0%
Asia Oceania	952	950	905	945	893	980	976	983	944	978	985	-1%
Total OECD	1324	1309	1263	1337	1265	1391	1361	1337	1264	1377	1376	0%
Gasoline[3]												
Americas	665	670	735	918	689	575	890	873	759	847	853	-1%
Europe	117	105	100	41	209	151	131	165	188	151	114	32%
Asia Oceania	75	93	84	72	107	119	97	102	66	141	68	107%
Total OECD	857	868	919	1031	1004	845	1118	1140	1013	1139	1035	10%
Jet & Kerosene												
Americas	100	141	169	180	190	148	144	121	134	212	159	33%
Europe	455	445	502	569	466	460	475	502	577	463	619	-25%
Asia Oceania	60	66	74	49	89	112	68	53	58	30	32	-7%
Total OECD	615	651	745	797	746	719	687	677	769	705	810	-13%
Gasoil/Diesel												
Americas	95	76	67	84	84	81	37	43	49	80	97	-18%
Europe	1043	1161	1339	1277	1275	1390	1351	1352	1457	1509	1312	15%
Asia Oceania	152	158	195	166	219	204	206	192	195	194	152	28%
Total OECD	1291	1395	1600	1528	1579	1675	1593	1587	1701	1784	1561	14%
Heavy Fuel Oil												
Americas	132	116	149	158	147	141	103	133	165	173	186	-7%
Europe	596	537	469	460	416	261	296	464	260	180	471	-62%
Asia Oceania	200	173	153	155	123	145	180	167	116	97	161	-40%
Total OECD	928	826	770	774	687	546	580	764	541	449	819	-45%
Other Products												
Americas	671	675	652	663	605	705	694	785	638	836	640	30%
Europe	692	701	773	748	775	1116	981	767	843	905	687	32%
Asia Oceania	399	343	344	351	320	301	244	242	184	271	368	-26%
Total OECD	1762	1719	1769	1762	1701	2122	1919	1794	1666	2011	1695	19%
Total Products												
Americas	1695	1702	1802	2031	1751	1692	1903	1980	1768	2175	1963	11%
Europe	3687	3712	3975	3952	3963	4269	4017	3990	4072	4021	4027	0%
Asia Oceania	2369	2301	2321	2285	2303	2464	2357	2323	2113	2193	2341	-6%
Total OECD	7751	7715	8097	8268	8017	8424	8277	8293	7953	8389	8330	1%
Total Oil												
Americas	5896	5728	6344	6898	6039	6250	6567	6705	6168	7044	6773	4%
Europe	12366	13216	13228	13598	13528	13742	13622	13687	14021	13655	13460	1%
Asia Oceania	8735	8874	8990	8884	8967	9471	8807	8257	9138	9309	8836	5%
Total OECD	26997	27818	28562	29380	28534	29462	28996	28649	29327	30008	29069	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.



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User's Guide and Glossary to the IEA *Oil Market Report*

For information on the data sources, definitions, technical terms and general approach used in preparing the *Oil Market Report (OMR)*, *Market Report Series_Oil* and *Annual Statistical Supplement* (current issue of the Statistical Supplement dated 11 August 2017), readers are referred to the *Users' Guide* at www.oilmarketreport.org/glossary.asp. It should be noted that the spot crude and product price assessments are based on daily Argus prices, converted when appropriate to US$ per barrel according to the Argus specification of products (Copyright © 2017 Argus Media Limited - all rights reserved).

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