

Oil Market Report

12 October 2017

HIGHLIGHTS

- **Following very strong year-on-year demand growth of 2.2 mb/d in 2Q17, the pace slowed to 1.2 mb/d in 3Q17**, reflecting relatively weak July and August data and the impact of hurricanes in September. Our forecast of global demand growth remains unchanged at 1.6 mb/d in 2017 (or 1.6%) and 1.4 mb/d in 2018 (or 1.4%).
- **Global oil supply rose 90 kb/d in September to 97.5 mb/d as non-OPEC output edged higher.** Output stands 620 kb/d higher than last year. In 2017, non-OPEC supplies are expected to grow by 0.7 mb/d, followed by a 1.5 mb/d increase in 2018.
- **OPEC crude output was virtually unchanged in September as slightly higher flows from Libya and Iraq offset lower supply from Venezuela.** Output of 32.65 mb/d was down 400 kb/d on a year ago. Compliance with supply cuts for the year-to-date is 86%.
- **OECD commercial stocks fell 14.2 mb in August from an upwardly revised July. The surplus over the five-year average fell to 170 mb.** Global stocks are likely to have drawn in 3Q17 as reductions in floating storage and the OECD outweighed net builds in China.
- **Benchmark crude prices rose by \$2-4/bbl in September versus August, marking the third straight month of gains.** Middle distillate prices increased almost twice as fast as crude, reflecting lower refinery throughputs and higher demand.
- **For 4Q17, our refinery throughput forecast edges up to 80.9 mb/d, up 0.1 mb/d quarter-on-quarter.** Our first forecast for January 2018 implies 1.2 mb/d year-on-year growth, although runs decline by 0.4 mb/d from December to just under 82 mb/d.
- **Our global crude and product balances show inventories drawing in 2017 by 0.1 mb/d and 0.2 mb/d, respectively.** For next year, the crude and product markets look broadly balanced, assuming OPEC holds output steady at around current levels.

PUBLISHING SCHEDULE – 2018

- Friday 19 January
- Tuesday 13 February⁽¹⁾
- Thursday 15 March
- Friday 13 April
- Wednesday 16 May
- Wednesday 13 June⁽²⁾
- Thursday 12 July
- Friday 10 August⁽³⁾
- Thursday 13 September
- Friday 12 October
- Wednesday 14 November
- Thursday 13 December

The Market Report Series Oil 2018 edition will be released on 5th March.

1 The 13th February OMR will comprise the usual data and projections through end-2018, but with abridged text.

2. Supply/demand forecasts will be 'rolled out' to 2019 in the report dated 13 June 2018.

3. The Annual Statistical Supplement 2018 Edition will be published in conjunction with the report dated 10 August 2018.

NB: On each of these dates, the report will be released at 10:00 am Paris local time.

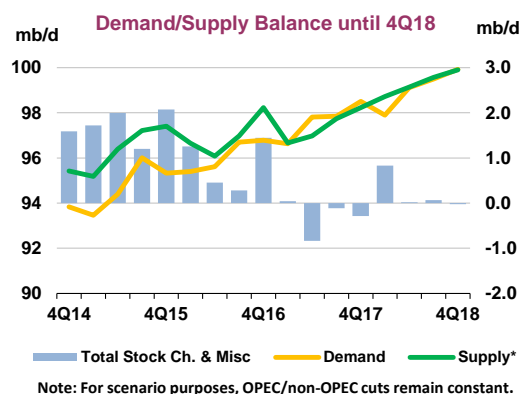
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Building on success

Over the last few months, questions lingered about whether producers were seriously committed to their agreement to cut output and balance the market (*"All in it together?" OMR August 2017*). While there may still be doubts about some of them, the market heavyweights have once again walked into the ring. A few weeks ahead of the next OPEC meeting, Saudi Arabia and Russia have strengthened their relationship with a high level summit, and a series of investment agreements accompanied by statements suggesting that the current oil output cuts might be tightened. Of course, we must wait and see what happens. But there is little doubt that leading producers have re-committed to do whatever it takes to underpin the market and to support the long process of re-balancing.

The backdrop to these high-level manoeuvres is the recent volatility we have seen in the Brent crude market, with prices coming close to the symbolic level of \$60/bbl before retreating to \$57/bbl. Uncertainty with some suppliers (Libya, Venezuela, Iran and northern Iraq) and signs of possibly slower than expected growth in US shale production, coupled with strong oil demand, provided upward momentum to the market. Producers looking for higher prices were on the verge of declaring victory. The number of net long positions held by money managers in Brent futures rose to their highest-ever level through September. However, more recently, enthusiasm has peaked and profit taking has set in. For WTI, the mini bull run was more limited because logistical constraints saw crude oil stocks increase at Cushing, causing the discount to Brent to blow out to nearly \$7/bbl from only \$2/bbl in June. Even the huge increase in US crude oil exports in late September to a record level of close to 2mb/d only increased the value of WTI versus Brent by about 95 cents/bbl. Markets have a tendency to over-shoot during headline-heavy periods, which is probably what we saw with Brent.



Meanwhile, detailed analysis of the global balance shows that in 2017 each quarter will show a deficit, other than a tiny build in 1Q17, and, for the year as a whole, stocks will fall by 0.3 mb/d. This assumes OPEC crude oil production remaining at 32.7 mb/d. Data is of course subject to revision, but we can now clearly see a major reduction in floating storage, oil in transit, and stocks held in some independent areas. In the OECD, the five-year average stock overhang is now down to 170 mb from 318 mb at the end of January and stocks have fallen in months when they normally increase, offsetting net builds in China. In the case of China, there is always a margin for error in data that is often derived rather than reported, but crude imports have fallen every month since June and the implied net build for China's stocks in September was relatively small at 100 kb/d.

Looking into 2018, we see that three quarters out of four will be roughly balanced -- again using an assumption of unchanged OPEC production, and based on normal weather conditions. However, our current numbers for 1Q18 imply a stock build of up to 0.8mb/d. Taking 2018 as a whole, oil demand and non-OPEC production will grow by roughly the same volume and it is this current outlook that might act as the ceiling for aspirations of higher oil prices. Leading oil producers will have looked at their market balances and probably drawn the same conclusion. The next few weeks ahead of the producers' meeting in Vienna on 30 November will be crucial in shaping their decision on output. A lot has been achieved towards stabilising the market, but to build on this success in 2018 will require continued discipline.

DEMAND

Summary

- **After the very strong year-on-year growth of 2.2 mb/d seen in 2Q17, oil demand growth returned to more normal levels in July/August.** Demand increases in OECD countries were moderate in July and preliminary data point to a further slowdown in August. Non-OECD growth continued to slow, more or less in line with our forecast. As a result, our overall outlook remains roughly unchanged, with small revisions to historical data offsetting each other. **We forecast global demand growth of approximately 1.6 mb/d in 2017 (or 1.6%) and 1.4 mb/d in 2018 (or 1.4%).**
- **Following the strong performance seen in 2Q17, growth slowed to 1.2 mb/d in 3Q17, reflecting relatively weak July and August (preliminary) data and the expected impact of hurricanes Harvey and Irma in September.** Demand is expected to bounce back in 4Q17, expanding by 1.7 mb/d year-on-year (y-o-y), assuming normal northern hemisphere winter temperatures.
- **US July data were weaker than seen recently, showing demand growth of 250 kb/d y-o-y after an increase of 650 kb/d in June.** Gasoline demand was slightly below last year for the first time in four months. LPG/ethane demand rose by 100 kb/d y-o-y after posting an increase of 240 kb/d in June.
- **According to domestic data, German oil consumption declined by 100 kb/d y-o-y in August, on lower naphtha deliveries.** Gasoil demand growth slowed to 70 kb/d y-o-y. French deliveries dropped by 35 kb/d in August and Italian demand ended up slightly below last year.
- **Chinese demand rose by 310 kb/d y-o-y in August, supported by an increase in naphtha and other product demand.** Growth continues to slow, and both gasoline and gasoil apparent demand contracted in August.
- **Indian demand dropped by 210 kb/d y-o-y in August, on exceptional weather conditions.** LPG was the only product posting positive growth.

Global Oil Demand (2016-2018)

(million barrels per day)*

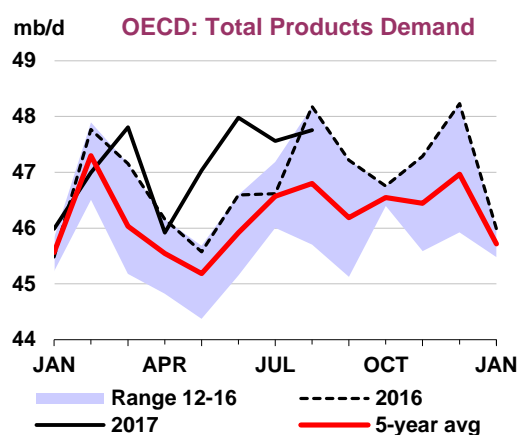
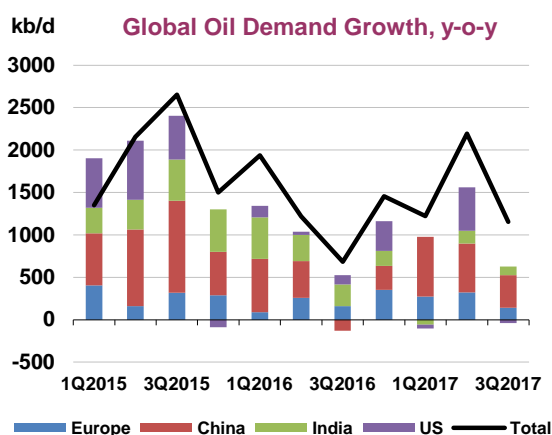
	1Q16	2Q16	3Q16	4Q16	2016	1Q17	2Q17	3Q17	4Q17	2017	1Q18	2Q18	3Q18	4Q18	2018
Africa	4.2	4.2	4.0	4.1	4.1	4.4	4.2	4.1	4.2	4.2	4.4	4.3	4.2	4.4	4.3
Americas	31.1	31.1	31.7	31.4	31.3	30.9	31.5	31.7	31.8	31.5	31.1	31.8	32.1	31.9	31.7
Asia/Pacific	33.4	32.8	32.2	33.3	32.9	34.3	33.9	33.0	34.3	33.8	35.0	34.5	33.7	35.2	34.6
Europe	14.3	14.6	15.2	14.9	14.8	14.6	15.0	15.3	15.0	15.0	14.5	15.0	15.5	15.1	15.0
FSU	4.6	4.6	4.9	4.9	4.8	4.6	4.8	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	8.4	8.8	8.3	8.4	8.1	8.6	8.9	8.4	8.5
World	95.4	95.6	96.7	96.8	96.1	96.6	97.8	97.9	98.5	97.7	97.9	99.1	99.5	99.9	99.1
Annual Chg (%)	2.1	1.3	0.7	1.5	1.4	1.3	2.3	1.2	1.8	1.6	1.3	1.3	1.7	1.4	1.4
Annual Chg (mb/d)	1.9	1.2	0.7	1.5	1.3	1.2	2.2	1.2	1.7	1.6	1.3	1.3	1.7	1.4	1.4
Changes from last OMR (mb/d)	0.0	0.0	0.0	-0.1	0.0	0.1	-0.1	0.1	-0.2	0.0	0.0	0.1	0.1	-0.1	0.0

* Including biofuels

Global overview

Estimates of global oil product demand growth in 2017 have been left unchanged compared to last month's *Report*, as 3Q17 provisional demand numbers were more or less in line with our expectations. The US Department of Energy (DOE) revised up oil demand in 2016 by 55 kb/d with the release of its

Petroleum Supply Annual. In our global forecast, however, the positive change to 2016 US demand was offset by a downward revision of 65 kb/d for Venezuela. Our estimate of global oil demand is roughly unchanged at 97.7 mb/d for 2017, rising to 99.1 mb/d in 2018, with growth in each year of 1.6 mb/d and 1.4 mb/d, respectively.



OECD

In this *Report*, we include finalised data through July for all OECD countries. Preliminary estimates are available for the US, Mexico, Japan, Korea and some European countries for August. This data point to an end of a period of particularly strong growth for oil deliveries in July and further deceleration in August.

OECD Demand based on Adjusted Preliminary Submissions - August 2017

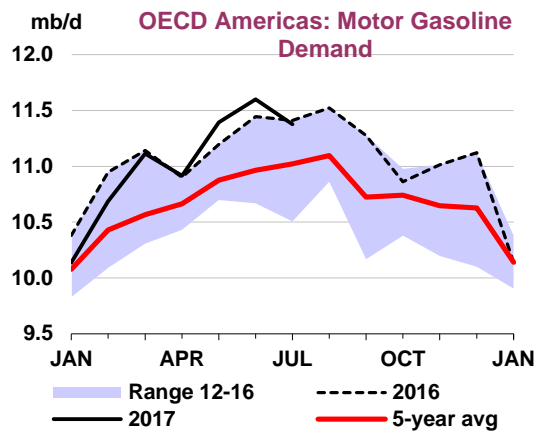
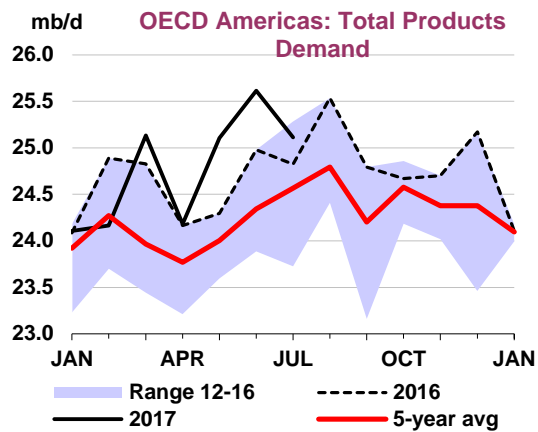
(million barrels per day)

	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*	11.38	-1.2	2.11	3.6	4.76	1.9	0.41	-6.1	0.60	-5.1	6.14	-1.63	25.40	-0.5
US50	9.56	-1.3	1.78	3.6	3.92	3.0	0.08	3.0	0.32	1.5	4.69	0.39	20.35	0.4
Canada	0.88	-0.8	0.17	2.2	0.29	2.1	0.26	-7.8	0.04	-5.0	0.83	-3.94	2.48	-2.2
Mexico	0.79	-0.9	0.09	9.7	0.35	-8.0	0.04	-13.6	0.12	-22.9	0.50	-13.53	1.90	-7.4
OECD Europe	2.05	1.0	1.56	0.3	5.02	0.2	1.33	-0.9	0.91	-1.4	3.56	-5.69	14.42	-1.4
Germany	0.46	5.0	0.22	-0.8	0.82	6.0	0.35	6.7	0.09	-0.9	0.42	-31.37	2.35	-4.2
United Kingdom	0.30	3.2	0.32	0.9	0.52	2.0	0.16	0.4	0.03	-0.3	0.29	-4.93	1.62	0.5
France	0.19	1.0	0.17	-0.2	0.68	-3.8	0.23	-1.9	0.04	-0.2	0.36	-1.25	1.67	-2.0
Italy	0.19	-4.6	0.13	8.2	0.44	-1.5	0.09	-1.4	0.07	8.9	0.33	-1.44	1.24	-0.5
Spain	0.12	0.6	0.16	2.0	0.47	-0.9	0.12	-2.4	0.16	0.6	0.26	0.27	1.30	-0.1
OECD Asia & Oceania	1.67	-3.7	0.70	2.1	1.34	-1.2	0.43	-3.7	0.58	0.5	3.22	-0.05	7.94	-1.0
Japan	0.99	-4.1	0.32	3.2	0.42	-1.9	0.28	-5.7	0.33	5.9	1.48	-0.12	3.82	-1.0
Korea	0.23	-9.9	0.17	2.1	0.39	-10.2	0.09	3.8	0.22	-7.4	1.51	0.88	2.62	-2.5
Australia	0.32	0.3	0.15	-0.9	0.47	8.3	0.00	0.0	0.02	-0.5	0.16	-5.89	1.12	2.2
OECD Total	15.10	-1.2	4.37	2.2	11.12	0.7	2.17	-2.5	2.09	-2.0	12.92	-2.40	47.75	-0.9

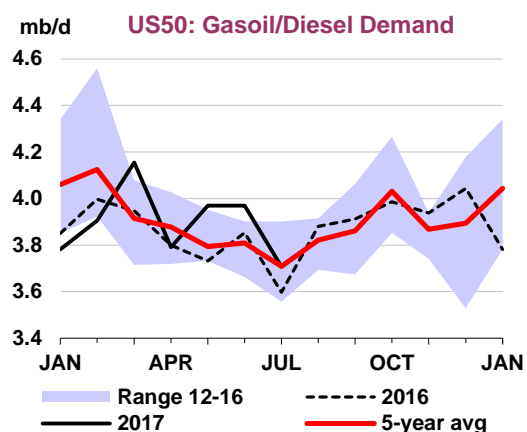
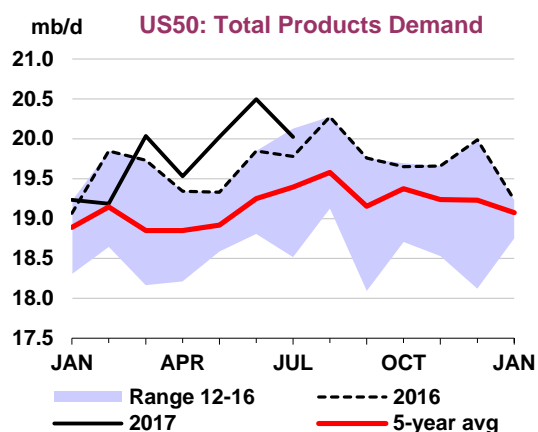
* Including US territories

Americas

The latest monthly data for July showed lower oil demand growth in the US, at 250 kb/d compared to 650 kb/d in June, reducing OECD Americas demand growth to 290 kb/d y-o-y in July. Growth in **Canada** jumped to 125 kb/d in July, supported by strong LPG and other gasoil deliveries. **Mexican** demand continued to decline, by 90 kb/d y-o-y in July.



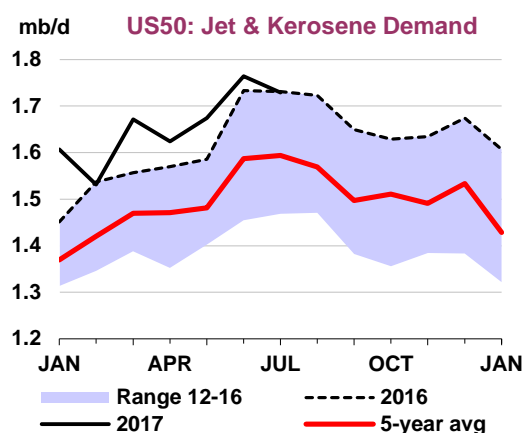
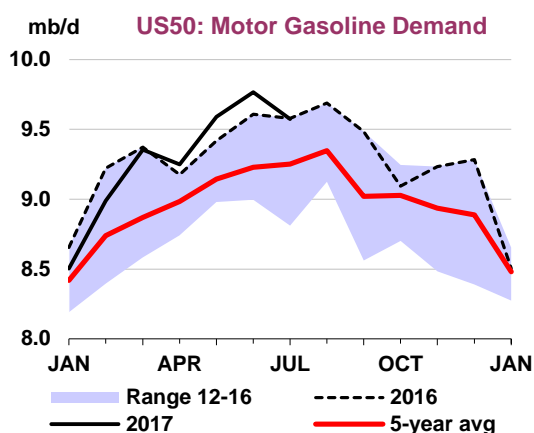
US gasoil demand rose by 110 kb/d in July, supported by the y-o-y growth of manufacturing production and higher freight transportation. CPB world trade monitor (Netherlands Bureau for Economic Policy Analysis) shows an increase of 3.8% y-o-y in the volume of US imports in July. US distillate demand generally benefits from high imports, as the goods are distributed by trucks through the country. In addition, diesel demand was supported by strong industrial production, reflected by the index of industrial production rising by 2.4% y-o-y in July. The Department of Transportation Freight Transportation Index rose by 2.7% y-o-y in July. However, industrial production growth slowed to 1.5% y-o-y in August.



DOE data for July show gasoline demand roughly flat after growing by 135 kb/d on average for the previous three months. The Department of Transportation nevertheless reported growth in travel demand of 0.9% y-o-y in July. Weekly data point to gasoline demand close to 9.55 mb/d in August, roughly unchanged vs. July, likely pushing demand below last year's level. Hurricane damages and higher gasoline prices will have taken their toll on gasoline demand in September, and we await firm data to confirm this.

US jet fuel demand remained roughly unchanged y-o-y in July, after growing by 70 kb/d on average in the past four months. International Air Transport Association data reported growth in North American international revenue passenger kilometres of 3.5% y-o-y in July, slightly down from 4.4% in June. Security measures implemented on travellers to the US may have discouraged some tourists. Domestic traffic increased, however, by 5.1% y-o-y, supported by a good economic environment.

LPG/ethane demand growth slowed to 100 kb/d y-o-y in July, following gains of 245 kb/d in June. The strong increase in June reflected the start-up of new ethylene capacity supporting ethane consumption.

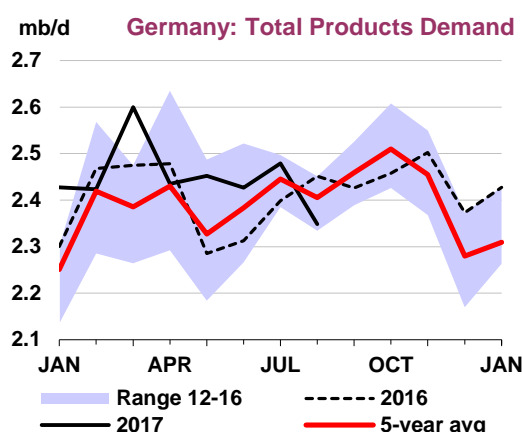
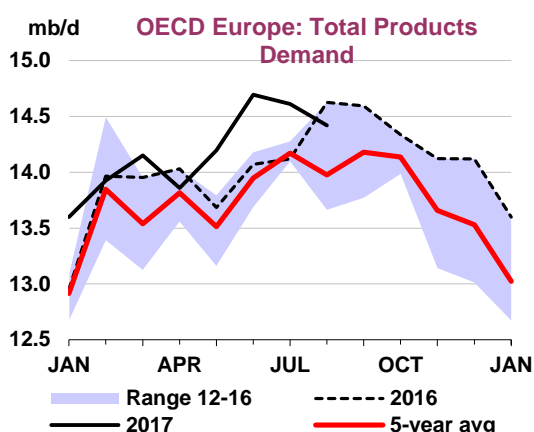


Ethane demand is expected to remain strong in August but should fall sharply in September, as hurricane Harvey closed half of the US Gulf Coast petrochemical facilities at the start of the month.

Our estimate of US demand in 3Q17 remains roughly unchanged from last month's *Report*. After a very strong 2Q17, with demand increasing by 515 kb/d y-o-y, demand in 3Q17 is expected to be 40 kb/d below last year. Gasoline demand in particular is forecast to drop by 110 kb/d compared with last year, based on July data, August preliminary numbers and the impact of hurricanes Harvey and Irma in September. LPG/ethane demand will also likely have been impacted by Harvey. On the other hand, gasoil demand will have remained strong, supported by reconstruction work and as some facilities use gasoil generators to produce electricity. Total oil demand is expected to bounce back in 4Q17 with y-o-y growth of 290 kb/d. For 2017 as a whole, US demand is expected to grow by 180 kb/d to 20.2 mb/d, and for 2018 at a slightly slower pace of 135 kb/d to 20.3 mb/d.

Europe

European oil demand grew by 490 kb/d y-o-y in July after averaging 565 kb/d over the previous two months. Preliminary data point to a y-o-y decline in August. Naphtha demand, in particular, is expected to drop sharply with German naphtha deliveries recording a 30% y-o-y decline in August.



German oil demand rose by 80 kb/d y-o-y in July, supported by very strong gasoil demand. Preliminary data point to a 100 kb/d contraction in August. In July, gasoil consumption rose by 125 kb/d in spite of a small y-o-y decline in diesel demand, supported by an increase of 135 kb/d in other gasoil (mainly heating oil) deliveries. Preliminary data for August indicates that the German heating oil buying spree ended, growing by only 20 kb/d y-o-y after having averaged 130 kb/d over the preceding three months. German gasoline demand declined by 5 kb/d y-o-y in July but it is estimated to have grown by 20 kb/d in

August. Weakness in naphtha, for which demand is estimated to have fallen by 115 kb/d y-o-y in August, pushed total German demand growth into negative territory.

Data for **France** show a slowdown in oil demand growth from 170 kb/d y-o-y in June to 50 kb/d in July. Demand is expected to contract by 35 kb/d in August. A notable slowdown was seen for gasoil: growth was 100 kb/d in June, 30 kb/d in July and is estimated to have gone negative by 30 kb/d in August.

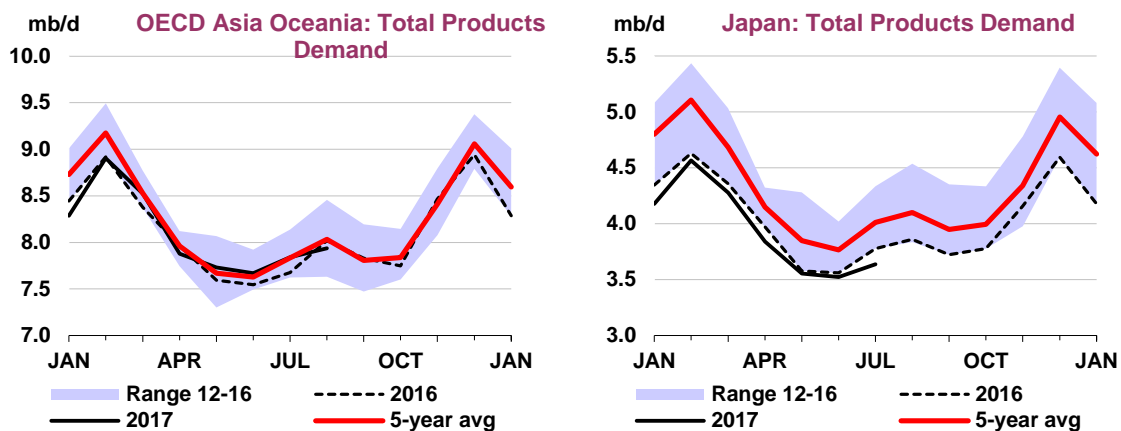
In **Italy**, demand grew by 45 kb/d in July, supported by strong naphtha deliveries. Gasoline and gasoil demand contracted, however. Preliminary data point to a small contraction in total demand in August.

Poland posted strong total oil demand growth of 90 kb/d in July, accounted mostly for by gasoil, which grew by 80 kb/d. Strong gasoil growth started in August 2016, partly reflecting better data collection. The y-o-y difference should therefore start to narrow in August 2017.

European oil demand should significantly slow in August compared to the previous few months. After an average increase of 540 kb/d in May-July, demand should contract by 210kb/d in August, according to preliminary data. Overall, we expect growth of 140 kb/d in 3Q17 and 100 kb/d in 4Q17. For 2017 and 2018, European oil demand is forecast to grow by 210 kb/d and 50 kb/d, respectively.

Asia Oceania

Asia Oceania demand gained 165 kb/d y-o-y in July. Gasoil demand, in particular, increased by 195 kb/d. Gasoline demand increased by 35 kb/d y-o-y. Preliminary data point to a contraction of 80 kb/d in regional demand in August.



Japanese oil demand dropped by 140 kb/d y-o-y in July and is expected to further contract by 40 kb/d in August. Gasoline and gasoil were both weak in August, dropping by 40 kb/d and 25 kb/d respectively.

In **South Korea**, demand rose by 160 kb/d y-o-y in July on strong naphtha deliveries but dropped by 70 kb/d in August as record rains and floods triggered a fall in transportation demand and slowed down construction activity. Motor gasoline demand fell by 25 kb/d while diesel demand contracted by 45 kb/d.

In **Australia**, gasoil demand rose by 95 kb/d y-o-y in July after an increase of 100 kb/d in June. Gasoil demand has been increasing since the start of 2017, in part supported by the restart of operations at several coal mines at the end of 2016. Asia OECD oil demand is expected to decrease by 20 kb/d in 2017 and 135 kb/d in 2018.

Non-OECD

August non-OECD demand data continue to show a deceleration in growth for most major countries. China's growth eased to 310 kb/d y-o-y in August after reaching 490 kb/d in July. India's demand contracted by 210 kb/d. Russian oil demand dropped by 90 kb/d in August. In Brazil, demand increased by 50 kb/d y-o-y in August.

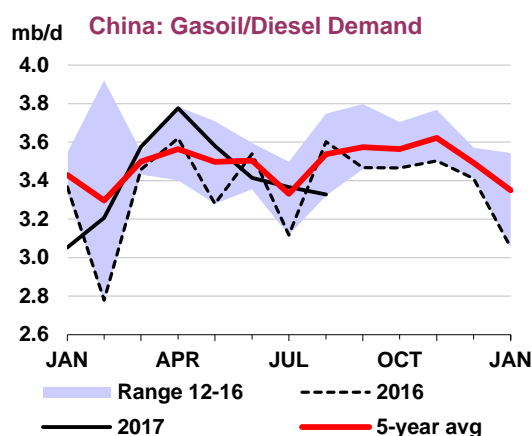
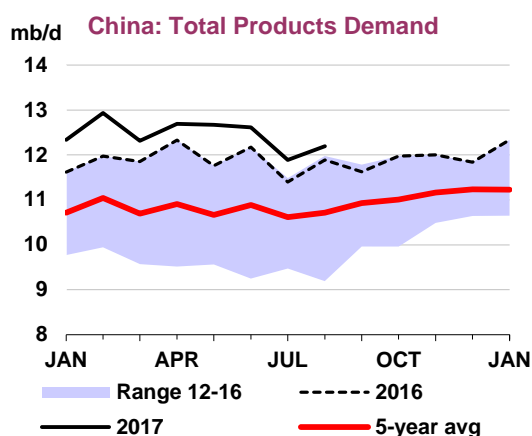
Non-OECD: Demand by Product

	(thousand barrels per day)			Annual Chg (kb/d)		Annual Chg (%)	
	Demand						
	1Q17	2Q17	3Q17	2Q17	3Q17	2Q17	3Q17
LPG & Ethane	6,386	6,474	6,246	346	120	5.6	2.0
Naphtha	2,808	2,727	2,647	13	35	0.5	1.4
Motor Gasoline	11,126	11,279	11,120	396	314	3.6	2.9
Jet Fuel & Kerosene	3,193	3,143	3,215	68	68	2.2	2.1
Gas/Diesel Oil	14,085	14,913	14,556	318	249	2.2	1.7
Residual Fuel Oil	5,438	5,354	5,549	6	174	0.1	3.2
Other Products	6,668	6,949	7,136	172	145	2.5	2.1
Total Products	49,703	50,838	50,467	1,319	1,105	2.7	2.2

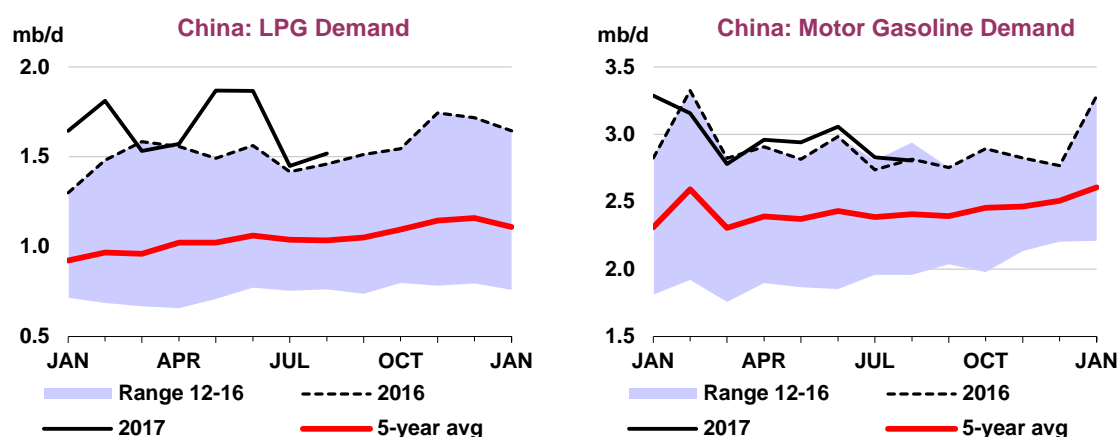
China

China's oil demand growth fell back to 310 kb/d in August from 490 kb/d in July. Most of the growth was in other products, while gasoline and gasoil demand declined y-o-y. In October, gasoline and jet fuel demand are expected to be supported by the Golden Week National Holiday and the mid-Autumn Festival. On the downside, restrictions on the use of trucks could be put in place ahead of the 19th National Congress of the Chinese Communist Party on 18 October, reducing diesel demand.

LPG demand grew by 60 kb/d y-o-y in August from 30 kb/d in July. In the first half of 2017, LPG demand was supported by new Propane Dehydrogenation (PDH) capacity but growth has recently slowed as no new PDH units have come online recently.



Gasoline demand contracted by 10 kb/d y-o-y in August. Gasoline demand rose by 170 kb/d in 2016 but growth slowed to 85 kb/d in 1H17, reflecting lower car sale and use. Gasoil demand dropped by 275 kb/d in August after posting an increase of 250 kb/d in July.



Looking at 2017 as a whole, we expect Chinese oil demand growth to accelerate to 540 kb/d from 310 kb/d in 2016, supported by the strength in 1H17. For 2018, we expect growth to slow to 325 kb/d.

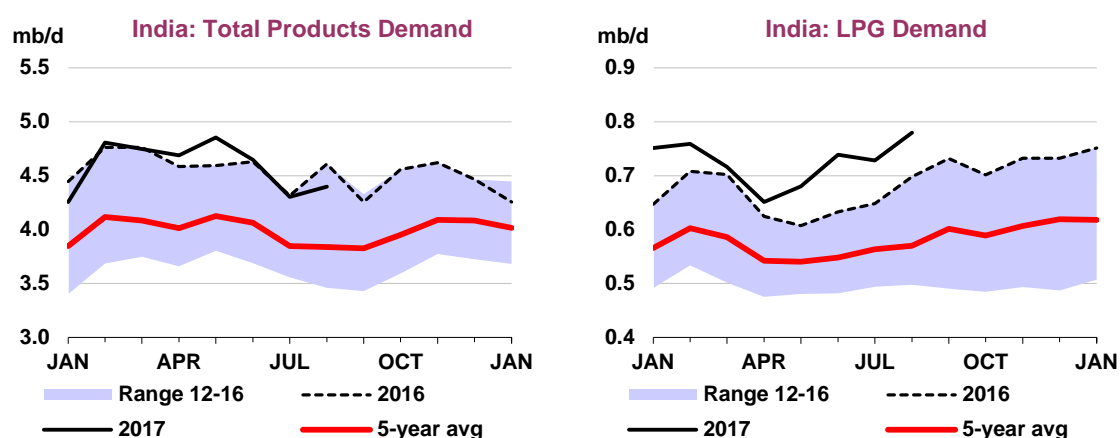
China: Demand by Product

(thousand barrels per day)

	Demand			Annual Chg (kb/d)		Annual Chg (%)	
	2016	2017	2018	2017	2018	2017	2018
LPG & Ethane	1,531	1,663	1,706	132	43	8.6	2.6
Naphtha	1,093	1,122	1,143	28	22	2.6	1.9
Motor Gasoline	2,870	2,963	3,023	92	61	3.2	2.1
Jet Fuel & Kerosene	656	703	734	47	31	7.2	4.5
Gas/Diesel Oil	3,386	3,457	3,552	71	95	2.1	2.8
Residual Fuel Oil	339	362	359	23	-2	6.8	-0.7
Other Products	1,993	2,139	2,213	146	74	7.3	3.4
Total Products	11,868	12,408	12,731	540	324	4.6	2.6

Other Non-OECD

In this *Report*, we have revised down our estimate for **Venezuelan** oil demand in 2016. Monthly data are often difficult to interpret but after examining consumption indicators for main products in 2016 we have revised down our estimate for demand by 65 kb/d. IMF data shows that Venezuela's GDP contracted by 14% in 2015 and 19% in 2016.



Indian oil demand contracted by 210 kb/d y-o-y in August, after a drop of 10 kb/d in July. Gasoil demand contracted 60 kb/d y-o-y, with diesel demand impacted by severe flooding, which reduced freight and manufacturing activities. Seasonal rainfall caused floods in Assam, West Bengal, Bihar and Gujarat

provinces. In addition, Indian demand in August 2016 was particularly strong and a base effect automatically reduced y-o-y demand in 2017. LPG demand rose by a strong 80 kb/d in August, supported by government policy to push LPG into the domestic sector at the expense of kerosene, which declined by 35 kb/d y-o-y. Jet kerosene, however, continues to post strong growth (15 kb/d in August compared with a drop of 50 kb/d for other kerosene) supported by government policies to bring air travel to smaller cities. India's oil demand is expected to increase by 90 kb/d in 2017 and 320 kb/d in 2018.

Saudi Arabian oil demand rose by 130 kb/d in July, on strong fuel oil and gasoline deliveries. The lifting of the ban on women driving cars may give some upwards support to demand when it is implemented next year. Meanwhile, Saudi Arabia is reportedly considering a massive increase in gasoline and jet fuel prices. According to some press reports, the government is contemplating boosting gasoline prices by 80% in November. Prices of other fuels would be gradually raised between 2018 and 2021. Data for July show a very strong increase in fuel oil demand (235 kb/d y-o-y) and a sharp drop in gasoil demand (125 kb/d y-o-y). Since the start of 2016, fuel oil demand has been posting very strong increases in Saudi Arabia, at the expense of direct crude use in the power sector (in particular in 2016) and gasoil (in 2017) to a lesser extent. Gasoil demand is mainly penalised by a sharp drop in economic – and in particular, construction - activity.

Saudi Arabia's product demand swings widely

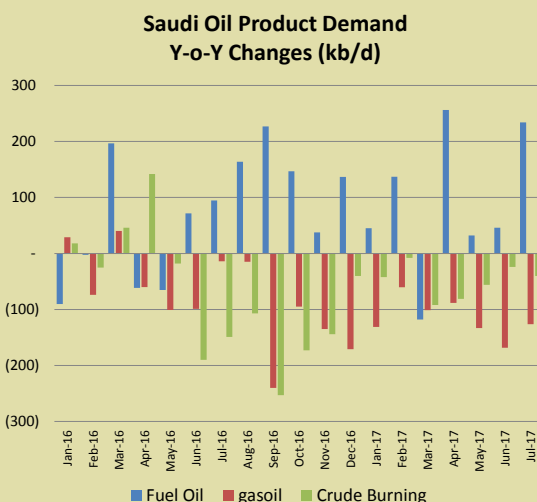
Saudi Arabia has witnessed large swings in product demand in the past few months, with strong increases in fuel oil demand while direct crude burning and gasoil demand posted sharp declines. The recent coming on stream of the Wasit gas plant and two new large fuel oil fired power plants explains the decline in direct crude use. Saudi electricity company started the Wasit power station and the Yanbu 3 power station, a 3.1 GW power plant operating on fuel oil, in 2016 and the Shuqaiq 2.6 GW fuel oil power plant in 2017.

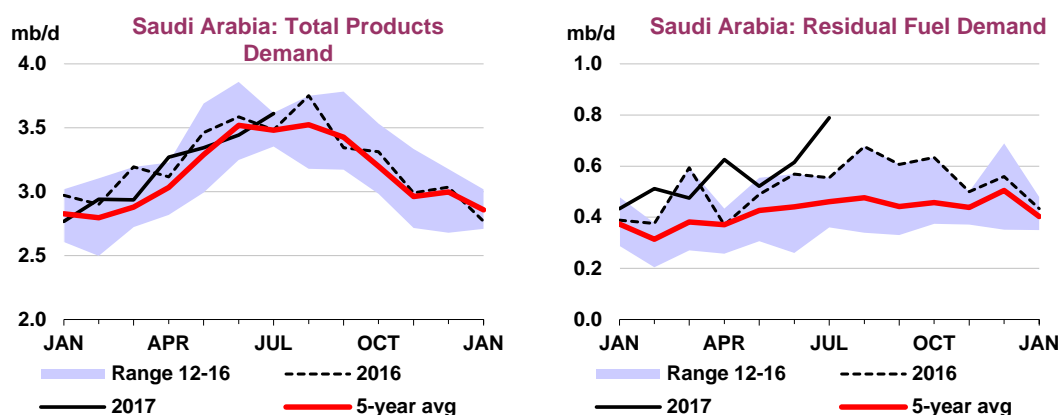
The start-up of these new fuel oil and gas fired power plants allowed Saudi Arabia to reduce its direct use of crude oil in electricity generation. As a result, crude burning dropped by an average of 75 kb/d in 2016 while fuel oil demand rose by 70 kb/d.

In the first seven months of 2017, crude burning dropped further by 50 kb/d while fuel oil consumption rose by 90 kb/d.

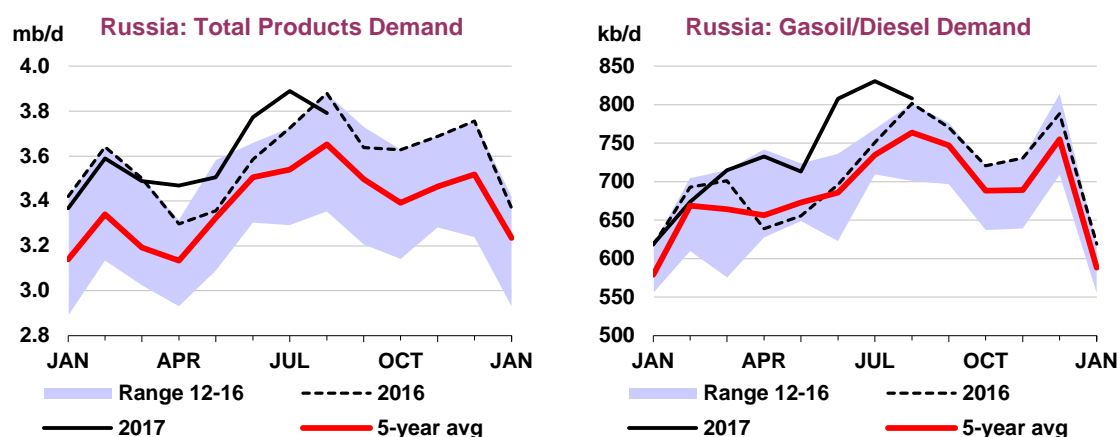
Gasoil demand also recorded big changes, dropping by 80 kb/d in 2016 and 115 kb/d in 2017. The weak economic environment, and in particular the slowdown of the construction sector, is believed to have caused most of the sharp drop in gasoil demand. Looking at the latest data, however, it appears possible that part of the recent drop in gasoil demand was due to its displacement by fuel oil in the power sector.

Saudi Arabia's Gross Domestic Product (GDP) shrank 1.03% y-o-y in the second quarter. The annual growth rate of the construction sector remained fragile, declining by 1.6% y-o-y in 2Q17 after a decline of 1.9% in 2016. A combination of high fiscal deficit and the sharp decline in oil prices since mid-2014 is still weighing on government spending.





Russian oil product demand contracted by 90 kb/d in August. Demand was penalised by low fuel oil and other products deliveries, contracting by 40 kb/d and 70 kb/d, respectively. Overall, Russian oil product demand is forecast to increase by 55 kb/d in both 2017 and 2018.



Oil demand in **Brazil** rose by 50 kb/d y-o-y in August, on strong gasoil and fuel oil deliveries. Oil product sales have been increasing y-o-y in the past four months, supported by the ongoing economic recovery. Oil product demand is increasing in line with GDP growth, which is expected to rebound in 2017 after three years of contraction. Gasoil deliveries rose by 20 kb/d and fuel deliveries by 30 kb/d. Total oil demand is expected to increase by 10 kb/d in 2017 and 65 kb/d in 2018.

Latest data for **Iran** - from JODI- show a very strong increase in gasoline demand in June-July, and a sharp decrease in fuel oil consumption. Booming car sales and increasing traffic explain the recent jump in gasoline consumption. Lower fuel oil demand may reflect further penetration of natural gas, but at present we do not have firm data to support this assumption.

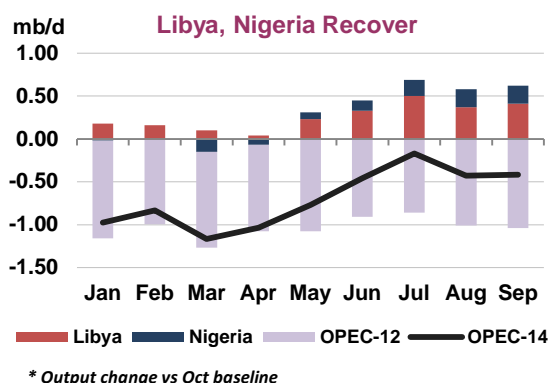
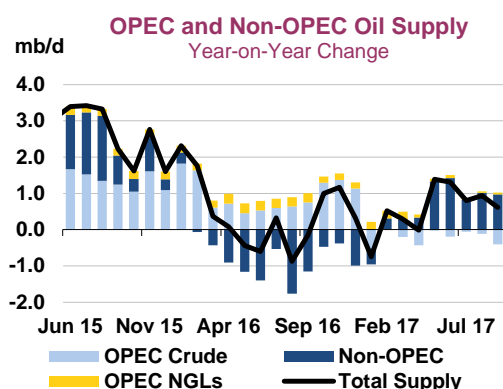
Non-OECD: Demand by Region

	(thousand barrels per day)						
	Demand			Annual Chg (kb/d)		Annual Chg (%)	
	1Q17	2Q17	3Q17	2Q17	3Q17	2Q17	3Q17
Africa	4,360	4,219	4,115	45	95	1.1	2.4
Asia	25,695	26,110	25,125	1,019	770	4.1	3.2
FSU	4,592	4,755	5,017	195	95	4.3	1.9
Latin America	6,445	6,569	6,685	-8	20	-0.1	0.3
Middle East	7,908	8,446	8,793	53	113	0.6	1.3
Non-OECD Europe	703	738	732	15	12	2.0	1.7
Total Products	49,703	50,838	50,467	1,319	1,105	2.7	2.2

SUPPLY

Summary

- **Global oil supply rose 90 kb/d in September as non-OPEC output edged higher.** Ongoing non-OPEC growth left output of 97.5 mb/d standing 620 kb/d above a year ago.
- **OPEC crude output was virtually unchanged in September as slightly higher flows from Libya and Iraq offset lower supply from Venezuela.** Output of 32.65 mb/d, just a touch up on August, was down 400 kb/d on a year ago, when OPEC started its run of record output. Compliance with the supply cuts remained strong at 88% for September and 86% for the year-to-date.
- **Combined production from Libya and Nigeria, both exempt from supply cuts, is up 730 kb/d from springtime lows.** Their rebound has diluted OPEC's supply cut.
- **Non-OPEC supplies edged 80 kb/d higher in September as scheduled and unscheduled outages continued to constrain production.** Output nevertheless stood 975 kb/d higher than a year ago, with gains stemming from the US, the North Sea and Kazakhstan, while increased production from Congo and Ghana also contributed. Mexico and Russia saw the largest year-on-year declines.
- **Non-OPEC oil supply is forecast to expand by 0.7 mb/d in 2017 and a further 1.5 mb/d in 2018 to reach 59.6 mb/d.** The US will be the largest contributor to growth in both 2017 and 2018, adding 470 kb/d and 1.1 mb/d, respectively.



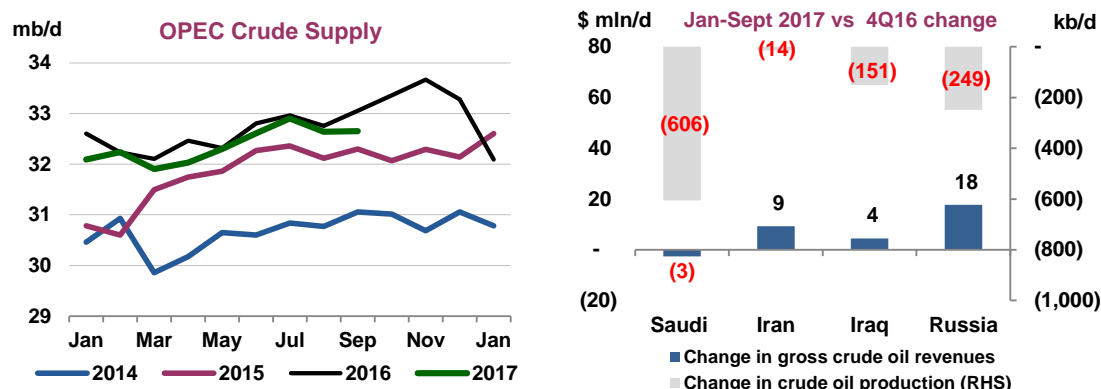
All world oil supply data for September discussed in this report are IEA estimates. Estimates for OPEC countries, Alaska, Azerbaijan, and Russia are supported by preliminary September supply data.

OPEC crude oil supply

OPEC supply inched up 10 kb/d in September to 32.65 mb/d as higher output from Libya and Iraq compensated for further declines in Venezuela. Compliance from the 12 members who agreed to cut supply remained robust at 88% for September and 86% for the year-to-date. Output from Libya rose 40 kb/d to 920 kb/d after the core Sharara oil field restarted following a pipeline blockade of more than two weeks. The recovery is tenuous and output was well below July's four-year peak above 1 mb/d. Flows from Nigeria held steady at 1.66 mb/d. The two African producers, exempt from cuts, between them have added 730 kb/d since their output bottomed out in the spring, which has eroded the impact of OPEC's output reduction.

Production from Iraq, including the Kurdistan Regional Government (KRG), edged up in September and it remains one of the least compliant producers party to supply cuts. The higher output showed that

heightened tension over the Kurdish region's independence referendum has yet to affect exports from northern Iraq through Turkey (see *Iraqi output rises despite threats to KRG oil*). Saudi Arabia pumped a touch less in September as lower domestic consumption more than offset slightly higher crude shipments to world markets. In Venezuela, production declined by 50 kb/d as imports of diluent to blend with heavy Orinoco oil fell because of Hurricane Harvey. Supply eased a touch in Angola and held steady in Iran, which received a slight increase under the OPEC agreement.



For Saudi Arabia and Russia, who worked together to forge the OPEC/non-OPEC agreement, there is a strong economic incentive to support oil prices by limiting supply. Their relationship was strengthened by King Salman's early October visit to Moscow, the first by a Saudi monarch. For 2017 to date, OPEC as a whole and Russia have earned more while pumping less. Libya and Nigeria, spared from cuts, account for half of OPEC's higher gross revenues. However, Saudi Arabia, which is shouldering the cut, earned slightly less than in 4Q16 – when Middle East producers and Russia pumped at record rates ahead of the output deal.

OPEC Crude Production

(million barrels per day)

	Aug 2017 Supply	Sep 2017 Supply	Supply Baseline ¹	Agreed Cut	September Actual Cut ²	August Compliance	September Compliance	2017 Average Compliance
Algeria	1.06	1.06	1.09	-0.050	-0.03	58%	58%	62%
Angola	1.68	1.66	1.75	-0.078	-0.09	91%	117%	129%
Ecuador	0.54	0.54	0.55	-0.026	-0.01	31%	31%	65%
Equatorial Guinea	0.12	0.13	0.14	-0.012	-0.01	167%	83%	118%
Gabon	0.18	0.19	0.20	-0.009	-0.01	244%	133%	41%
Iran ³	3.84	3.84	3.71	0.090	0.13	NA	NA	NA
Iraq	4.49	4.52	4.56	-0.210	-0.04	34%	20%	34%
Kuwait	2.70	2.71	2.84	-0.131	-0.13	105%	98%	99%
Qatar	0.61	0.61	0.65	-0.030	-0.04	127%	127%	119%
Saudi Arabia	9.96	9.94	10.54	-0.486	-0.60	120%	124%	123%
UAE	2.93	2.93	3.01	-0.139	-0.08	60%	60%	52%
Venezuela	1.99	1.94	2.07	-0.095	-0.13	81%	134%	30%
Total OPEC 12	30.10	30.07	31.11	-1.176	-1.04	86%	88%	86%
Libya ⁴	0.88	0.92						
Nigeria ⁴	1.66	1.66						
Total OPEC	32.64	32.65						

¹ Based on October 2016 OPEC secondary source figures, except Angola which is based on September 2016.

² From OPEC supply baseline.

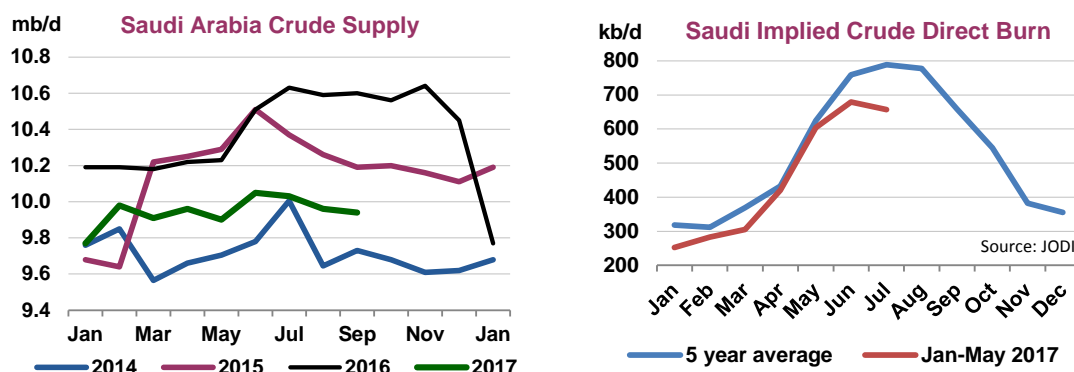
³ Iran was given a slight increase.

⁴ Libya and Nigeria are exempt from cuts.

Total OPEC crude output in September was down 400 kb/d on a year ago, when the group's Middle East members started to ramp up. Saudi Arabia (-660 kb/d), Venezuela (-230 kb/d), the UAE (-220 kb/d) and Kuwait (-210 kb/d) showed the largest year-on-year (y-o-y) declines. Libyan production was up 560 kb/d y-o-y, Nigerian supply stood 370 kb/d higher while Iranian flows were up 130 kb/d.

As for the market balances, the call on OPEC crude rises to 32.98 mb/d in 4Q17, 0.33 mb/d above September's output, but falls to 31.87 mb/d in 1Q18.

Supply from **Saudi Arabia** dipped 20 kb/d to 9.94 mb/d, as a decline in domestic consumption more than offset slightly higher crude shipments to world markets. The Kingdom has pumped below its 10.06 mb/d supply target since the OPEC cut commenced in January. Preliminary tanker tracking data suggest that exports were around 6.7 mb/d during September, up slightly on August. Exports typically rebound in the autumn after falling during the summer when more crude is burned in power plants and as global crude demand from refiners rises following maintenance. Saudi shipments are due to rise, although Aramco said that despite "very strong demand" for its crude of more than 7.7 mb/d in November, it would limit loadings to 7.15 mb/d in order to stay within its OPEC supply target. Saudi Aramco described the 560 kb/d cut in customer requests for November as "unprecedented".



The latest official data from the Joint Organisations Data Initiative (JODI) show Saudi shipments of crude during July sank to 6.69 mb/d – the lowest since August 2014. During the first seven months of this year, exports were roughly 7.1 mb/d versus 7.5 mb/d in the same period of 2016, according to JODI figures. To stay below its OPEC supply target, Saudi Aramco has made sharp cuts in loadings to clients in the US and to a lesser extent to Europe, while sparing most of its customers in Asia. It raised the official selling price differential for November loadings of light crude into Asia, but made sharp cuts on grades bound for Northwest Europe and a slight reduction to light grades for the US.

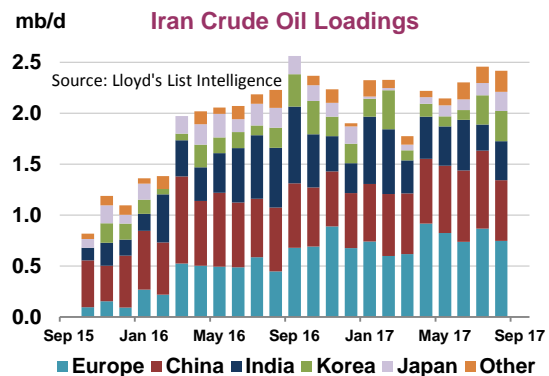
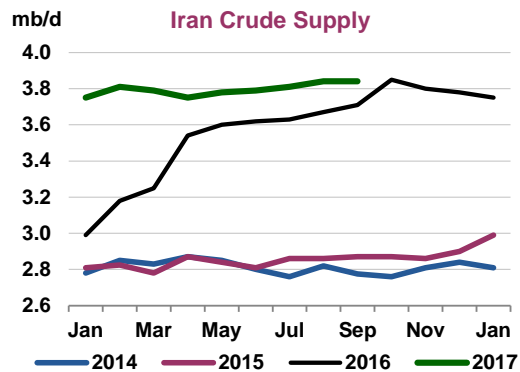
On the domestic front, the amount of crude burned in power plants eased to 660 kb/d in July versus 680 kb/d in June as the Kingdom sought to optimize the gas processing capacity it brought online a year ago. Crude oil for power generation is also increasingly being replaced by fuel oil (see *Demand*). In 2016, about 630 kb/d of crude was used in power plants during the peak 2Q-3Q period.

Saudi Aramco's long-awaited public listing of up to 5% of its shares is on track to take place in 2H18, according to Energy Minister Khalid al-Falih. The initial public offering is the main plank of Vision 2030, a bold reform plan to diversify the Saudi economy beyond oil.

Output in neighbouring Gulf countries was broadly steady. Production in both the **UAE** and **Qatar** was flat at 2.93 mb/d and 610 kb/d, respectively. Supply from **Kuwait** rose a touch to 2.71 mb/d.

For **Iran**, the focus is on the possibility of the US withdrawing from the nuclear deal agreed in 2015. The easing of sanctions allowed by the deal has seen Iran boost production above 3.8 mb/d from around 3 mb/d at the start of 2016 and more than double exports. Uncertainty around the nuclear deal is growing at the same time as Iran seeks to attract foreign investors into its oil and gas sector. Total has already finalised a deal for the South Pars 11 project, and Tehran hopes to secure more deals by the end of 1Q18. Meanwhile, output in September held steady at 3.84 mb/d.

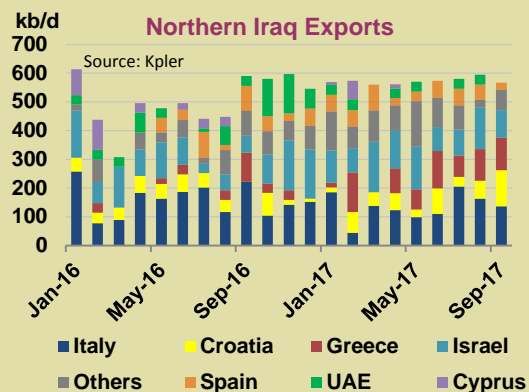
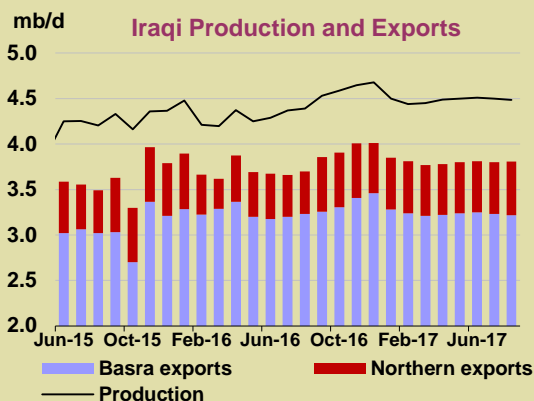
Iran is nonetheless pressing ahead with development of the West of Karun region, the backbone of its expansion effort. Output from the southern section of the Azadegan field is expected to rise by 65 kb/d to 145 kb/d by the end of 1Q18. International and Iranian companies are now seeking to form consortia to bid for a project to boost the entire Azadegan field 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. Elsewhere in West of Karun, some 25 kb/d is due to start up at the South Yaran field by the end of this year while Yadavaran, which pumps around 115 kb/d, is expected to be offered to investors under a new upstream contract. Iran is expected to launch its new West of Karun crude next year, with production of the heavy grade now just under 300 kb/d.



As for crude oil sales, shipments during September dipped by around 40 kb/d to 2.42 mb/d as customers in China and Europe reduced liftings, according to preliminary tanker tracking data. The amount of oil stored at sea was steady at 3 mb – down from 26 mb a year ago. Exports to China fell by 170 kb/d and dropped by 120 kb/d to Europe. Loadings rose by 130 kb/d to India and by 70 kb/d to Japan. As for condensates loaded from Assaluyeh, Iranian officials pegged September exports at more than 400 kb/d. Shipments are expected to fall to around 300 kb/d in October, due to maintenance at the South Pars gas field, which produces condensates. The work could reportedly stretch through November. South Korea is Iran's biggest lifter of condensates, while the UAE and Japan are also regular buyers.

Iraqi output rises despite threats to KRG oil

The Kurdish region's independence referendum on 25 September has driven a wedge between Erbil and Baghdad although production and exports are flowing as normal. Output during September rose by 30 kb/d to 4.52 mb/d as exports edged higher from southern Iraq. Shipments from the northern, semi-autonomous region through Turkey were relatively steady at 580 kb/d.



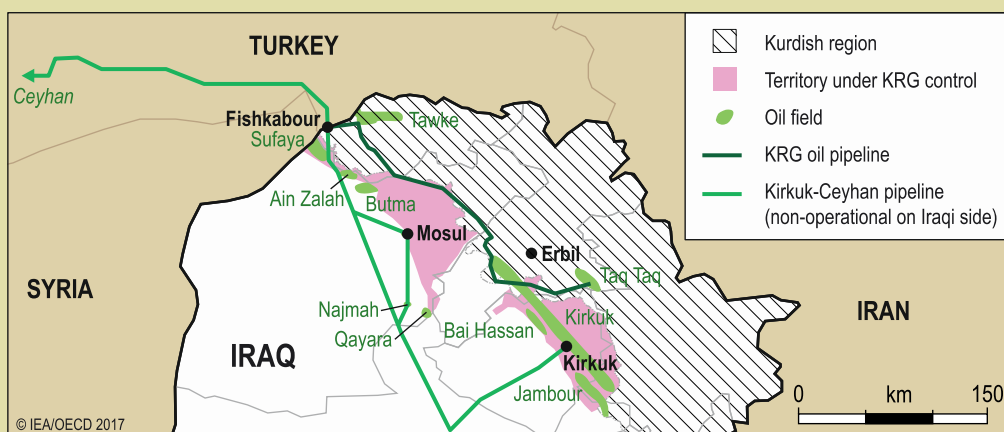
Supported by neighbouring Turkey and Iran, Baghdad has called for the KRG to cancel the referendum result or face sanctions, international isolation and possible military strikes. For its part, Baghdad swiftly sought to

Iraqi output rises despite threats to KRG oil (continued)

reclaim control in the north. Prime Minister Haider al-Abadi and parliament have demanded the return of control over oil fields that belong to the federal North Oil Co (NOC) and that all oil sales be handled by the State Oil Marketing Organization (SOMO). Although Baghdad officially calls Kurdish oil sales illegal, it has turned a blind eye to most trade. Baghdad also plans to repair and reopen its oil pipeline from the fields of Kirkuk to Ceyhan in Turkey in a bid to largely bypass Kurdistan. Iraq halted use of the route in 2014 after the so-called Islamic State (IS) swept through the region, but hopes to ship between 250 kb/d to 400 kb/d through the line. Repairs are likely to take some time as the network has been badly damaged.

For now, exports from northern Iraq continue to flow via the KRG's oil pipeline that links to the twin Kirkuk-Ceyhan pipeline at Fishkabour on the border with Turkey. But Ankara, which fears independence will inflame its Kurdish population, has threatened to turn off the pipeline that ships Kurdish-controlled crude across its territory to the Mediterranean. Any move to halt flows would be crippling for Erbil, which exports all of its crude - providing most of its income – through Turkey.

Some 600 kb/d, roughly half from the Kirkuk field that is overseen by Kurdish forces but claimed by Baghdad, is piped via Turkey. Another 40 kb/d is sent to Turkey by truck from Gulf Keystone's Shaikan field. For Baghdad, the referendum intensifies long-running feuds over the status of oil-rich Kirkuk, the KRG's right to independent oil sales and revenue sharing. The KRG had been shipping a share of exports on behalf of the federal government, but no transfers have occurred since June.



This map is without prejudice to the status of or sovereignty over any territory, to the delimitation of international frontiers and boundaries and to the name of any territory, city or area.

A halt to flows would also cause problems for mainly European buyers of crude from northern Iraq. Italy is the biggest importer, with Croatia, Greece, Spain and Israel ranking as regular lifters. Foreign companies drilling for oil in Kurdistan must also be concerned. The KRG only recently settled debts with DNO and Genel. Just ahead of the referendum, Rosneft expanded its energy deal with the KRG. It is moving ahead with plans to invest in Kurdistan's crude oil pipeline to Turkey, and intends to finance a gas export pipeline. The KRG and Rosneft struck a wide-ranging deal in February including the development of five oil and gas blocks, investment in the oil export pipeline to Turkey, and purchases of crude exports from the KRG.

As for the upstream, the fields that Baghdad is demanding that the KRG return include Bai Hassan and Avana dome, along with Ain Zalah, Sufaya and Butmah. Kurdistan produces just under 600 kb/d from fields under its control: nearly half is pumped from the Avana dome and Bai Hassan, which the KRG has controlled since Kurdish Peshmerga forces secured the area after IS militants swept through northern Iraq in 2014. The KRG has exported that oil independently since then.

Iraqi Oil Minister Jabbar al-Luaibi has instructed NOC to raise output from the northern Nineveh province to more than 30 kb/d. Output from the fields, some of which are disputed by the KRG, is expected to meet higher demand from local refineries in areas formerly under the control of IS. Oil fields in the region include Qayara, now pumping roughly 10 kb/d, as well as Sulfaya, Ain Zalah and Butmah – each with capacity of around 10 kb/d. The upstream plan follows the restart of the 20 kb/d Qayara refinery near Mosul, the provincial capital, which is now running at half capacity.

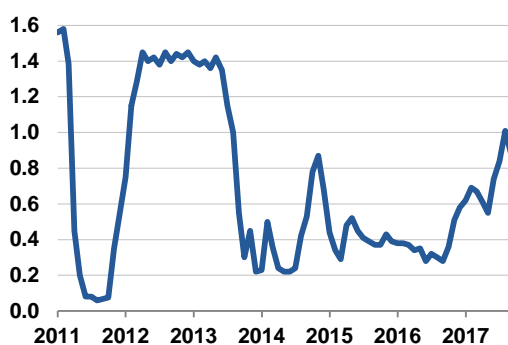
Iraqi output rises despite threats to KRG oil (continued)

Operations have also resumed at the 16 kb/d Haditha refinery in the western Anbar province. Luaibi also called for the urgent rehabilitation of damaged oil installations and fields in Kirkuk and Salah-al-Din.

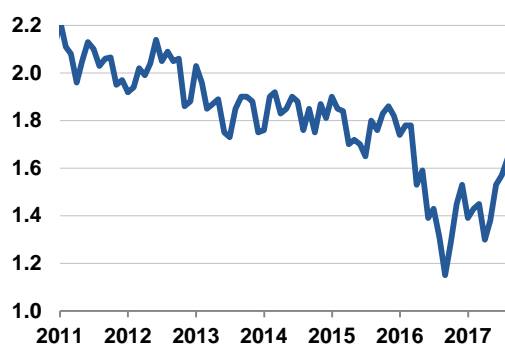
As for southern Iraq, which produces the lion's share of exports, Royal Dutch Shell's plan to exit the 220 kb/d Majnoon oil field could make it more challenging for Baghdad to achieve its longer term plans to boost capacity. Shell had aimed to raise Majnoon's output to 420 kb/d within three years. It holds a 45% stake in the field that it operates under a technical service contract (TSC). Petronas holds a 30% stake, while the Iraqi government has 25%. Luaibi said Chevron and Total have expressed willingness to work on the field. The Iraqi oil minister also said Exxon Mobil was in advanced talks on an integrated water injection project that is crucial to sustaining output from the south. The scheme includes the development of the Bin Umar, Nassiriya, Luhais, Ratawi and Tuba fields. The international oil companies that are running Iraq's southern mega-projects requested a review of the TSCs after the oil price collapse at the end of 2014 strained Baghdad's budget and impeded its ability to repay them.

Libyan production bounced back in September, edging up 40 kb/d to 920 kb/d after output from its largest field, Sharara, restarted following a pipeline blockade of more than two weeks. Sharara produced for most of September, but an armed group forced yet another brief closure in early October. The 300 kb/d capacity field, crucial to Libya's recovery, has been producing at just over 200 kb/d. A sustained comeback – even to the recent peak of 1 mbd reached in July – may prove difficult given the ongoing security challenges. The National Oil Corp is working to prevent rebel groups taking over installations and shutting down oil fields.

mb/d **Libya Crude Supply**



mb/d **Nigeria Crude Supply**



Nigerian production held at 1.66 mb/d during September, the highest level since February 2016, before militants stepped up their oil sector attacks in the Niger Delta. A lull in the violence has allowed flows to rise steadily and to stand 370 kb/d above September 2016, when production was at a three-decade low. Militant attacks have fallen since early this year after the government intensified peace talks with rebel leaders. Civil conflict and targeted attacks on its oil sector had spared Nigeria from OPEC cuts. Now that production is recovering, the oil minister has said that it will not rise above 1.8 mb/d.

Production in **Angola** eased by 20 kb/d in September to 1.66 million b/d, which pushed compliance with OPEC cuts to 117%. This apparently exemplary discipline is mostly due to declines from ageing oil fields. Seeking to arrest the decline, Sonangol aims to review and possibly sweeten commercial terms offered to oil investors and reduce excessive bureaucracy. Angola's new president, Joao Lourenco, has merged the ministries of mineral resources and petroleum, appointing Diamantino Pedro Azevedo as its head. Crude oil production from **Gabon** crept up 10 kb/d in September to 190 kb/d, while supply from Equatorial Guinea inched up to 130 kb/d. **Algerian** production was steady at 1.06 mb/d.

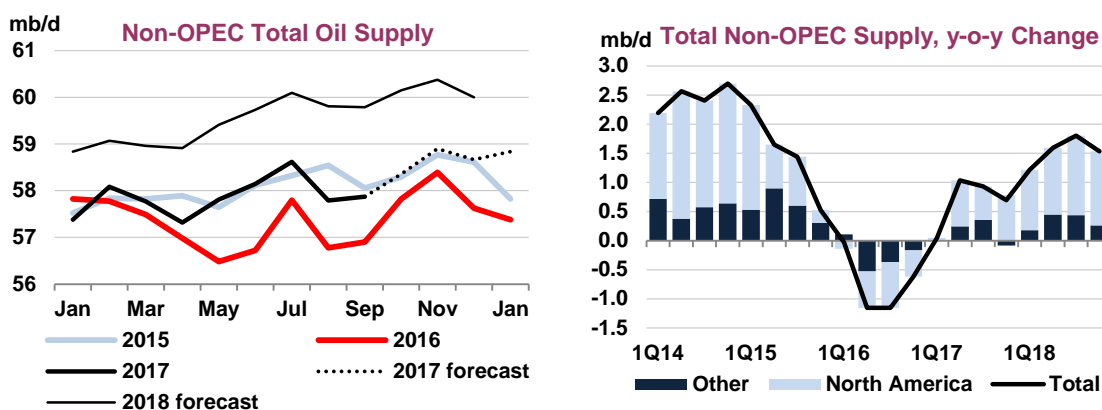
Output from **Venezuela** fell 50 kb/d to 1.94 mb/d after Hurricane Harvey cut imports of diluents needed to process extra heavy oil from the Orinoco Belt. In any event, the worsening economic and political crisis has sped the decline in production as operations slow at Orinoco upgraders. The situation is

particularly acute for projects where Petroleos de Venezuela (PDVSA) is the sole investor. During September, production was down 230 kb/d on a year ago. In theory, supply should recover when logistics return to normal and diluent can make it to the upgraders. Market sources say PDVSA now has to work harder to place exports of crude, especially into the US, as sanctions and operational challenges cast doubt on Venezuela's reliability of supply.

Logistical difficulties arising from Harvey and sanctions have hit Venezuela's exports to the US, which fell to around 370 kb/d, the lowest in more than a decade. Although most commercial trade is exempt from sanctions, some buyers in the US reportedly have struggled to open letters of credit. Venezuela's oil minister has meanwhile confirmed that PDVSA is negotiating to swap Rosneft's collateral in US refiner Citgo, which could help skirt difficulties arising from US sanctions. Rosneft holds a 49.9% stake in Citgo for a 2016 loan of about \$1.5 billion. Supply from **Ecuador** held steady at 540 kb/d. Ecuador plans to offer oil exploration and production blocks in January under new contract terms.

Non-OPEC overview

Non-OPEC oil supplies edged up 80 kb/d in September as field maintenance and weather-related outages continued to constrain output. Precautionary shut-ins and flooding curbed US oil production, while scheduled maintenance restricted output in Russia, Azerbaijan and Canada. Production likely rebounded in the North Sea and in Brazil, while the continued ramp-up of production from new fields in Kazakhstan, Ghana and Congo also contributed. At 57.9 mb/d, total non-OPEC output stood 975 kb/d above a year earlier. For the year as a whole, non-OPEC output is forecast to gain 0.7 mb/d followed by an increase of 1.5 mb/d during 2018. Both numbers are unchanged from last month's *Report*.



Despite the disruption to production in the Gulf of Mexico and lower Texas caused by Hurricane Harvey, US oil output is estimated 590 kb/d above a year earlier in September. Well completions at US shale oil fields have picked up from the low levels seen at the start of the year, so that even though new rig additions have stalled, output continues its upward trend. After hitting a low of 8.6 mb/d in September 2016, US crude oil production had already gained 685 kb/d by July, the latest month for which consolidated production data is available. Natural gas liquids production increased by an additional 150 kb/d. Total US output is forecast to expand by 470 kb/d on average in 2017 and 1.1 mb/d during 2018, to 14.1 mb/d.

Russian crude oil production held largely steady in September, just above 10.9 mb/d, as maintenance from the Exxon-operated Sakhalin field offset increases from Rosneft, Gazpromneft and other producers. After posting year-on-year gains of 150 kb/d on average over the first eight months of the year, Russian oil output fell below year earlier levels last month for the first time in more than three years. Azeri production was also kept in check for a second consecutive month, with lower output from the Shah Deniz gas and condensate field offsetting slightly higher volumes from the Azeri-Chirag-Deepwater

Gunashli (AGC) complex, which had seen sharply lower volumes in August. While September production data was not yet available for Kazakhstan at the time of writing, downwardly revised loading schedules suggest Kashagan output inched only marginally higher.

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	19.9	20.4	20.0	21.0	20.9	21.3	21.7	21.2
Europe	3.5	3.7	3.5	3.4	3.6	3.6	3.7	3.7	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	0.5	0.4
Total OECD	23.4	24.0	23.7	23.8	24.4	24.0	25.1	25.0	25.2	25.8	25.3
Former USSR	14.2	14.5	14.4	14.3	14.4	14.4	14.5	14.5	14.4	14.4	14.5
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	3.5	3.4	3.5	3.4	3.4	3.3	3.3	3.4
Latin America	4.5	4.6	4.5	4.6	4.7	4.6	4.6	4.7	4.8	4.9	4.8
Middle East	1.3	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.3	1.3	1.2
Africa	1.7	1.7	1.7	1.8	1.7	1.7	1.8	1.8	1.8	1.8	1.8
Total Non-OECD	29.4	29.5	29.3	29.3	29.4	29.4	29.5	29.5	29.4	29.5	29.5
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	2.1	2.6	3.0	2.6	2.5
Total Non-OPEC	57.4	57.7	57.8	58.1	58.6	58.1	59.0	59.4	59.8	60.2	59.6
Annual Chg (mb/d)	-0.7	0.0	1.0	0.9	0.7	0.7	1.3	1.6	1.7	1.6	1.5
Changes from last OMR (mb/d)	0.0	-0.1	0.0	-0.1	-0.1	-0.1	0.0	0.0	-0.1	0.0	0.0

Maintenance also continued to constrain North Sea oil supplies, although loadings suggest output recovered somewhat by September. Brazilian production likely rebounded, while production in Ghana and Congo saw additional gains as new fields continue to ramp-up. August estimates for non-OPEC as a whole were revised down by 220 kb/d since last month's *Report*, most notably due to weaker than expected production in Brazil and China as well as for global biofuels.

Adherence to agreed output reductions from non-OPEC's 10 participating countries held largely steady at around 125% in September, as both Russian and Azeri production was disrupted by maintenance and as Mexican supplies slipped further. Mexican production had already fallen by 195 kb/d below the October 2016 baseline by August and Hurricane Harvey likely caused output to slip further as Pemex advanced maintenance of its biggest field, Ku-Maloob-Zaap. Compliance for the group as a whole has averaged 75% so far this year.

Non-OPEC Supply Reduction Commitments

thousand barrels per day (kb/d)

Country	IEA August Oil Output	IEA September Oil Output ²	IEA Supply Baseline ³	Agreed Cut	Actual Cut ³	August Compliance	September Compliance	2017 Average Compliance
Azerbaijan	739	734	815	-35	-81	215%	231%	117%
Kazakhstan	1,772	1,807	1,805	-20	3	162%	-13%	N/A
Mexico	2,205	2,164	2,400	-100	-236	195%	236%	113%
Oman	976	977	1,020	-45	-43	97%	95%	96%
Russia	11,284	11,279	11,597	-300	-318	104%	106%	78%
Others ¹	1,225	1,243	1,253	-46	-9	59%	20%	-2%
Total	18,201	18,203	18,888	-546	-685	126%	125%	75%

1 Bahrain, Brunei, Malaysia, Sudan and South Sudan

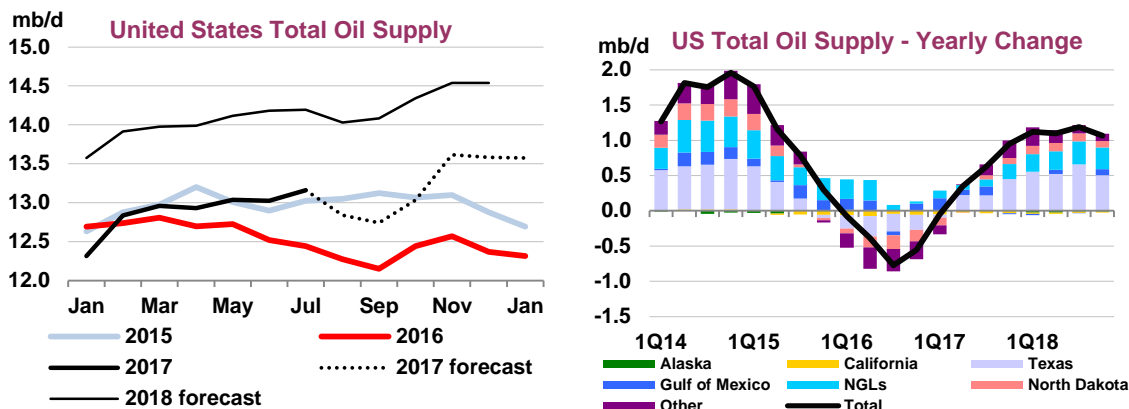
2 September total oil supply, based on market intelligence sources and tanker tracking data. Azerbaijan and Russia based on preliminary country statistics.

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

OECD

North America

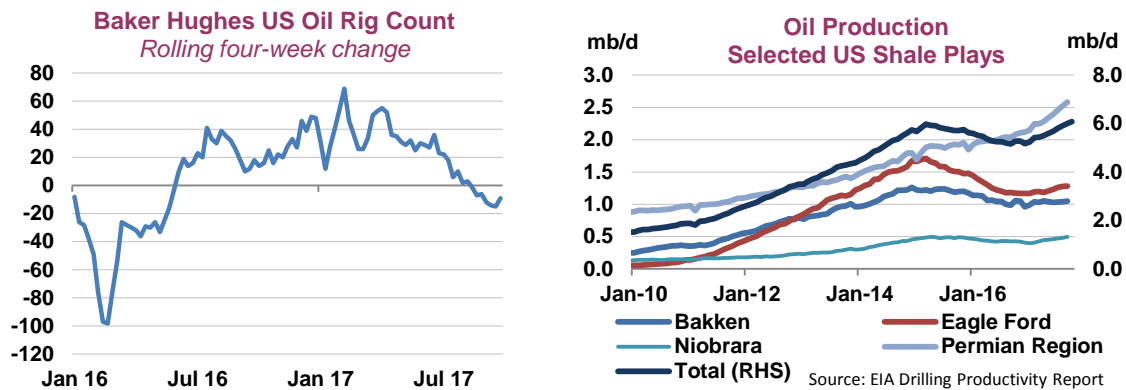
US – July Alaska actual, others estimated: US crude and condensate production rose 140 kb/d in July, to 9.24 mb/d. Crude oil output stood 555 kb/d above a year earlier and at its highest level since November 2015. Gains were driven by the Gulf of Mexico, which rebounded by a sharp 127 kb/d from a month earlier, when tropical storm Cindy had curbed output. Lower 48 onshore production also inched higher, led by Texas (+21 kb/d), North Dakota (+14 kb/d) and Oklahoma (+3 kb/d), while Alaskan supplies, fell by a further 40 kb/d m-o-m as maintenance intensified. NGL production was steady at around 3.75 mb/d, increasing 150 kb/d y-o-y.



US oil output likely fell in August and September, as Hurricane Harvey, which made landfall in Texas on 26 August, disrupted both offshore and onshore output. As much as 430 kb/d of offshore production was shut in at the peak, but with no major damage reported, installations were quickly brought back on line. Flooding and staff evacuations also shut in crude oil production in the Eagle Ford shale play in lower Texas, but onshore output is also estimated to have resumed relatively swiftly. In its latest *Drilling Productivity Report (DPR)*, the Energy Information Administration (EIA) revised lower its Eagle Ford productivity and production estimates due to Hurricane Harvey. The revision also impacted the Permian region, but to a lesser degree. Output from the plays covered in the report, were nevertheless seen rising by an average of 100 kb/d per month from July through October.

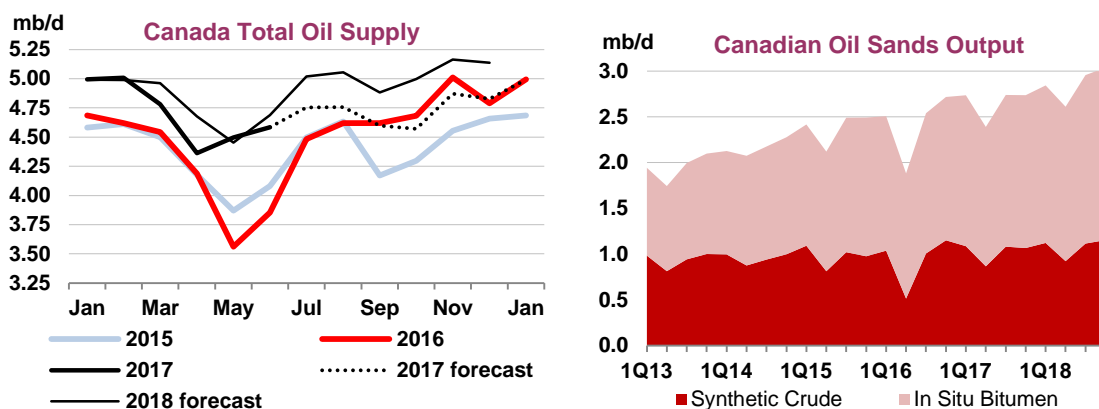
On 7 October, tropical storm Nate, the fourth major storm to hit the US in less than two months, made landfall in Mississippi as a Category 1 Hurricane. Nate forced the closure of as much as 92% of Gulf of Mexico's oil production, or 1.6 mb/d, and 77% of the area's natural gas output at peak. As the storm passed with little damage reported, by 10 October the amount of shut-in oil production had been reduced to 1.02 mb/d (58.5%) according to the US Bureau of Safety and Environmental Enforcement (BSEE). While the precautionary shut-ins were nearly three times as large as those caused by Harvey, total US production is estimated to have risen overall as onshore output was not affected.

After five weeks of flat or falling oil rig counts, by the end of September, US drillers added 6 rigs back to service. In the week ending 29 September, 750 rigs were operating, a 75% increase from a year earlier and 434 rigs more than at the low point reached in May last year. Moreover, the number of well completions are picking up. According to Rystad Energy, the number of horizontal US tight oil wells completed in the US during has risen above 800 per month since August, compared with around 400 at the start of the year. Earlier this year, completions had significantly lagged the number of wells spudded, causing the number of drilled but uncompleted wells to surge to record highs. Rystad put this number at around 5 000 in August, while the DPR estimated a backlog of more than 7 000 wells. US oil production is forecast to increase 470 kb/d in 2017 and 1.1 mb/d during 2018, of which 350 kb/d and 820 kb/d is crude oil, respectively.



Canada – June actual: Canada's total oil supply rose by nearly 90 kb/d in June, as synthetic crude oil production from Alberta recovered from maintenance. At just shy of 4.6 mb/d, total Canadian oil output stood a hefty 730 kb/d above a year earlier, when wildfires had impacted oil sands operations. Based on preliminary data for Alberta and offshore Newfoundland, production rose a further 220 kb/d in July. Albertan oil sands output, including synthetic crude oil, increased 200 kb/d m-o-m, to 2.7 mb/d. Offshore output declined by nearly 20 kb/d, however, providing a small offset. In August, Suncor started maintenance at its Terra Nova Floating Production, Storage and Offloading (FPSO) facility, reducing output to almost zero. According to news reports, the planned turnaround is expected to last eleven weeks. Earlier in the year, Husky Energy was reported to be planning maintenance at its offshore White Rose project during 3Q17, although this outage has not yet been confirmed.

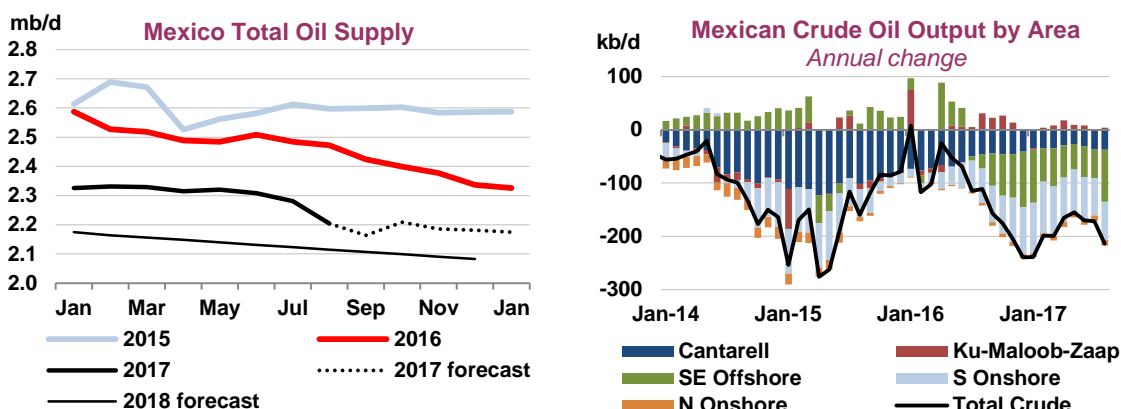
Husky Energy announced earlier this year that it is proceeding with its \$2.2 billion West White Rose project in offshore Newfoundland and Labrador. First oil is expected in 2022 and the project could achieve a gross peak production rate of about 75 kb/d by 2025. The company continues to offset natural reservoir declines through infill and development well drilling at the White Rose field and satellite extensions. An infill well was completed at North Amethyst in February 2017, while an additional development well is planned at South White Rose with first oil expected in 4Q17. Onshore, Canadian Natural Resources started 45 days of planned maintenance at its 190 kb/d Horizon oil sands project in mid-September. A fire at the facility in September might delay the planned restart.



TransCanada announced on 5 October that it had abandoned its C\$15.7 billion (\$12.52 billion) Energy East pipeline project citing "changed circumstances", taking a fourth-quarter C\$1 billion after-tax non-cash charge. The cancellation of the project comes less than a year after the government rejected Enbridge's Northern Gateway export pipeline, and is a further setback for the country's oil industry. New project sanctioning had already taken a hit following the drop in global crude prices and export capacity constraints provide additional risk to new developments going forward. The vast majority of Canadian

crude exports go to the United States, and Energy East would have shipped 1.1 mb/d to the Canadian east coast ports for loading onto tankers and shipment to markets in Europe and Asia.

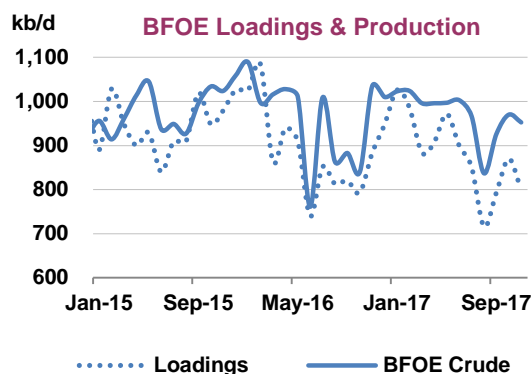
Mexico - August actual: Mexico's total oil production was confirmed at just over 2.2 mb/d in August, of which 1.93 mb/d was crude oil. Crude and condensate production dropped 56 kb/d from a month earlier, with lower output from the offshore Ixtal field accounting for most of the decline. Total output, including NGLs, was 268 kb/d below the previous year and 195 kb/d lower than in October 2016. Mexico had pledged to cut oil production by 100 kb/d. While no new data were available for September 2017 at the time of writing, output is estimated to have dropped further as Pemex advanced maintenance at its Ku-Maloob-Zaap system due to the arrival of Hurricane Harvey. For the year as a whole, Mexican oil production is expected to decline by 205 kb/d and by 135 kb/d in 2018 to 2.13 mb/d.



While all of Mexico's major oil fields are in decline, it is onshore production that is declining most sharply. It accounts for slightly less than 20% of national output and is currently declining at around 20% per annum. As such, onshore output in August stood 80 kb/d below a year earlier. In comparison, observed decline rates for the country as a whole are trending around 8%. Ku-Maloob Zaap is the only production system not currently in decline. In early October, Pemex secured a partner to increase oil production from mature onshore fields in southern Mexico. Egyptian oil company Cheiron Holdings Ltd, part of the Pico Group, won a contract to join forces with Pemex in developing the Cárdenas and Mora fields in the southern state of Tabasco, while Germany's DEA Deutsche Erdoel made the highest offer for the Ogarrio field, also in Tabasco. An auction for two offshore fields received no bids.

North Sea

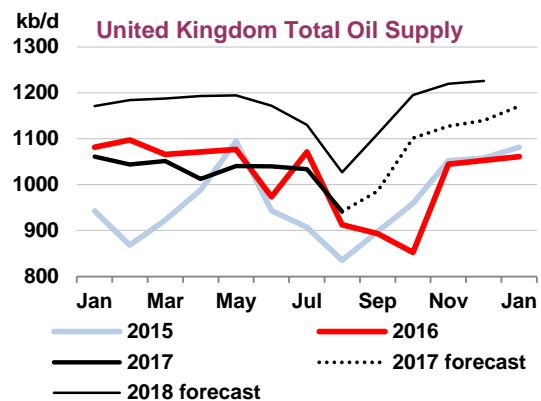
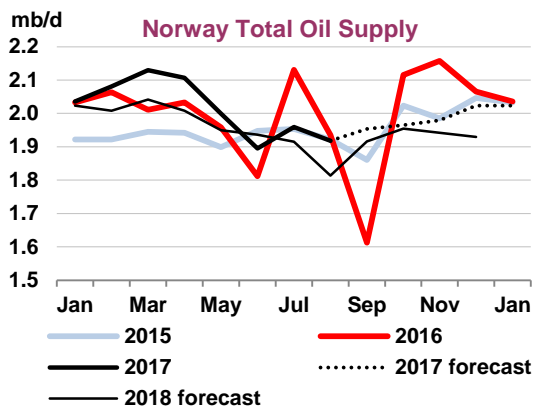
After hitting a three-year low of only 715 kb/d in August as seasonal maintenance curbed supplies, scheduled loadings of North Sea crudes that underpin the dated Brent benchmark rose in September and October. Output of Brent, Forties, Ekofisk and Oseberg (BFOE) is scheduled to average 870 kb/d in October, up from 793 kb/d in September. Scheduled loadings are expected to drop again by 70 kb/d in November, with Oseberg crude particularly affected.



*Source: Reuters / IEA

Norway – July actual, August provisional: Norwegian oil output dropped by 40 kb/d in August, to 1.92 mb/d, as seasonal maintenance curbed production at a number of fields. Final July output levels were revised lower by 47 kb/d since last month's *Report*, but nevertheless showed a m-o-m increase of 65 kb/d. Statoil's Gina Krog field that started up on 30 June, contributed 17 kb/d in July. Output was 171 kb/d lower than a year earlier in July and 17 kb/d below the previous year in August. In September,

the Arctic Goliat oilfield was again shut for scheduled maintenance, and in early October Eni said the field will remain shut for repairs for “some weeks”. Norway’s Petroleum Safety Authority separately said it had demanded that Eni must make repairs following an audit of the oil platform’s electrical safety. Eni had scheduled a shutdown of 2-3 weeks in September.

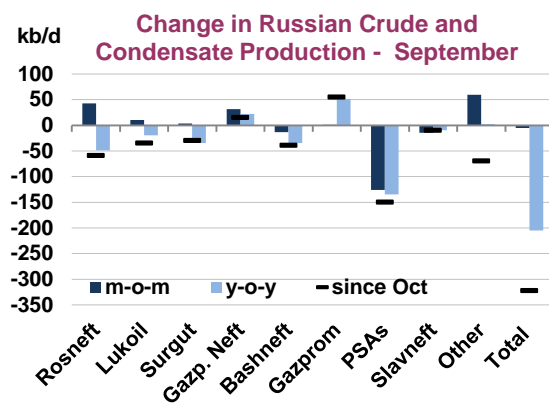
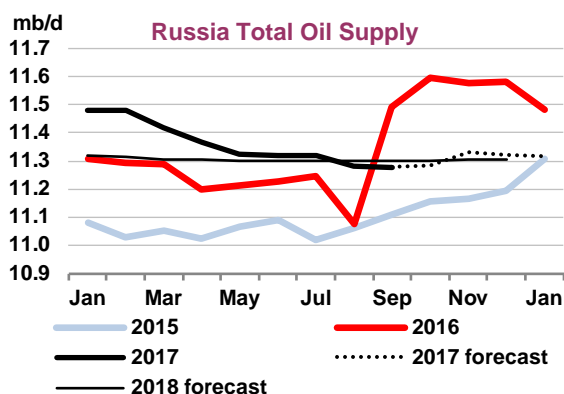


UK – July actual, August preliminary: After three months of relatively steady output, preliminary data show UK oil supply falling 90 kb/d in August, to 955 kb/d. The drop was not as steep as that suggested by loading schedules, however, which saw North Sea crude shipments (UK and Norway) falling by a combined 177 kb/d from July to a three-year low of only 1.75 mb/d. Field level data for June and final official estimates for July confirm preliminary estimates of production near 1.05 mb/d. Output should rise from September, however, with loadings of the Forties crude stream 110 kb/d higher. The ramp up of BP’s Schiehallion field, which started up in May should also contribute. Output which averaged 23 kb/d in June is expected to rise to a plateau level of around 130 kb/d during 2018.

Non-OECD

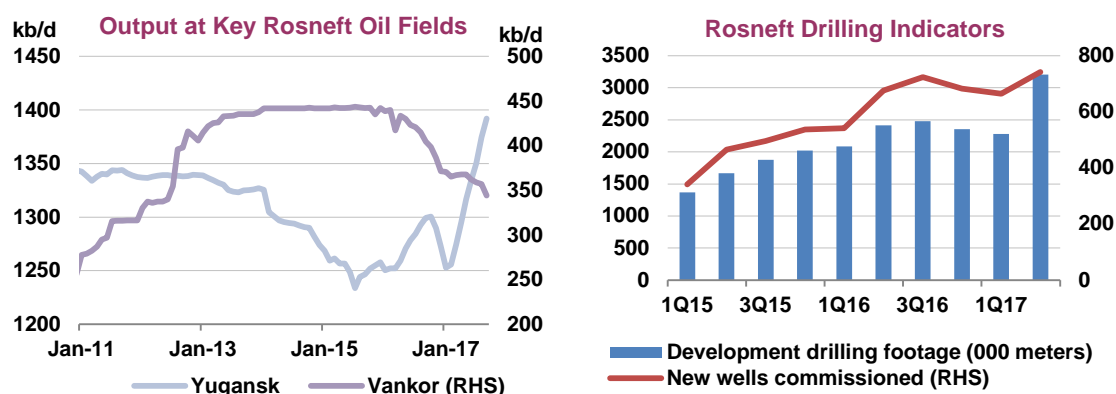
Former Soviet Union

Russia – August actual, September provisional: Russian crude and condensate production was largely unchanged in September, at 10.91 mb/d, despite further maintenance cuts at the Exxon-operated Sakhalin field in the Far East. Russia’s largest oil producers, Rosneft, Lukoil, Surgutneftegas, Gazpromneft and Tatneft all hiked output last month, by a combined 100 kb/d. Total Russian oil output nevertheless fell below year-earlier levels for the first time in more than three years. Moreover, output stood 318 kb/d below the October 2016 baseline compared with a pledged reduction of 300 kb/d.



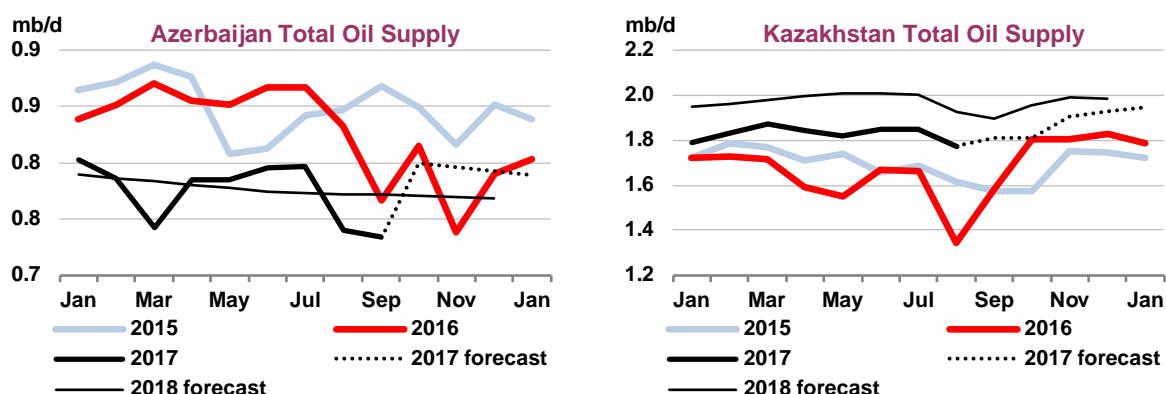
The biggest increases came from Rosneft, which, excluding its Bashneft subsidiary, raised production by 43 kb/d m-o-m, to 3.82 mb/d in September. Despite curbing output to comply with Russia’s overall

pledge to reduce supplies, Rosneft has put increased efforts into managing brownfield decline through intensified development drilling activity, the commissioning of new wells and increased use of horizontal wells with multistage fracturing. During 2Q17, the company increased the number of meters drilled by 33% from a year earlier, to 3.2 million meters, and raised the number of new wells commissioned to 742, a 10% increase from a year earlier, while lifting the share of horizontal wells in the total. The greatest beneficiary of the increased drilling has undoubtedly been Rosneft's Yuganskneftegaz subsidiary, which is also its biggest producer. Output at the Yugansk field reached nearly 1.4 mb/d in September, a gain of more than 90 kb/d, or 7%, from a year earlier and its highest level since the 1980s. With output slipping at Vankor (-45 kb/d) and Rosneft's Far East Shelf fields (-45 kb/d) due to decline and outages, total company oil output stood 49 kb/d below a year earlier and 59 kb/d lower than its October 2016 production.



Lukoil's production rose by 10 kb/d m-o-m, while Surgutneftegaz, Gazpromneft and Tatneft raised output by 4 kb/d, 32 kb/d and 10 kb/d, respectively. Flows from PSA operators dropped 126 kb/d m-o-m to 198 kb/d, as Sakhalin 1 production fell to only 45 kb/d, from more than 230 kb/d produced in July.

Azerbaijan – August actual, September preliminary: Azeri oil supply dropped by 57 kb/d in August, on lower output from the BP-operated ACG complex and as condensate production from the Shah Deniz gas field fell. Preliminary data released by the ministry show production largely unchanged in September as a rebound in condensate output offset further declines at ACG. At 734 kb/d, Azerbaijan's total oil production was 81 kb/d lower than in October 2016, compared with an agreed cut of 35 kb/d. Output is expected to rebound in October as scheduled work is concluded.



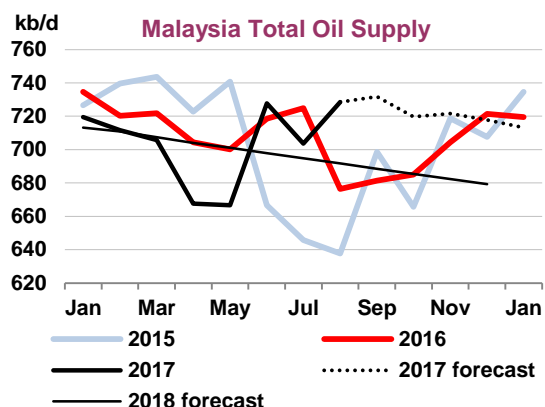
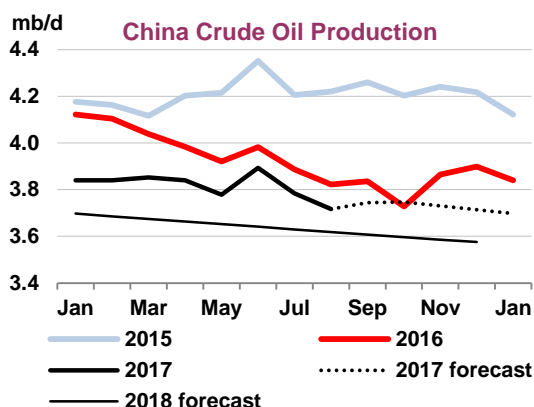
Kazakhstan – August actual: Kazakhstan total oil production fell by nearly 80 kb/d in August, to 1.77 mb/d, largely in line with expectations, as output from Tengiz was constrained by maintenance. Estimated September output levels have been revised lower, however, as preliminary loading schedules showing a sharp increase of Kashagan shipments were cut and as works continued at the Tengiz and

Karachaganak fields. Kashagan loadings via the Caspian Pipeline Consortium pipeline, first pencilled in at 270 kb/d for September, were later revised down to only 175 kb/d. Preliminary October schedules showed planned shipments of around 215 kb/d. According to Kazakh officials, the field should produce roughly 270 kb/d during 4Q17 and 260-300 kb/d in 2018, significantly lower than the North Caspian Operating Company's target to reach the 370 kb/d plateau production by the end of the year. While we have slightly lowered our forecast for the remainder of the year, and recognise the risk to 2018 output, for now we maintain our forecast of average output at around 350 kb/d next year.

Historical supply data for Kazakhstan starting from 1994 has been revised higher by an average of around 30 kb/d following an update to the conversion factors used for official production data, reported in metric tons, into barrels and a reassessment of NGL production historically. Field specific conversion factors are now applied to Tengiz (7.94), Karachaganak (7.85), Kashagan (7.7) while the remainder of the country's output (roughly 43% of national output) is still converted using a factor of 7.3 barrels per metric ton. Including condensate production from Karachaganak, the current weighted average conversion factor for Kazakhstan's oil output is estimated at around 7.63 barrels/metric ton. In all, we forecast Kazakhstan's oil production to rise by 180 kb/d and 130 kb/d during 2017 and 2018, respectively, to average 1.97 mb/d next year.

Asia

China – August actual: Chinese crude and condensate production plunged to a new low in August, of roughly 3.7 mb/d. CNOOC was forced to shut in four fields (Lufeng 3-1, Lufeng 13-2, Lufeng 13-2B and Lufeng 7-2) in the Pearl River Mouth basin in the eastern part of the South China Sea during August due to a leak at the Nanhai Shengkai FPSO. Following an update to historical statistics, based on provincial data reported by the National Bureau of Statistics and ongoing revisions to the conversion factors used for countries publishing data in metric tons, historical Chinese crude production estimates have been revised down by roughly 50 kb/d back to 1994. Chinese oil supplies are generally relatively heavy in grade, with gravity for key fields ranging from 24.2°API for Shengli to 31.93°API for Daqing. Based on the field and regional specific gravity estimates, current Chinese crude production are converted by an average of around 7.2 barrels/metric ton.



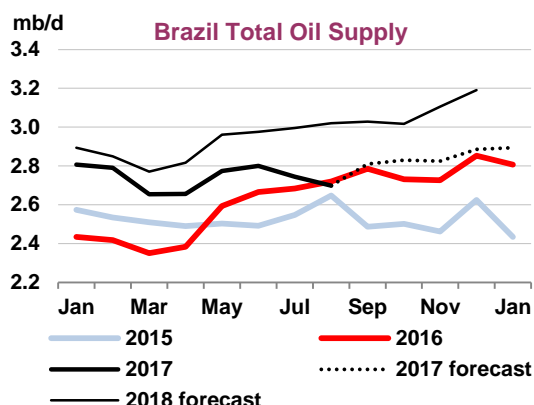
Elsewhere in Asia, **Malaysian** crude oil production rebounded in August, to 680 kb/d or 50 kb/d more than a year earlier. Including NGLs and nonconventional supplies, Malaysian supply was 730 kb/d. Despite pledging to cut production by 20 kb/d from an October 2016 baseline, data published by the Central Bank show production increased by more than 40 kb/d from October through August. Production has been supported by the start-up of Shell's 60 kb/d Malikai project off the coast of Sabah last December. According to ConocoPhillips, which holds a 35% non-operating interest, drilling operations for the second batch at Malikai wells began in June, following the shutdown of the field for maintenance work during 2Q17. **Vietnamese** oil output held steady in September, at around 260 kb/d. Output was

nevertheless, 29 kb/d lower than a year ago, a drop of nearly 10%. In **Thailand**, meanwhile, the shutdown of onshore oil and gas production by a number of operators following a ruling by the Supreme Administrative Court regarding the use of designated agricultural land for other activities, had less of an impact than previously thought. July crude oil output was 24 kb/d higher than our estimate, at 237 kb/d, 8.3% below a year earlier. NGLs supplies were steady at around 200 kb/d. **Indian** oil production dropped by 18 kb/d to 852 kb/d, in August, largely unchanged from a year earlier.

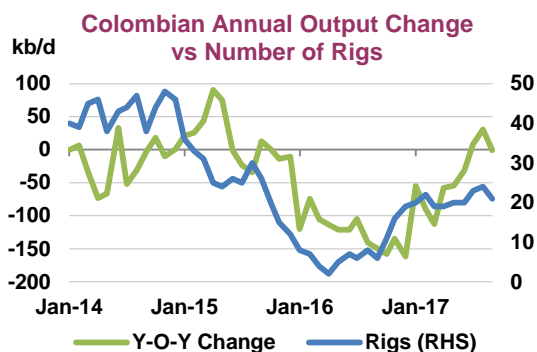
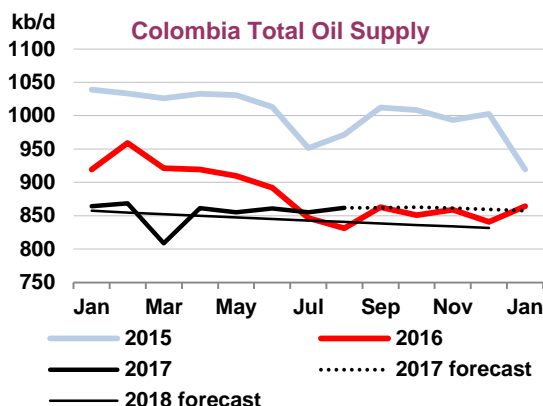
Latin America

Brazil – August actual: Brazilian oil supply slipped another 45 kb/d in August, as field maintenance curbed output for a second consecutive month. While production from the Jubarte, Baleia Azul and Baleia Franca fields rebounded by a combined 90 kb/d from a month earlier when maintenance had curbed output, production at Lula dropped by 114 kb/d m-o-m. Petrobras announced the decline was due to scheduled shutdowns of the Cidade de Marica and Cidade de Itaguaí FPSOs. Supply from the Marlim, Marlim Leste and Marlim Sul fields also slipped by a combined 25 kb/d, after having posted a strong month in July. At 2.7 mb/d, total Brazilian oil supply fell below year earlier levels for the first time in sixteen months. Over the first seven months of this year, supplies stood 240 kb/d higher than in the comparable period of 2016.

In late September, ExxonMobil partnered with Petrobras, and dominated awards in Brazil's 14th upstream licensing round by paying record signature bonuses. But the fact that only 37 blocks out of the 287 on offer found takers, might suggest that other large oil firms are waiting for the sub-salt blocks that will come up for auction later this month. Exxon and Petrobras submitted joint bids totalling R3.6 bn (\$1.4 bn) for six Campos Basin blocks, considered to have sub-salt potential. The fields are governed by a simple concession model contract, not the production sharing terms that apply to confirmed sub-salt acreage. Murphy Oil, CNOOC, Repsol, Karoon Gas as well as local QGEP were amongst the other companies winning awards. Twelve companies, including Exxon, Shell, Statoil, Total, Repsol, Petronas and Galp have prequalified for the two pre-salt rounds due to take place on 27 October.



Colombia – August actual: After recording average output declines of 12% during 2016, Colombian oil supply seems to have stabilised around 860 kb/d. In August, production was marginally higher than a month earlier and roughly 30 kb/d above a year earlier. Colombian oil producers have increased spending this year and the number of rigs drilling for oil had reached 24 by August, compared with only two rigs at the low point in April 2016.

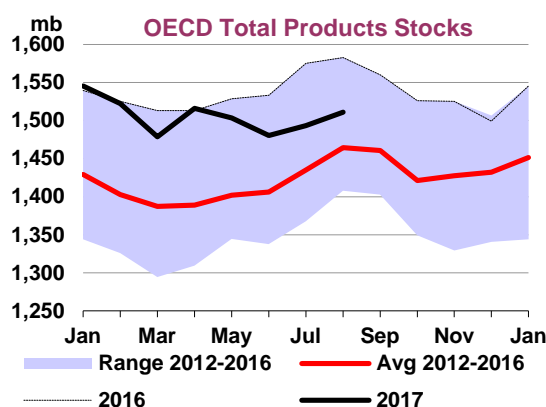
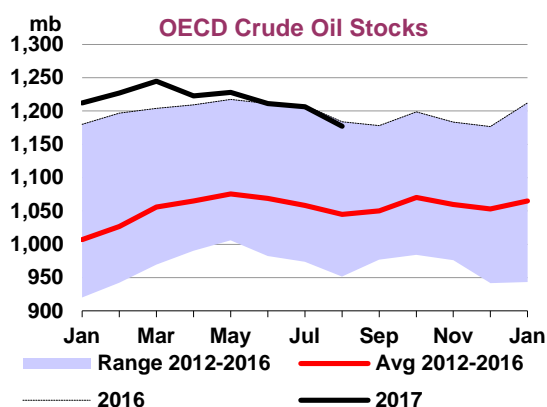


Source: IEA, Baker Hughes

STOCKS

Summary

- **OECD commercial stocks decreased 14.2 mb in August to 3 015 mb and continued to fall against the five-year average** on higher-than-expected demand. July stocks were revised 13.1 mb higher.
- **Hurricane Harvey led to a partial reversal of the trends seen in previous months in the US, with an increase in crude stocks** and a large oil product draw, particularly for diesel. The crude stock build was not as much as implied by the loss of refining capacity following the storm, as trade quickly adapted.
- **Preliminary data for September show oil stocks drawing everywhere**, from Europe to Fujairah, Japan, Singapore, the US and floating storage.
- **Global oil stocks are likely to have drawn in 3Q17 for only the second time since 2014, as reductions in floating storage and the OECD outweighed net builds in China.** China's crude imports have fallen every month since June and the implied net build for September was relatively small at 100 kb/d.



Global Overview

OECD commercial oil stocks stood at 3 015 mb at the end of August, down 14.2 mb from July. While stocks remained above the symbolic 3 000 mb mark, they fell for the fourth straight month against the five-year average, to a surplus of 170 mb. Overall non-OECD stocks – accounting for floating storage, oil in transit, Chinese commercial inventories, Fujairah and Singapore – also reduced in August, with only Singapore reporting a monthly build. Preliminary data for September show oil stocks falling everywhere, from Europe (-11.8 mb) to Fujairah (-2.3 mb), Japan (-5.5 mb), Singapore (-6.3 mb), the US (-15 mb) and floating storage (-16.7 mb). Hurricane Harvey boosted US crude stocks and curbed product inventories, however, the increase in crude stockpiles would have been much larger if trade had not adapted so quickly. US crude imports dropped, whereas crude exports increased throughout the month, reaching a new record of 2 mb/d in the week ended 29 September. It is also noticeable that China's crude imports have fallen in the last few months, implying a much lower net build than in 2Q17. Overall, we estimate that global oil stocks are likely to have decreased in 3Q17 for only the second time since oil prices crashed in the middle of 2014 (See *Did global oil stocks draw in 3Q17?*).

Aug17 v Jul17 Stock Estimate		
	mb	mb/d
Americas Commercial	-3.3	-0.1
Asia Oceania Commercial	2.1	0.1
Europe Commercial	-13.0	-0.4
Government Stocks	-0.2	0.0
Total OECD	-14.4	-0.5
Floating Storage	-19.1	-0.6
Oil in Transit	-11.5	-0.4
Fujairah (FEDCom/S&P Global Platts)	-1.7	-0.1
Singapore (International Enterprise)	1.5	0.0
China Commercial Stocks (OGP)	-9.1	-0.3
Total	-54.2	-1.7

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

OECD commercial stocks fell counter-seasonally in August by 14.2 mb to 3 015 mb, with draws recorded in the Americas (-3.3 mb) and Europe (-12.9 mb), and a build (+2.1 mb) in Asia Pacific. Stocks in the OECD typically build strongly at this time of year due to higher oil product output from refiners and an increase in oil product imports from non-OECD countries ahead of the northern hemisphere winter. This was not the case this year, marking another month when OECD stocks have departed from the trend. The surplus to the five-year average – taking into account baseline stock adjustments in Australia and Sweden made at the start of 2017 – declined for the fourth straight month by 32.5 mb to 170 mb. On the basis of forward demand, commercial stocks covered 63.8 days at the end of the month, down 0.1 day from July.

Crude stockpiles fell in all three OECD regions – more sharply in the Americas and Europe than in Asia – reflecting higher refinery utilisation and lower crude imports after a near record in July. They stood at 1 178 mb at the end of August, down 29.2 mb month-on-month. Meanwhile, oil product stockpiles increased but less than usual, due to strong end-user demand for diesel. Middle distillate stocks in the OECD stood a mere 11 mb above the five-year average at the end of August, down from 38 mb in December 2016. Additionally, fuel oil stocks increased their deficit to the five-year average to -16 mb at the end of August on lower Russian production and with increasing bunker fuel demand in key Asian ports. Hurricane Harvey led to builds in crude inventories and draws in oil products in the US in the weeks following the storm. However, the overall crude build of 3.3 mb for the US was not as significant as implied by the loss of refining capacity following the storm, as trade quickly adapted. Crude imports fell and exports reached a new weekly record of 2 mb/d at the end of September.

Preliminary Industry Stock Change in August 2017 and Second Quarter 2017

	August 2017 (preliminary)				Second Quarter 2017			
	(million barrels)				(million barrels per day)			
	Am	Europe	As. Ocean	Total	Am	Europe	As. Ocean	Total
Crude Oil	-14.0	-10.6	-4.6	-29.2	-0.45	-0.34	-0.15	-0.94
Gasoline	-4.0	0.5	1.2	-2.3	-0.13	0.02	0.04	-0.07
Middle Distillates	-2.5	0.4	4.6	2.5	-0.08	0.01	0.15	0.08
Residual Fuel Oil	0.9	-1.7	-1.0	-1.9	0.03	-0.06	-0.03	-0.06
Other Products	18.6	0.3	0.5	19.4	0.60	0.01	0.02	0.63
Total Products	13.0	-0.5	5.2	17.7	0.42	-0.02	0.17	0.57
Other Oils ¹	-2.3	-1.9	1.5	-2.7	-0.07	-0.06	0.05	-0.09
Total Oil	-3.3	-12.9	2.1	-14.2	-0.11	-0.42	0.07	-0.46

¹ Other oils includes NGLs, feedstocks and other hydrocarbons.

Preliminary data for September show oil stocks drawing everywhere, from Europe (-11.8 mb) to Fujairah (-2.3 mb), Japan (-5.5 mb), Singapore (-6.3 mb), the US (-15 mb) as well as a further fall in floating storage (-16.7 mb). The draw in US stocks occurred as Gulf Coast refiners curbed output after Harvey. In all, we estimate that global oil stocks are likely to have decreased in 3Q17 (See *Did global oil stocks draw in 3Q17?*).

Revisions versus September 2017 Oil Market Report

	(million barrels)							
	Americas		Europe		Asia Oceania		OECD	
	Jun-17	Jul-17	Jun-17	Jul-17	Jun-17	Jul-17	Jun-17	Jul-17
Crude Oil	-1.8	2.9	0.7	-5.6	0.0	0.3	-1.1	-2.4
Gasoline	0.1	2.1	0.2	2.1	0.0	-1.1	0.3	3.2
Middle Distillates	1.5	6.4	-0.8	2.7	0.0	-1.4	0.7	7.7
Residual Fuel Oil	0.0	0.2	-0.9	-2.0	0.0	0.4	-0.9	-1.5
Other Products	-1.0	3.0	-0.2	-2.9	0.0	0.7	-1.2	0.8
Total Products	0.6	11.6	-1.7	-0.1	0.0	-1.3	-1.1	10.2
Other Oils ¹	0.7	4.3	0.2	0.9	0.0	0.1	0.9	5.3
Total Oil	-0.4	18.8	-0.8	-4.8	0.0	-0.9	-1.2	13.1

¹ Other oils includes NGLs, feedstocks and other hydrocarbons.

OECD oil inventories were revised down 1.2 mb in June and up 13.1 mb in July as new figures emerged. The July revision was largely down to the US, which modified its stocks of middle distillates, gasoline and other products up. The revision was almost as much as the preliminary fall in August OECD stocks.

Did global oil stocks draw in 3Q17?

There is no stocks data covering the whole world, but by looking at figures for the OECD, China, floating storage and other trading hubs, a more comprehensive global picture emerges. Stocks data for 3Q17 – some of which is still preliminary – indicates that, on balance, global oil inventories are likely to have drawn for only the second time since oil prices crashed in 2014. This happened as draws in the OECD and in floating storage have more than compensated for the net stock builds occurring in China. Taken together, we estimate that known oil inventories drew by 53 mb, or 600 kb/d, during 3Q17. This contrasts with a lesser 100 kb/d draw for the same quarter in our global oil balances and could be explained by timing differences or the incomplete coverage of stocks data. Interestingly, our global balances for 2Q17 showed a 800 kb/d draw, whereas Chinese implied net stock builds were strong during the quarter.

The draw in OECD stocks was limited in July-August but came at a time when stocks normally increase. Then, in September, draws accelerated on higher demand and as the loss of oil products output from Gulf Coast refineries was not met by enough imports from outside the bloc. OECD inventories – commercial and government – decreased by a combined 37 mb in 3Q17, with draws focused heavily on US and European oil products, in particular diesel. Diesel stocks in the OECD stood merely 11 mb above the five-year average at the end of August and preliminary data indicates that the surplus was all but eliminated in September with lower US products output and higher-than-expected demand.

3Q17 vs 2Q17 Stocks		
	mb	mb/d
OECD Total - July/August	-5	0.0
OECD - September (Preliminary)	-32	-0.4
Fujairah (S&P Global Platts)	-4	0.0
Singapore (International Enterprise)	2	0.0
Floating Storage (EA Gibson)	-44	-0.5
Oil in Transit	-20	-0.2
Total exc China Balance	-103	-1.1
China Balance	50	0.5
Total	-53	-0.6

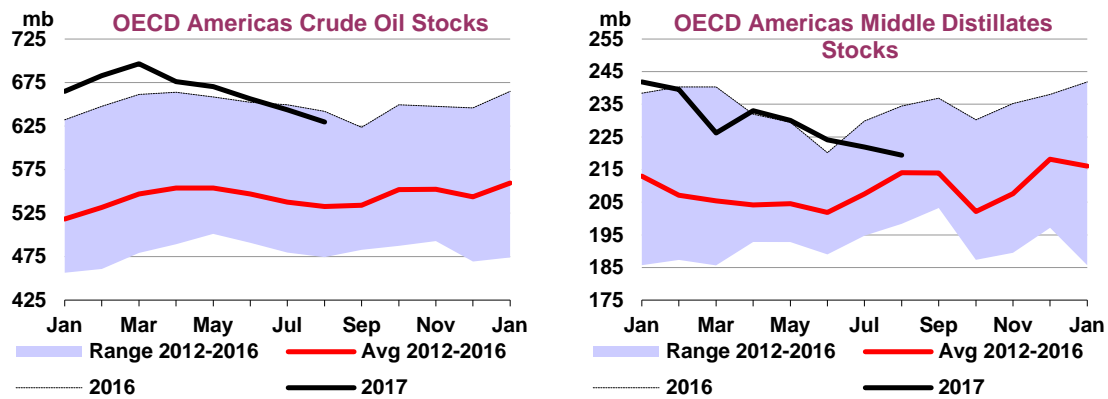
Floating storage and oil in transit have contributed the bulk of stock draws so far this year, as tighter supply fundamentals reduced the need for shipments and rendered floating stocks uneconomic. Except for certain rare cases when old VLCCs were hired to store crude, floating storage is usually more expensive than land-based alternatives, and so tends to be the first form of storage to disappear when oil supplies reduce. Preliminary estimates point to a 64 mb drop in both floating stocks and oil in transit during 3Q17, which means they are now close to the five-year average.

Finally, the steep reduction in Chinese crude imports seen since June is equally, if not more, significant as it implies that crude stocks are no longer growing quickly. China's crude imports fell for the third consecutive month in August and, together with the increase in refinery runs, this implies that net stock builds (defined as net imports plus crude production minus refinery intake) were around 590 kb/d, the lowest figure since January 2017. Net builds could be as low as 100 kb/d in September if estimates for a further fall in crude imports are confirmed, amidst higher prices and as import quotas held by independent refiners were filled.

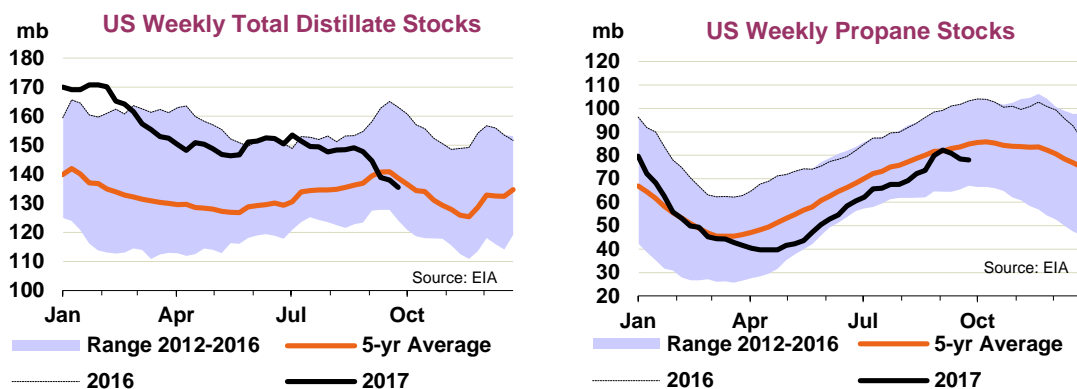
Recent OECD industry stock changes

OECD Americas

Commercial stocks in the OECD Americas fell 3.3 mb in August to reach 1 586 mb, their lowest level since February 2016. By end-month, inventories stood 137 mb above the five-year average, the lowest surplus recorded in over two years. Crude oil stocks drew for the fifth straight month due to high runs at US refineries, however by the end of August Hurricane Harvey brought draws to a halt as a large portion of Gulf Coast refineries closed down. OECD Americas crude stockpiles were 630 mb at the end of August, down 14 mb on the month. While crude stocks have drawn steeply in the US this year thanks to high refinery runs, they have remained stable, or have increased, in Canada, Mexico and Chile. Oil product stocks increased seasonally in August, by 13 mb, to 769 mb, thanks to higher refinery runs. 'Other' stocks (largely US propane) increased by 18.6 mb due to normal restocking ahead of the winter period, whereas middle distillates (-2.5 mb) and gasoline stocks (-4 mb) declined due to higher demand and exports to Europe and Latin America.



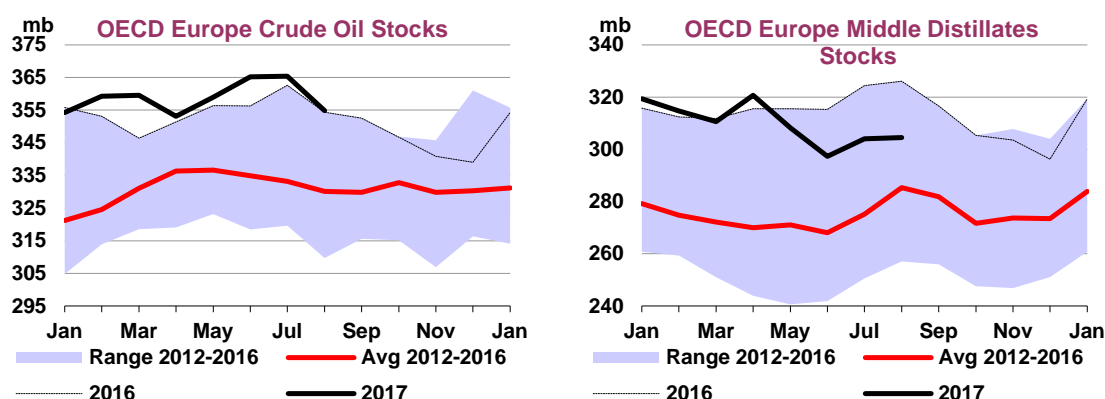
Preliminary data from the US *Energy Information Administration* (EIA) for September show a partial reversal of the trends seen in recent months, with crude stocks building and oil products drawing due to Hurricane Harvey. Crude stocks went up 3.3 mb between the end of August and 29 September, with builds seen in the Gulf Coast (PADD 3), where the storm was active, and the Mid-Century (PADD 2), which feeds crude by pipeline to the Gulf Coast. In the other PADDs, crude stocks were either unchanged or down during the month, partly as a result of refiners increasing runs in those regions to capture improved oil product margins. The overall crude build of 3.3 mb for the US was not as significant as implied by the loss of refining capacity in the weeks that followed the storm, as trade quickly adapted. US crude prices fell in relation to other international crude benchmarks (Brent and Dubai) in late August, helping to stem the flow of imports and incentivising exports. Imports averaged 7.1 mb/d during September, down from 8 mb/d in August, whereas exports increased by 600 kb/d on average to 1.3 mb/d in September. Exports reached a weekly record of 1.98 mb/d in the week ending 29 September. By the end of September, crude stocks had started drawing once again on the back of higher refining activity and exports. The Midwest region remains a key exception, as crude stocks have built since July, reflecting the steady increase in US and Canadian production and the inability to export all of it. This is the main reason behind the widening of the price spread between Brent and Dubai crudes and WTI.



Oil product stocks fell by a steep 18.3 mb in September, with draws seen for middle distillates (-12.5 mb), gasoline (-8.3 mb) and even propane (-1 mb), which normally builds until well into October. Stocks of fuel oil and unfinished oil rose. As for crude, the closure of refineries in the aftermath of Hurricane Harvey had a large impact on product stocks, but this was partly offset by trade flows. European refiners stepped up exports of gasoline in early September and these started to reach US shores during the month. Gasoline stocks subsequently increased in the week ending 29 September. Middle distillate stocks fell below the five-year average as refineries produced less diesel after the hurricane and as exports remained relatively high. Propane stocks continued to build through to mid-September, but they drew later in the month on high exports. Demand for LPG for crop-drying was limited due to warm and dry weather in the Midwest.

OECD Europe

OECD Europe commercial stocks fell counter-seasonally by 12.9 mb in August to reach 990 mb, their lowest level since December 2016. When taking into account the upward revision made to Swedish baseline stock figures in January, total oil stocks in the region stood 30 mb above the five-year average, the lowest surplus recorded in two years. Crude stockpiles declined 10.6 mb to 355 mb, as imports fell following a record-breaking July and as refiners maximised runs to profit from stellar margins. Figures from *Kpler*, the cargo tracking company, showed crude imports falling 16 mb to 335 mb in August and then declining by a further 7 mb in September, to 328 mb.



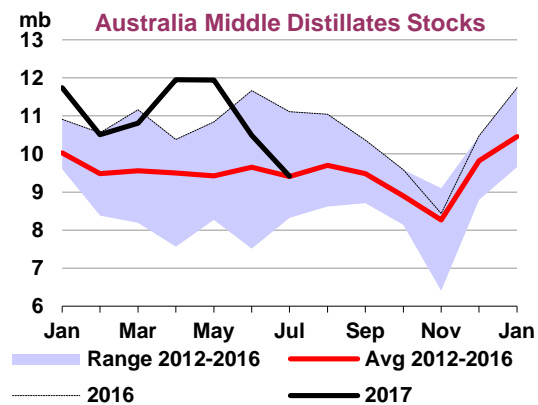
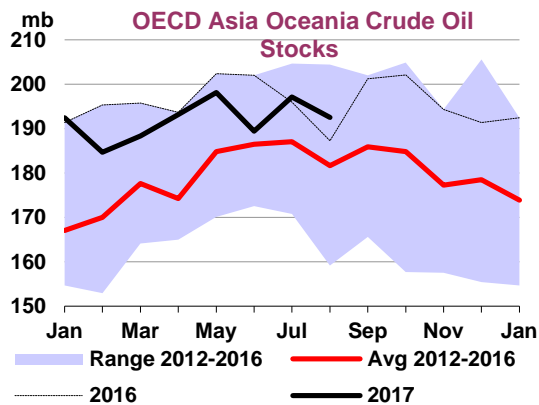
Oil product stocks fell counter-seasonally, by 0.5 mb to 561 mb. There were modest builds in middle distillates (0.4 mb), gasoline (0.5 mb), 'other products' (0.3 mb) and a fall in fuel oil inventories (1.7 mb). Middle distillate stocks normally increase more at this time of the year, but strong demand in Europe and outages at some refineries dampened builds. Hurricane Harvey and planned maintenance at European and Russian refineries are likely to have had a further downward impact on gasoline and diesel holdings in Europe in September. Exports from East of Suez markets have picked up, but are unlikely to have a material impact before October due to the time required to ship products.

Preliminary data from Euroilstock for September showed crude and oil product stocks decreasing across the board relative to August. Crude stocks fell 3.2 mb, while gasoline and middle distillates declined 2 mb and 4 mb, respectively, on the back of higher exports and lower imports to and from the US, following Hurricane Harvey. There were draws in fuel oil (-0.8 mb) and naphtha (-1.8 mb). The overall monthly oil stocks draw was 11.8 mb, the largest reported by Euroilstock all year.

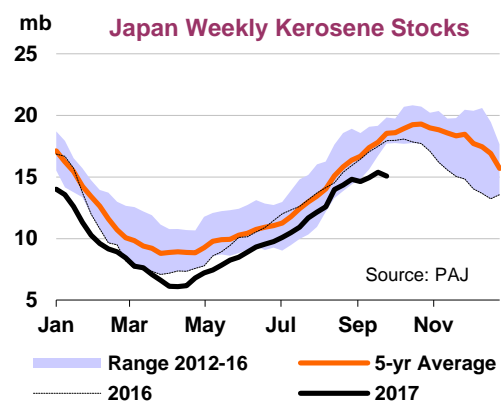
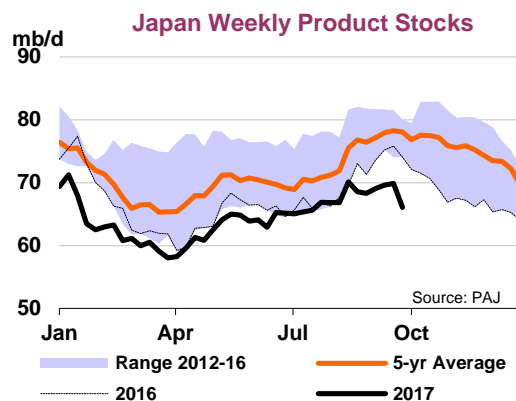
OECD Asia Oceania

Commercial stocks in OECD Asia Oceania gained seasonally by 2.1 mb to reach 439 mb at the end of August. When taking into account the upward revision made to Australian baseline stock figures in January, total oil stocks in the region stood merely 3 mb above the five-year average. Crude stocks fell 4.6 mb to 193 mb in August, reflecting lower crude imports during the month and higher refinery runs in Japan. South Korean crude stocks gained by a modest 0.9 mb to 145 mb. Record rains and floods in the country in August also reduced demand and this in turn led to an increase in stocks of middle distillates (+1.7 mb) and gasoline (+1 mb). In Japan, crude imports amounted to 94 mb during the month, down from July's four-month high of 103 mb, according to *Kpler*.

Australian commercial stocks declined 1.6 mb in July to 34 mb and were a significant 5.5 mb, or 14%, below their level in July 2016. Holdings of middle distillates, in particular, have declined sharply in recent months and now stand in line with the five-year average. Several refineries have closed in recent years and this has led to some destocking of crude oil and certain oil products. The annual peak in demand normally occurs in November and so, without further diesel imports from Asian refiners over the next few weeks, middle distillate stocks could fall below the five-year average.



Preliminary weekly data from the *Petroleum Association of Japan* (PAJ) show total oil stocks falling by a steep 5.5 mb in September with draws in both crude and oil products. Crude imports fell further and refineries reduced runs, helping to explain the draw. Crude stockpiles were down 1.9 mb on the month to their lowest level since March. Stocks of unfinished products (-1.3 mb), fuel oil (-1.2 mb), gasoil and diesel (-0.9 mb), naphtha (-0.5 mb) and jet fuel (-0.2 mb) also declined, whereas gasoline (-0.1 mb) and kerosene stocks (0.4 mb) built. Kerosene stocks have gained in line with seasonal patterns in recent months ahead of the winter, however they remain below 2016's level as well as the five-year average metric, reflecting lower refinery output following a programme of rationalisation. Stocks of certain other key products, such as gasoline, diesel, gasoil and naphtha also stand below the average.

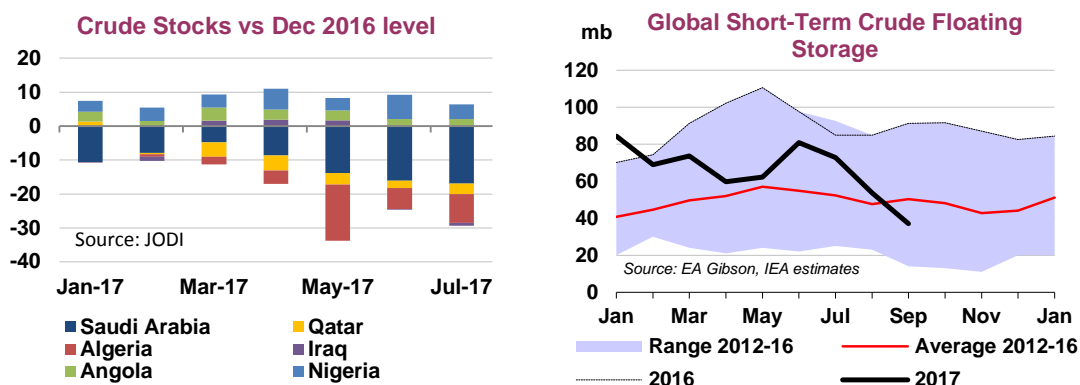


Other stock developments

In the 23 non-OECD countries that have submitted figures to JODI for the month of July, total oil stocks built by a modest 1.7 mb relative to June. There were builds recorded in Thailand (4.4 mb), India (3.6 mb) and Nigeria (2.4 mb). In Thailand and India, the builds were likely due to lower demand for crude from refineries and lower oil products consumption during the monsoon season, whereas in Nigeria higher gasoline imports were the main explanation. There were draws reported in several OPEC countries, including Saudi Arabia (1.6 mb), Algeria (1.6 mb), Qatar (1.5 mb) and Iraq (1.4 mb), as well as in Brazil (2.6 mb). Crude stocks in several OPEC countries have fallen this year due to lower production as part of the agreement to limit output. Overall, stocks in these 23 countries have fallen 63.6 mb between July 2016 and July 2017, with the bulk of draws concentrated on crude and NGLs (38.8 mb) and the rest in oil products (24.7 mb).

Oil held in floating storage fell in July (8.1 mb), August (19.1 mb) and September (16.7 mb). At 37 mb at the end of September, according to *EA Gibson*, short-term term floating storage reached its lowest level since December 2014. Other figures available from *Kpler* showed a similar drop in September. Demand from refineries increased during the period and oil field maintenance curbed supply, progressively

reducing the need for such stocks. Floating storage volumes are now below the five-year average metric. Oil in transit volumes also continued to fall in September, estimates available from *Kpler* and *Vortexa* showed, by between 34-82 mb.



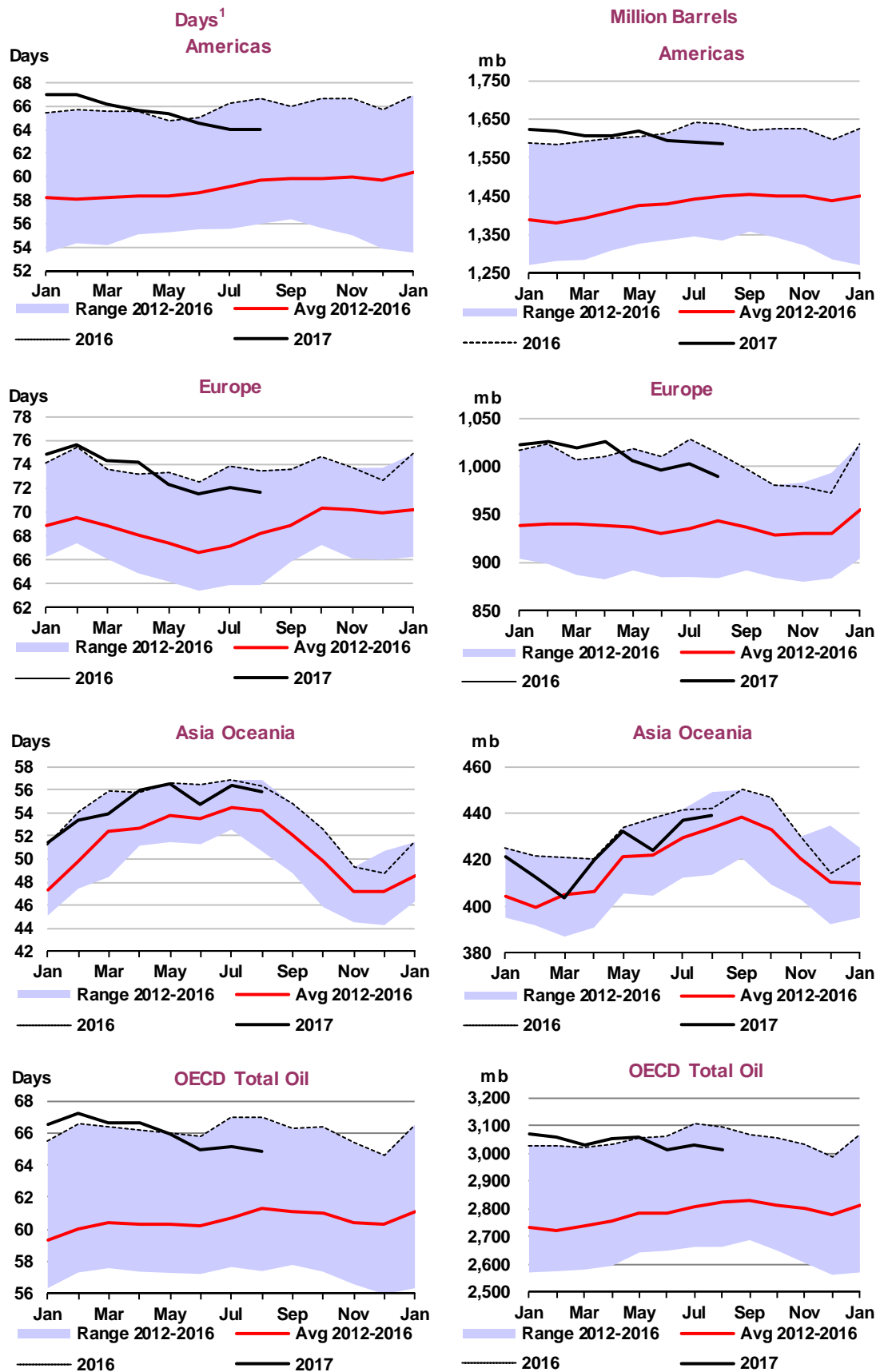
Data from *China Oil, Gas and Petrochemicals* (China OGP) indicate that commercial oil stocks fell 9.1 mb in August on the month, the second straight monthly fall, to their lowest since December 2016. Crude stocks fell 7.6 mb on higher refinery utilisation, whereas oil product stocks were relatively stable. Gasoline and diesel demand increased seasonally with higher traffic and more manufacturing activity. However, crude imports fell for the third consecutive month in August and, together with the increase in refinery runs, this implies that net stock builds (defined as net imports plus crude production minus refinery intake) were around 590 kb/d during the month, the lowest figure since January 2017. Net builds could be as low as 100 kb/d in September if estimates for a further fall in crude imports during September are confirmed, implying that China has reduced the pace of its stockpiling in parallel with the higher oil price.

Oil inventories in Fujairah fell in September by 2.3 mb to 17.3 mb, their lowest level (on a monthly basis) since *FEDCom* and *S&P Global Platts* started publishing the data at the start of the year. There were falls across all major product categories, including light, middle and heavy distillates. Oil product stocks have fallen in the last few months since the outset of the diplomatic crisis between Qatar and neighbouring countries, which temporarily disrupted shipping traffic.

Singaporean stocks also fell in September after spending July-August at elevated levels. Oil product inventories were down 6.3 mb on the month to 45 mb, with falls recorded in light, middle distillates and residues. Higher shipping traffic, which has continued to increase in the Straits of Malacca this year, is partly to blame. Oil product stocks in Singapore are back down below last year's level, but they remain above the five-year average.

Regional OECD End-of-Month Industry Stocks

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

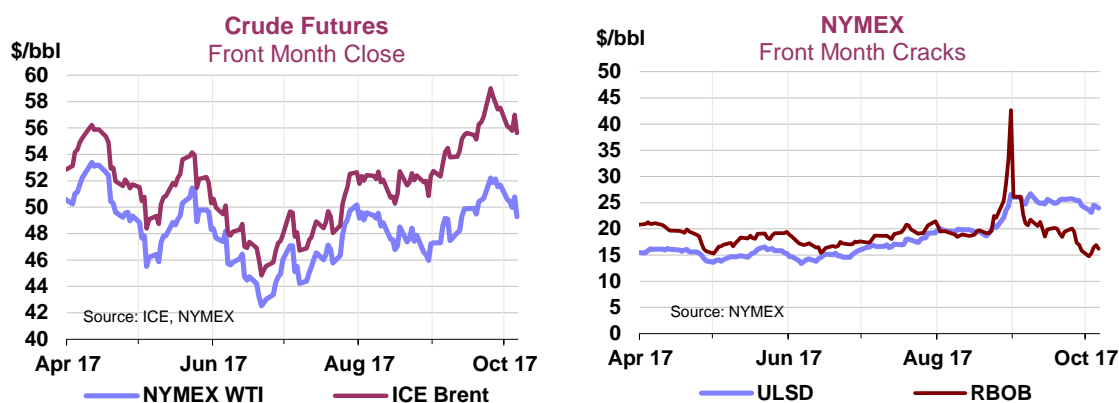


1 Days of forward demand are based on average demand over the next three months

PRICES

Summary

- **Benchmark crude prices rose by \$2-4/bbl in September versus August, marking the third straight month of gains.** Higher oil product demand and political tensions in the Middle East contributed.
- **Money managers increased net long positions in crude futures to a near record at the end of September, reflecting stronger optimism about oil prices.** Net long positions in global diesel futures skyrocketed following Hurricane Harvey.
- **Oil product markets were buoyant throughout the month.** Middle distillate prices increased almost twice as fast as crude, reflecting lower refinery throughputs and higher demand.



Market overview

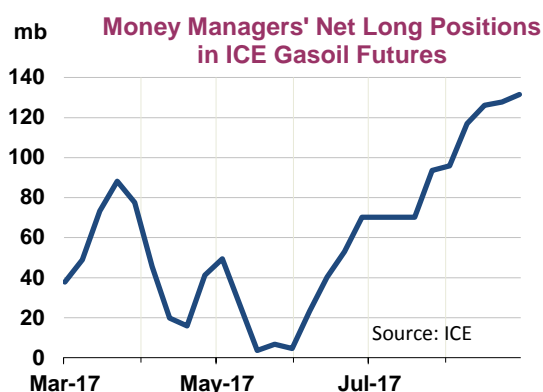
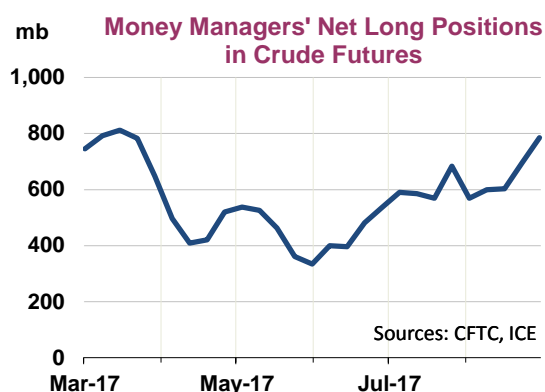
Outright oil prices gained in September for the third straight month on the back of strong demand for oil products in the northern hemisphere. Brent futures even briefly reached their highest since July 2015. They had come off by the time of writing but remained some \$9-10/bbl higher than before OPEC agreed to cut its production at the end of November 2016. The price rise reflects rising optimism on the part of oil traders, who built net long positions to nearly a record during the month – and would certainly have reached it without Hurricane Harvey, which disrupted the US refining infrastructure and curbed crude demand. Oil product markets remained buoyant in September following Harvey and also due to strong underlying demand globally, while refinery maintenance in Europe and Asia also contributed. Middle distillates were the strongest part of the barrel, increasing almost twice as quickly as crude during the month, with naphtha and gasoline behind.

Futures markets

Crude futures in September moved up to their highest level since July 2015, reflecting strong demand for diesel in the northern hemisphere, a slower pace of production gains in US light tight oil basins and political tensions in Iraq following Kurdistan's decision to organise a referendum on independence. Front-month Brent futures were trading at \$57/bbl at the time of writing, up from \$52.38/bbl at the end of August. The Brent price went as high as \$59.02/bbl on 25 September, before easing in the final days of the month and in early October. In parallel, money managers continued to build net long positions in Brent and WTI crude futures, which reached 785 mb on 26 September, their highest level since April, and only 87 mb below their historical peak, data from exchanges showed.

Net long positions in WTI futures dropped in late August as Hurricane Harvey slashed crude demand from US refiners. They resumed their growth in September and were back to the pre-hurricane level at

the time of writing. Meanwhile, net long positions in Brent futures continued to rise through late August and September. They reached their highest level in several years on 26 September and stayed elevated in early October, highlighting rising optimism from traders about the outlook for oil prices. Net long positions held by money managers in diesel rose substantially in September both in Europe (ICE low sulphur gasoil futures) and North America (NYMEX diesel futures), and were at their highest level ever, in response to higher demand and lower output from Gulf Coast refiners. The ratio of long to short positions held by money managers in ICE gasoil futures was 18.6 at end-September, compared with a long-run average of just 3.6.



The Month 1-Month 2 ICE Brent futures spread dipped briefly into contango at the start of September, but it quickly returned to backwardation after, a sign of tight crude supplies in Northwest Europe. It went to \$0.75/bbl on 29 September, its highest level since June 2014, just before expiry of the November contract. As noted in last month's *Report*, this is the first sustained period of backwardation in Brent futures since oil prices fell below \$100/bbl in 2014. While lower output at North Sea oil fields supported the move into backwardation in August, and was still a factor in September and early October, higher demand for light sweet crudes from refiners helped boost prices in September. Longer-dated Brent spreads, which had remained relatively stable during July-August despite the tightening of the front futures spread, rose in September. Brent is now in backwardation all the way to the end of 2019.

Prompt Month Oil Futures Prices

(monthly and weekly averages, \$/bbl)

	Jul	Aug	Sep	Sep-Aug Avg Chg	% Chg	Week Commencing:				
						04 Sep	11 Sep	18 Sep	25 Sep	02 Oct
NYMEX										
Light Sweet Crude Oil	46.68	48.06	49.88	1.82	3.8	48.60	49.08	50.20	51.89	50.21
RBOB	65.96	69.84	69.85	0.01	0.0	70.15	69.12	69.64	69.83	66.12
ULSD	64.11	68.51	75.21	6.70	9.8	74.12	74.16	75.52	77.21	74.10
ULSD (\$/mmbtu)	11.31	12.08	13.27	1.18	9.8	13.07	13.08	13.32	13.62	13.07
Henry Hub Natural Gas (\$/mmbtu)	2.96	2.91	3.01	0.10	3.5	2.96	3.02	3.05	2.97	2.91
ICE										
Brent	49.15	51.87	55.51	3.64	7.0	53.64	54.87	56.04	58.06	56.11
Gasoil	60.77	64.68	71.33	6.65	10.3	69.72	70.67	71.77	73.70	71.03
Prompt Month Differentials										
NYMEX WTI - ICE Brent	-2.47	-3.81	-5.63	-1.82		-5.04	-5.79	-5.84	-6.17	-5.90
NYMEX ULSD - WTI	17.43	20.45	25.33	4.88		25.52	25.08	25.32	25.32	23.89
NYMEX RBOB - WTI	19.28	21.78	19.97	-1.81		21.55	20.04	19.44	17.94	15.91
NYMEX 3-2-1 Crack (RBOB)	18.66	21.34	21.76	0.42		22.87	21.72	21.40	20.40	18.57
NYMEX ULSD - Natural Gas (\$/mmbtu)	8.35	9.18	10.26	1.08		10.11	10.06	10.27	10.65	10.16
ICE Gasoil - ICE Brent	11.62	12.81	15.82	3.01		16.08	15.80	15.73	15.64	14.92

Source: ICE, NYMEX.

The Brent-WTI futures spread, which widened considerably in August thanks to lower North Sea production, increased further in September with lower crude demand by US refiners in the aftermath of Hurricane Harvey. It was \$5.36/bbl at the time of writing, up from \$4.90/bbl at the end of August. Higher US crude exports and narrower NYMEX WTI price spreads indicated that it was unlikely to gain further in the short-term. The Brent-Dubai Exchange of Futures for Physical (EFP) spread stayed below \$2/bbl for most of the month, but is generally up from the lows reached in June as global refiners increased their demand of light sweet crude in response to higher diesel and gasoline prices. The relative increase in price for Brent versus Dubai crude has rendered the most expensive exports from the Atlantic Basin to Asia uneconomic, even if the arbitrage window remains open for several crude grades. At the time of writing, the EFP was trading at \$2.23/bbl.

In oil products, the Month 1-Month 2 ICE low sulphur gasoil futures curve moved firmly into backwardation following a reduction in refinery runs in the US Gulf Coast linked to hurricane Harvey, a region that typically exports large amounts of diesel to Europe, and import demand from Latin America, traditionally satisfied by the Gulf Coast. The upcoming closure of some European refineries for seasonal maintenance work helped to support the spread. It reached as high as \$1.01/bbl on 21 September and was trading at \$0.64/bbl at the time of writing, up from \$0.20/bbl at the end of August. It is the first period of sustained backwardation in European diesel markets since March 2015. In outright terms, European diesel futures traded in September at their highest since July 2015. NYMEX diesel futures also increased after hurricane Harvey and maintained most of their gains during September, even if the Month 1-Month 2 spread fell later in the month.

The Month 1-Month 2 NYMEX Reformulated Gasoline Blendstock for Oxygen Blending (RBOB) spread dropped sharply in early September following the passage of Hurricane Harvey and eased progressively through the month. US Gulf Coast infrastructure suffered little damage from the hurricane and European refiners were able to compensate for the temporary supply shortfall by sending gasoline to the US and Latin America, explaining the price fall. At \$0.68/bbl at the time of writing, the Month 1-Month 2 spread was the same as a year ago.

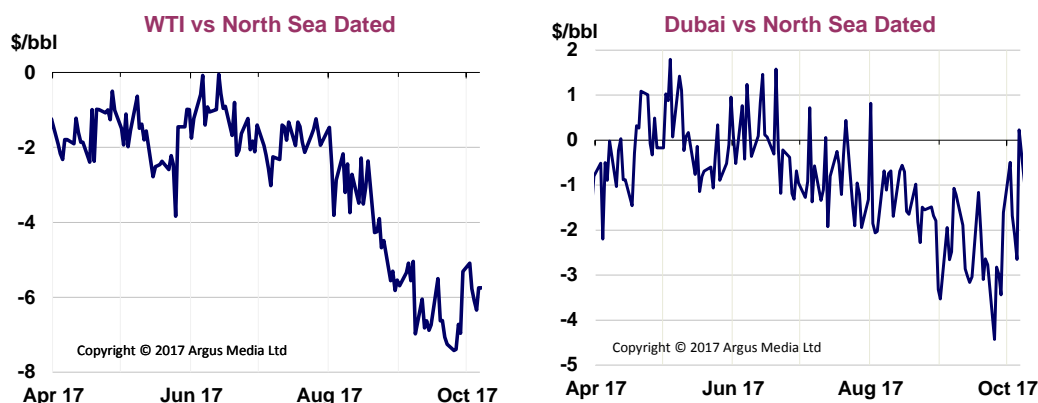
Spot crude oil prices

Global crude prices gained in September for the third straight month with strong demand from refiners and lower production in some regions. Light sweet grades from the North Sea, the Caucasus and West Africa increased faster than sour grades for the second month in a row. WTI lagged significantly behind other global crudes, but most US grades gained on a differentials basis.

North Sea crude prices continued the uptrend started in August and were amongst the best performing grades globally in September. North Sea Dated averaged \$56.07/bbl, up \$4.44/bbl on the month. Lower output from North Sea oil fields and high refinery runs linked to stellar margins for diesel and gasoline combined to tighten the light sweet crude market. On top of this, regular cargo exports to Asia, made more profitable since the start of 2017 by the tightening of the spread between crudes from the Atlantic Basin and the Middle East, picked up in September and are likely to increase further in October. Contracts for differences, which track the relationship between physical cargo prices and forward contracts, increased substantially in the second half of September. CFDs for prompt delivery traded at one point at the widest premium to week 6 since 2014, but they declined in the last days of September. The Forties differential to North Sea Dated also increased to as high as \$1.08/bbl in late September and rose against medium sour grades delivered in Northwest Europe, such as Urals. Other North Sea crude grades also gained. By early October, however, North Sea grades fell sharply.

West African crude prices rose in parallel with Brent and other light sweet grades from the Atlantic Basin. Steady demand from European and Asian refiners and lower expected loadings in Nigeria during November helped boost prices. In the second half of the month, sales from storage in South Africa

dampened price increases. Qua Iboe traded at a \$1.45/bbl premium to North Sea Dated in late September, the highest in a year, as scheduled maintenance curtailed volumes. Bonny Light, which returned to force majeure in mid-September due to the closure of one of the two pipelines feeding the export terminal, fell from a \$1.80/bbl premium to North Sea Dated in late August to \$1.30/bbl by the end of September. Increased uncertainty around loadings helped to moderate the grade's differential. Angolan grades also rose sharply, but less than Nigerian crudes as refiners generally favoured sweeter grades and as the arbitrage to China was less favourable. Angolan loadings are set to fall in November to their lowest in more than a year, owing to field maintenance.



Urals prices rose in September, but they lagged increases in light sweet crudes. Urals for delivery in Northwest Europe was up \$3.36/bbl to \$54.37/bbl during the month. Relative to North Sea Dated, the grade fell from \$-1.30/bbl in late August to \$-1.90/bbl at the end of September, with higher exports from Russia's north scheduled over October and lower demand from Asian refiners. The sharper backwardation in Brent futures has had a big impact on the relative differential applied to cargoes, with earlier-loading cargoes valued lower on a differentials basis than later ones. Urals exports via northern ports will increase by 3.5 mb to 50 mb in October, whereas loadings via Novorossiysk in the Black Sea will fall, boosting the price of Mediterranean versus Baltic Urals. A storm in the Black Sea in late September also significantly hampered exports, opening the arbitrage window from the Baltic to the Mediterranean and supporting the differential. Light sweet crude grades delivered in the Mediterranean, such as Azeri Light and Saharan Blend, increased relative to North Sea Dated in the first half of September, reflecting higher demand from refiners. Lower expected production at the Kashagan field in September also helped to support the price of CPC Blend cargoes, which traded above North Sea Dated for several days in the second half of September, before easing.

Middle Eastern crude prices rose in tandem with the rest of the global crude oil complex, even if the increases were not as large as for North Sea and West African grades. Dubai was up \$3.47/bbl on the month to \$53.71/bbl and it was \$2.36/bbl below North Sea Dated on average, wider on the month but still a narrow spread by historical standards. Strong demand from Asian refiners for end-year crude supplies supported physical markets. Dubai traded above swaps, and thus in an implied backwardation, throughout the month. Other Middle Eastern grades, such as Al Shaheen, Murban, Oman and Upper Zakum also increased relative to Dubai and their respective official selling price. Oman traded \$1.38/bbl above Dubai in late September, its highest price since August 2015 during a previous buying spree by Asian refiners. The differential fell in early October. Murban crude was supported by lower expected production in November as part of the UAE's ongoing output cuts. Condensate prices from the region also gained with lower supplies in Iran linked to maintenance at the South Pars gas field.

In the US, landlocked grades such as WTI delivered in Cushing, Oklahoma, or West Canadian Select, struggled due to waning demand from US refiners in the aftermath of Hurricane Harvey, whereas Gulf of Mexico crude differentials benefitted from production cuts and strong export demand. Sour grades Mars

and Poseidon gained \$3.68/bbl and \$3.55/bbl on the month, respectively. An outage at the Thunder Horse offshore platform in mid-September pushed sour differentials even higher. The widening of the price difference between Brent and WTI crudes, which started in early August, continued after Harvey hit the Texas coastline and throughout September. This was a major driver for US crude differentials, which mostly rose as a result. Bakken crude hit a premium over WTI of \$3.75/bbl on 14 September, the result of strong demand from PADD 1 and PADD 2 refiners looking to compensate for Gulf Coast shutdowns and higher synthetic crude prices following a fire at an oil sands project in northern Alberta. Bakken differentials eased in late September before strengthening once again in early October. Hurricane Nate caused a short-lived shutdown of a large portion of US Gulf of Mexico production in early October and this supported US crude differentials.

Spot Crude Oil Prices and Differentials

(monthly and weekly averages, \$/bbl)

	Jul	Aug	Sep	Sep-Aug Avg Chg	%	Week Commencing:				
						04 Sep	11 Sep	18 Sep	25 Sep	02 Oct
Crudes										
North Sea Dated	48.51	51.64	56.07	4.44	8.6	53.94	55.70	56.67	58.59	56.02
Brent (Asia) Mth 1	48.85	52.08	55.73	3.65	7.0	53.62	54.69	56.27	58.33	56.72
WTI (Cushing) Mth 1	46.65	48.03	49.83	1.80	3.7	48.60	49.08	50.06	51.83	50.21
Urals (Mediterranean)	47.82	51.29	54.89	3.60	7.0	52.85	54.45	55.42	57.44	55.75
Dubai	47.59	50.24	53.71	3.47	6.9	52.07	52.91	54.33	55.54	54.68
Tapis (Dated)	50.15	53.54	58.40	4.87	9.1	56.09	57.85	58.87	60.79	58.22
Differential to North Sea Dated										
WTI (Cushing)	-1.85	-3.61	-6.24	-2.64		-5.34	-6.62	-6.61	-6.76	-5.81
Urals (Mediterranean)	-0.68	-0.34	-1.18	-0.84		-1.09	-1.25	-1.25	-1.15	-0.27
Dubai	-0.91	-1.40	-2.36	-0.97		-1.87	-2.79	-2.35	-3.06	-1.34
Tapis (Dated)	1.64	1.90	2.33	0.43		2.15	2.15	2.20	2.20	2.20
Prompt Month Differential										
Forward Cash Brent Mth1-Mth2	-0.17	0.16	0.32	0.16		0.11	0.31	0.44	0.49	0.37
Forward WTI Cushing Mth1-Mth2	-0.17	-0.23	-0.43	-0.19		-0.49	-0.51	-0.37	-0.30	-0.34
Forward Dubai Mth1-Mth2	-0.29	-0.07	0.07	0.13		0.15	0.18	0.14	-0.21	0.28

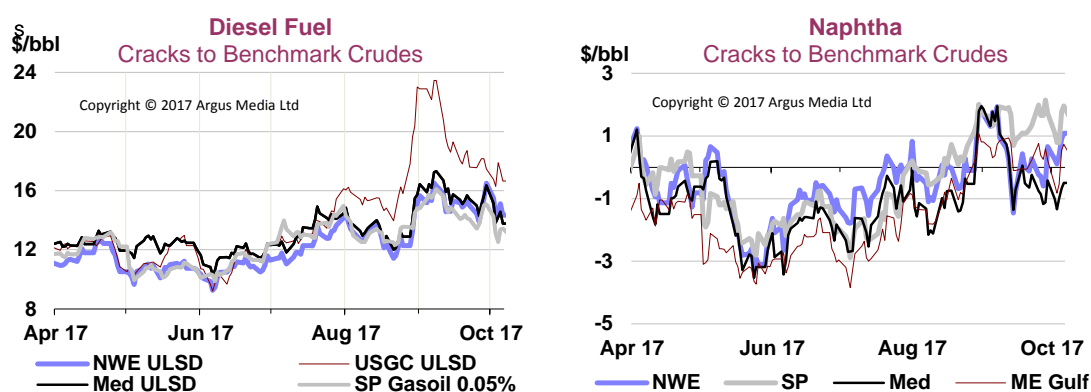
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Spot product prices

Global oil product prices continued to rise at a faster pace than crude oil in September. Hurricane Harvey impacted oil product supply well into September, while refinery maintenance in Europe and Asia also contributed. Middle distillates were the strongest part of the barrel, with gasoline a close second.

Diesel, gasoil and jet fuel prices rose almost twice as fast as crude oil in September, buoyed by strong demand as well as planned and unplanned refinery outages. This marked the third straight month of gains relative to crude. The US Gulf Coast is the world's prime exporter of diesel and was hampered throughout September following the closure of refineries. Other factors also played their part in diesel's strength, including planned refinery turnarounds in Europe and Asia and colder-than-normal temperatures in parts of Europe and North America. This led to some unusual trade movements. European refiners sent an estimated 4.5 mb of diesel to Argentina, Brazil and Cuba, partly offsetting lower export flows from the US Gulf Coast. The US was said to have exported only 3.7 mb of diesel to Europe during September, equivalent to the minimum volume guaranteed under long-term contracts. In compensation, refiners situated in the Far East, India and the Middle East sent large quantities of diesel and jet fuel to the US West Coast – where stocks had fallen sharply – as well as to Europe. The price of diesel barges in Rotterdam gained \$6.64/bbl to \$71.33/bbl, while in Singapore 500 ppm gasoil cargoes were up \$4.98/bbl to \$68.49/bbl. Diesel refining margins hit their highest level in two years, before receding in late September. Stock draws pushed physical diesel markets into sharper backwardation. By early October, US diesel exports to Europe and Latin America ramped up but were still below capacity.

Gasoline prices reacted sharply higher in late August and kept their premium to pre-hurricane levels until the middle of September, before easing considerably in line with the switch to the cheaper winter specification in Europe and North America. Rotterdam premium unleaded gasoline barges gained \$4.40/bbl on the month to reach \$70.04/bbl, while US Gulf unleaded gasoline pipeline prices rose \$1.75/bbl to \$72.51/bbl. The price spread between US high and low-octane gasoline widened significantly after the hurricane, as Gulf Coast refiners gave priority to basic grades. By the middle of September, however, octane spreads had returned to previous levels. European refiners sent large amounts of gasoline to the US East Coast in the first half of September, although the arbitrage window progressively closed thereafter. It was replaced by import demand from Brazil and Mexico – which were hit hard by the temporary shutdown of US exports – and robust demand from the Middle East and West Africa. Up to 5.5 mb of European reformat, an octane enhancer, also departed for China. Singapore gasoline prices were supported by the hurricane and a subsequent increase in demand from Mexico, a relatively rare arbitrage, but the price increase in Asia was less than elsewhere and in line with crude.



Naphtha prices followed gasoline higher and even surpassed it in Asia, home to the largest petrochemical production cluster, reflecting tight supplies of condensate in the Middle East and strong demand from crackers. Singapore naphtha cargo prices were up \$4.62/bbl to \$55.20/bbl on average in September. Maintenance at Iran's South Pars field curbed condensate supply, which yields particularly large amounts of naphtha, thus boosting the price. Low stocks, linked to relatively low cargo arrivals in Asia in recent months, and higher LPG prices following the passage of Hurricane Harvey and ahead of the winter season in the northern hemisphere incentivised demand from petrochemical manufacturers. Asian and European physical naphtha markets were both trading in backwardation by the end of the month, reflecting strong market fundamentals.

Fuel oil prices matched increases in crude during September, but generally lagged behind other oil products. That being said, fuel oil strengthened progressively through the month as increased demand reduced stocks in the key storage hubs of Rotterdam and Singapore. The Asian market, in particular, rose in the second half of September after it had spent several weeks in the doldrums. Month 1 380 centistoke fuel oil cargo swaps traded at a steep \$0.47/bbl premium to Month 2 in late September, the highest differential recorded since February, before easing in early October. Cargo arrivals into Asia are likely to fall in October and November as the fuel oil arbitrage from Europe to Asia remained shut until the middle of September, and as poor weather in the Caribbean hampered exports. Meanwhile, bunker fuel demand in Singapore was higher year-on-year and dry bulk shipping indices strengthened, pointing to higher shipping traffic. In Europe, outright fuel oil prices increased in line with crude while physical cargoes traded at a stable differential to swaps. Global fuel oil prices were buoyed in late 2016 by OPEC's decision to cut output of its mainly sour crudes and, as a result, global fuel oil stockpiles have followed a downward trend.

Spot Product Prices

(monthly and weekly averages, \$/bbl)

	Jul	Aug	Sep	Sep-Aug Chg	%	Week Commencing:					Jul	Aug	Sep	Chg
						04 Sep	11 Sep	18 Sep	25 Sep	02 Oct				
Rotterdam, Barges FOB														
											Differential to North Sea Dated			
Premium Unl 10 ppm	60.78	65.64	70.04	4.40	6.7	72.51	69.76	69.17	67.75	65.17	12.27	14.00	13.97	-0.03
Naphtha	47.83	51.57	56.39	4.81	9.3	55.42	55.30	56.78	58.39	56.57	-0.68	-0.06	0.31	0.38
Jet/Kerosene	60.98	64.93	69.78	4.85	7.5	68.87	68.72	69.93	71.87	68.89	12.47	13.29	13.71	0.41
ULSD 10ppm	60.90	64.70	71.33	6.64	10.3	69.75	70.72	71.78	73.62	70.80	12.39	13.06	15.26	2.20
Gasoil 0.1%	59.09	62.25	68.89	6.65	10.7	67.68	68.33	69.32	70.79	67.93	10.58	10.61	12.82	2.21
LSFO 1%	45.07	46.75	49.80	3.05	6.5	48.98	49.71	49.91	50.79	49.40	-3.44	-4.89	-6.28	-1.39
HSFO 3.5%	43.52	45.40	48.44	3.04	6.7	47.54	48.70	48.77	48.98	47.59	-4.99	-6.23	-7.63	-1.40
Mediterranean, FOB Cargoes														
											Differential to Urals			
Premium Unl 10 ppm	60.37	66.13	70.24	4.11	6.2	71.84	70.22	69.80	68.06	65.95	12.54	14.84	15.35	0.51
Naphtha	46.31	50.46	54.97	4.52	9.0	54.36	54.16	55.04	56.58	54.84	-1.51	-0.84	0.08	0.92
Jet Aviation fuel	60.30	64.36	68.78	4.42	6.9	68.28	67.89	68.51	70.58	67.64	12.47	13.06	13.88	0.82
ULSD 10ppm	61.22	64.79	70.72	5.93	9.2	69.47	70.38	70.81	72.71	70.06	13.40	13.50	15.83	2.33
Gasoil 0.1%	58.89	62.38	68.53	6.15	9.9	66.92	67.98	68.90	70.77	67.56	11.07	11.08	13.64	2.56
LSFO 1%	45.73	47.09	50.39	3.29	7.0	49.20	50.12	50.65	51.85	50.48	-2.10	-4.20	-4.51	-0.30
HSFO 3.5%	44.62	45.99	49.23	3.24	7.0	48.08	49.39	49.68	50.07	48.70	-3.20	-5.30	-5.66	-0.36
US Gulf, FOB Pipeline														
											Differential to LLS			
Super Unleaded	70.70	75.90	84.01	8.11	10.7	95.44	85.36	77.30	77.77	70.99	21.69	24.82	29.17	4.35
Unleaded	65.79	70.77	72.51	1.75	2.5	76.58	71.99	70.16	70.05	67.11	16.78	19.68	17.67	-2.01
Jet/Kerosene	60.07	66.44	73.33	6.90	10.4	78.53	71.50	71.62	71.58	68.99	11.06	15.35	18.49	3.14
ULSD 10ppm	62.55	67.31	74.42	7.10	10.6	75.76	73.23	73.80	75.16	72.51	13.54	16.23	19.58	3.34
Heating Oil	55.85	59.51	65.82	6.31	10.6	65.80	64.73	65.83	67.00	63.82	6.84	8.43	10.98	2.55
No. 6 3%*	43.89	44.85	47.56	2.71	6.1	47.34	48.12	47.21	47.76	46.29	-5.12	-6.23	-7.28	-1.05
Singapore, FOB Cargoes														
											Differential to Dubai			
Premium Unleaded	61.76	67.51	70.43	2.92	4.3	70.52	70.46	70.18	70.55	68.79	14.17	17.27	16.72	-0.55
Naphtha	45.92	50.58	55.20	4.62	9.1	53.64	54.31	55.50	57.37	55.96	-1.67	0.34	1.49	1.15
Jet/Kerosene	59.77	63.11	68.08	4.97	7.9	66.82	66.83	68.42	70.23	67.69	12.18	12.87	14.37	1.50
Gasoil 0.05%	61.05	63.51	68.49	4.98	7.8	67.78	67.83	68.49	69.87	68.02	13.46	13.27	14.78	1.51
LSWR Cracked	48.26	49.28	52.55	3.27	6.6	51.26	52.08	53.21	53.65	52.62	0.67	-0.96	-1.16	-0.20
HSFO 180 CST	47.23	48.35	51.94	3.59	7.4	50.45	51.44	52.72	53.14	52.10	-0.36	-1.89	-1.77	0.12
HSFO 380 CST 4%	46.32	47.84	51.37	3.53	7.4	49.95	50.79	52.00	52.74	51.60	-1.28	-2.40	-2.34	0.06

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* Waterborne

Freight

Freight for **VLCCs** on the Middle East Gulf (MEG) to Asia route averaged \$0.83/bbl in September, up a little from August but near historical lows. The rate rose in late September and early October with higher demand for crude exports to Asian refineries. VLCC rates have fallen to their lowest level ever this year due to a combination of factors, including lower OPEC crude exports and the building of new ships.

Suezmax rates on the West Africa to Northwest Europe route rose \$0.12/bbl to \$1.06/bbl as European refineries increased crude imports amid stellar margins for diesel and gasoline. Baltic **Aframax** rates also gained sharply with higher refinery demand, rising from \$0.59/bbl in August to \$0.78/bbl in September. Aframax rates in the Caribbean were supported in the first half of September by weather delays.

Clean product freight on the UK Continent-US Atlantic Coast route stayed elevated in the first half of September due to strong exports of gasoline from Europe to the East Coast, following hurricane Harvey. By end-September, the rate was \$1.61/bbl, down from the peak of \$3.22/bbl reached at the end of August, but was still higher than before the hurricane. Rates in the US Gulf suffered from the steep fall in oil product exports from the region.

East of Suez, the Long Range MEG-Japan rate stayed unchanged, even if stronger naphtha imports in Asia pushed it higher in late September. Medium Range tanker rates firmed with higher shipments to Australia and Latin America.

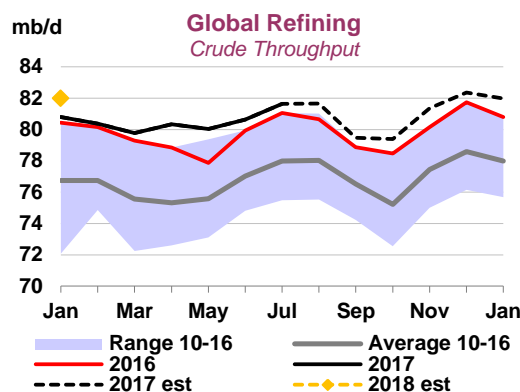
REFINING

Summary

- Our estimate for 3Q17 refining throughput has been revised up by 0.4 mb/d to 80.8 mb/d, on higher European and OECD Asia crude runs. Year-on-year (y-o-y) growth reaches 0.7 mb/d.
- Our forecast for 4Q17 sees global refinery intake edging up 0.1 mb/d quarter-on-quarter (q-o-q), to 80.9 mb/d, up 0.9 mb/d y-o-y. From September to December, global refining throughput is expected to increase by 2.9 mb/d.
- The global increase in refining margins caused by Hurricane Harvey has largely vanished, but margins remain at comfortable levels. Global refined product markets look balanced in 4Q17, after draws in 2Q17 and 3Q17.
- Our first forecast for January 2018 implies 1.2 mb/d y-o-y growth, with large gains in non-OECD, although throughput declines by 0.4 mb/d from December levels to just under 82 mb/d.

Global refinery overview

Strong preliminary throughput data for OECD Europe and Asia in August, as well as a slightly faster than expected recovery in the US in September, pushed the estimate for 3Q17 global throughput higher, partly offsetting our Harvey-related downgrade in last month's *Report*. For 3Q17, throughput is now estimated at 80.8 mb/d, a historical record, which, however, is expected to be broken in 4Q17, albeit by a small margin of 0.1 mb/d. The upwardly revised 3Q17 throughput is still not sufficient to stem refined product stock draws globally. On the other hand, a 0.2 mb/d downward revision to 4Q17 demand growth means that refined product markets on aggregate are balanced through year-end. For the year as a whole, 2017 will see throughput grow by 0.9 mb/d, well below the estimated growth in refined products demand, estimated at about 1.4 mb/d.



Global Refinery Crude Throughput¹

(million barrels per day)

	2016	2Q17	Aug 17	Sep 17	3Q17	Oct 17	Nov 17	Dec 17	4Q17	2017	Jan 18
Americas	18.9	20.0	19.6	17.8	19.1	18.3	19.5	19.7	19.2	19.3	19.3
Europe	11.9	12.0	12.6	12.5	12.5	12.2	12.4	12.5	12.4	12.2	12.3
Asia Oceania	6.9	6.6	7.2	6.9	7.0	6.5	7.0	7.4	7.0	7.0	7.4
Total OECD	37.8	38.6	39.4	37.1	38.7	37.1	38.9	39.5	38.5	38.5	39.0
FSU	6.8	6.7	6.9	6.7	6.9	6.8	7.0	7.0	6.9	6.8	7.0
Non-OECD Europe	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
China	10.8	11.0	11.1	11.3	11.0	11.3	11.2	11.3	11.3	11.1	11.3
Other Asia	10.4	10.3	10.4	10.5	10.4	10.5	10.5	10.6	10.5	10.4	10.6
Latin America	4.2	3.8	3.8	3.8	3.8	3.9	3.9	4.0	3.9	3.9	4.0
Middle East	7.2	7.3	7.4	7.4	7.4	7.3	7.3	7.3	7.3	7.3	7.4
Africa	2.0	2.0	2.1	2.0	2.0	1.9	1.9	2.1	2.0	2.0	2.0
Total Non-OECD	41.9	41.6	42.1	42.2	42.1	42.2	42.3	42.7	42.4	42.1	42.9
Total	79.7	80.2	81.6	79.4	80.8	79.3	81.3	82.3	80.9	80.5	81.9
<i>Year-on-year change</i>	<i>0.5</i>	<i>1.5</i>	<i>1.0</i>	<i>0.6</i>	<i>0.7</i>	<i>0.9</i>	<i>1.2</i>	<i>0.6</i>	<i>0.9</i>	<i>0.9</i>	<i>1.2</i>

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

Global crude oil and refined product balances

Our global oil balance has changed slightly from the previous *Report*, following updates to historical data and revisions to supply and demand forecasts. Markets were balanced in 1Q17, while the rest of the year sees inventories declining. For 2017 as a whole, global oil stocks are expected to draw by 0.3 mb/d on average. Moreover, for the first time since 2013, there could be no visible builds in any of the quarters.

Crude Oil and Refined Product Balances

(million barrels per day)

	2015	1Q16	2Q16	3Q16	4Q16	2016	1Q17	2Q17	3Q17	4Q17	2017
World total demand	94.8	95.4	95.6	96.7	96.8	96.1	96.6	97.8	97.9	98.5	97.7
World total supply	96.6	96.7	96.1	97.0	98.2	97.0	96.7	97.0	97.8	98.2	97.4
World balance¹	1.7	1.3	0.5	0.3	1.4	0.9	0.0	-0.8	-0.1	-0.3	-0.3
Refined product demand	80.8	81.3	81.6	82.6	81.6	81.8	82.1	83.6	83.4	83.2	83.1
Refined product supply	81.4	82.1	81.0	82.4	82.3	82.0	82.5	82.5	83.1	83.2	82.8
Refined product balance	0.6	0.9	-0.5	-0.3	0.7	0.2	0.4	-1.1	-0.3	0.0	-0.2
<i>Memo</i>											
OECD refined product actual stock change ²	0.3	0.4	-0.3	0.0	-0.1	0.0	0.0	-0.3	0.2		
Non-OECD refined product implied stock change	0.4	0.5	-0.2	-0.2	0.7	0.2	0.4	-0.8	-0.5		
Crude oil demand	80.6	81.0	80.3	81.6	81.3	81.1	81.4	81.7	82.4	82.2	81.9
Crude and condensate supply ¹	81.6	82.0	80.6	81.4	82.9	81.7	81.6	81.3	81.8	82.5	81.8
Crude oil balance	1.0	1.0	0.3	-0.2	1.7	0.7	0.2	-0.4	-0.6	0.3	-0.1
<i>Memo</i>											
OECD crude oil actual stock change ²	0.4	0.1	-0.1	-0.6	-0.2	-0.2	0.5	-0.8	-0.7		
Non-OECD crude oil implied stock change	0.6	0.9	0.4	0.3	1.9	0.9	-0.2	0.3	0.1		
China crude oil balance	0.3	0.4	0.6	0.7	0.2	0.5	0.8	1.2	0.5		
Floating storage/oil in transit ²	0.3	0.2	0.3	-0.2	0.2	0.1	-0.3	-0.3	-0.7		
Other Non-OECD crude oil stock change	0.0	0.3	-0.5	-0.2	1.5	0.3	-0.7	-0.5	0.4		
Non-refined product (LPG) stock change	0.1	-0.6	0.7	0.7	-0.9	0.0	-0.6	0.7	0.7		

¹ 4Q17 OPEC crude oil output assumed flat from September levels

² Includes preliminary numbers for August and September 2017

Global crude oil balances

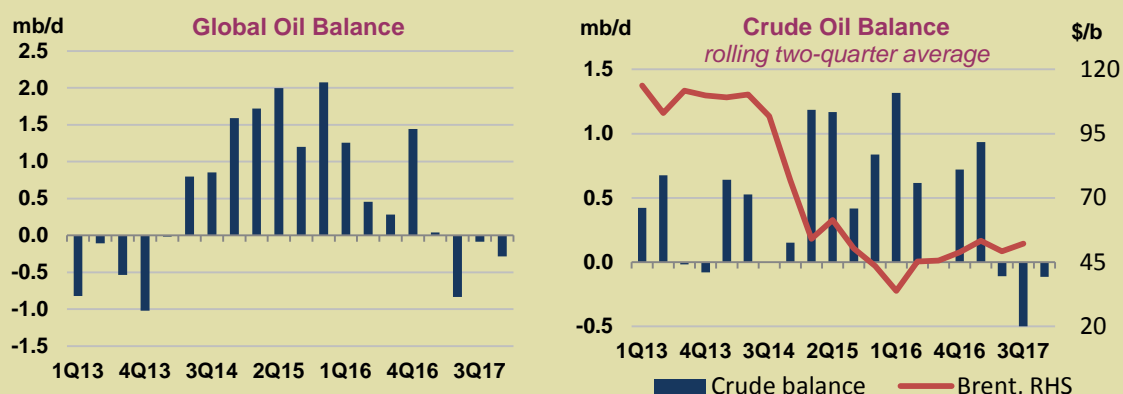
Looking at crude oil and refined product markets separately reveals the nuances that are otherwise hidden behind headline oil balances. After a small build in 1Q17, global crude oil balances show draws in 2Q17 and 3Q17, at an average rate of 0.5 mb/d. Moreover, net of implied Chinese crude oil stockbuilds, the rest of the world has seen an average crude oil stock draw of 1.1 mb/d since the start of the year. Year-to-date OECD crude oil stock change, including preliminary data for August-September, has amounted to about 0.3 mb/d of draws. Changes in volumes in floating storage and oil in transit (which are mostly crude oil), account for another 0.4 mb/d decline (see *Stocks*). The remainder, a 0.3 mb/d draw, likely comes from non-OECD countries excluding China.

In 4Q17, our forecast of crude oil demand (refinery throughput plus direct use of crude oil) and supply (crude oil and condensate supply for non-OPEC, with OPEC crude production assumed flat from September levels) imply a small build of 0.3 mb/d. We do not forecast Chinese stockbuilding.

The outlook for 2018 is quite interesting. Modelling global refinery throughput at a level to meet refined product demand on aggregate, and, with OPEC crude oil output assumed, for the purposes of this exercise, at 32.7 mb/d throughout the year, the crude oil market looks balanced on average. Obviously, the possibility of seasonal builds and draws is not excluded, given the normal swings in crude oil demand. However, the point is that, assuming a balanced refined products market, crude oil markets are also balanced with OPEC production at 32.7 mb/d in 2018. If China continues to build crude oil stocks, the required volumes would have to come from stockholdings elsewhere, as it has been the case so far this year.

The main reason behind a tighter crude oil balance presented in this month's report is our upgrade to the 3Q17 refinery throughput estimate, following stronger than expected August performance in Europe and OECD Asia and lower crude oil output.

Global crude oil and refined product balances (continued)



We have also made a baseline revision to our estimate of global direct use of crude oil by including data from China. The country's National Bureau of Statistics in its 2015 annual review reports some 180 kb/d of direct use of crude oil, which, in our demand assessment, is accounted for in "other products" category. Most of it is used in oil fields, and indeed three of the largest oil-producing provinces – Heilongjiang, Shaanxi and Shandong – together account for almost all of the country's total.

The inclusion of Chinese data brought our global annual crude oil direct use number to an average of 1.3 mb/d. Power generation in the Middle East accounts for most of it. Hence, while the direct use volume compared to global refinery throughput is minimal, its seasonal swings can be quite substantial as average temperatures rise and fall. From 1Q to 3Q, the direct use ramps up by 0.4 mb/d, and then declines. Sometimes this offsets seasonal changes in refining volumes, while at other times it adds to them. Thus, monitoring the trends in the direct use of crude oil is an important part of crude oil market analysis.

China's implied balances

China has played a major role in global crude oil markets by helping to clear most of the excess seen in the last two-three years, which puts an even greater importance on understanding better, but also, scrutinizing the Chinese data. Our ongoing investigation into Chinese oil supply and demand has resulted in another improvement of our implied crude oil balance. Chinese crude oil output and imports data are reported in tonnes, and the choice of conversion factor influences the volumetric values. Crude oil production volumes have been corrected downwards after applying field-specific conversion factors (see *Supply*). At the same time, applying individual conversion factors for various streams of imported crude oil we arrived at a weighted average conversion factor for imports of about 7.25 barrels per tonne for 2017. The conversion factor for refinery throughput and direct burn of crude have accordingly been adjusted.

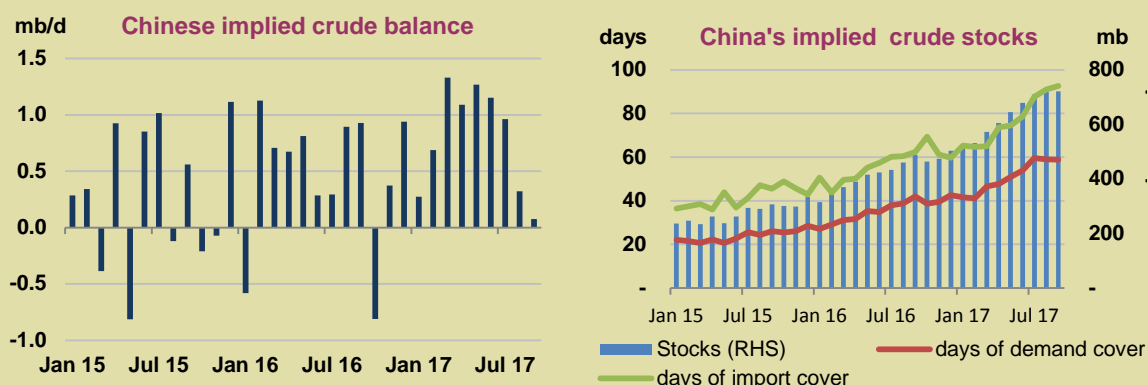
With these changes, the volumes of China's implied crude oil balance have declined. In the first half of this year, they still amounted to a record build of 1 mb/d, but this halved in 3Q17. Our estimate of September imports based on cargo tracking, combined with refinery throughput and crude production forecasts, yields a very small build for the month. If we reconstruct Chinese crude oil stocks by taking the last reported volumetric data from *China Oil, Gas and Petrochemical* report and adding implied crude oil balances since January 2015, we get a cumulative crude oil stock holding of about 700 mb at the end of September.

Our calculations imply that the country's import cover stands at about 90 days, while total demand cover is about 60 days. This is similar to the levels of emergency stockholding required of IEA members, although the current volumes actually held in the IEA countries are higher. Our calculation of product stocks based on the reported monthly stock changes of Sinopec and PetroChina adds another 150 mb. China's calculated 850 mb of stock holding is comparable to the combined oil stocks of Japan and Korea, whose combined demand is only half that of China. In OECD Europe, total stockholding is at 1 470 mb, i.e. 70% more than China's, but with demand only 15% higher. The US holds the largest oil stocks in the world, some 2 bn barrels.

A rough calculation shows that since January 2015, China has spent about \$24 bn on "excess" crude oil, at an average price of \$50/bbl. For comparison, China's current account surplus since 1Q15 has totalled \$680 bn.

Global crude oil and refined product balances (continued)

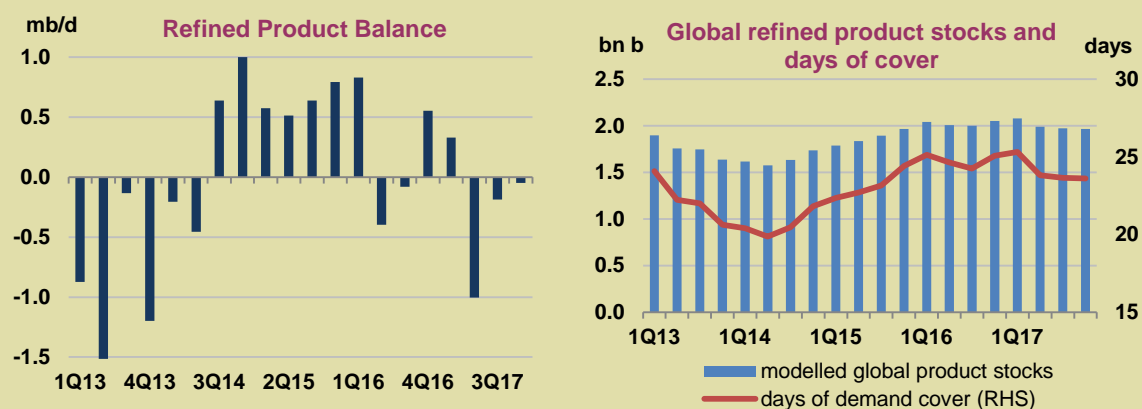
The availability of hard currency is definitely not an issue, but could China be nearing full storage capacity? Various sources put country's total storage capacity between 800 – 1 000 mb, although it is not clear whether underground sites are included. News reports in early 2016 mentioned 130 mb of total underground storage capacity in five sites under construction, all of which were expected to start operations by mid-2017.



If we use the upper limit of the range of Chinese storage capacity estimates, some 150 mb could still be available. If filling continues at a rate similar to 2017's year-to-date average, it would take another six months to reach full capacity. Thus, the sharp slowdown seen in August-September may yet prove temporary.

Global refined product markets

We reconstructed global refined product inventories using IEA data for OECD stocks and JODI data for non-OECD stocks as of end-2012 (as since then the number of reporting countries has decreased), and then added our implied quarterly stock changes. We estimate global refined product stocks at about 2 billion barrels, or about 24 days of forward demand cover. Two thirds of these are in OECD countries. After large draws in 2Q17, global refined product inventories saw a moderate decline in 3Q17, which, however, is counterseasonal. In 4Q17, the market is expected to be almost balanced.

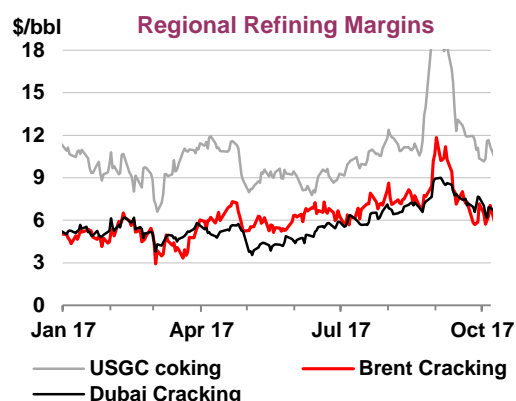


The role of non-refined products

We have already specified, our breakdown of global balances into refined products and crude oil balances does not include a small proportion of the global oil market – the non-refinery NGLs, with LPG being the largest component. The US, Japan and Korea are big users of heating propane, which has a strong seasonality pattern: stock build in summer and draws in winter. If we assume that this year LPG quarterly stock builds follow the pattern of last three years, then 2Q-3Q would have seen builds of about 0.6 mb/d, with 1Q and 4Q drawing about as much. This helps to explain the gap between the headline global oil demand balance in our Table 1 on one hand, and the sum of crude oil and refined product balances on the other hand.

Margins

In September, most of our regional refining margin indicators gained on August, but by the end of the month, the Hurricane Harvey premium had essentially vanished. The crude oil price rally in the second half of the month was one of the reasons why the margins started trending downward and why the monthly change in light sweet crude hydroskimming margins was negative. Fuel oil cracks were especially affected. In the two months since July, the fuel oil discount to crude oil has essentially doubled, back to the levels of 1Q17.



While 2Q17 and 3Q17 are both estimated to have seen refined product inventories decline, global stocks remain at comfortable levels (See *Global crude oil and refined products balances*).

IEA/KBC Global Indicator Refining Margins¹

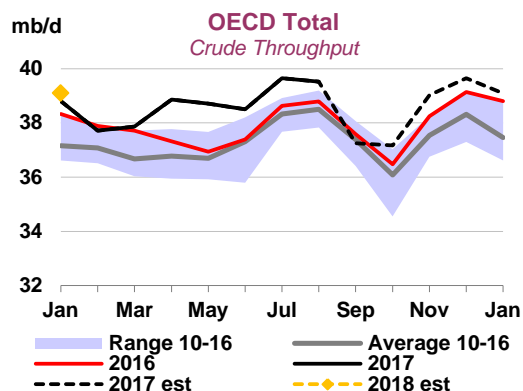
	Monthly Average (\$/bbl)				Change	Average for week ending:					
	Jun 17	Jul 17	Aug 17	Sep 17	Sep 17-Aug 17	08 Sep	15 Sep	22 Sep	29 Sep	06 Oct	
NW Europe											
Brent (Cracking)	6.57	6.80	7.79	8.17	↑ 0.38	10.48	8.02	7.39	6.07	6.31	
Urals (Cracking)	6.77	6.90	7.54	9.09	↑ 1.55	10.63	9.08	8.63	7.48	6.95	
Brent (Hydroskimming)	3.37	3.30	3.57	3.52	↓ -0.05	5.41	3.49	2.87	1.74	2.28	
Urals (Hydroskimming)	2.69	2.98	2.95	3.98	↑ 1.03	5.10	4.15	3.69	2.59	2.34	
Mediterranean											
Es Sider (Cracking)	8.00	8.33	8.66	8.79	↑ 0.13	10.44	8.58	8.20	7.31	7.51	
Urals (Cracking)	6.96	7.54	7.80	9.14	↑ 1.34	10.47	9.17	8.74	7.70	7.10	
Es Sider (Hydroskimming)	5.69	5.28	4.98	4.67	↓ -0.31	6.20	4.54	4.12	3.22	3.68	
Urals (Hydroskimming)	3.53	3.63	3.17	3.95	↑ 0.78	5.17	4.18	3.65	2.39	2.11	
US Gulf Coast											
50/50 HLS/LLS (Cracking)	8.24	10.48	13.37	14.38	↑ 1.01	19.66	14.96	11.63	10.45	9.48	
Mars (Cracking)	6.17	7.98	9.56	9.92	↑ 0.36	14.30	10.79	7.55	6.33	5.83	
ASCI (Cracking)	5.91	7.63	9.14	9.53	↑ 0.39	13.77	10.35	7.39	5.91	5.39	
50/50 HLS/LLS (Coking)	9.68	12.00	15.30	16.53	↑ 1.23	22.21	17.01	13.56	12.45	11.41	
50/50 Maya/Mars (Coking)	8.77	10.40	12.90	14.25	↑ 1.35	18.55	14.30	12.17	11.20	10.99	
ASCI (Coking)	9.64	11.65	14.21	15.48	↑ 1.27	20.43	15.85	13.11	11.74	10.93	
US Midcon											
WTI (Cracking)	12.28	14.43	16.84	17.86	↑ 1.02	20.68	16.49	16.07	17.39	16.49	
30/70 WCS/Bakken (Cracking)	11.64	12.92	15.09	14.98	↓ -0.11	17.96	12.93	13.64	14.49	12.94	
Bakken (Cracking)	13.28	14.72	17.30	16.75	↓ -0.55	20.11	13.78	15.47	16.66	14.55	
WTI (Coking)	13.94	16.15	18.92	20.02	↑ 1.11	23.01	18.43	18.07	19.70	18.76	
30/70 WCS/Bakken (Coking)	14.07	15.54	18.40	18.62	↑ 0.22	21.69	16.11	17.24	18.47	16.80	
Bakken (Coking)	13.95	15.41	18.16	17.59	↓ -0.57	21.04	14.51	16.23	17.58	15.46	
Singapore											
Dubai (Hydroskimming)	2.05	2.58	2.89	3.38	↑ 0.49	4.04	3.56	3.10	2.82	2.30	
Tapis (Hydroskimming)	4.19	3.97	3.96	3.22	↓ -0.73	4.85	3.25	2.86	1.93	3.05	
Dubai (Hydrocracking)	5.23	6.12	7.11	7.80	↑ 0.70	8.71	7.98	7.34	7.19	6.68	
Tapis (Hydrocracking)	6.32	6.52	7.28	6.77	↓ -0.51	8.57	6.79	6.26	5.46	6.64	

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

Source: IEA, KBC Advanced Technologies (KBC)

OECD refinery throughput

OECD July refinery throughput was finalised 0.3 mb/d higher from the preliminary data, and August preliminary numbers revealed a much stronger than expected performance in Europe and Asia. The estimate for September US runs, based on weekly data, also implied a somewhat faster post-Harvey recovery. With this, 3Q17 OECD refining intake is revised up by 0.6 mb/d to 38.7 mb/d, the highest rate since 2008. The 4Q17 forecast is revised up by 0.3 mb/d, with runs seasonally declining by 0.2 mb/d. For 2017 as a whole, OECD refiners are expected to register 0.7 mb/d y-o-y growth for crude runs. In January 2018, refining throughput is expected to increase by 0.3 mb/d y-o-y, while seasonally declining from December.



Refinery Crude Throughput and Utilisation in OECD Countries

(million barrels per day)

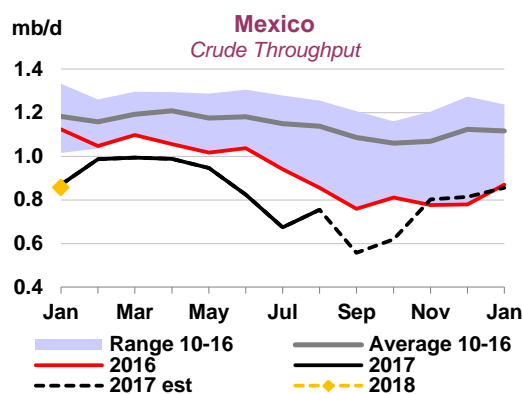
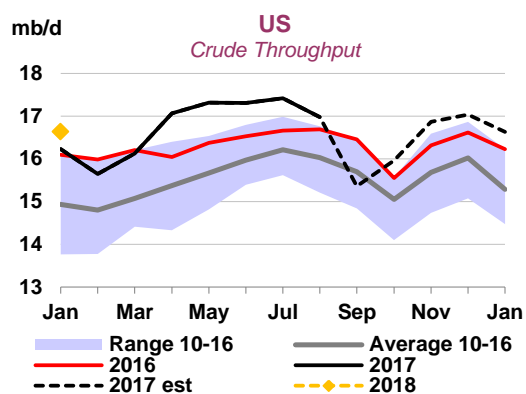
	Mar 17	Apr 17	May 17	Jun 17	Jul 17	Aug 17	Change from		Utilisation rate ¹	
							Jul 17	Aug 16	Aug 17	Aug 16
US ²	16.03	16.97	17.21	17.21	17.32	16.88	-0.44	0.29	93%	92%
Canada	1.77	1.68	1.77	1.81	1.78	1.83	0.06	0.08	95%	91%
Chile	0.18	0.16	0.19	0.20	0.18	0.17	-0.01	0.00	76%	75%
Mexico	0.98	0.98	0.94	0.81	0.67	0.75	0.08	-0.10	45%	51%
OECD Americas³	18.96	19.78	20.10	20.02	19.94	19.63	-0.31	0.27	89%	89%
France	1.05	1.15	1.11	1.16	1.19	1.23	0.04	0.01	99%	87%
Germany	1.84	1.95	1.74	1.77	1.89	1.90	0.01	-0.10	94%	99%
Italy	1.31	1.33	1.29	1.41	1.48	1.51	0.03	0.10	86%	80%
Netherlands	1.13	1.19	1.13	1.03	1.06	0.92	-0.14	-0.18	71%	85%
Spain	1.28	1.36	1.25	1.23	1.39	1.43	0.03	0.10	100%	93%
United Kingdom	1.09	1.12	1.08	1.13	1.09	1.12	0.03	0.00	89%	81%
Other OECD Europe	4.22	4.05	4.24	4.30	4.45	4.47	0.02	0.19	92%	88%
OECD Europe	11.92	12.14	11.83	12.03	12.55	12.57	0.03	0.12	91%	88%
Japan	3.21	3.18	2.91	2.76	3.15	3.31	0.15	0.08	96%	87%
South Korea	3.03	2.88	2.95	2.79	3.10	3.11	0.01	0.22	98%	94%
Other Asia Oceania	0.64	0.78	0.81	0.80	0.81	0.81	0.00	0.04	93%	89%
OECD Asia Oceania	6.88	6.84	6.67	6.35	7.06	7.22	0.16	0.34	96%	90%
OECD Total	37.77	38.76	38.61	38.40	39.55	39.42	-0.13	0.73	91%	89%

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

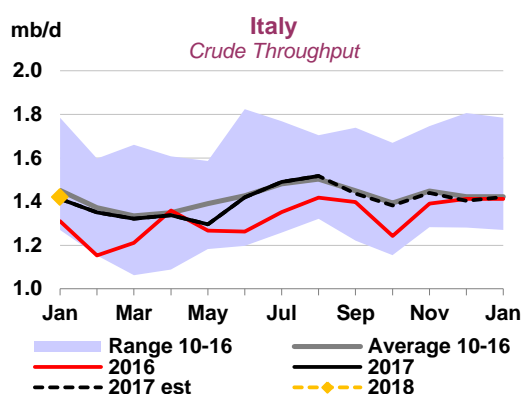
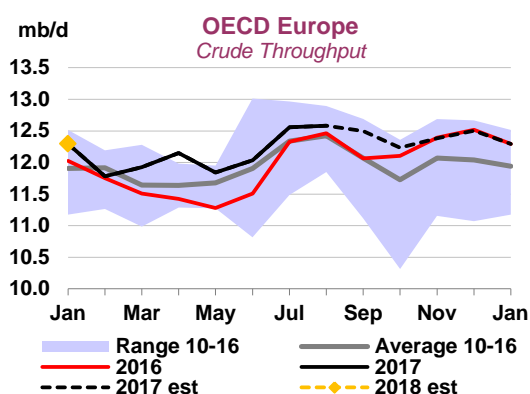
² US\$0

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

Hurricane Harvey caused August and September refinery throughput in the **US** to fall from the monthly average rates of above 17 mb/d. We expect runs to recover to these levels in November-December. Planned maintenance in October, and a smaller impact from precautionary shutdowns in Louisiana for Hurricane Nate, are expected to weigh on October refinery intake. In 4Q17, y-o-y growth, interrupted by Harvey, resumes, with runs up 460 kb/d. January runs are expected to decline from December levels, but will still be 400 kb/d higher y-o-y.

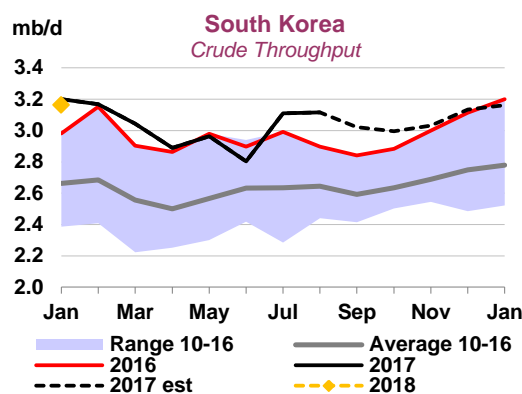
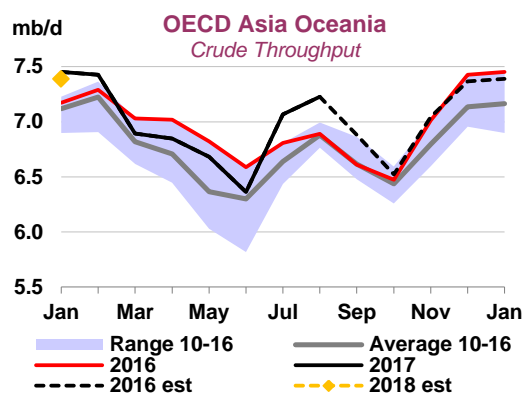


In **Mexico**, a small recovery in August, and then a shutdown of the country's largest refinery, Salina Cruz, at the end of the month caused a zigzag pattern in refining throughput. In September, intake is estimated to have hit a new low, with runs under 600 kb/d. The restart of Salina Cruz, originally slated for end-September, is now delayed until well into October. The refinery is located in an area that was recently stricken by an earthquake, but facilities were reported to be undamaged. The start of the eventual recovery of Mexican throughput is pushed back yet again to the last months of the year. For 2017 as a whole, throughput is forecast to decline by 120 kb/d, making it the fourth consecutive year of declining activity.



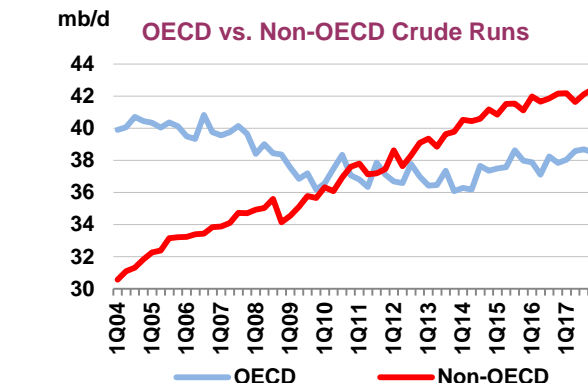
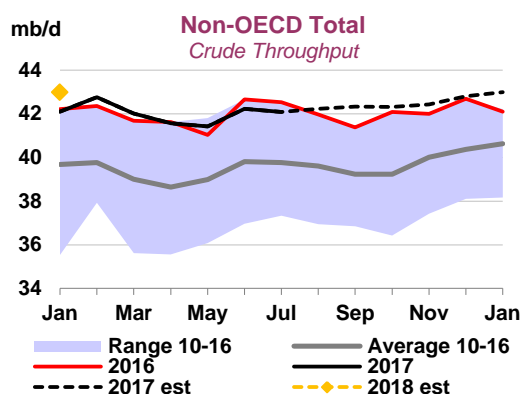
Preliminary numbers for August refinery intake in **OECD Europe** came in much stronger than expected, mostly thanks to unusually high throughput in France and Italy. French refiners in particular ran flat out, with utilisation rates at 99%. Italy not only reached the highest throughput in five years, at 1.5 mb/d, in August, but its July throughput was also finalised some 150 kb/d higher, to just under 1.5 mb/d. After 3Q17's 260 kb/d y-o-y increase, 4Q17 runs in OECD Europe are expected almost flat y-o-y, seasonally declining by 170 kb/d. January 2018 runs are forecast at 12.3 mb/d, also flat y-o-y.

OECD Asia too, had a very strong month in August, with runs reaching 7.2 mb/d, a level more typical of peak winter demand. South Korean refiners did not pause for refinery maintenance as much as expected. Regional throughput is however, expected to decline in September-October for maintenance before picking up again in November. In 4Q17, throughput is forecast to be flat y-o-y, but runs in January 2018 are expected to decline by 60 kb/d y-o-y.



Non-OECD refinery throughput

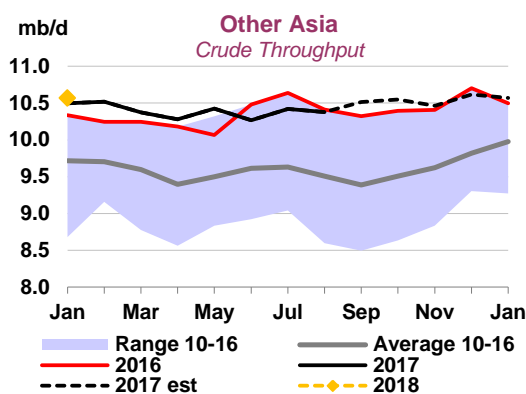
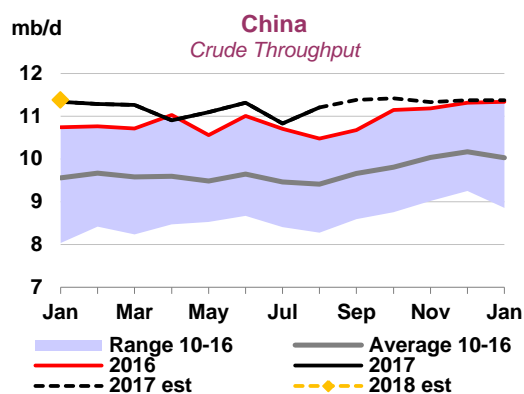
June and July estimates for non-OECD throughput have been revised up by 0.1 mb/d on the basis of fresh data. Our forecast for 3Q17 however, is lowered by 0.2 mb/d, to 42.1 mb/d, as August and September throughput estimates are revised down in the FSU and the Middle East due to new maintenance programmes. For 4Q17, our forecast is also downgraded by 0.2 mb/d following a downward revision to demand. With these revisions, total non-OECD throughput is expected to edge up by 0.2 mb/d in 2017 as a whole. In January 2018, y-o-y growth is expected at 0.9 mb/d, with non-OECD taking over the leading role again.



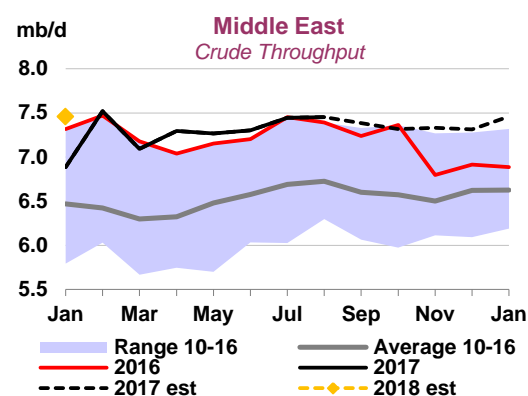
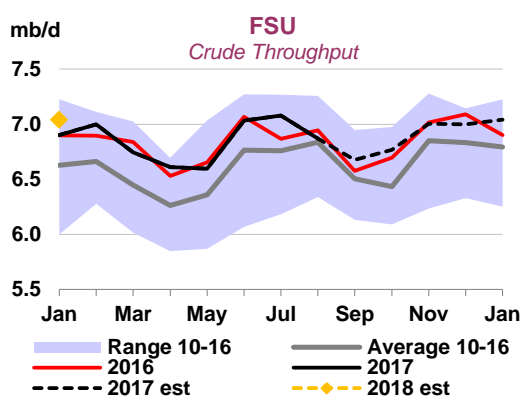
We have made important changes to our assessment of **China's** refining throughput. First, we have lowered the conversion factor applied to the crude throughput data reported by the National Bureau of Statistics (NBS) (See *Global crude oil and refined product balances*). We now calculate the weighted average conversion factors of local crude oil output and imports on a monthly basis and apply it to refinery throughput. This has brought the volumetric throughput down by about 100 kb/d.

Second, we now apply an assumption of unreported runs. As we discussed in the *August Report*, we believe some 100 kb/d throughput is not included in the official statistics, although this number likely varies from month to month. We think one of the main reasons for underreporting is technical. It appears that NBS does not always capture the first months of operations at new units. For example, Petrochina's Anning refinery, according to various sources, started commercial operations in August, but the host province's (Yunnan) refinery throughput data was still reported as zero. It is our understanding that historical revisions are not made; hence, the uncaptured throughput is "lost" to the statistics.

With this, our August refining throughput number has turned out some 90 kb/d lower than our forecast. For the remainder of the year though the forecast has been revised up by an average 50 kb/d. 2017 throughput is forecast to increase by 370 kb/d. In January, runs are expected to stay flat from December, and only 40 kb/d up year-on-year.



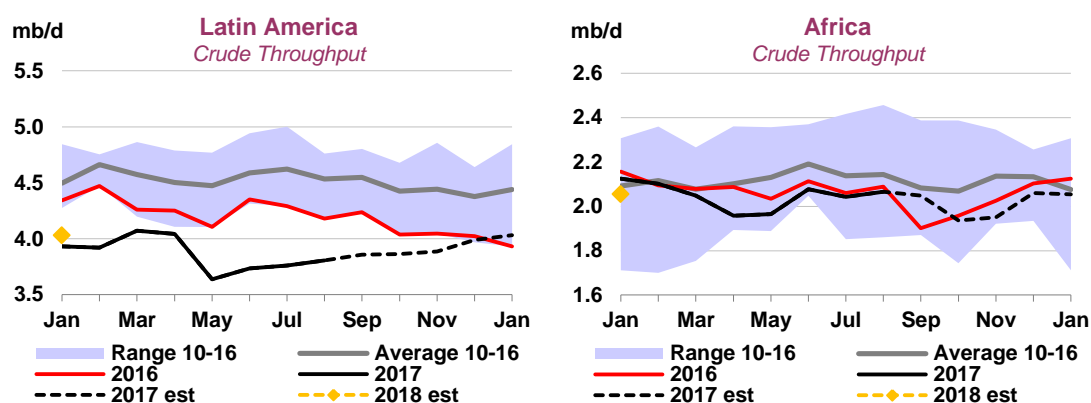
Indian throughput edged up by a small 40 kb/d in August from July levels. Our forecast for 3Q17 and 4Q17 is revised down by about 40 kb/d. This means that for 2017, the y-o-y change is almost flat, with runs up by only 30 kb/d. **Chinese Taipei** and **Thailand** reported stronger runs in August. The prospects of growth in this region in the next few months are rather subdued until the new refinery in **Vietnam**, the Nghi Son facility, enters commercial operation at some point during 1Q18.



Russian September preliminary data came in 100 kb/d lower, and we revised our 4Q17 forecast down by 70 kb/d on new maintenance information. Our 3Q17 estimate for **Belarus** has been revised down by 90 kb/d due to a major maintenance programme in August. After two consecutive years of annual declines, **FSU** throughput is expected to stabilise this year.

The Middle East saw some historical revisions this month as **Iran** published missing data for May and June, with runs stronger than previously reported by 40 kb/d and 60 kb/d respectively. Iraq's July actual number was lower by 60 kb/d, while Saudi Arabia's was higher by 40 kb/d. Overall, our 3Q17 estimate for Middle East throughput is revised down by 80 kb/d to 7.4 mb/d. Throughput in 4Q17 is forecast to decline by some 100 kb/d, most of which is due to a planned maintenance in Saudi Arabia. For the year as a whole, Middle East throughput is estimated to be up by 90 kb/d on 2016, the lowest growth rate in four years.

In **Latin America**, throughput continues to recover month-on-month. **Brazil's** refining intake likely bottomed out in July, with August runs already back above 1.7 mb/d. Throughput is expected to continue growing, although we do not forecast it to reach the 1.8 mb/d level this year, and for the year as a whole, it still means a decline of 130 kb/d. There is no fresh news on **Venezuela**, and we continue to assume very low utilisation rates with throughput under 500 kb/d. This year the region as a whole is expected to see the strongest annual decline in runs since the closure of Aruba's refinery in 2012, with throughput down some 340 kb/d y-o-y.



Nigerian throughput continued trending lower, falling to just under 50 kb/d in July, its lowest level this year. Chevron's **South African** refinery, along with other downstream assets in the country, was announced as a takeover target for commodities trading firm Glencore. The near-term outlook for the continent's refining industry, however, remains largely uninspiring, with most of the countries continuing to rely on imported products.

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	25.0	25.2	24.9	24.6	25.1	25.3	25.1	25.0
Europe	13.5	13.8	13.6	13.9	14.4	14.2	14.0	13.9	14.2	14.6	14.3	14.3	13.8	14.3	14.7	14.4	14.3
Asia Oceania	8.1	8.1	8.6	7.7	7.8	8.4	8.1	8.6	7.8	7.8	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	47.7	47.3	46.9	46.9	47.7	47.7	47.3
NON-OECD DEMAND																	
FSU	4.6	4.5	4.6	4.6	4.9	4.9	4.8	4.6	4.8	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	0.7	0.7	0.7	0.7	0.7	0.7	0.8	0.7
China	10.8	11.6	11.8	12.1	11.6	11.9	11.9	12.5	12.7	12.1	12.3	12.4	12.8	12.9	12.5	12.7	12.7
Other Asia	11.8	12.4	13.0	13.0	12.7	13.0	12.9	13.2	13.4	13.0	13.7	13.3	13.8	14.0	13.6	14.2	13.9
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	8.4	8.8	8.3	8.4	8.1	8.6	8.9	8.4	8.5
Africa	3.9	4.1	4.2	4.2	4.0	4.1	4.1	4.4	4.2	4.1	4.2	4.2	4.4	4.3	4.2	4.4	4.3
Total Non-OECD	47.1	48.4	48.6	49.5	49.4	49.4	49.2	49.7	50.8	50.5	50.8	50.4	51.0	52.2	51.8	52.2	51.8
Total Demand¹	92.9	94.8	95.4	95.6	96.7	96.8	96.1	96.6	97.8	97.9	98.5	97.7	97.9	99.1	99.5	99.9	99.1
OECD SUPPLY																	
Americas ⁴	19.1	20.0	19.9	19.0	19.3	19.7	19.5	20.0	19.8	19.9	20.4	20.0	21.0	20.9	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	3.6	3.7	3.7	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	0.5	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	25.8	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	14.4	14.4	14.5	14.5	14.4	14.4	14.5
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	3.5	3.4	3.5	3.4	3.4	3.3	3.3	3.4
Americas ^{2,4}	4.4	4.6	4.3	4.4	4.6	4.6	4.5	4.6	4.5	4.6	4.7	4.6	4.6	4.7	4.8	4.9	4.8
Middle East	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.3	1.3	1.2
Africa ²	1.8	1.8	1.7	1.6	1.7	1.7	1.7	1.7	1.7	1.8	1.7	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	29.3	29.4	29.4	29.5	29.5	29.4	29.5	29.5
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	2.1	2.6	3.0	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	59.0	59.4	59.8	60.2	59.6
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	6.7	6.8	6.9	6.9	6.8	6.9	6.9	6.9	6.9	6.9	7.0	7.1	7.0	7.0	7.0
Total OPEC	37.1	38.4	39.0	39.3	39.8	40.3	39.6	38.9	39.2	39.7							
Total Supply⁴	93.7	96.6	96.7	96.1	97.0	98.2	97.0	96.7	97.0	97.8							
STOCK CHANGES AND MISCELLANEOUS																	
Reported OECD																	
Industry	0.4	0.8	0.3	0.4	0.1	-0.9	0.0	0.3	-0.2								
Government	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	-0.1								
Total	0.4	0.8	0.4	0.4	0.1	-0.9	0.0	0.3	-0.3								
Floating storage/Oil in transit	0.0	0.3	0.2	0.3	-0.2	0.2	0.1	-0.3	-0.3								
Miscellaneous to balance ⁵	0.4	0.7	0.6	-0.3	0.4	2.1	0.7	0.0	-0.2								
Total Stock Ch. & Misc	0.8	1.7	1.3	0.5	0.3	1.4	0.9	0.0	-0.8	-0.1							
Memo items:																	
Call on OPEC crude + Stock ch. ⁶	29.9	30.1	31.1	32.1	32.6	32.0	31.9	32.0	33.1	32.8	33.0	32.7	31.9	32.7	32.6	32.7	32.5

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

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

Table 2
SUMMARY OF GLOBAL OIL DEMAND

	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	24.97	25.17	24.90	24.63	25.06	25.33	25.14	25.04
Europe	13.83	13.61	13.92	14.44	14.19	14.05	13.89	14.25	14.58	14.29	14.25	13.82	14.30	14.71	14.37	14.30
Asia Oceania	8.06	8.57	7.70	7.84	8.38	8.12	8.56	7.76	7.83	8.28	8.11	8.43	7.57	7.68	8.20	7.97
Total OECD	46.44	46.78	46.10	47.34	47.42	46.91	46.92	46.97	47.39	47.75	47.26	46.88	46.94	47.72	47.72	47.32
Asia	23.96	24.83	25.09	24.36	24.94	24.80	25.70	26.11	25.12	26.00	25.73	26.55	26.95	26.05	26.98	26.63
Middle East	8.37	7.86	8.39	8.68	8.09	8.26	7.91	8.45	8.79	8.26	8.35	8.12	8.63	8.93	8.39	8.52
Americas	6.71	6.46	6.58	6.66	6.54	6.56	6.45	6.57	6.68	6.60	6.58	6.52	6.69	6.81	6.72	6.68
FSU	4.55	4.59	4.56	4.92	4.93	4.75	4.59	4.76	5.02	4.93	4.83	4.67	4.81	5.06	5.01	4.89
Africa	4.09	4.19	4.17	4.02	4.14	4.13	4.36	4.22	4.12	4.23	4.23	4.45	4.34	4.19	4.36	4.33
Europe	0.69	0.69	0.72	0.72	0.71	0.71	0.70	0.74	0.73	0.74	0.73	0.72	0.75	0.75	0.76	0.74
Total Non-OECD	48.37	48.63	49.52	49.36	49.36	49.22	49.70	50.84	50.47	50.77	50.45	51.02	52.18	51.79	52.21	51.80
World	94.81	95.40	95.62	96.70	96.78	96.13	96.63	97.81	97.85	98.51	97.71	97.90	99.12	99.50	99.93	99.12
of which: US50	19.53	19.54	19.50	19.94	19.77	19.69	19.49	20.01	19.90	20.05	19.87	19.64	20.07	20.23	20.03	20.00
Europe 5*	8.13	8.09	8.14	8.34	8.21	8.19	8.24	8.28	8.37	8.26	8.29	8.12	8.25	8.43	8.29	8.27
China	11.56	11.81	12.08	11.64	11.94	11.87	12.51	12.66	12.11	12.35	12.41	12.78	12.92	12.49	12.73	12.73
Japan	4.12	4.44	3.70	3.79	4.18	4.03	4.33	3.64	3.69	4.02	3.92	4.20	3.41	3.54	3.93	3.77
India	4.24	4.65	4.60	4.39	4.55	4.55	4.60	4.73	4.42	4.80	4.64	4.90	5.04	4.74	5.14	4.96
Russia	3.41	3.52	3.41	3.75	3.69	3.59	3.48	3.58	3.82	3.70	3.65	3.54	3.63	3.85	3.79	3.70
Brazil	3.18	3.02	3.07	3.13	3.07	3.07	3.01	3.05	3.16	3.11	3.08	3.05	3.13	3.23	3.18	3.15
Saudi Arabia	3.42	3.02	3.39	3.53	3.11	3.26	2.88	3.35	3.58	3.14	3.24	3.01	3.43	3.59	3.18	3.30
Canada	2.37	2.33	2.32	2.46	2.40	2.38	2.35	2.34	2.49	2.41	2.40	2.35	2.37	2.50	2.42	2.41
Korea	2.47	2.66	2.55	2.60	2.72	2.63	2.69	2.56	2.62	2.72	2.65	2.69	2.58	2.59	2.72	2.65
Mexico	2.01	2.05	2.02	2.01	2.03	2.03	1.96	1.98	1.94	2.05	1.98	1.96	1.97	1.95	2.03	1.98
Iran	1.84	1.84	1.82	1.79	1.82	1.82	1.84	1.82	1.79	1.81	1.82	1.84	1.87	1.83	1.84	1.84
Total	66.27	66.98	66.60	67.37	67.48	67.11	67.38	68.00	67.89	68.43	67.93	68.07	68.68	68.97	69.26	68.75
% of World	69.9%	70.2%	69.7%	69.7%	69.7%	69.8%	69.7%	69.5%	69.4%	69.5%	69.5%	69.5%	69.3%	69.3%	69.3%	69.4%
Annual Change (% per annum)																
Americas	1.6	0.7	0.5	0.4	1.5	0.8	-0.5	2.0	-0.3	1.3	0.6	0.6	0.4	1.4	-0.1	0.6
Europe	2.2	0.7	1.9	1.1	2.6	1.5	2.0	2.3	1.0	0.7	1.5	-0.5	0.4	0.8	0.6	0.3
Asia Oceania	0.1	-1.3	1.1	1.2	2.1	0.8	-0.1	0.8	-0.1	-1.2	-0.2	-1.5	-2.4	-1.9	-1.0	-1.7
Total OECD	1.5	0.3	1.0	0.8	1.9	1.0	0.3	1.9	0.1	0.7	0.7	-0.1	-0.1	0.7	-0.1	0.1
Asia	5.9	6.1	3.8	1.5	2.9	3.5	3.5	4.1	3.2	4.2	3.7	3.3	3.2	3.7	3.8	3.5
Middle East	-0.6	1.0	-1.5	-1.7	-3.0	-1.4	0.6	0.6	1.3	2.1	1.2	2.6	2.2	1.5	1.6	2.0
Americas	-2.1	-2.5	-2.3	-1.7	-2.6	-2.3	-0.3	-0.1	0.3	0.9	0.2	1.2	1.9	1.8	1.8	1.7
FSU	-1.9	7.7	-0.1	4.3	6.2	4.4	0.1	4.3	1.9	0.2	1.6	1.7	1.2	0.9	1.5	1.4
Africa	4.0	2.1	2.2	0.1	-0.5	0.9	4.1	1.1	2.4	2.1	2.4	2.0	2.9	1.8	3.0	2.4
Europe	3.9	4.2	5.9	2.9	2.0	3.7	1.5	2.0	1.7	3.6	2.2	1.9	1.5	2.0	2.9	1.9
Total Non-OECD	2.6	3.8	1.6	0.7	1.2	1.7	2.2	2.7	2.2	2.8	2.5	2.6	2.6	2.6	2.9	2.7
World	2.1	2.1	1.3	0.7	1.5	1.4	1.3	2.3	1.2	1.8	1.6	1.3	1.3	1.7	1.4	1.4
Annual Change (mb/d)																
Americas	0.39	0.18	0.11	0.11	0.36	0.19	-0.12	0.49	-0.08	0.32	0.16	0.15	0.10	0.36	-0.03	0.14
Europe	0.29	0.09	0.26	0.16	0.35	0.21	0.27	0.32	0.14	0.10	0.21	-0.07	0.05	0.12	0.08	0.05
Asia Oceania	0.01	-0.11	0.09	0.09	0.17	0.06	-0.01	0.06	-0.01	-0.10	-0.02	-0.13	-0.18	-0.15	-0.08	-0.14
Total OECD	0.69	0.16	0.46	0.37	0.89	0.47	0.15	0.87	0.05	0.32	0.35	-0.04	-0.04	0.33	-0.03	0.06
Asia	1.33	1.42	0.92	0.36	0.71	0.85	0.86	1.02	0.77	1.06	0.93	0.85	0.84	0.93	0.98	0.90
Middle East	-0.05	0.08	-0.13	-0.15	-0.25	-0.11	0.05	0.05	0.11	0.17	0.10	0.21	0.19	0.13	0.13	0.16
Americas	-0.14	-0.16	-0.15	-0.11	-0.17	-0.15	-0.02	-0.01	0.02	0.06	0.01	0.07	0.12	0.12	0.12	0.11
FSU	-0.09	0.33	0.00	0.20	0.29	0.20	0.00	0.20	0.09	0.01	0.08	0.08	0.06	0.05	0.08	0.07
Africa	0.16	0.09	0.09	0.01	-0.02	0.04	0.17	0.05	0.10	0.09	0.10	0.09	0.12	0.08	0.12	0.10
Europe	0.03	0.03	0.04	0.02	0.01	0.03	0.01	0.01	0.01	0.03	0.02	0.01	0.01	0.01	0.02	0.01
Total Non-OECD	1.23	1.78	0.76	0.32	0.57	0.85	1.08	1.32	1.10	1.40	1.23	1.31	1.35	1.32	1.45	1.36
World	1.92	1.94	1.22	0.69	1.45	1.32	1.22	2.19	1.15	1.73	1.58	1.27	1.31	1.65	1.42	1.41
Revisions to Oil Demand from Last Month's Report (mb/d)																
Americas	0.00	0.09	0.07	0.03	0.01	0.05	0.00	-0.01	0.00	-0.01	-0.01	-0.01	0.01	0.01	-0.01	0.00
Europe	0.00	-0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.01	0.00	0.01	0.02	0.00	0.01
Asia Oceania	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.02	-0.04	-0.02	-0.04	-0.04	-0.08	-0.06	-0.06
Total OECD	0.00	0.09	0.07	0.03	0.01	0.05	0.00	-0.02	0.00	-0.05	-0.02	-0.05	-0.01	-0.05	-0.07	-0.05
Asia	0.00	0.01	0.01	0.02	0.00	0.01	0.02	-0.02	0.09	0.00	0.02	0.04	0.05	0.16	0.05	0.07
Middle East	0.00	0.00	0.00	-0.01	0.00	0.00	0.09	0.04	0.05	-0.06	0.03	0.06	0.05	-0.01	-0.05	0.01
Americas	0.01	-0.04	-0.04	-0.06	-0.07	-0.05	-0.03	-0.05	-0.05	-0.06	-0.05	-0.02	-0.01	-0.02	-0.03	-0.02
FSU	0.00	0.00	0.00	0.00	0.00	0.00	0.01	-0.01	-0.01	-0.02	-0.01	0.00	0.00	-0.03	0.00	-0.01
Africa	0.00	0.00	0.00	0.00	0.00	0.00	0.02	-0.02	0.02	0.00	0.00	0.00	0.01	0.01	0.00	0.00
Europe	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	-0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Non-OECD	0.01	-0.03	-0.03	-0.04	-0.07	-0.04	0.12	-0.07	0.09	-0.15	0.00	0.07	0.10	0.11	-0.03	0.06
World	0.01	0.05	0.04	-0.01	-0.06	0.01	0.11	-0.08	0.09	-0.20	-0.02	0.02	0.08	0.06	-0.10	0.02
Revisions to Oil Demand Growth from Last Month's Report (mb/d)																
World	0.00	0.01	0.01	-0.02	-0.04	-0.01	0.06	-0.12	0.10	-0.14	-0.03	-0.09	0.17	-0.02	0.10	0.04

* France, Germany, Italy, Spain and UK

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

										Latest month vs.	
	2015	2016	3Q16	4Q16	1Q17	2Q17	May 17	Jun 17	Jul 17 ²	Jun 17	Jul 16
Americas											
LPG and ethane	3.25	3.27	3.10	3.32	3.50	3.07	3.03	3.14	3.21	0.07	0.12
Naphtha	0.34	0.35	0.34	0.34	0.35	0.36	0.34	0.37	0.36	-0.01	0.01
Motor gasoline	10.89	11.10	11.40	11.00	10.64	11.30	11.39	11.60	11.38	-0.22	-0.03
Jet and kerosene	1.82	1.90	1.99	1.92	1.89	1.97	1.96	2.06	2.06	0.00	0.02
Gasoil/diesel oil	5.22	5.07	5.00	5.20	5.14	5.10	5.20	5.22	4.88	-0.34	0.12
Residual fuel oil	0.55	0.60	0.61	0.60	0.67	0.69	0.71	0.75	0.57	-0.18	-0.12
Other products	2.47	2.44	2.60	2.47	2.28	2.48	2.46	2.49	2.66	0.17	0.16
Total	24.55	24.74	25.05	24.85	24.47	24.97	25.10	25.61	25.11	-0.50	0.29
Europe											
LPG and ethane	1.17	1.21	1.20	1.25	1.25	1.14	1.13	1.08	1.13	0.05	-0.08
Naphtha	1.11	1.11	1.12	1.09	1.27	1.11	1.09	1.11	1.18	0.08	0.04
Motor gasoline	1.89	1.90	2.01	1.86	1.79	1.99	1.98	2.07	2.01	-0.06	0.01
Jet and kerosene	1.33	1.37	1.54	1.32	1.29	1.45	1.42	1.54	1.64	0.11	0.13
Gasoil/diesel oil	6.21	6.29	6.30	6.52	6.32	6.42	6.45	6.62	6.41	-0.21	0.44
Residual fuel oil	0.89	0.88	0.90	0.87	0.89	0.87	0.86	0.88	0.90	0.01	0.00
Other products	1.24	1.28	1.38	1.29	1.09	1.28	1.27	1.39	1.33	-0.06	-0.04
Total	13.83	14.05	14.44	14.19	13.89	14.25	14.19	14.69	14.61	-0.08	0.49
Asia Oceania											
LPG and ethane	0.77	0.83	0.83	0.85	0.89	0.77	0.77	0.74	0.74	0.00	-0.09
Naphtha	1.98	1.96	1.91	2.04	2.14	1.98	1.99	1.97	2.01	0.05	0.19
Motor gasoline	1.54	1.55	1.63	1.56	1.47	1.53	1.54	1.53	1.63	0.10	0.03
Jet and kerosene	0.86	0.90	0.69	1.02	1.17	0.73	0.69	0.69	0.70	0.01	0.04
Gasoil/diesel oil	1.81	1.84	1.78	1.92	1.90	1.90	1.90	1.95	1.90	-0.05	0.20
Residual fuel oil	0.64	0.65	0.60	0.65	0.64	0.51	0.50	0.48	0.54	0.06	-0.12
Other products	0.46	0.40	0.40	0.34	0.35	0.34	0.35	0.31	0.31	0.01	-0.09
Total	8.06	8.12	7.84	8.38	8.56	7.76	7.73	7.67	7.84	0.17	0.16
OECD											
LPG and ethane	5.19	5.31	5.13	5.41	5.64	4.98	4.92	4.97	5.08	0.12	-0.05
Naphtha	3.43	3.42	3.37	3.47	3.76	3.44	3.42	3.45	3.56	0.12	0.23
Motor gasoline	14.32	14.55	15.05	14.42	13.90	14.82	14.91	15.20	15.02	-0.19	0.01
Jet and kerosene	4.01	4.16	4.22	4.27	4.34	4.15	4.07	4.29	4.40	0.12	0.20
Gasoil/diesel oil	13.24	13.20	13.08	13.64	13.36	13.42	13.55	13.78	13.19	-0.59	0.75
Residual fuel oil	2.09	2.14	2.11	2.12	2.20	2.06	2.07	2.11	2.01	-0.10	-0.24
Other products	4.17	4.12	4.38	4.10	3.72	4.11	4.08	4.18	4.30	0.12	0.03
Total	46.44	46.91	47.34	47.42	46.92	46.97	47.03	47.97	47.56	-0.42	0.94

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

North America comprises US 50 states, US territories, Mexico and Canada.

² Latest official OECD submissions (MOS).

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

	2015	2016	3Q16	4Q16	1Q17	2Q17	May 17	Jun 17	Jul 17 ²	Latest month vs.	
										Jun 17	Jul 16
United States³											
LPG and ethane	2.45	2.47	2.32	2.51	2.69	2.36	2.29	2.42	2.45	0.03	0.10
Naphtha	0.22	0.22	0.21	0.22	0.24	0.24	0.24	0.25	0.22	-0.03	0.00
Motor gasoline	9.18	9.32	9.58	9.20	8.95	9.54	9.59	9.77	9.57	-0.19	0.00
Jet and kerosene	1.55	1.62	1.70	1.65	1.61	1.69	1.67	1.76	1.73	-0.04	0.00
Gasoil/diesel oil	4.00	3.88	3.80	3.99	3.95	3.91	3.97	3.97	3.71	-0.26	0.11
Residual fuel oil	0.26	0.33	0.33	0.32	0.37	0.37	0.37	0.42	0.27	-0.15	-0.15
Other products	1.87	1.86	1.99	1.88	1.69	1.91	1.89	1.91	2.07	0.16	0.19
Total	19.53	19.69	19.94	19.77	19.49	20.01	20.02	20.49	20.02	-0.47	0.24
Japan											
LPG and ethane	0.44	0.44	0.43	0.44	0.50	0.40	0.40	0.37	0.37	0.00	-0.07
Naphtha	0.79	0.76	0.71	0.80	0.83	0.75	0.74	0.73	0.70	-0.03	0.01
Motor gasoline	0.89	0.90	0.96	0.90	0.82	0.87	0.87	0.87	0.95	0.08	0.00
Jet and kerosene	0.49	0.50	0.32	0.59	0.73	0.36	0.33	0.32	0.31	-0.01	0.01
Diesel	0.43	0.43	0.43	0.45	0.43	0.41	0.39	0.42	0.43	0.01	0.00
Other gasoil	0.34	0.35	0.30	0.37	0.39	0.32	0.31	0.33	0.31	-0.02	0.01
Residual fuel oil	0.37	0.34	0.32	0.34	0.33	0.27	0.24	0.24	0.28	0.04	-0.06
Other products	0.37	0.31	0.31	0.30	0.30	0.27	0.27	0.25	0.28	0.03	-0.04
Total	4.12	4.03	3.79	4.18	4.33	3.64	3.55	3.52	3.64	0.11	-0.14
Germany											
LPG and ethane	0.10	0.10	0.10	0.09	0.11	0.10	0.11	0.08	0.09	0.01	-0.01
Naphtha	0.39	0.38	0.39	0.39	0.44	0.36	0.36	0.32	0.40	0.07	-0.04
Motor gasoline	0.42	0.42	0.44	0.42	0.41	0.45	0.45	0.46	0.43	-0.03	0.00
Jet and kerosene	0.18	0.20	0.23	0.20	0.20	0.21	0.19	0.22	0.23	0.01	0.00
Diesel	0.74	0.76	0.80	0.76	0.75	0.78	0.78	0.81	0.78	-0.02	-0.01
Other gasoil	0.36	0.36	0.27	0.39	0.39	0.36	0.39	0.36	0.35	-0.01	0.13
Residual fuel oil	0.11	0.09	0.09	0.10	0.10	0.07	0.05	0.07	0.08	0.01	0.00
Other products	0.06	0.10	0.11	0.10	0.08	0.11	0.11	0.11	0.12	0.01	0.02
Total	2.37	2.41	2.42	2.44	2.49	2.44	2.45	2.43	2.48	0.05	0.08
Italy											
LPG and ethane	0.11	0.11	0.10	0.12	0.13	0.10	0.10	0.09	0.10	0.00	0.01
Naphtha	0.08	0.09	0.09	0.08	0.11	0.11	0.10	0.13	0.12	-0.01	0.03
Motor gasoline	0.18	0.18	0.19	0.17	0.16	0.18	0.17	0.20	0.19	-0.01	-0.01
Jet and kerosene	0.09	0.10	0.11	0.09	0.08	0.11	0.11	0.13	0.13	0.00	0.01
Diesel	0.47	0.46	0.47	0.45	0.45	0.47	0.48	0.50	0.48	-0.02	0.00
Other gasoil	0.09	0.09	0.10	0.10	0.08	0.08	0.08	0.09	0.09	-0.01	-0.01
Residual fuel oil	0.08	0.06	0.07	0.06	0.07	0.06	0.06	0.07	0.08	0.01	0.02
Other products	0.18	0.16	0.16	0.18	0.15	0.16	0.16	0.16	0.17	0.00	0.00
Total	1.27	1.25	1.29	1.24	1.23	1.28	1.28	1.37	1.35	-0.02	0.04
France											
LPG and ethane	0.13	0.12	0.11	0.12	0.14	0.10	0.10	0.09	0.09	0.00	-0.02
Naphtha	0.12	0.10	0.11	0.07	0.12	0.10	0.10	0.10	0.11	0.01	0.00
Motor gasoline	0.16	0.17	0.19	0.17	0.16	0.19	0.19	0.20	0.19	-0.01	0.00
Jet and kerosene	0.15	0.15	0.17	0.14	0.15	0.16	0.16	0.17	0.19	-0.02	0.02
Diesel	0.71	0.70	0.72	0.71	0.71	0.73	0.73	0.75	0.72	-0.03	0.01
Other gasoil	0.26	0.25	0.24	0.28	0.28	0.21	0.20	0.21	0.23	0.02	0.02
Residual fuel oil	0.04	0.04	0.04	0.05	0.06	0.05	0.06	0.05	0.06	0.01	0.01
Other products	0.12	0.12	0.13	0.10	0.09	0.14	0.13	0.17	0.13	-0.04	0.00
Total	1.69	1.66	1.71	1.63	1.72	1.68	1.67	1.75	1.73	-0.02	0.05
United Kingdom											
LPG and ethane	0.14	0.16	0.16	0.16	0.16	0.14	0.13	0.15	0.13	-0.02	-0.04
Naphtha	0.03	0.03	0.03	0.03	0.03	0.04	0.04	0.04	0.04	0.00	0.01
Motor gasoline	0.29	0.29	0.29	0.29	0.28	0.30	0.29	0.30	0.29	-0.01	0.01
Jet and kerosene	0.31	0.31	0.32	0.31	0.32	0.31	0.30	0.31	0.33	0.02	0.04
Diesel	0.50	0.52	0.51	0.53	0.49	0.53	0.49	0.53	0.52	-0.01	0.01
Other gasoil	0.13	0.13	0.15	0.12	0.12	0.14	0.13	0.14	0.13	-0.01	0.00
Residual fuel oil	0.03	0.03	0.03	0.03	0.03	0.02	0.02	0.03	0.03	0.00	0.00
Other products	0.11	0.11	0.11	0.11	0.11	0.12	0.11	0.12	0.12	0.00	0.00
Total	1.55	1.59	1.60	1.58	1.53	1.59	1.52	1.63	1.59	-0.04	0.04
Canada											
LPG and ethane	0.35	0.37	0.36	0.39	0.39	0.32	0.36	0.32	0.37	0.04	0.04
Naphtha	0.09	0.10	0.10	0.10	0.09	0.09	0.07	0.10	0.11	0.01	0.00
Motor gasoline	0.81	0.85	0.88	0.84	0.80	0.86	0.87	0.90	0.90	0.00	0.00
Jet and kerosene	0.13	0.14	0.15	0.13	0.13	0.14	0.14	0.14	0.18	0.03	0.02
Diesel	0.31	0.30	0.30	0.29	0.30	0.29	0.29	0.29	0.28	-0.01	-0.02
Other gasoil	0.26	0.24	0.26	0.27	0.26	0.26	0.28	0.30	0.28	-0.02	0.08
Residual fuel oil	0.05	0.04	0.04	0.04	0.05	0.06	0.08	0.06	0.04	-0.03	0.00
Other products	0.36	0.34	0.36	0.35	0.33	0.32	0.32	0.33	0.38	0.05	-0.01
Total	2.37	2.38	2.46	2.40	2.35	2.34	2.41	2.45	2.52	0.08	0.12

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	Jul 17	Aug 17	Sep 17
OPEC											
Crude Oil											
Saudi Arabia	10.42			9.97	9.98				10.03	9.96	9.94
Iran	3.55			3.77	3.83				3.81	3.84	3.84
Iraq	4.42			4.50	4.50				4.50	4.49	4.52
UAE	3.05			2.93	2.93				2.94	2.93	2.93
Kuwait	2.88			2.71	2.70				2.70	2.70	2.71
Neutral Zone	0.00			0.00	0.00				0.00	0.00	0.00
Qatar	0.65			0.62	0.61				0.61	0.61	0.61
Angola	1.71			1.64	1.67				1.67	1.68	1.66
Nigeria	1.47			1.49	1.65				1.64	1.66	1.66
Libya	0.39			0.71	0.94				1.01	0.88	0.92
Algeria	1.11			1.06	1.06				1.07	1.06	1.06
Equatorial Guinea	0.14			0.12	0.13				0.13	0.12	0.13
Ecuador	0.55			0.53	0.54				0.54	0.54	0.54
Venezuela	2.24			2.05	1.99				2.03	1.99	1.94
Gabon	0.23			0.20	0.20				0.22	0.18	0.19
Total Crude Oil	32.80			32.31	32.73				32.90	32.64	32.65
Total NGLs ¹	6.81	6.91	7.04	6.90	6.94	6.92	7.02	7.07	6.94	6.94	6.94
Total OPEC^{2,3}	39.61			39.22	39.67				39.84	39.58	39.59
NON-OPEC^{2,3}											
OECD											
Americas	19.48	20.01	21.23	19.80	19.91	20.39	20.99	20.94	20.25	19.87	19.60
United States	12.53	13.01	14.12	13.00	12.92	13.41	13.82	14.10	13.16	12.84	12.74
Mexico	2.47	2.26	2.13	2.31	2.22	2.19	2.16	2.14	2.28	2.20	2.16
Canada	4.47	4.74	4.98	4.48	4.77	4.79	5.00	4.70	4.80	4.82	4.69
Chile	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Europe	3.52	3.55	3.62	3.49	3.43	3.63	3.72	3.66	3.48	3.37	3.46
UK	1.03	1.06	1.18	1.04	1.00	1.14	1.20	1.20	1.05	0.95	1.00
Norway	1.99	2.00	1.95	2.00	1.94	1.99	2.02	1.96	1.96	1.92	1.95
Others	0.49	0.49	0.48	0.45	0.49	0.50	0.49	0.49	0.47	0.50	0.50
Asia Oceania	0.43	0.41	0.43	0.40	0.42	0.42	0.42	0.43	0.42	0.42	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	0.08	0.07	0.07	0.07	0.08	0.08	0.07
Total OECD	23.42	23.97	25.29	23.69	23.76	24.44	25.13	25.03	24.14	23.66	23.47
NON-OECD											
Former USSR	14.24	14.37	14.45	14.35	14.26	14.41	14.50	14.49	14.36	14.19	14.21
Russia	11.34	11.35	11.30	11.34	11.29	11.31	11.31	11.30	11.32	11.28	11.28
Others	2.90	3.02	3.15	3.02	2.96	3.10	3.19	3.19	3.04	2.91	2.93
Asia²	7.57	7.35	7.07	7.37	7.32	7.25	7.18	7.10	7.36	7.28	7.30
China	3.99	3.86	3.71	3.91	3.84	3.80	3.75	3.73	3.87	3.80	3.84
Malaysia	0.71	0.71	0.70	0.69	0.72	0.72	0.71	0.70	0.70	0.73	0.73
India	0.85	0.85	0.83	0.85	0.85	0.84	0.85	0.83	0.87	0.85	0.84
Indonesia	0.88	0.85	0.80	0.85	0.84	0.83	0.82	0.81	0.84	0.84	0.84
Others	1.15	1.07	1.03	1.07	1.06	1.05	1.05	1.04	1.08	1.06	1.06
Europe	0.14	0.13	0.12	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
Americas²	4.49	4.58	4.76	4.54	4.56	4.66	4.64	4.71	4.55	4.52	4.61
Brazil	2.61	2.77	2.97	2.74	2.75	2.85	2.84	2.92	2.74	2.70	2.81
Argentina	0.61	0.58	0.58	0.56	0.58	0.58	0.58	0.58	0.58	0.58	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	0.37	0.36	0.38	0.38	0.36
Middle East^{2,4}	1.26	1.24	1.25	1.24	1.23	1.23	1.23	1.24	1.24	1.23	1.23
Oman	1.01	0.98	0.99	0.98	0.98	0.98	0.98	0.98	0.97	0.98	0.98
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	0.02	0.03	0.03	0.03	0.02	0.02	0.03	0.03	0.03
Others	0.20	0.21	0.22	0.22	0.21	0.20	0.21	0.22	0.22	0.20	0.20
Africa	1.66	1.71	1.80	1.68	1.76	1.73	1.82	1.81	1.75	1.75	1.78
Egypt	0.67	0.63	0.61	0.64	0.63	0.63	0.62	0.61	0.63	0.63	0.63
Others	1.00	1.08	1.19	1.05	1.13	1.10	1.20	1.19	1.12	1.12	1.15
Total Non-OECD	29.36	29.37	29.46	29.33	29.26	29.41	29.49	29.47	29.40	29.10	29.27
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	2.41	2.54	2.45	2.78	2.47	2.06	2.55	2.78	2.73	2.84
TOTAL NON-OPEC	57.38	58.05	59.60	57.76	58.10	58.60	59.00	59.37	58.61	57.79	57.87
TOTAL SUPPLY	96.99			96.98	97.77				98.46	97.37	97.46

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 STOCKS¹ AND QUARTERLY STOCK CHANGES

	RECENT MONTHLY STOCKS ²					PRIOR YEARS' STOCKS ²			STOCK CHANGES			
	in Million Barrels					in Million Barrels			in mb/d			
	Apr2017	May2017	Jun2017	Jul2017	Aug2017*	Aug2014	Aug2015	Aug2016	3Q2016	4Q2016	1Q2017	2Q2017
OECD Americas												
Crude	676.2	670.6	656.3	643.8	629.8	481.7	582.6	642.0	-0.31	0.24	0.56	-0.44
Motor Gasoline	275.9	275.1	268.7	262.9	258.9	245.4	249.6	262.6	-0.15	0.11	0.02	-0.03
Middle Distillate	233.2	230.3	224.4	222.2	219.7	198.6	228.4	234.7	0.18	0.01	-0.13	-0.02
Residual Fuel Oil	46.8	45.9	41.1	39.9	40.7	46.0	45.1	46.8	-0.02	0.03	0.00	-0.08
Total Products ³	752.4	761.9	753.2	756.2	769.2	716.6	761.4	801.3	0.31	-0.29	-0.43	0.19
Total ⁴	1607.8	1619.4	1595.3	1589.5	1586.2	1374.6	1535.0	1638.1	0.11	-0.24	0.10	-0.13
OECD Europe												
Crude	353.4	359.3	365.4	365.7	355.1	312.0	343.2	354.6	-0.04	-0.15	0.18	0.06
Motor Gasoline	99.8	94.5	92.2	90.6	91.1	88.6	85.3	92.6	-0.07	0.09	0.02	-0.09
Middle Distillate	320.9	308.4	297.5	304.3	304.8	268.5	300.0	326.3	0.01	-0.22	0.06	-0.15
Residual Fuel Oil	64.9	63.7	64.7	63.0	61.3	67.7	71.6	71.2	-0.05	-0.01	-0.03	-0.02
Total Products ³	598.6	572.1	557.7	561.8	561.3	520.2	554.9	589.3	-0.15	-0.11	0.16	-0.33
Total ⁴	1026.2	1005.5	995.5	1002.8	989.9	903.6	966.4	1013.3	-0.15	-0.27	0.33	-0.26
OECD Asia Oceania												
Crude	193.4	198.4	189.7	197.4	192.7	180.3	204.7	187.5	-0.01	-0.11	-0.03	0.01
Motor Gasoline	24.4	26.2	25.1	22.8	24.0	22.6	23.6	24.3	-0.03	0.00	-0.01	0.02
Middle Distillate	66.1	66.6	63.3	64.1	68.6	69.4	70.2	75.7	0.07	-0.11	-0.05	0.04
Residual Fuel Oil	18.8	20.6	20.9	21.6	20.6	24.3	21.2	19.8	0.00	-0.02	0.01	0.03
Total Products ³	165.1	169.5	169.7	175.6	180.8	179.8	178.3	192.5	0.13	-0.27	-0.08	0.16
Total ⁴	420.3	432.4	424.1	436.9	439.0	431.1	449.1	442.1	0.13	-0.39	-0.13	0.23
Total OECD												
Crude	1223.0	1228.3	1211.4	1206.8	1177.6	974.1	1130.5	1184.1	-0.36	-0.01	0.71	-0.37
Motor Gasoline	400.1	395.7	386.0	376.3	374.1	356.5	358.6	379.4	-0.25	0.20	0.03	-0.10
Middle Distillate	620.2	605.3	585.2	590.6	593.0	536.5	598.6	636.7	0.27	-0.32	-0.12	-0.13
Residual Fuel Oil	130.5	130.2	126.8	124.5	122.6	137.9	137.9	137.8	-0.06	0.01	-0.02	-0.07
Total Products ³	1516.1	1503.6	1480.6	1493.6	1511.3	1416.6	1494.5	1583.1	0.29	-0.66	-0.35	0.02
Total ⁴	3054.3	3057.3	3014.9	3029.2	3015.0	2709.2	2950.5	3093.5	0.09	-0.90	0.31	-0.16

OECD GOVERNMENT-CONTROLLED STOCKS⁵ AND QUARTERLY STOCK CHANGES

	RECENT MONTHLY STOCKS ²					PRIOR YEARS' STOCKS ²			STOCK CHANGES			
	in Million Barrels					in Million Barrels			in mb/d			
	Apr2017	May2017	Jun2017	Jul2017	Aug2017*	Aug2014	Aug2015	Aug2016	3Q2016	4Q2016	1Q2017	2Q2017
OECD Americas												
Crude	688.8	684.5	679.2	678.9	678.6	691.0	695.1	695.1	0.00	0.00	-0.04	-0.14
Products	2.0	2.0	2.0	2.0	2.0	1.5	2.0	2.0	0.00	0.00	0.00	0.00
OECD Europe												
Crude	206.1	206.2	208.4	208.3	208.5	208.4	207.1	205.9	0.01	-0.01	0.00	0.03
Products	275.7	273.0	272.2	268.5	268.2	259.3	257.0	269.6	0.03	0.05	0.02	-0.03
OECD Asia Oceania												
Crude	385.1	385.0	385.0	385.0	385.0	387.6	383.3	385.4	0.00	-0.01	0.00	0.01
Products	38.0	38.0	38.0	38.0	38.0	31.0	33.7	35.9	0.00	0.01	0.01	0.00
Total OECD												
Crude	1280.0	1275.7	1272.6	1272.2	1272.1	1287.1	1285.5	1286.4	0.01	-0.02	-0.04	-0.09
Products	315.6	313.0	312.2	308.4	308.1	291.8	292.6	307.5	0.03	0.06	0.03	-0.03
Total ⁴	1598.1	1592.6	1588.5	1583.9	1583.8	1583.1	1582.2	1596.2	0.04	0.04	0.00	-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 COUNTRIES¹
('millions of barrels' and 'days')

	End June 2016		End September 2016		End December 2016		End March 2017		End June 2017 ³	
	Stock	Days Fwd ²	Stock	Days Fwd	Stock	Days Fwd	Stock	Days Fwd	Stock	Days Fwd
	Level	Demand	Level	Demand	Level	Demand	Level	Demand	Level	Demand
OECD Americas										
Canada	175.2	71	184.8	77	183.3	78	184.9	79	182.7	-
Chile	10.7	32	12.2	37	11.2	33	11.9	35	11.2	-
Mexico	48.8	24	45.7	23	47.3	24	47.5	24	49.2	-
United States ⁴	2051.4	103	2053.2	104	2031.6	104	2034.5	102	2011.2	-
Total ⁴	2308.2	92	2318.0	93	2295.5	94	2301.0	92	2276.4	92
OECD Asia Oceania										
Australia	38.2	35	36.7	33	33.9	30	33.3	28	35.4	-
Israel	-	-	-	-	-	-	-	-	-	-
Japan	573.5	151	586.6	140	562.5	130	546.3	150	566.3	-
Korea	238.0	92	239.3	88	230.3	86	237.8	93	236.4	-
New Zealand	9.2	57	8.7	50	8.9	48	8.2	48	9.0	-
Total	859.0	110	871.3	104	835.6	98	825.6	106	847.1	109
OECD Europe⁵										
Austria	22.5	81	21.6	81	22.8	88	24.3	94	21.8	-
Belgium	52.4	81	50.5	74	47.4	72	45.5	72	44.2	-
Czech Republic	22.8	123	22.9	111	21.9	117	22.5	102	21.4	-
Denmark	30.7	187	29.7	187	30.5	201	27.2	169	27.3	-
Estonia	2.6	84	2.4	81	2.4	72	2.6	94	2.7	-
Finland	45.4	219	44.9	219	42.3	220	44.8	224	43.4	-
France	167.5	98	166.9	102	162.2	94	167.7	100	165.4	-
Germany	288.2	119	285.0	117	285.4	115	280.7	115	277.1	-
Greece	32.6	102	30.8	99	33.9	115	35.1	118	32.4	-
Hungary	22.7	137	23.6	148	24.5	151	24.3	144	25.2	-
Ireland	12.3	84	11.7	74	11.8	78	12.8	86	12.1	-
Italy	120.9	94	127.4	102	124.3	101	134.4	105	133.7	-
Latvia	3.9	90	4.4	118	2.4	69	2.4	58	3.3	-
Luxembourg	0.8	15	0.7	12	0.7	12	0.7	12	0.7	-
Netherlands	159.6	158	154.2	158	152.6	155	154.7	157	154.5	-
Norway	26.5	116	23.2	96	22.9	113	22.9	107	22.0	-
Poland	65.4	106	68.4	113	67.4	116	69.8	110	69.5	-
Portugal	24.9	100	23.2	101	21.9	98	26.5	110	24.0	-
Slovak Republic	12.4	134	11.3	138	12.1	147	12.8	151	13.0	-
Slovenia	4.7	86	4.4	81	4.5	96	4.9	94	5.1	-
Spain	135.9	103	139.4	107	129.0	101	136.5	106	128.7	-
Sweden	33.3	101	35.7	109	33.5	107	51.5	159	52.3	-
Switzerland	35.8	166	36.5	156	35.2	158	35.5	162	34.5	-
Turkey	78.0	76	76.5	81	79.1	100	81.4	83	84.0	-
United Kingdom	82.4	51	78.1	49	82.3	54	81.2	51	81.7	-
Total	1484.1	103	1473.5	104	1452.9	105	1502.8	105	1479.8	106
Total OECD	4651.3	98	4662.8	98	4584.1	98	4629.4	99	4603.3	99
DAYS OF IEA Net Imports⁶ -	202	-	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 entropot 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 June 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 <i>Millions of Barrels</i>	Industry	Total	Government ¹ controlled <i>Days of Fwd. Demand²</i>	Industry
2Q2014	4232	1581	2651	92	34	58
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	4615	1595	3020	100	35	66
2Q2016	4651	1592	3059	98	34	65
3Q2016	4663	1596	3067	98	34	65
4Q2016	4584	1600	2984	98	34	64
1Q2017	4629	1600	3030	99	34	65
2Q2017	4603	1588	3015	99	34	65

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 2Q2017 (when latest forecasts are used).

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

	2014	2015	2016	3Q16	4Q16	1Q17	2Q17	May 17	Jun 17	Jul 17	Year Earlier	
											Jul 16	change
Saudi Light & Extra Light												
Americas	0.65	0.63	0.69	0.69	0.62	0.70	0.74	0.86	0.71	0.57	0.88	-0.31
Europe	0.84	0.78	0.79	0.78	0.87	0.64	0.78	0.75	0.74	0.70	0.72	-0.03
Asia Oceania	1.17	1.25	1.40	1.22	1.56	1.65	1.49	1.48	1.27	1.66	1.18	0.48
Saudi Medium												
Americas	0.36	0.37	0.44	0.44	0.48	0.43	0.35	0.30	0.31	0.31	0.41	-0.09
Europe	0.03	0.03	0.01	0.03	0.01	0.01	0.00	-	-	-	0.02	-
Asia Oceania	0.45	0.44	0.41	0.42	0.34	0.33	0.33	0.31	0.35	0.37	0.42	-0.05
Canada Heavy												
Americas	1.71	1.90	2.04	2.12	2.07	2.31	2.25	2.22	2.28	2.15	2.07	0.07
Europe	0.00	0.01	0.01	0.02	0.01	0.01	-	-	-	0.04	-	-
Asia Oceania	0.00	-	-	-	-	-	-	-	-	-	-	-
Iraqi Basrah Light²												
Americas	0.35	0.17	0.42	0.47	0.55	0.53	0.67	0.65	0.63	0.63	0.43	0.20
Europe	0.50	0.72	0.81	0.90	0.67	0.76	0.84	0.86	0.87	0.73	0.87	-0.14
Asia Oceania	0.24	0.41	0.46	0.44	0.41	0.42	0.39	0.29	0.46	0.52	0.41	0.12
Kuwait Blend												
Americas	0.27	0.13	0.14	0.18	0.14	0.19	0.18	0.23	0.30	0.13	0.26	-0.14
Europe	0.09	0.13	0.19	0.22	0.26	0.20	0.22	0.21	0.22	0.27	0.18	0.10
Asia Oceania	0.62	0.65	0.66	0.68	0.60	0.71	0.68	0.75	0.61	0.67	0.71	-0.04
Iranian Light												
Americas	-	-	-	-	-	-	-	-	-	-	-	-
Europe	0.10	0.09	0.21	0.33	0.24	0.38	0.25	0.26	0.21	0.22	0.40	-0.18
Asia Oceania	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.01	0.01	0.01	-	-
Iranian Heavy³												
Americas	-	-	-	-	-	-	-	-	-	-	-	-
Europe	0.01	0.02	0.21	0.27	0.38	0.41	0.52	0.45	0.71	0.68	0.24	0.44
Asia Oceania	0.28	0.27	0.52	0.58	0.59	0.73	0.43	0.42	0.44	0.52	0.55	-0.03
BFOE												
Americas	0.01	0.01	0.02	0.02	0.03	0.02	0.01	0.04	0.00	0.02	0.02	0.00
Europe	0.56	0.49	0.44	0.48	0.42	0.39	0.41	0.37	0.47	0.49	0.40	0.08
Asia Oceania	0.07	0.06	0.05	-	0.08	0.09	0.06	-	0.14	0.10	-	-
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	0.70	0.76	0.69	0.89	-0.20
Asia Oceania	0.02	0.06	0.03	0.01	0.04	0.05	0.09	0.08	0.07	0.07	-	-
Venezuelan 22 API and heavier												
Americas	0.64	0.67	0.63	0.65	0.66	0.52	0.61	0.53	0.61	0.42	0.75	-0.33
Europe	0.08	0.09	0.05	0.04	0.05	0.06	0.04	0.02	0.05	0.01	0.04	-0.03
Asia Oceania	-	-	-	-	-	-	-	-	-	-	-	-
Mexican Maya												
Americas	0.66	0.50	0.53	0.52	0.53	0.54	0.63	0.67	0.68	0.61	0.56	0.05
Europe	0.14	0.15	0.17	0.17	0.20	0.20	0.18	0.18	0.12	0.20	0.18	0.01
Asia Oceania	-	0.01	0.05	0.06	0.07	0.06	0.07	0.04	0.06	0.06	0.10	-0.03
Russian Urals												
Americas	-	-	-	-	-	-	-	-	-	-	-	-
Europe	1.58	1.61	1.72	1.73	1.77	1.64	1.57	1.50	1.65	1.73	1.75	-0.02
Asia Oceania	-	-	-	-	-	-	0.02	-	0.02	0.03	-	-
Cabinda and Other Angola												
North America	0.04	0.06	0.16	0.20	0.13	0.04	-	-	-	0.16	0.28	-0.13
Europe	0.33	0.42	0.27	0.43	0.16	0.09	0.07	0.03	0.10	0.16	0.49	-0.34
Pacific	0.01	0.02	0.01	-	-	-	0.01	0.03	-	0.03	-	-
Nigerian Light⁴												
Americas	0.00	0.02	0.07	0.08	0.07	0.02	0.04	0.13	-	0.13	0.06	0.06
Europe	0.55	0.57	0.39	0.33	0.31	0.36	0.46	0.49	0.41	0.38	0.44	-0.06
Asia Oceania	0.02	-	0.01	0.01	0.03	0.02	0.03	0.06	0.03	0.03	-	-
Libya Light and Medium												
Americas	-	-	-	-	-	-	-	-	-	0.10	-	-
Europe	0.31	0.22	0.20	0.17	0.30	0.41	0.37	0.41	0.43	0.60	0.22	0.38
Asia Oceania	0.02	0.01	0.02	0.03	0.01	0.04	0.04	0.06	0.04	-	-	-

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	May 17	Jun 17	Jul 17	Year Earlier	
											Jul 16	% change
Crude Oil												
Americas	4201	4026	4542	4867	4288	4558	4664	4637	4725	4400	5062	-13%
Europe	8679	9505	9253	9647	9566	9462	9606	9642	9697	9974	10096	-1%
Asia Oceania	6366	6573	6669	6599	6664	7006	6450	6745	5934	7026	6408	10%
Total OECD	19246	20103	20464	21112	20518	21026	20719	21024	20356	21400	21566	-1%
LPG												
Americas	12	10	20	23	18	23	16	25	11	11	31	-65%
Europe	433	418	444	469	468	499	417	465	399	437	514	-15%
Asia Oceania	531	518	566	547	551	603	586	558	584	549	620	-12%
Total OECD	975	947	1030	1039	1036	1126	1020	1048	995	996	1165	-14%
Naphtha												
Americas	20	14	10	4	18	19	19	22	14	12	6	87%
Europe	352	345	348	388	354	392	365	396	340	308	359	-14%
Asia Oceania	952	950	905	945	893	980	976	967	983	944	959	-2%
Total OECD	1324	1309	1263	1337	1265	1391	1361	1384	1337	1264	1324	-5%
Gasoline³												
Americas	665	670	735	918	689	575	890	972	873	759	953	-20%
Europe	117	105	100	41	209	150	131	165	165	188	-38	na
Asia Oceania	75	93	84	72	107	119	97	104	102	66	81	-18%
Total OECD	857	868	919	1031	1004	844	1118	1241	1140	1013	997	2%
Jet & Kerosene												
Americas	100	141	169	180	190	148	144	121	121	134	200	-33%
Europe	455	445	502	569	466	460	475	510	502	577	545	6%
Asia Oceania	60	66	74	49	89	112	68	66	53	58	52	11%
Total OECD	615	651	745	797	746	719	687	697	677	769	797	-3%
Gasoil/Diesel												
Americas	95	76	67	84	84	81	37	43	43	49	55	-11%
Europe	1043	1161	1339	1277	1275	1390	1351	1421	1352	1457	1293	13%
Asia Oceania	152	158	195	166	219	204	206	189	192	195	160	22%
Total OECD	1291	1395	1600	1528	1579	1675	1593	1654	1587	1701	1507	13%
Heavy Fuel Oil												
Americas	132	116	149	158	147	141	103	98	133	165	180	-8%
Europe	596	537	469	460	416	261	296	195	464	264	444	-41%
Asia Oceania	200	173	153	155	123	145	180	189	167	118	182	-36%
Total OECD	928	826	770	774	687	546	580	482	764	546	806	-32%
Other Products												
Americas	671	675	652	663	605	705	694	687	785	638	721	-11%
Europe	692	701	770	743	775	1111	975	1014	757	843	655	29%
Asia Oceania	399	343	344	351	320	301	244	265	242	184	376	-51%
Total OECD	1762	1719	1766	1757	1701	2117	1913	1967	1784	1665	1751	-5%
Total Products												
Americas	1695	1702	1802	2031	1751	1692	1903	1968	1980	1768	2146	-18%
Europe	3687	3712	3973	3947	3963	4263	4011	4167	3980	4074	3772	8%
Asia Oceania	2369	2301	2321	2285	2303	2464	2357	2338	2323	2114	2430	-13%
Total OECD	7751	7715	8095	8263	8017	8419	8271	8472	8283	7955	8347	-5%
Total Oil												
Americas	5896	5728	6344	6898	6039	6250	6567	6605	6705	6168	7208	-14%
Europe	12366	13216	13226	13593	13528	13725	13617	13808	13678	14048	13867	1%
Asia Oceania	8735	8874	8990	8884	8967	9471	8807	9083	8257	9140	8838	3%
Total OECD	26997	27818	28559	29376	28534	29445	28990	29496	28640	29355	29913	-2%

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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