

# Oil Market Report

**13 April 2018**

## HIGHLIGHTS

- **Our forecast for global oil demand growth for 2018 is unchanged from last month's report at 1.5 mb/d.** OECD demand in 1Q18 was revised up by 315 kb/d, partly due to cold weather in the US and the start-up of a petrochemical project. There are offsetting reductions to growth in 2Q and 3Q.
- **Non-OECD demand in 1Q18, by contrast, has been revised down by 260 kb/d** due to weak Chinese data. India's early 2018 growth is strong at 380 kb/d y-o-y in the first two months.
- **Global oil supply eased by 120 kb/d in March, to 97.8 mb/d, after OPEC and non-OPEC producers deepened their cuts to 2.4 mb/d.** Output was nevertheless 1.4 mb/d higher than a year ago mainly due to higher US production. Non-OPEC supply is set to grow by 1.8 mb/d in 2018.
- **OPEC crude production fell by 200 kb/d in March, to 31.83 mb/d, on further declines in Venezuela and lower output in Africa.** Compliance with the output deal reached 163%. The call on OPEC crude and stocks will hover around 32.5 mb/d for the rest of this year.
- **OECD commercial stocks declined by 26 mb to 2 841 mb and were just 30 mb above the five-year average at end February.** The average could be reached by May, on the assumption of tight balances in 2Q18. Product stocks are already in deficit.
- **ICE Brent futures averaged \$66.72/bbl in March and in recent days have risen above \$70/bbl to levels not seen since December 2014.** Tension in the Middle East is a key factor alongside tighter compliance with the OPEC/non OPEC output deal.
- **After 1Q18's peak refinery maintenance in Europe and the US, global throughput will see a seasonal ramp-up in 2Q18.** From March to July, runs will increase by 3.1 mb/d, but supply of refined products will lag behind demand growth.

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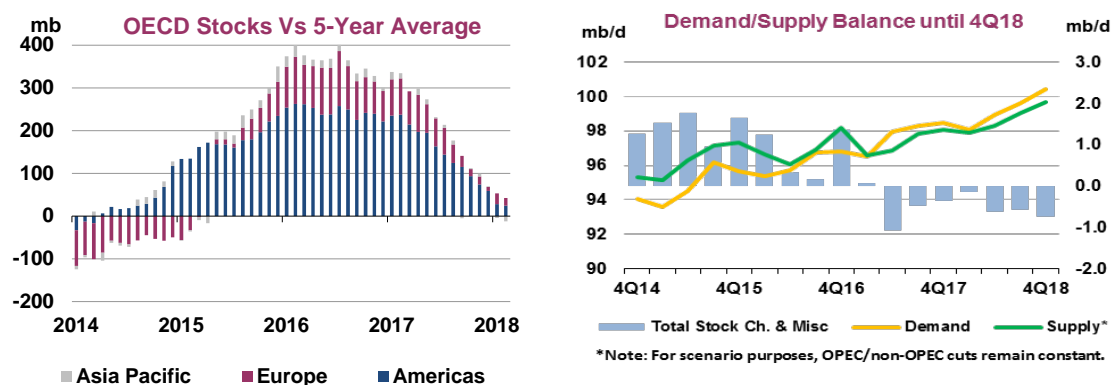
## Mission accomplished?

Political uncertainty in the Middle East has returned to the fore in recent days. As we write, uncertainty about the next steps in Syria and Yemen have helped propel the price of Brent crude oil back above \$70/bbl. It remains to be seen if recently elevated prices are sustained and if so what are the implications for the market demand and supply dynamics.

In the meantime, our overall view of global demand and supply growth in 2018 is unchanged from last month. For demand, early in 2018 stronger growth in the US was partially offset by weaker growth in China. India has seen a strong start to the year. Globally, we expect oil demand to grow by 1.5 mb/d in 2018. However, there is an element of risk to this outlook from the current tension on trade tariffs between China and the US, and we look at this issue in the demand section of this *Report*.

For supply, our outlook for non-OPEC growth remains unchanged at 1.8 mb/d. Data for US production show that in January output fell by a modest 24 kb/d, much in line with our forecast with adverse weather playing a part. We retain our view that US crude production in 2018 will increase by 1.3 mb/d versus last year. However, there is concern about bottlenecks in takeaway capacity that have seen recent discounts for WTI Midland versus Houston widen to a record at nearly \$9/bbl. This issue applies in Canada as well as in the US.

As far as the OPEC/non-OPEC output cuts are concerned, some countries party to the 2016 Vienna agreement, have, for different reasons, seen production fall by more than they promised. These extra cutbacks total over 800 kb/d. To all intents and purposes, more than a second Saudi Arabia has been added to the output agreement. The overall state of the cuts in March shows OPEC's compliance rate at 163% with its non-OPEC partners achieving a rate of 90%. With just under half of global oil supply subject to restraint and oil demand growing steadily, the impact on stocks has been substantial. The text of the Vienna agreement notes that OECD *and* non-OECD stocks were above the five-year average and states that they should fall to "normal" levels. Normal is assumed to mean, although it does not explicitly say so, the five-year average. There is less clarity with regard to non-OECD stocks, so five-year average OECD stocks have become the de facto target to measure success of the output cuts.



Since May last year they have fallen constantly the average and new data for February show a larger than usual fall in volume terms with stocks now only 30 mb above the five-year level, and product stocks actually below it. Our balances show that if OPEC production were constant this year, and if our outlooks for non-OPEC production and oil demand remain unchanged, in 2Q18-4Q18 global stocks could draw by about 0.6 mb/d. With markets expected to tighten, it is possible that when we publish OECD stocks data in the next month or two they will have reached or even fallen below the five-year average target. It is not for us to declare on behalf of the Vienna agreement countries that it is "mission accomplished", but if our outlook is accurate, it certainly looks very much like it.

# DEMAND

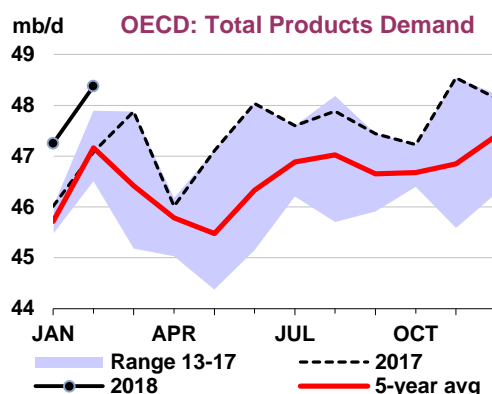
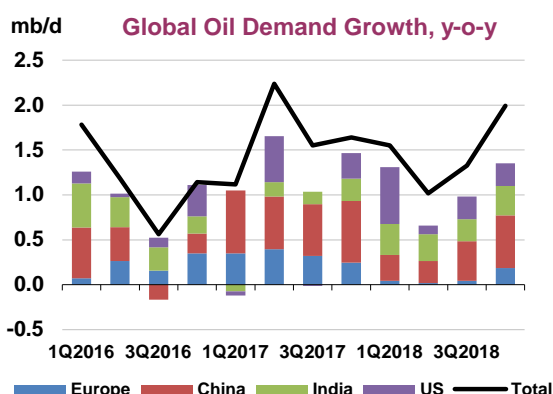
## Summary

Our outlook for global oil demand growth is unchanged from last month's *Report*. Some unusual data were, however, reported in 1Q18 for major consumers, but they largely cancelled each other out. An upward revision to US demand was almost offset by a downward revision for China. Smaller revisions due to new data, weather and price developments have been incorporated. For 2018 as a whole, oil demand is still expected to grow by 1.5 mb/d to 99.3 mb/d.

OECD oil demand was untouched for 2018 compared to last month's *Report*, as stronger growth in 1Q18 is offset by lower growth for the rest of the year. OECD demand in 1Q18 has been revised up by 315 kb/d, led by the US due to cold weather and the start-up of a petrochemical project. Lower growth subsequently is largely attributable to a higher oil price assumption.

Non-OECD demand for 2018 as a whole is also roughly similar to last month, but in 1Q18 it has been revised down by 260 kb/d due to weak Chinese data. We expect a rebound in Chinese demand from March onwards and we have revised slightly upwards our forecast for the rest of the year. India's oil demand continues to be strong.

One new factor to take into consideration is the potential risk from the trade dispute between the US and China. While it is too early to adapt our forecast to take account of possible protectionist measures, we discuss some possible implications in the next section.



## Fundamentals

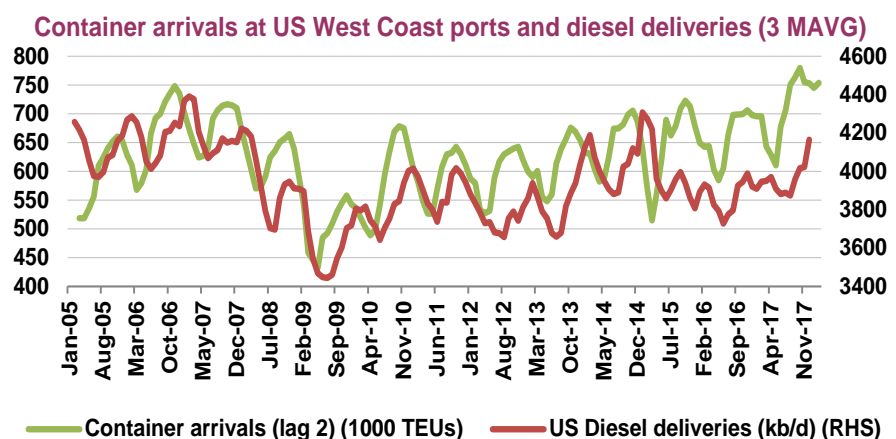
The economic outlook remains supportive, but the trade dispute between the US and China is introducing a downward risk to the forecast. The OECD's interim economic outlook published on 13 March 2018 highlighted strong growth in most countries, in particular the "advanced economies". The outlook sees world growth at 3.9% in both 2018 and 2019, similar to the assumptions underpinning our demand forecast. The report also noted that an escalation of trade tensions would be damaging for growth and jobs.

Recent trade numbers are very strong, with growth in global volumes estimated at 5.2% in 2017, double the rate seen in the previous two years and the highest since 2011. The impact of protectionist measures on GDP growth is difficult to quantify precisely, but recent studies provide some indications. In its *Economic Outlook 2016*, the OECD simulated the impact of a rise in trade tariffs increasing global trade costs against all partners on all goods (but not on services) by 10 percentage points. Under this scenario,

trade tariffs would increase to the rates of 2001, before the trade negotiations under the Doha Development Round started. As a result, trade would be 6% lower than under the base case, and world GDP would be 1.4% lower. The US, China and Europe would be the most impacted. Maurice Obstfeld, the IMF Chief Economist, published in 2016 a blog: *"Tariffs do More Harm than Good at Home"* illustrating the consequence of a scenario under which the US levies a 20% tariff on imports from emerging East Asia. Over five years, this tariff policy would cut US GDP by 0.6% compared to the base case if there is no retaliation from Asian countries, and by 1.3% if there is retaliation. Such a policy would reduce both imports and exports, by respectively 4% and 6% the first year if there is retaliation. Of course, this would have strong consequences for oil demand as a cut of 1% to world GDP growth, assuming an income elasticity of 0.7, and everything else unchanged, would reduce oil demand growth by roughly 690 kb/d.

Oil demand would suffer the direct impact of lower bunker consumption and lower inland transportation of traded goods, reducing fuel oil and diesel use. A drop of 5% in global trade could reduce international fuel oil bunker demand (roughly 3.5 mb/d) by at least 180 kb/d.

The impact on diesel is more difficult to quantify, but is illustrated by the correlation sometimes observed between containers arrivals at the US ports of Long Beach and Los Angeles and US diesel deliveries. Diesel deliveries in a three-month average vary in line with the arrival of containers on the US West Coast, as goods imported from Asia are moved into department stores all over the country.



US NGL producers may also suffer direct consequences if China, as it has been announced, retaliates by imposing high tariffs on imports of petrochemical feedstocks. China reportedly plans to impose an additional 25% duty on US propane, likely to significantly reduce its imports of LPG from the US. China importers (largely PDH plants) bought around 110 kb/d of propane from the US in 2017 increasing to 130 kb/d currently. They are likely to switch to Middle East supplies if tariffs are imposed.

US petrochemical producers would also be severely impacted by Chinese tariffs on exports of polyethylene. The US currently ships more than 12% of its low-density polyethylene production to China and the announced tariff of 25% would make this trade uneconomic. In the future, the development of ethane crackers and polyethylene plants in the US could slow if they are not able to export petrochemical products to China, by far the fastest growing market. In the meantime, US export availability is set to almost double in 2018. Lower demand from the domestic petrochemical industry would add to difficulties experienced by US NGL producers.

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For now, we must wait and see how the trade dispute develops. In the meantime, price and weather inputs have been adjusted to reflect recent developments. Temperature variations had a strong impact on OECD heating oil demand in 1Q18. A cold snap in January supported strong heating oil and LPG demand in the US. Temperatures in the US were closer to last year's levels in February and March, but April temperatures are expected to be cold, producing more support to demand. By contrast, Europe experienced mild temperatures in January and colder weather in February and March.



We updated our price assumptions with the ICE Brent futures curve as of early April. As a result, the average of prices used for 2018 in the model was 4.4% higher than that of March (\$66.5/bbl vs. \$63.7/bbl). With oil demand at roughly 98 mb/d and price elasticity close to -0.03, and assuming everything else remaining unchanged, an increase of 4.4% in prices would result in a reduction of 130 kb/d to the projections for 2018. Of course, the impact of prices is partially offset by other factors, such as heating degree-days, recent data changes, and policies implemented in various countries.

### 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	4.3	4.3	4.2	4.3	4.3	4.4	4.3	4.2	4.3	4.3	4.5	4.4	4.3	4.4	4.4
Americas	31.1	31.1	31.7	31.4	31.3	30.9	31.5	31.7	31.7	31.5	31.5	31.6	31.9	32.0	31.7
Asia/Pacific	33.3	32.7	32.1	33.3	32.9	34.1	33.9	33.3	34.5	33.9	34.9	34.6	34.1	35.6	34.8
Europe	14.3	14.7	15.2	14.9	14.8	14.7	15.1	15.5	15.2	15.1	14.7	15.1	15.6	15.4	15.2
FSU	4.5	4.5	4.9	4.8	4.7	4.5	4.7	5.0	4.8	4.7	4.6	4.7	5.0	4.9	4.8
Middle East	7.9	8.4	8.7	8.1	8.3	7.9	8.5	8.6	8.0	8.3	7.9	8.6	8.9	8.3	8.4
<b>World</b>	<b>95.4</b>	<b>95.7</b>	<b>96.8</b>	<b>96.8</b>	<b>96.2</b>	<b>96.5</b>	<b>98.0</b>	<b>98.3</b>	<b>98.5</b>	<b>97.8</b>	<b>98.1</b>	<b>99.0</b>	<b>99.6</b>	<b>100.5</b>	<b>99.3</b>
Annual Chg (%)	1.9	1.3	0.6	1.2	1.2	1.2	2.3	1.6	1.7	1.7	1.6	1.0	1.4	2.0	1.5
Annual Chg (mb/d)	1.8	1.2	0.6	1.1	1.2	1.1	2.2	1.6	1.6	1.6	1.6	1.0	1.3	2.0	1.5
Changes from last OMR (mb/d)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	-0.1	0.0	0.0

\* Including biofuels

While the global demand picture is little changed, revisions for 1Q18 highlight the volatility of data recently received for major consumers. Demand data for some products for both China and the US were outside historical ranges in January or February.

## OECD

This month we have our first complete set of data for OECD countries for January 2018. Preliminary estimates are available for Mexico, Japan, Korea and some European countries for February 2018. Weekly US data are available through end-March. Recent data point to a rebound in European demand in February.

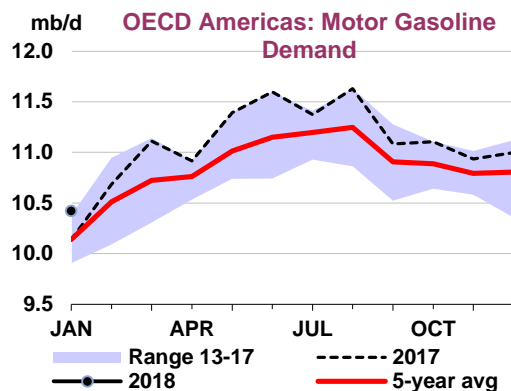
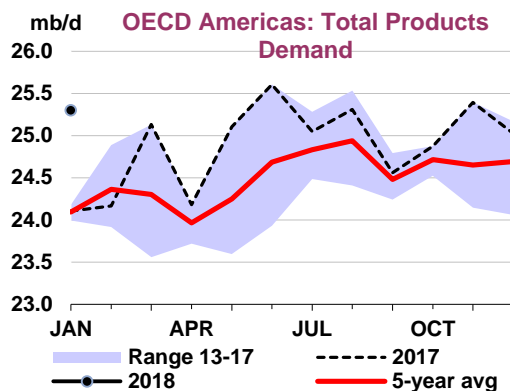
### OECD Demand based on Adjusted Preliminary Submissions - February 2018

	(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
<b>OECD Americas*</b>	<b>10.77</b>	<b>0.8</b>	<b>1.99</b>	<b>9.4</b>	<b>4.66</b>	<b>3.2</b>	<b>0.61</b>	<b>5.4</b>	<b>0.61</b>	<b>3.8</b>	<b>6.22</b>	<b>4.06</b>	<b>24.86</b>	<b>2.9</b>
US50	9.05	0.6	1.70	11.1	3.76	3.3	0.28	3.3	0.31	16.0	4.79	6.72	19.89	3.6
Canada	0.81	0.7	0.14	0.5	0.31	-1.3	0.29	18.1	0.06	-0.4	0.77	1.05	2.38	2.3
Mexico	0.76	2.3	0.08	0.7	0.38	6.7	0.02	-47.0	0.14	-12.1	0.55	-10.40	1.94	-3.1
<b>OECD Europe</b>	<b>1.84</b>	<b>1.3</b>	<b>1.36</b>	<b>5.8</b>	<b>4.91</b>	<b>2.2</b>	<b>1.81</b>	<b>15.5</b>	<b>0.97</b>	<b>13.1</b>	<b>3.67</b>	<b>-0.16</b>	<b>14.56</b>	<b>4.0</b>
Germany	0.44	8.4	0.22	16.6	0.76	3.0	0.44	11.6	0.11	14.1	0.56	-20.13	2.52	0.2
United Kingdom	0.29	-2.5	0.33	0.4	0.54	-4.1	0.13	4.4	0.03	24.4	0.30	-1.50	1.63	-1.4
France	0.17	4.0	0.15	1.2	0.71	-0.3	0.33	22.2	0.06	9.0	0.36	0.37	1.78	4.2
Italy	0.16	-2.2	0.09	13.4	0.46	0.2	0.08	0.9	0.07	11.8	0.42	6.17	1.27	3.3
Spain	0.10	0.4	0.11	3.1	0.47	2.0	0.21	15.1	0.13	-4.3	0.29	1.56	1.32	3.0
<b>OECD Asia &amp; Oceania</b>	<b>1.53</b>	<b>-0.7</b>	<b>1.32</b>	<b>3.6</b>	<b>1.47</b>	<b>2.8</b>	<b>0.57</b>	<b>0.0</b>	<b>0.62</b>	<b>-5.1</b>	<b>3.44</b>	<b>0.15</b>	<b>8.95</b>	<b>0.5</b>
Japan	0.85	-1.9	0.84	3.5	0.46	-1.0	0.43	3.0	0.32	-2.6	1.64	-1.90	4.54	-0.4
Korea	0.21	2.3	0.25	6.2	0.40	1.9	0.08	-16.4	0.25	-9.7	1.57	2.46	2.76	0.8
Australia	0.34	-0.8	0.16	-1.7	0.55	6.9	0.00	0.0	0.03	4.9	0.16	-1.57	1.23	2.4
<b>OECD Total</b>	<b>14.14</b>	<b>0.7</b>	<b>4.66</b>	<b>6.7</b>	<b>11.04</b>	<b>2.7</b>	<b>2.99</b>	<b>10.1</b>	<b>2.20</b>	<b>4.8</b>	<b>13.33</b>	<b>1.85</b>	<b>48.37</b>	<b>2.7</b>

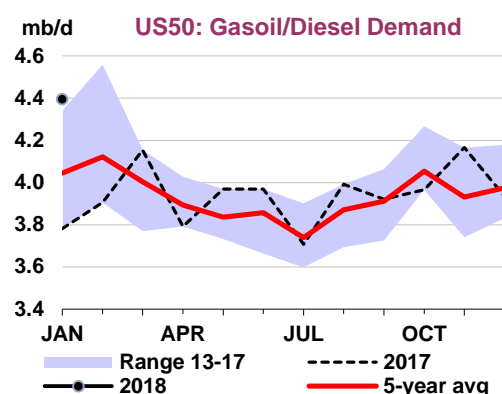
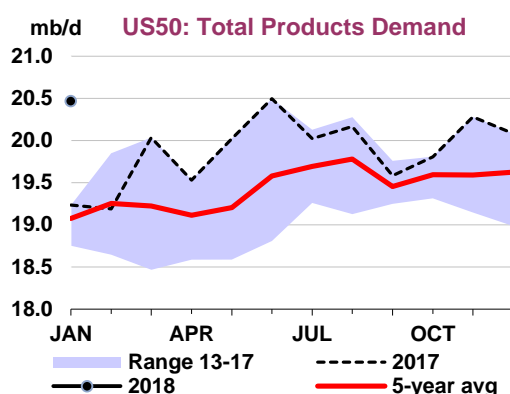
\* Including US territories

Preliminary data for February show a slowdown in US demand and a sharp increase in Europe, partly reflecting temperature swings.

## Americas



**US** oil demand rose by a huge 1.23 mb/d year-on-year (y-o-y) in January after growth of only 100 kb/d in December. January saw cold weather supporting heating oil and propane demand, as well as the commissioning of a petrochemical project boosting ethane deliveries. Weekly data for February shows demand returning to the historical range but still well above 2017. In March, demand should return to last year's level.

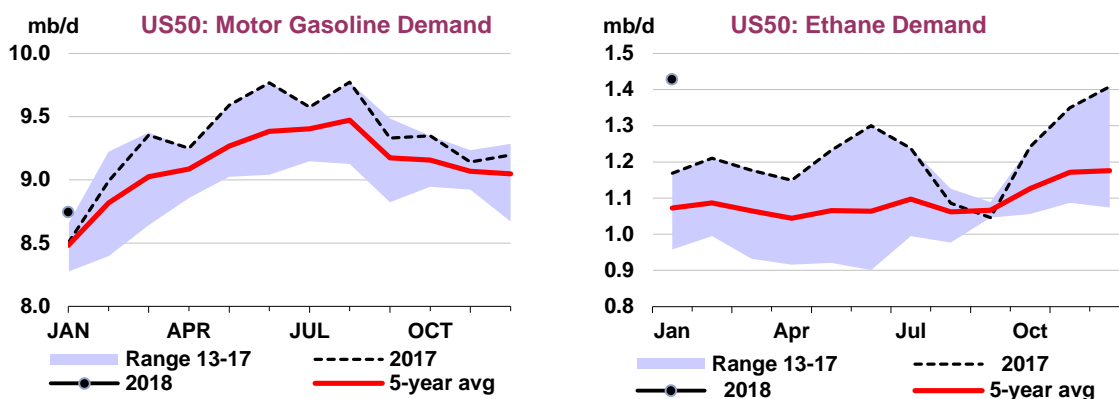


US gasoil demand benefited from cold weather, increasing by 615 kb/d y-o-y in January. Demand rose by 330 kb/d on the East coast, supported by heating oil deliveries. Heating degree days in January in PADD1A (New England) and PADD1B (Central Atlantic) –the largest heating oil consumers- were 20% and 26% higher than last year, respectively. The weather improved in February and March, but cold weather appears to have resumed in April. In addition, diesel demand continues to be supported by global trade, and CPB world trade monitor (Netherlands Bureau for Economic Policy Analysis) shows an increase of 3.7% y-o-y in the volume of US imports in January. US manufacturing production rose by 3.5% y-o-y in January. Weekly data point to an increase of 3.3% y-o-y in gasoil demand in February but to a decline of 3.8% in March.

Jet fuel demand rose by 20 kb/d y-o-y in January, after growth of 80 kb/d in December. The International Air Transport Association reported growth of 3.4% y-o-y in US domestic air transport in January as the January cold snap disrupted air travel. In February, US domestic revenue passenger kilometers rose by 6.2% y-o-y. Weekly data point to strong growth in jet/kerosene demand in February (11% y-o-y), slowing to 6% in March.

Department of Energy data show a strong increase in LPG/ethane demand, up by 415 kb/d y-o-y, reflecting cold weather and the start-up of a new Dow ethane cracker (1.5 mt capacity) at Freeport, Texas in late September. The cracker progressively increased operations and reached full capacity at the

end of 2017. Ethane demand grew to over 1.4 mb/d in December and remained at this level in January, pushing up y-o-y growth to 260 kb/d. Ethane demand should get a further boost in 2Q18 with the commissioning of Exxon-Mobil's new Baytown cracker (1.5 mt capacity) and Chevron Phillips Cedar Bayou, Texas, a 1.5 mt/y cracker. Propane demand was also strong, rising from 1 mb/d in December 2017 to 1.39 mb/d in January 2018, supported by low temperatures in PADD2. Propane demand rose by 145 kb/d y-o-y in the Midwest in January as heating degree-days were 20% higher than a year ago.



Gasoline demand rose by 240 kb/d y-o-y in January, although year-ago levels were weak. The Department of Transportation reported growth in travel demand of only 0.4% y-o-y in January, due to adverse weather conditions. Traffic in the North East region declined by 1.8% y-o-y and Vehicle Miles Travelled in the South Atlantic region slowed by 1.0% y-o-y as cold temperature reduces travel. Weekly data point to an increase of 0.6% y-o-y in gasoline demand in February and a small drop of 0.2% in March.

**Canada's** oil demand declined by 30 kb/d y-o-y in January on poor naphtha and LPG/ethane deliveries, following weak demand in December. **Mexico's demand** continues to decline, posting a small y-o-y drop in both January and February. LPG demand gained some support in January from relatively low temperatures but remains below its five-year average.

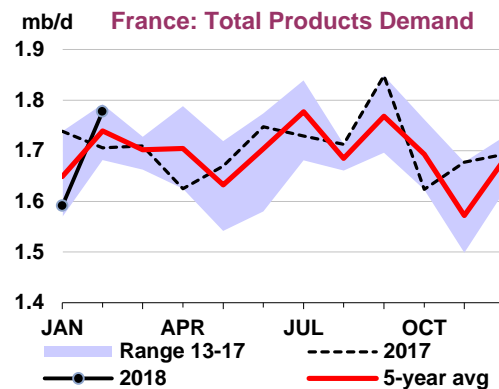
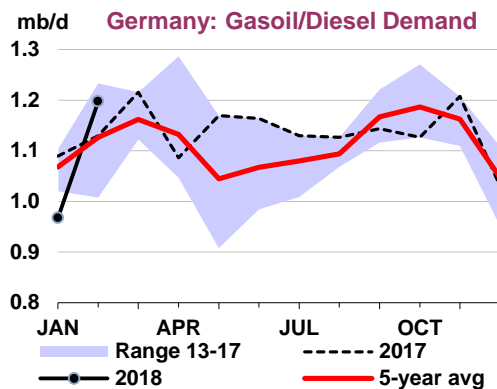
North American demand is expected to remain robust in 1Q18 after a strong 4Q17, supported by LPG/ethane and gasoil deliveries. LPG/ethane demand was up 135 kb/d y-o-y in 4Q17 and in 1Q18 it should remain 290 kb/d higher than last year. Gasoline demand growth is expected to accelerate from 15 kb/d in 4Q17 to 90 kb/d in 1Q18, mainly because 1Q17 was relatively weak. Gasoil demand, benefiting from severe weather conditions, increased by 60 kb/d y-o-y in 4Q17 and should expand by 195 kb/d in 1Q18. Total North American oil demand, after growing by 135 kb/d in 2017, should increase by 260 kb/d in 2018.

## Europe

European oil demand declined by 250 kb/d y-o-y in January, on low naphtha and gasoil deliveries. Preliminary data point to a jump of 555 kb/d in February.

Gasoil deliveries are largely responsible for the swing observed in total European demand. Consumption was almost stagnant in December, rising by only 5 kb/d, but dropped by 190 kb/d y-o-y in January. Preliminary data point to a rebound to a growth of 350 kb/d y-o-y in February. Mild temperatures and a gasoil price spike in January explain low deliveries. These factors were reversed in February. Heating degree-days in Germany, for example, were 30% lower than last year in January and 40% higher in February.





In **Germany**, oil demand declined by 265 kb/d y-o-y in January and rose by a mere 5 kb/d in February, on poor diesel and naphtha demand. Oil demand in **France** also showed some weakness, dropping by 145 kb/d in January on weak gasoil deliveries, but bounced back by 70 kb/d in February. In **Italy**, oil demand rose in January and February, by 30 kb/d and 40 kb/d respectively.

The recent German data are difficult to interpret. Naphtha demand plunged in January (down 135 kb/d y-o-y) and remained subdued in February (down 100 kb/d y-o-y). This could partly be due to a switch by ethylene crackers to LPG as the spread between propane and naphtha fell sharply in January/February. European cracker flexibility is limited, however, estimated at between 10% to 30% of total capacity, and the reduction in naphtha demand appears abnormally large. In addition, there was no increase in LPG demand in January and February. In fact, it declined. In the meantime, gasoline demand jumped by 65 kb/d y-o-y in January and diesel demand contracted by 60 kb/d. While we are expecting strong gasoline growth and weak diesel demand after the recent court order potentially banning older diesel cars from some cities, it is too soon for this factor to have an impact. Higher prices and fewer heating degree-days are likely to have taken their toll. Next month's data should bring some clarification.

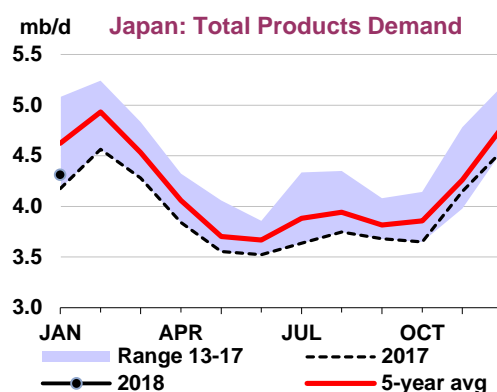
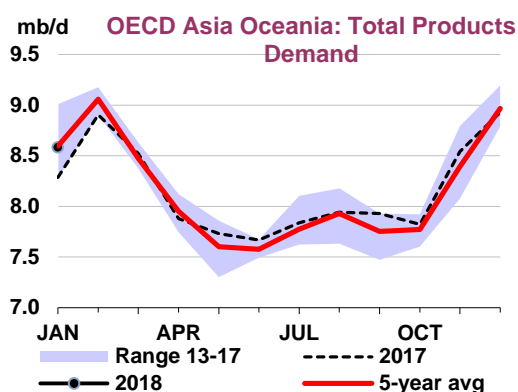
Gasoil demand in France in January was also particularly weak, declining by 105 kb/d y-o-y. Heating oil demand was responsible, contracting by 95 kb/d y-o-y. Preliminary data point to a rebound in demand in February. There were 37% fewer heating degree-days in January versus last year but 50% above last year in February.

Overall, demand grew by 245 kb/d in 4Q17 in Europe, slowing to 40 kb/d growth in 1Q18. European oil demand growth should slow to 70 kb/d in 2018 from 330 kb/d in 2017.

## Asia Oceania

OECD Asia Oceania demand rose by 295 kb/d y-o-y in January, after a small decline of 10 kb/d in December. Both gasoline and gasoil demand rose by 120 kb/d y-o-y. In contrast, LPG demand posted a small decline of 45 kb/d.

**Japanese** oil demand rose by 135 kb/d in January, on strong gasoline deliveries (up 100 kb/d y-o-y). However, demand is expected to contract by 20 kb/d in February. Demand for jet kerosene rose in January by 30 kb/d y-o-y and is expected to post similar growth in February. Demand has been revised up slightly for 2018 in line with stronger recent data. Japanese demand declined by roughly 85 kb/d in 2017 and we expect a further decline of 55 kb/d in 2018. **South Korean** demand rose by 110 kb/d in January and 20 kb/d in February, supported by strong naphtha and kerosene deliveries.



In **Australia**, gasoil demand continued to grow strongly, rising by 60 kb/d y-o-y in January. Demand for other products remained stagnant. Diesel demand has been increasing since the start of 2017, in part supported by the restart of coal mining at the end of 2016.

OECD Asia Oceania oil demand increased by 45 kb/d in 4Q17 and is expected to rise by 50 kb/d in 1Q18. For 2017 as a whole, demand in the region increased by 40 kb/d in 2017, but should contract by 55 kb/d in 2018.

## Non-OECD

Several large non-OECD countries showed strong growth in January, with India standing out. Elsewhere, in Egypt and Pakistan the switch to natural gas has accelerated and is displacing oil even faster than we had anticipated.

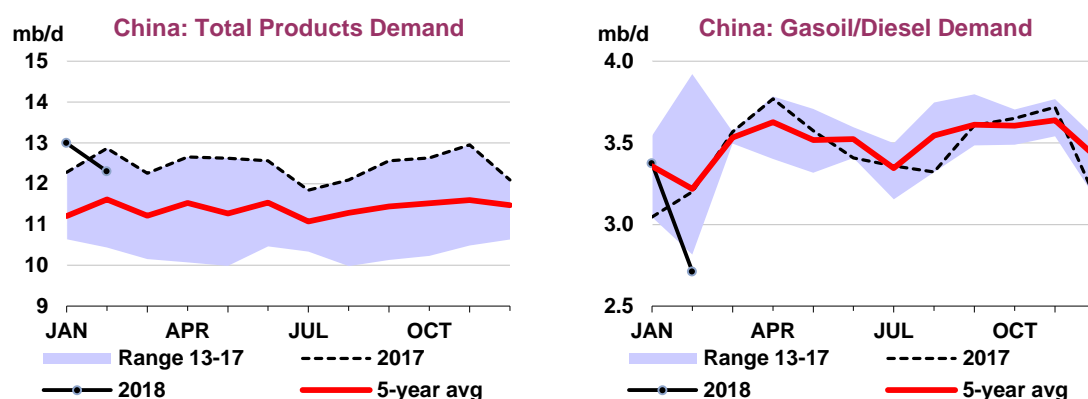
### Non-OECD: Demand by Product

	(thousand barrels per day)						
	Demand			Annual Chg (kb/d)		Annual Chg (%)	
	3Q17	4Q17	1Q18	4Q17	1Q18	4Q17	1Q18
LPG & Ethane	6,285	6,468	6,569	42	172	0.7	2.7
Naphtha	2,714	2,888	2,872	156	29	5.7	1.0
Motor Gasoline	11,370	11,447	11,453	327	255	2.9	2.3
Jet Fuel & Kerosene	3,214	3,022	3,180	75	29	2.5	0.9
Gas/Diesel Oil	14,737	14,802	14,339	192	190	1.3	1.3
Residual Fuel Oil	5,161	4,950	5,089	-213	-180	-4.1	-3.4
Other Products	7,192	6,923	6,931	521	414	8.1	6.4
<b>Total Products</b>	<b>50,673</b>	<b>50,499</b>	<b>50,434</b>	<b>1,100</b>	<b>909</b>	<b>2.2</b>	<b>1.8</b>

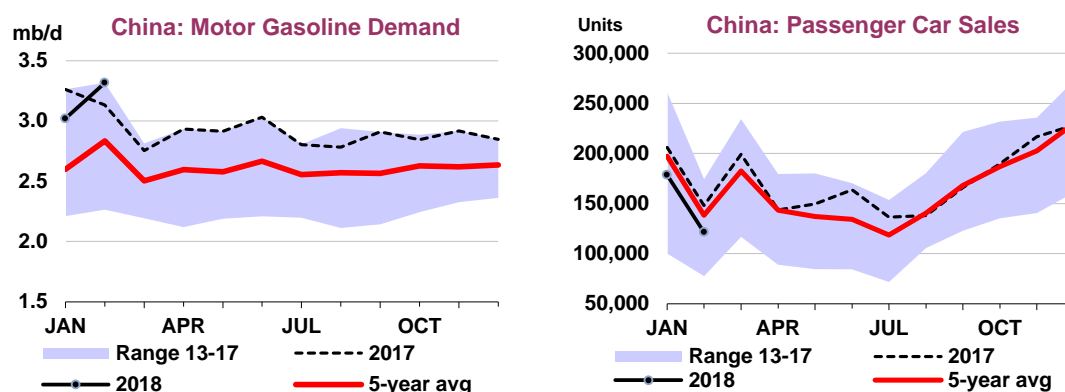
## China

Chinese oil demand in February is estimated from the National Bureau of Statistics (NBS) combined data for January/February on refinery runs and production and monthly data for trade and inventories. The later timing of the holiday in 2018 distorts the y-o-y comparison. In January, oil demand was 710 kb/d higher than last year and February demand was 565 kb/d lower. A comparison of combined January-February data makes more sense, but there will likely still be an impact of the New Year Holiday in March.

Typically, the New Year period is characterised by high gasoline demand, as many Chinese travel home to visit their families, and low gasoil demand as most factories are closed. While the official holiday generally lasts for a week (starting on 15 February in 2018), the traditional celebration lasts for three weeks and some factories can be closed for more than a month. Many factories and businesses shut down ten days before the New Year to allow time for workers to travel home.



The Chinese New Year triggers a huge migration taking place during the Spring Festival Travel Season, which was between 1 February and 12 March in 2018. The National Development and Reform Commission estimates that Chinese returning home will make 2.48 billion road trips, 390 million rail trips, 65 million air trips and 46 million boat trips over the 40-days period. Chinese domestic air traffic rose by 5.9% y-o-y in January and 11.8% y-o-y in February.



Gasoline demand rose by 185 kb/d y-o-y in February, supported by the New Year migrations. The combined January-February demand was 30 kb/d below last year. We nevertheless expect a rebound in March, with gasoline demand increasing by 220 kb/d y-o-y, as migration in 2018 lasted until 12 March. Diesel demand was particularly weak in February, down 490 kb/d y-o-y. The combined January-February diesel demand was down by 80 kb/d y-o-y. Diesel demand should remain weak in March.

Chinese oil demand growth will slow from 685 kb/d in 4Q17 to around 265 kb/d in 1Q18. For the year as a whole, growth should slow to 450 kb/d in 2018 from 640 kb/d in 2017.

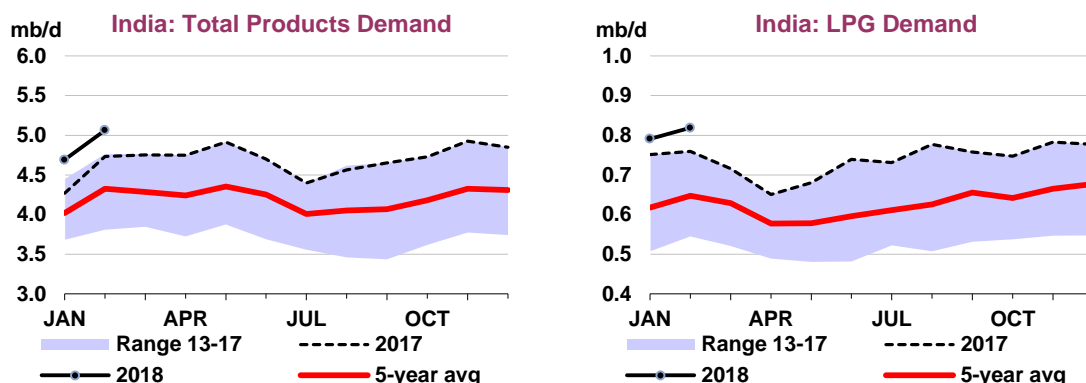
### China: Demand by Product

	(thousand barrels per day)						
	Demand			Annual Chg (kb/d)		Annual Chg (%)	
	2016	2017	2018	2017	2018	2017	2018
LPG & Ethane	1,513	1,644	1,710	130	66	8.6	4.0
Naphtha	1,115	1,172	1,238	57	66	5.1	5.6
Motor Gasoline	2,861	2,925	3,018	64	92	2.2	3.2
Jet Fuel & Kerosene	648	704	744	56	41	8.6	5.8
Gas/Diesel Oil	3,423	3,449	3,508	25	59	0.7	1.7
Residual Fuel Oil	336	378	385	43	7	12.7	1.8
Other Products	1,913	2,173	2,290	261	117	13.6	5.4
<b>Total Products</b>	<b>11,809</b>	<b>12,445</b>	<b>12,893</b>	<b>637</b>	<b>448</b>	<b>5.4</b>	<b>3.6</b>

## Other Non-OECD

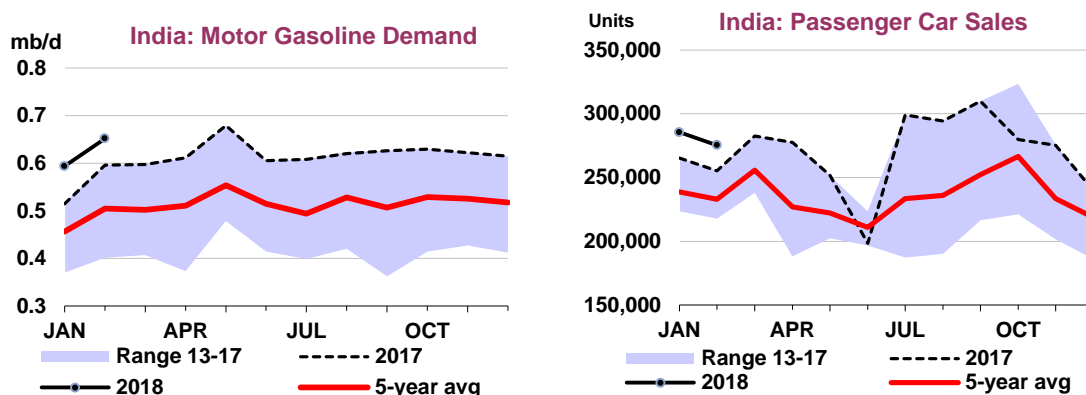
**India's** oil demand rose by 330 kb/d y-o-y in February, after even stronger growth of 420 kb/d y-o-y in January. Part of the growth is due to the comparison with a low base, as demonetisation largely impacted Indian economic activity and oil demand in 1H2017.

LPG demand grew by 60 kb/d in February, as government policies supported demand growth in the residential sector. LPG replaced kerosene used in heating and lighting, bringing down household kerosene demand by 20 kb/d y-o-y. Jet/kerosene demand rose by 15 kb/d as India continues to post world records in domestic air traffic growth. After growth of 17.9% in January, Indian revenue passenger kilometers rose by 22.9% in February.



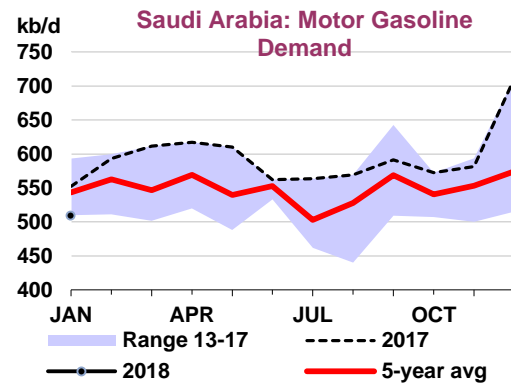
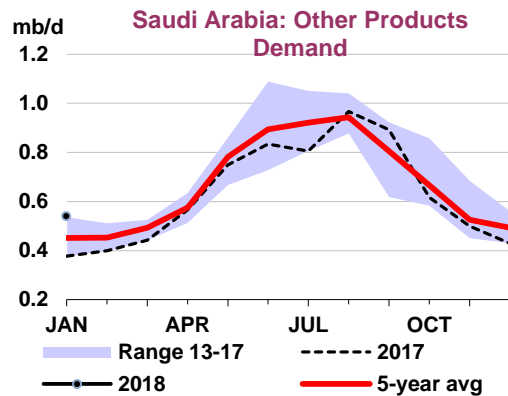
Indian car sales grew by 7.8% y-o-y in February, after a strong January, pushing up gasoline demand by 55 kb/d y-o-y. The society of Indian Automobile Manufacturers expects car sales to increase by 9% in the fiscal year ending in March 2017. Gasoil demand rose by 100 kb/d in February, down from a growth of 205 kb/d in January but still reflecting strong industrial production growth.

Our overall oil demand forecast for India in 2018 is largely unchanged: following growth of 125 kb/d in 2017, growth will accelerate to 310 kb/d this year. The factors that slowed demand in 2017 (demonetisation and the new goods and service tax -GST) are now absorbed and underlying strong economic growth will support oil demand. Rising final oil product prices could, however, cap growth. Last year, India implemented a price reform linking domestic products prices to crude prices, resulting in a strong rise in the cost of transport fuels. In addition, the government is considering bringing transport fuel under the umbrella of the GST.

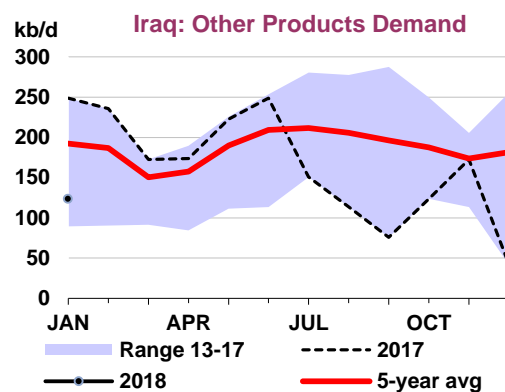
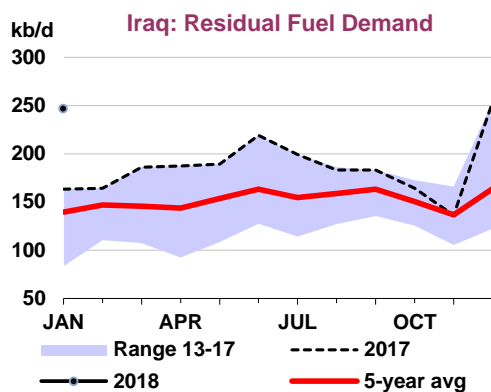


**Saudi Arabian** oil demand rose by 100 kb/d y-o-y in January supported by strong growth in other products. Most of this is direct crude use in the power sector. Saudi crude use bounced back in January and the comparison with a low number in January 2017 increased the y-o-y difference. Gasoline demand

declined by 45 kb/d y-o-y after a very strong growth of 150 kb/d in December ahead of a change in domestic gasoline prices. Gasoil demand remained very weak, down by 75 kb/d y-o-y.



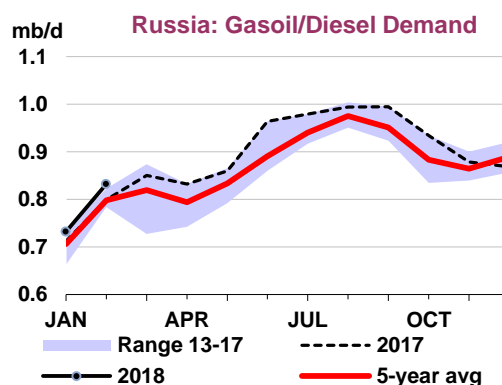
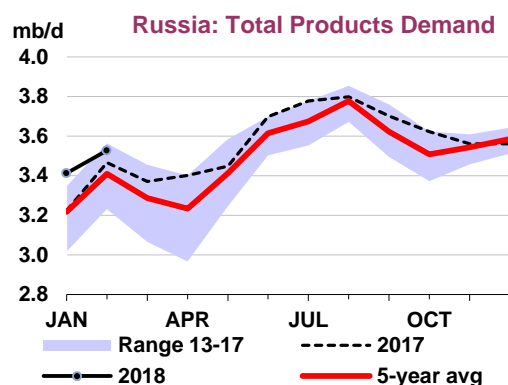
**Iraq's** fuel oil demand remained very strong in January, increasing by 85 kb/d y-o-y. This confirms the assumption that Iraq started to replace crude oil in its power sector not only by natural gas, as highlighted in the *March Report*, but also by fuel oil. Direct crude use remained low in January at around 80 kb/d.



**Pakistan's** oil demand estimate for 2018 has, once again, been revised slightly down by 25 kb/d. Data from the Pakistan Oil Companies Advisory Council show a further drop in fuel oil demand as power generation switches to LNG. In the first 10 months of 2017, demand was 180 kb/d, and from November 2017 to January 2018 it fell to 90 kb/d following the commissioning of a second LNG terminal. A third LNG terminal should start up in 2019. In February 2018, Pakistan's fuel oil demand was reported at 55 kb/d. Gasoil demand fell by 30 kb/d y-o-y in February.

**Egypt** reported a set of weak demand data for January. Gasoil demand was 20 kb/d down y-o-y and fuel oil demand 50 kb/d lower than last year. Weak oil demand is likely to reflect the switch to natural gas in the power and domestic sectors (as documented in January 2018 Report).





Russian oil demand data continued to be strong in February, showing an increase for total products of 60 kb/d y-o-y. Gasoil demand rose by 30 kb/d and gasoline gained 15 kb/d. Russian oil demand growth is set to accelerate to 60 kb/d in 2018 after only 20 kb/d in 2017. **In Brazil**, oil demand remained roughly unchanged in February. Brazil's oil demand is expected to remain roughly stable in 2018, but may be impacted by the political turmoil. **South African** data is now available through the end of 2017 and show a slight drop in oil demand in 4Q17. Gasoline posted a small decline (5 kb/d) while gasoil showed some growth (5 kb/d). Oil demand is expected to remain roughly stable in 2018.

### Non-OECD: Demand by Region

(thousand barrels per day)

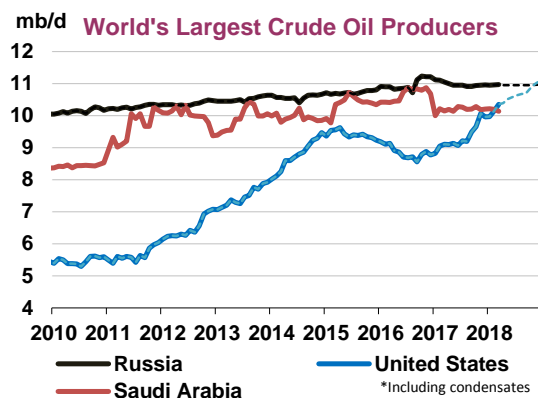
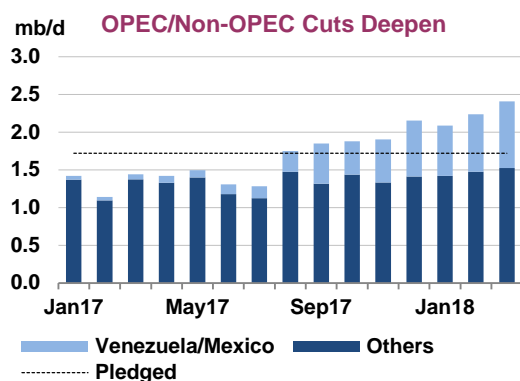
(thousand barrels per day)

	Demand		Annual Chg (kb/d)			Annual Chg (%)	
	3Q17	4Q17	1Q18	4Q17	1Q18	4Q17	1Q18
Africa	4,235	4,321	4,453	4	37	0.1	0.8
Asia	25,400	26,058	26,293	1,186	720	4.8	2.8
FSU	4,960	4,812	4,587	-23	124	-0.5	2.8
Latin America	6,680	6,582	6,444	47	-5	0.7	-0.1
Middle East	8,647	7,980	7,919	-142	1	-1.8	0.0
Non-OECD Europe	751	745	738	29	33	4.1	4.7
<b>Total Products</b>	<b>50,673</b>	<b>50,499</b>	<b>50,434</b>	<b>1,100</b>	<b>909</b>	<b>2.2</b>	<b>1.8</b>

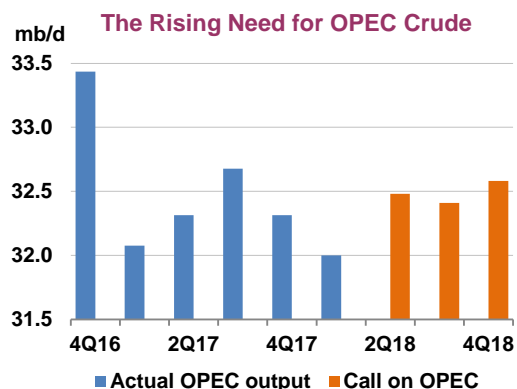
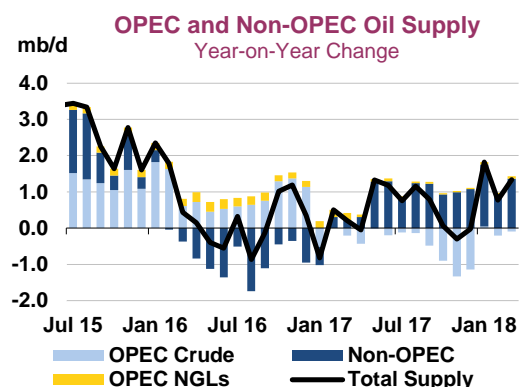
# SUPPLY

## Summary

World oil supply eased to 97.8 mb/d during March, after OPEC/non-OPEC producers cut output by 2.4 mb/d, significantly more than their pledged 1.7 mb/d. Just over a third of the March cut, however, was due to unintentional reductions from Venezuela and Mexico, which have lost a combined 890 kb/d versus the October 2016 baseline. Chronic mismanagement has pushed down Venezuelan crude production by 580 kb/d compared to a year ago, while Mexican output stands 240 kb/d lower. Losses from Venezuela helped push OPEC crude output to the lowest level in nearly three years and raised compliance to an eye-popping 163%. Non-OPEC countries participating in the output deal saw a strong compliance rate of 90%.



The US is meanwhile powering ahead. Its relentless growth kept global oil supply during March running 1.34 mb/d above a year ago and allowed it to overtake Saudi Arabia to become the world's second biggest producer of crude oil after Russia. Further expansion is on the way, although infrastructure constraints are emerging that could slow the pace somewhat. In any case, with anticipated gains of 1.5 mb/d, the US is dominating non-OPEC supply growth of 1.8 mb/d in 2018. Canada, Brazil and Kazakhstan are also expected to post growth, which will compensate for lower production from China and Mexico. For March, non-OPEC supply was 59.06 mb/d, which was 1.36 mb/d higher than a year ago. OPEC total oil output was largely unchanged year-on-year (y-o-y).



Despite the strong US performance, our balances suggest that the call on OPEC crude and stocks will hover around 32.5 mb/d for the rest of this year – nearly 700 kb/d more than the 14-member group produced in March. Assuming current OPEC production is maintained, further stock draws lie ahead. As of March, OPEC's spare production capacity was 3.41 mb/d, with Saudi Arabia accounting for 64% of the total.

So far, there is no evidence of OPEC raising production in response to recent higher prices or to make up for the plunge in Venezuelan supply. OPEC crude oil production in March fell by 200 kb/d to 31.83 mb/d, due mainly to losses in Venezuela and African member countries. Gulf producers continue to pump below their agreed level. Overall OPEC compliance with supply cuts is distorted by Venezuela's crisis, but even if Caracas produced at its agreed level, the performance rate would still be above 100%.

### OPEC / Non-OPEC Output Compliance<sup>1</sup>

(million barrels per day)

	Feb 2018 Supply	Mar 2018 Supply	Supply Baseline <sup>2</sup>	Agreed Cut	March Actual Cut	February Compliance	March Compliance	Average Compliance	Sustainable Production Capacity <sup>6</sup>	Spare Capacity vs Feb 2018 Supply
Algeria	1.04	0.98	1.09	-0.05	-0.11	98%	218%	97%	1.08	0.10
Angola	1.57	1.52	1.75	-0.08	-0.23	232%	296%	162%	1.60	0.08
Ecuador	0.51	0.52	0.55	-0.03	-0.03	146%	108%	77%	0.54	0.02
Equatorial Guinea	0.13	0.13	0.14	-0.01	-0.01	83%	83%	115%	0.13	0.00
Gabon	0.20	0.21	0.20	-0.01	0.01	22%	-89%	4%	0.21	0.00
Iran <sup>3</sup>	3.82	3.81	3.71	0.09	0.10	NA	NA	NA	3.85	0.04
Iraq	4.46	4.44	4.56	-0.21	-0.12	48%	58%	44%	4.75	0.31
Kuwait	2.70	2.70	2.84	-0.13	-0.14	105%	105%	101%	2.94	0.24
Qatar	0.58	0.60	0.65	-0.03	-0.05	227%	160%	136%	0.64	0.04
Saudi Arabia	9.96	9.92	10.54	-0.49	-0.62	120%	128%	121%	12.10	2.18
UAE	2.80	2.87	3.01	-0.14	-0.14	153%	103%	71%	3.18	0.31
Venezuela	1.55	1.49	2.07	-0.10	-0.58	544%	607%	193%	1.50	0.01
<b>Total OPEC 12</b>	<b>29.32</b>	<b>29.19</b>	<b>31.11</b>	<b>-1.18</b>	<b>-1.92</b>	<b>152%</b>	<b>163%</b>	<b>106%</b>		
Libya <sup>4</sup>	1.03	0.99							1.02	0.03
Nigeria <sup>4</sup>	1.68	1.65							1.70	0.05
<b>Total OPEC</b>	<b>32.03</b>	<b>31.83</b>							<b>35.24</b>	<b>3.41</b>
Azerbaijan	0.81	0.80	0.81	-0.04	-0.02	22%	55%	77%		
Kazakhstan	1.96	1.96	1.80	-0.02	0.15	-763%	-751%	-277%		
Mexico	2.15	2.09	2.40	-0.10	-0.31	245%	310%	184%		
Oman	0.97	0.98	1.02	-0.05	-0.04	100%	97%	93%		
Russia	11.34	11.35	11.60	-0.30	-0.25	86%	82%	81%		
Others <sup>5</sup>	1.18	1.20	1.22	-0.05	-0.02	97%	51%	64%		
<b>Total Non-OPEC</b>	<b>18.41</b>	<b>18.37</b>	<b>18.86</b>	<b>-0.55</b>	<b>-0.49</b>	<b>82%</b>	<b>90%</b>	<b>86%</b>		

<sup>1</sup> OPEC figures are crude oil only. Non-OPEC figures are total oil supply (including NGLs).

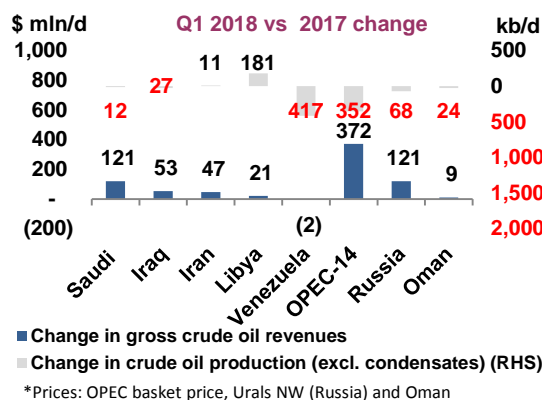
<sup>2</sup> OPEC based on Oct 2016 OPEC secondary source figures, except Angola which is based on Sep 2016. Non-OPEC based on IEA Oct total supply estimates. Kazakhstan Nov estimate.

<sup>3</sup> Iran was given a slight increase. <sup>4</sup> Libya and Nigeria are exempt from cuts. <sup>5</sup> Bahrain, Brunei, Malaysia, Sudan and South Sudan.

<sup>6</sup> Capacity levels can be reached within 90 days and sustained for an extended period.

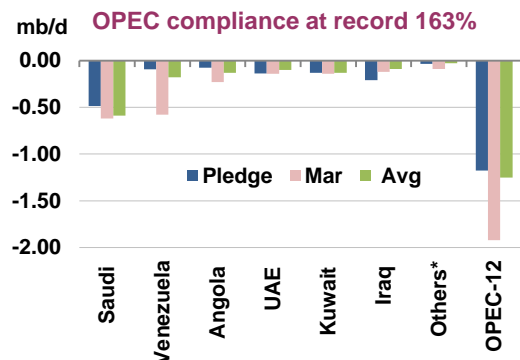
Officials from Saudi Arabia and Russia have meanwhile signalled their willingness to keep the output pact in place and stress that any exit will be orderly. There is also increasing talk of institutionalising the partnership, although there is little detail available as to what this entails. Saudi Crown Prince Mohammed bin Salman has said he foresees a two-decade alliance, while Russian Energy Minister Alexander Novak has said Russia is willing to cooperate indefinitely with OPEC.

For now, though, it is clear that countries participating in the deal continue to earn more while producing less. Saudi Arabia and Russia saw the biggest reward in 1Q18, earning \$121 million a day in additional revenue compared to 2017. Venezuela, on the other hand, lost \$2 million a day. As a whole, OPEC producers netted an extra \$372 million a day. Oman made an extra \$9 million. Iraq, which has been producing above its OPEC target, was a leading beneficiary. Libya, too, continued to benefit from its production recovery.

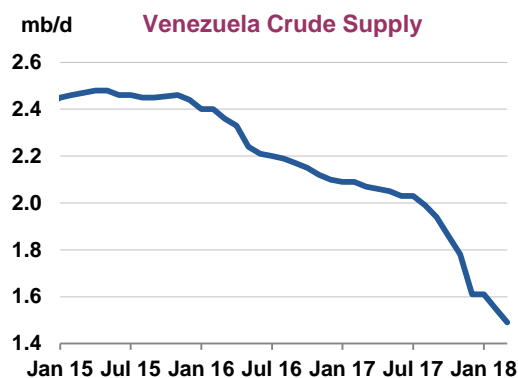


## OPEC crude oil supply

Scheduled maintenance, unplanned declines and tighter supply discipline cut OPEC crude oil production by 200 kb/d in March to 31.83 mb/d, down 70 kb/d on the previous year. Further losses in **Venezuela** pushed crude oil supply 580 kb/d below its OPEC target, with the scale of this unintentional reduction nearing that of Saudi Arabia. Output slid 60 kb/d month-on-month (m-o-m) to 1.49 mb/d, with no let-up in the oil sector's deterioration. Average production in 1Q18 of 1.55 mb/d was down 200 kb/d on the fourth quarter of last year, when a dramatic deceleration cut supply by 240 kb/d from 3Q17.



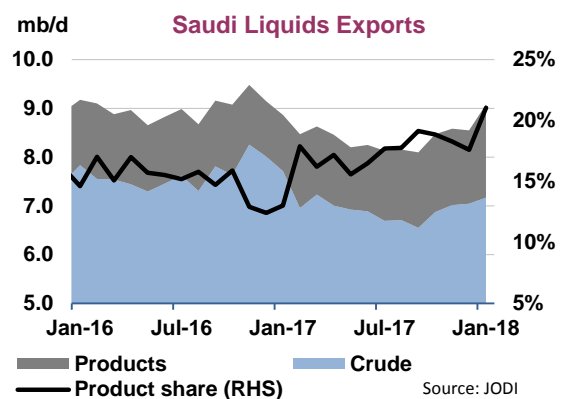
The production setback has forced Petroleos de Venezuela (PDVSA) to rely increasingly on crude imports, specifically Russian Urals to process at the Isla refinery that it leases in Curaçao. It also purchases light sweet crude from Algeria and Nigeria as well as naphtha to mix with extra-heavy crude pumped from the Orinoco Belt. PDVSA has meanwhile reportedly delayed maintenance at its 150 kb/d Petromonagas crude upgrader, a joint venture with Rosneft, from April until the summer. Difficulties in sourcing diluent, payment issues and ongoing operational challenges are likely to lead to further production declines that could cut capacity by the end of this year to 1.38 mb/d, the lowest level since the late 1940s.



**Saudi Arabia** pushed output even further below its agreed supply target to 9.92 mb/d in March, down 40 kb/d m-o-m. It has held supply below its target ever

since the cuts started in January 2017. To help clear away excess inventories, the Kingdom has vowed to sustain lower levels and keep crude shipments below 7 mb/d through May. Saudi Arabia shipped an average 7 mb/d of crude oil to world markets last year, down 680 kb/d on 2016 – mostly from sharp cutbacks to customers in the US. Asia has been spared and, in fact, tanker tracking data show that exports to China rose in 2017.

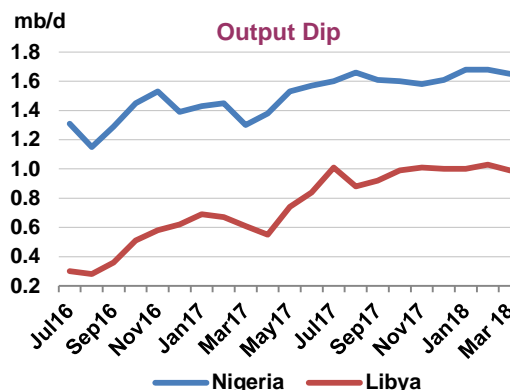
That might be set to change, at least in the short term. Sinopec reportedly intends to cut Saudi crude oil imports in May by 40% as its internal demand falls due to planned refinery maintenance and after Saudi Aramco set a higher-than-expected price for Arab Light crude. The monthly formula price rose by \$0.10/bbl to a premium of \$1.20/bbl to the Oman/Dubai average for May loadings of its flagship grade to Asia. Buyers had expected to see m-o-m decreases to reflect a weaker price for Middle East benchmark Dubai crude.



The latest data from the Joint Organisations Data Initiative (JODI), meanwhile, show exports of crude in January rose to 7.17 mb/d, up 125 kb/d m-o-m. Shipments of products have been trending higher and January saw record flows of 1.91 mb/d, up 410 kb/d on December. Total oil sales rose to 9.1 mb/d in January, up 530 kb/d m-o-m, with products accounting for 21%. On the domestic front, the amount of crude used in power plants rose 70 kb/d m-o-m to 330 kb/d in January, up 75 kb/d on a year earlier. By region, African producers posted the largest loss in March, with output down 170 kb/d m-o-m. **Algeria**

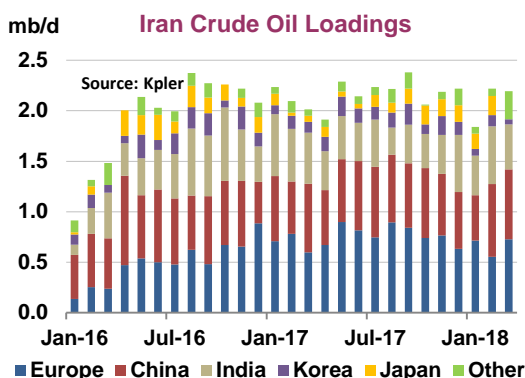
showed the most notable decline after maintenance cut production by 60 kb/d. Output of 980 kb/d was the lowest since 2002. Scheduled maintenance began in mid-March at the Hassi Berkine South and Bir Rabaa North oil fields. Output in **Angola** slipped to 1.52 mb/d, the lowest since October 2016, due mostly to natural declines. A recovery is expected later this year after the ramp up of Total's \$16 billion Kaombo project. At its peak, the ultra-deep-water field is expected to pump 230 kb/d.

Output in Libya and Nigeria eased for the first time this year, but combined March output was up 730 kb/d compared to 2017 – more than enough to offset Venezuela's y-o-y decline. **Libyan** supply fell 40 kb/d to 990 kb/d due to disruptions caused by security issues at the 70 kb/d El Feel oil field, which was closed on 23 February after a protest over pay by members of the Petroleum Facilities Guards. Libyan production is likely to fluctuate somewhat due to ongoing problems with security and the dilapidated state of its oil network.



**Nigerian** production slipped 30 kb/d in March to 1.65 mb/d. A halt in the sabotage attacks that cut supply in the summer of 2016 to a 30-year low allowed output to rise 350 kb/d above March 2017 levels.

**Iran** pumped a touch less in March, with supply inching down to 3.81 mb/d. Tanker tracking data showed exports of crude oil eased marginally to 2.19 mb/d, which put 1Q18 average shipments at 2.1 mb/d. Exports to Asia fell, with Japan appearing to cut purchases altogether. Other countries that cut back on imports were India (120 kb/d), Korea (60 kb/d) and China (30 kb/d). In contrast, sales to Europe were up by 170 kb/d. Iran had no oil stored at sea at the end of March.

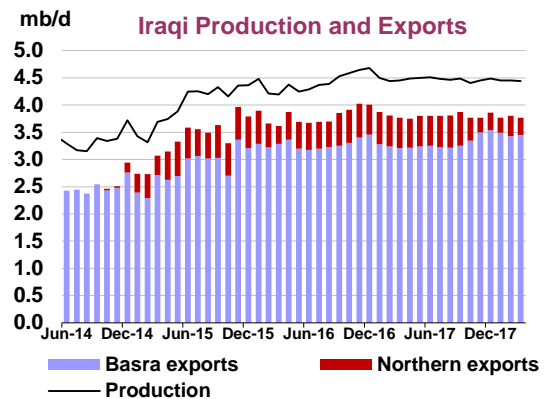


Following years of under-investment due to international sanctions, Iran is seeking to boost output with cash and technology from foreign companies. The National Iranian Oil Co (NIOC) has signed its first oil field development deal under its new upstream contract with a consortium led by Zarubezhneft. The \$750-million deal between Zarubezhneft and Iran's privately owned Dana Energy is expected to lift output at the Aban and West Paydar fields, which now pump 36 kb/d between them, to 48 kb/d in 10 years. Some international oil companies (IOCs) are cautious about investing in Iran as concerns mount over the fate of the 2015 nuclear deal. Firms from Russia and Asia are thought to be the top contenders for upstream deals because they do not have significant US exposure and are less dependent on the US financial network.

Production from **Iraq** dipped to 4.44 mb/d in March. Crude oil exports from the south bumped up 20 kb/d to 3.45 mb/d, despite maintenance at a loading facility. The Basra-area fields have been pumping more to make up for lower northern output. Iraqi forces regained control over the northern oil fields of Kirkuk in mid-October and output at core fields (over 250 kb/d) had been shut-in. Since mid-March, however, some 50 kb/d of flows appear to have resumed from the Kirkuk field's Avana Dome. Sales of northern crude via the Kurdistan Regional Government (KRG) pipeline to Turkey were running at roughly 320 kb/d, down 50 kb/d on February. Iraq's oil sales could be substantially higher if Baghdad and Erbil were able to reach a lasting political deal to use the Kurdish pipeline.



Royal Dutch Shell has meanwhile agreed to sell its 19.6% stake in the 400 kb/d West Qurna-1 field in southern Iraq to Itochu for \$406 million, as it winds down operations at the 230 kb/d Majnoon field. Shell opted to leave the oil sector as part of its \$30 billion global divestment programme. It remains committed to Iraq's gas industry as operator of the Basra Gas Co. Production held steady m-o-m in **Equatorial Guinea** and **Kuwait** at 130 kb/d and 2.7 mb/d, respectively.

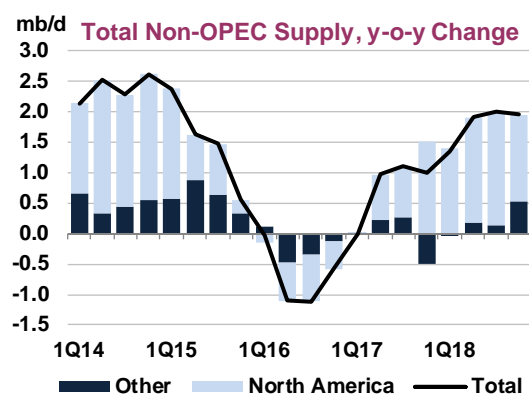
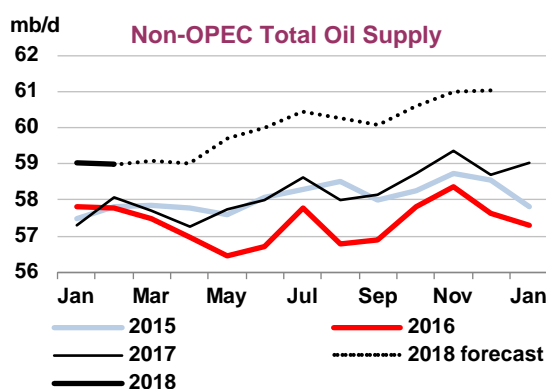


The **UAE** posted the largest increase in March, with production climbing 70 kb/d to 2.87 mb/d after oil fields sprang back from maintenance. Despite the rise, supply was below its OPEC quota. The Abu Dhabi National Oil Co (Adnoc) has finalised awards for its restructured, 700 kb/d offshore oil concession that has been split into three separate ventures: Lower Zakum, Umm Shaif and Nasr, and Satah al-Ras Boot (Sarab) and Umm Lulu. Total secured a combined 25% stake in Lower Zakum (5%) and Umm Shaif/Nasr (20%), the largest share for any company, while OMV acquired the final 20% stake in Sarab and Umm Lulu. Adnoc will retain a 60% stake in each. OMV, owned 25% by Abu Dhabi, joins CNPC, Eni, ONGC and Cepsa as newcomers in the UAE's upstream. Adnoc has also launched its first ever oil and gas exploration round, with bids due by October. Two of the six blocks are offshore and four are onshore, and estimates suggest they contain substantial amounts of oil and gas.

Output elsewhere in OPEC crept higher, reaching 600 kb/d in **Qatar**, 520 kb/d in **Ecuador** and 210 kb/d in **Gabon**.

## Non-OPEC overview

Non-OPEC oil supply inched up by 80 kb/d in March to 59.1 mb/d, 1.4 mb/d up on a year ago. Higher US supplies and, to a lesser extent, increased output in Brazil, Peru and Ghana following outages in February, offset declines in Canada and Mexico. Non-OPEC supply growth is on track to accelerate throughout the year as US LTO ramps up further and new projects come on line in Brazil, Canada and the UK. Forecast 2018 non-OPEC supply is unchanged since last month's *Report*, rising by nearly 1.8 mb/d to 59.9 mb/d. The US accounts for more than 80% of growth, as output expands by another 1.5 mb/d.



The largest m-o-m drop came from Canada (-235 kb/d) as producers advanced maintenance and cut back production in response to steep price discounts, and the biggest y-o-y decline stemmed from Mexico. By March, Mexican oil supply stood 240 kb/d below a year ago and was 310 kb/d lower than the October baseline compared with a pledged cut of 100 kb/d. As such, Mexico accounted for the largest decline of all non-OPEC producers party to the agreement, exceeding even that of Russia that had pledged to curb

output by 300 kb/d. Russian oil output inched up last month, reducing its compliance rate to 82%, its lowest since April 2017. Overall compliance for the 10 countries nevertheless improved to 90%, from 82% a month earlier. Kazakhstan showed the weakest performance, with output rising by 150 kb/d over the period compared with a pledged cut of 20 kb/d.

### Non-OPEC Supply

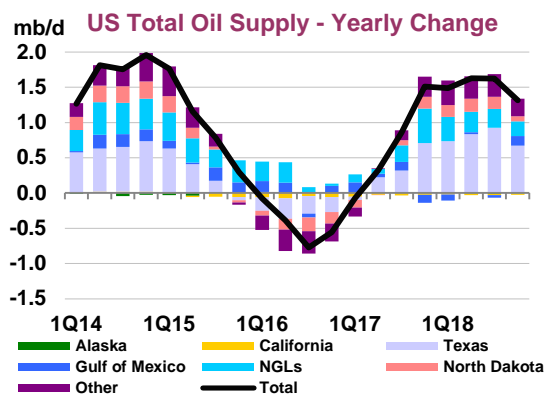
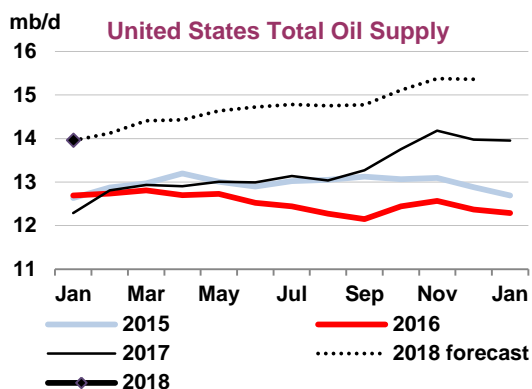
(million barrels per day)

	2016	1Q17	2Q17	3Q17	4Q17	2017	1Q18	2Q18	3Q18	4Q18	2018
Americas	19.5	19.9	19.8	20.2	21.2	20.3	21.3	21.5	22.0	22.6	21.9
Europe	3.5	3.6	3.5	3.4	3.4	3.5	3.6	3.5	3.4	3.6	3.5
Asia Oceania	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.4
<b>Total OECD</b>	<b>23.4</b>	<b>24.0</b>	<b>23.6</b>	<b>24.0</b>	<b>25.0</b>	<b>24.1</b>	<b>25.3</b>	<b>25.4</b>	<b>25.9</b>	<b>26.6</b>	<b>25.8</b>
Former USSR	14.2	14.4	14.3	14.3	14.4	14.4	14.5	14.4	14.4	14.5	14.4
Europe	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
China	4.0	3.9	3.9	3.8	3.8	3.9	3.8	3.8	3.8	3.7	3.8
Other Asia	3.6	3.5	3.4	3.4	3.4	3.5	3.4	3.4	3.3	3.3	3.4
Latin America	4.5	4.6	4.5	4.5	4.5	4.5	4.5	4.6	4.6	4.8	4.6
Middle East	1.3	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
Africa	1.7	1.7	1.7	1.7	1.7	1.7	1.8	1.8	1.8	1.7	1.8
<b>Total Non-OECD</b>	<b>29.3</b>	<b>29.5</b>	<b>29.3</b>	<b>29.2</b>	<b>29.3</b>	<b>29.3</b>	<b>29.3</b>	<b>29.3</b>	<b>29.2</b>	<b>29.4</b>	<b>29.3</b>
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	2.4	2.8	2.4	2.4	2.1	2.5	2.8	2.5	2.5
<b>Total Non-OPEC</b>	<b>57.4</b>	<b>57.7</b>	<b>57.7</b>	<b>58.3</b>	<b>58.9</b>	<b>58.1</b>	<b>59.0</b>	<b>59.6</b>	<b>60.3</b>	<b>60.9</b>	<b>59.9</b>
Annual Chg (mb/d)	-0.7	0.0	1.0	1.1	1.0	0.8	1.3	1.9	2.0	1.9	1.8
Changes from last OMR (mb/d)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	0.1	0.0	0.0

## OECD

### North America

US crude oil supply held steady in January (+6 kb/d), the latest month for which consolidated data is available, as an increase in output in the Gulf of Mexico largely offset declines in onshore production. Texas and New Mexico saw the largest declines, falling 56 kb/d and 17 kb/d, respectively, to 3.89 mb/d and 0.54 mb/d. Despite freezing temperatures, North Dakota production held steady at around 1.16 mb/d. At 9.96 mb/d, total US crude production was 1.1 mb/d higher than a year earlier, with Texas (+687 kb/d or 21%), North Dakota (181 kb/d or 19%), Colorado (134 kb/d or 46%), Oklahoma (127 kb/d or 32%) and New Mexico (124 kb/d or 30%) all posting strong increases.

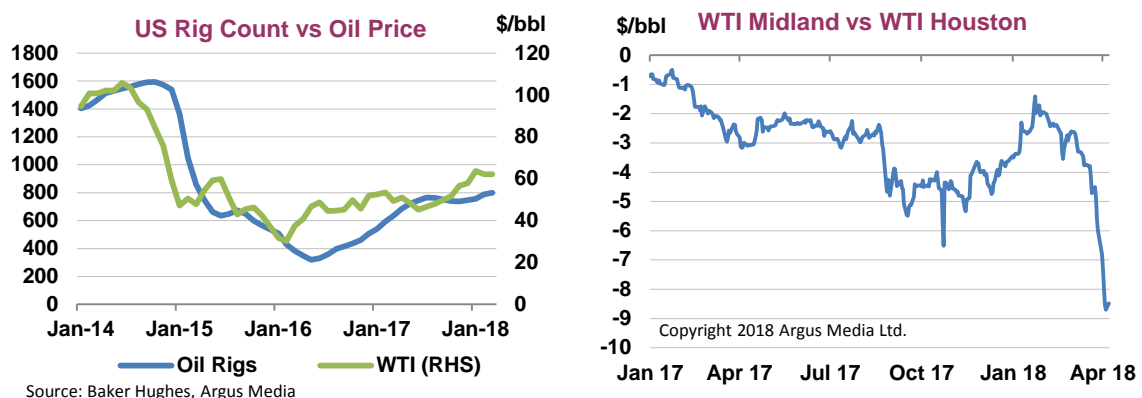


Gulf of Mexico production rose by 79 kb/d m-o-m in January to just over 1.6 mb/d, despite continued outages. Royal Dutch Shell announced late March that it hopes to resume operations at its Enchilada platform by June after it was damaged in a fire last November. The disruption to this key processing hub

for a number of fields in the Garden Banks area, also affected output from nearby fields. For example, Hess reported that it had lost about 30 kboe/d due to the shutdown but that it expects its affected fields – Conger, Baldpate and Penn State - to be back on line by the third quarter. In the meantime, output will get a boost from Hess's Stampede project that started up in January. Output is expected to reach 40 kb/d by 4Q18.

As for the onshore, the output drop was expected due to freezing temperatures extending as far south as Texas. Meanwhile, the EIA's drilling productivity report showed output from key shale plays rising by 95 kb/d m-o-m in January. The same report pegs monthly gains from February through April at just over 100 kb/d per month, to reach 6.95 mb/d in April – 1.4 mb/d higher than a year ago. While companies held the number of oil rigs largely stable overall in March, in the week ending 6 April they added 11 more, the biggest addition in two months. With 808 oil rigs active, the total reached its highest level since March 2015. As in previous months, companies dedicated more resources to the Permian, and over the past five weeks the number of oil rigs there rose by 10. Another seven rigs were deployed in the Williston Basin (Bakken), offsetting a drop of 12 rigs in the Cana Woodford and Utica basins.

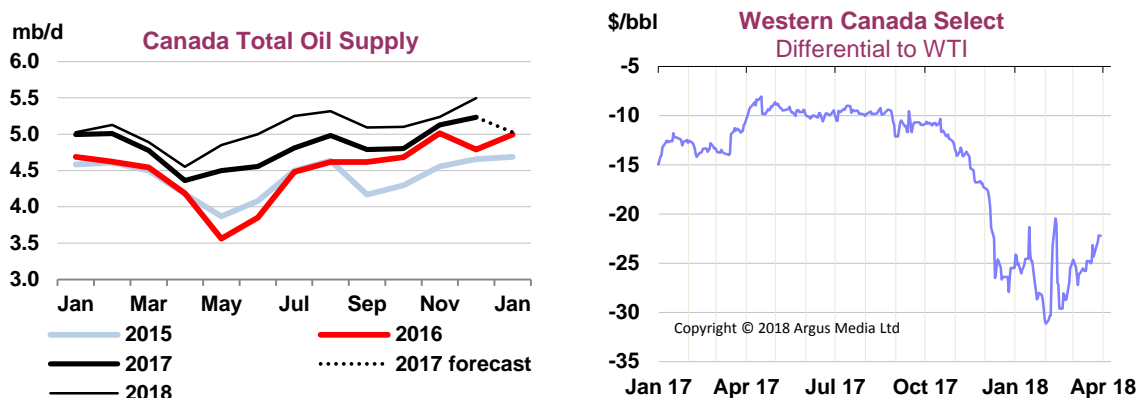
Nearly 55% of all active oil rigs are now operating in the Permian, compared with less than 50% a year ago and around 35% back in 2015. According to a Federal Reserve Bank of Dallas survey, oil activity in Texas continues to expand. However, the ramp-up in activity has pushed wage and other costs higher. According to the survey, average breakeven costs rose to \$52/bbl in 1Q18 against 2017's average of \$50/bbl. Across the basins, the average breakeven cost ranged from \$47-55/bbl in the first quarter, with the Permian Midland at the bottom of this range. Close to 90% of respondents said their costs remain below the \$66/bbl WTI spot price recorded at the end of March.



With output in the Permian basin expanding rapidly, and limited takeaway capacity available, producers are having to discount the crude, potentially posing a threat to future production. With few additional pipeline projects scheduled to be completed this year, operators may be forced to slow drilling or completions. According to media reports quoting market intelligence firm Genscape, pipeline utilisation from the Permian to the Gulf Coast has averaged about 89% so far this year and 96% over the past four weeks. As a result, Midland light sweet crude currently trades at more than \$8/bbl below West Texas Intermediate at East Houston, a key delivery spot for export markets. This is the biggest spread on record and it is now wide enough to cover spot shipping rates, which are typically higher than long-term committed rates offered by pipeline companies and even make transport by rail or truck economic. Bottlenecks are expected to ease during 2019 when major pipeline projects such as the Cactus 2 and EPIC lines come on stream. For more information on Texas infrastructure developments, see *North American oil looking for a way out* in OIL 2018.

**Canadian** oil production rose another 105 kb/d in December, the latest month for which final consolidated data is available. At 5.2 mb/d, total output stood 445 kb/d higher than the previous year,

boosted by the start-up of the Fort Hills, Horizon and Hebron projects. For 2017 as a whole, Canadian oil production was up 355 kb/d y-o-y, to 4.8 mb/d. Preliminary data for Alberta, which accounts for the bulk of Canadian oil supply, suggest output eased in January and only marginally improved in February. Oil sands production fell by 165 kb/d in January, on lower output of synthetic crudes. A partial recovery was reported for February.



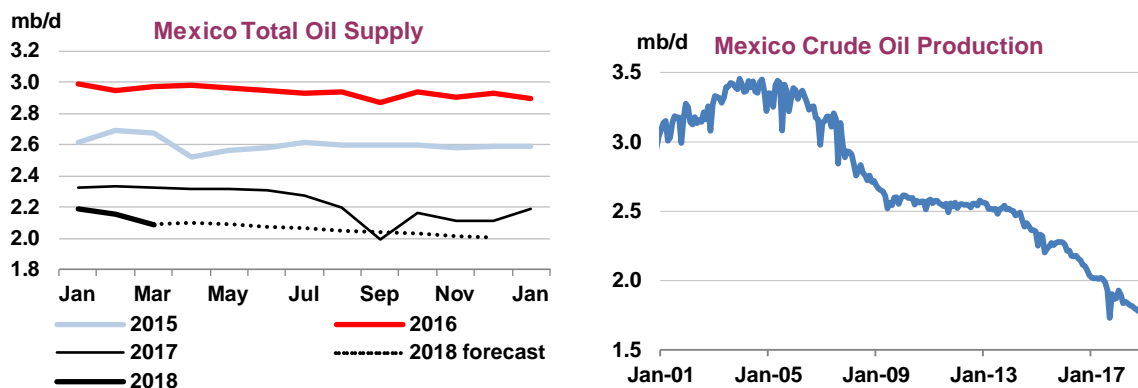
Midstream bottlenecks are also having an impact on Canadian oil supply. As in Texas, restricted takeaway capacity has caused the light-heavy price differential to blow out. The spread between Western Canada Select and WTI delivered at Cushing reached as much as \$30/bbl in February compared with only \$10/bbl back in 2017. While exports by rail have been rising lately, to reach 150 kb/d by December, demand from non-oil customers and a shortage of rail cars are restricting higher shipments. Cenovus, which purchased a crude-by-rail loading terminal in Bruderheim back in 2015, says a shortage of locomotive hauling capacity is preventing it from fully utilising the facility. More rail capacity could be available to crude shippers by mid-year once a backlog of federally regulated grain shipments is worked off and as more shippers agree to take-or-pay transportation deals with the rail companies.

In the meantime, the wide price differentials have led companies to adjust maintenance and production plans. For example, Cenovus Energy announced it has been operating its Christina Lake and Foster Creek oil sands facilities at reduced rates since February and storing excess barrels in its reservoirs. To further mitigate the impact of current pipeline constraints and discounted heavy oil pricing, Cenovus said it is evaluating opportunities to optimise the scheduling of maintenance at its oil sands facilities.

Suncor announced last month that it had advanced a planned eight-week turnaround at its syncrude upgrader, originally scheduled to begin in April. As a result, 1Q18 output fell to approximately 240 kb/d from 300 kb/d in 4Q17. Syncrude also said that base plant operations were lower than expected due to a significant weather-related outage in January. Base plant operations returned to normal levels in February and are expected to remain so until a planned turnaround of Upgrader 1 in the second quarter. Suncor also said that the ramp up of Fort Hills is progressing very well following the start-up of the first secondary extraction train towards the end of January. Both Cenovus and Syncrude left 2018 production guidance unchanged.

**Mexican** oil output continues its downward slope. According to preliminary data, crude oil production dropped by another 60 kb/d m-o-m in March to 1.84 mb/d, from 1.90 mb/d in February and 1.93 mb/d at the start of the year. While declines were broad-based, the largest fall was recorded from the Ku-Malob-Zaap fields, down 26 kb/d m-o-m, and the Cantarell complex, which was 7 kb/d lower. The latest data show total oil output 240 kb/d below a year earlier and 310 kb/d lower than the October 2016 level, which serves as the baseline to calculate OPEC/non-OPEC output cuts. Mexico pledged to reduce production by 100 kb/d.

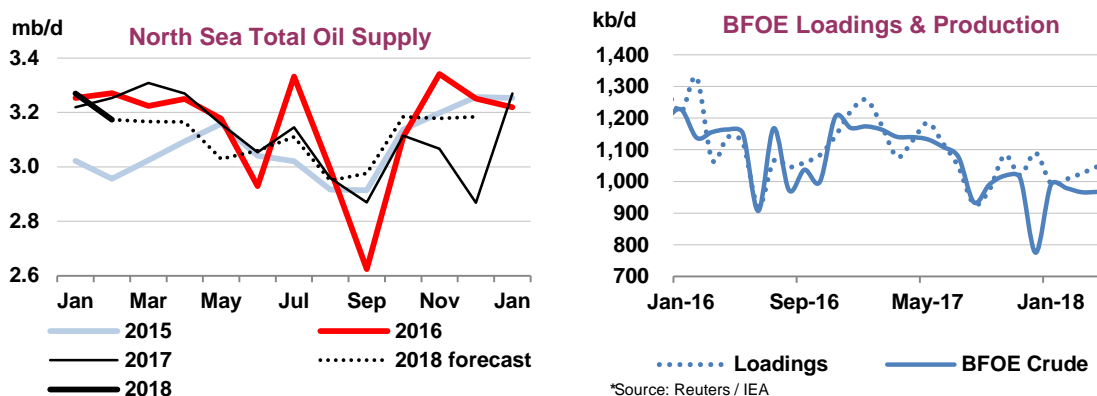
Meanwhile, the opening up of the Mexican upstream is moving apace. Another round of auctions was concluded in March. The regulator, National Hydrocarbon Commission (CNH), awarded just under half of the 35 shallow-water blocks on offer in Round 3.1 to firms including Repsol, Total, Eni, Premier Oil and Pemex, which was seen as the biggest winner overall. Companies focused on oil, with no bids submitted for the 17 blocks holding wet gas resources. CNH expects operations in the awarded blocks to start in 2022, with oil production peaking at 235 kb/d by 2025, and natural gas output reaching 220 MMcf/d. The government received \$124 million in cash payments for the three most highly contested blocks that lie north of the prolific Zama and Amoca discoveries, and which are estimated to hold up to 1.8 billion boe of oil in place. Estimated future investment in the awarded blocks amounts to \$8.6 billion.



CNH also approved Pemex's development plan for the Ek-Balam oil and natural gas field in the Sound of Campeche in March. Pemex told CNH it plans to spend \$6.6 billion to develop the shallow water field that is expected to produce 100 kb/d of oil and 26.9 mmcf/d of gas by 2022. Despite the new awards and the approval of the Ek-Balam project, the government does not expect a significant change in oil production before 2025. This is later than had been previously expected.

## North Sea

**North Sea** oil supply eased in February, falling by 100 kb/d to 3.2 mb/d. Loading schedules suggest steady production in March and April, ahead of a sharp drop in May as a number of Norwegian fields are to undergo maintenance. May schedules show that most grades will decline next month, with shipments of benchmark grades Forties, Ekofisk, Troll and Oseberg all set to fall. Oseberg crude will be unavailable for most of the month. Forecasts from the Norwegian Petroleum Directorate show that May will be the heaviest maintenance month for Norwegian fields, with production dropping from 1.6 mb/d in April to 1.47 mb/d.

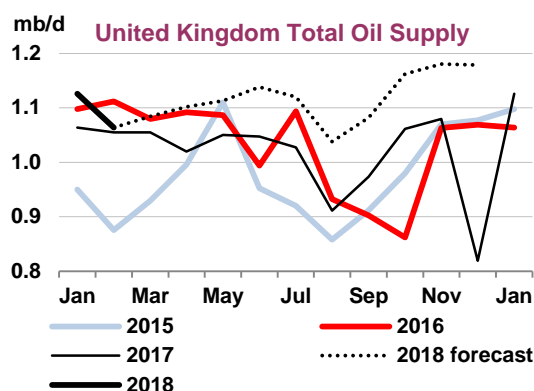
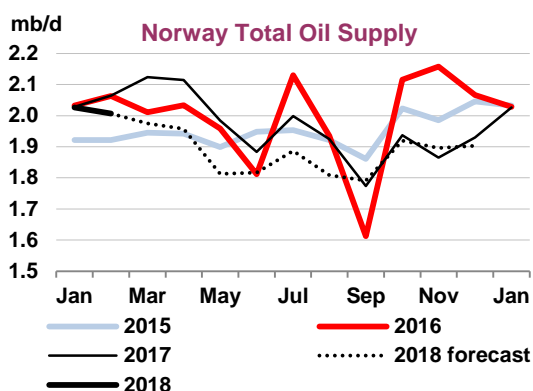




Availability of Forties will be lower than previously expected in June, with only a slight recovery expected in July, according to Forties Pipeline System (FPS) operator Ineos. June's Forties production is now expected to average just 410 kb/d, down from a previous forecast of 426 kb/d. Barring the disruption caused by the pipeline's closure in December, the forecast is for the lowest output since August last year, when a number of fields on the FPS were closed for maintenance. Output will rise in July to 423 kb/d.

**Norwegian** oil supply inched lower by 20 kb/d in February, to just over 2 mb/d, according to preliminary data. Final field level data for January confirmed output of 2.03 mb/d – a nine month high. The monthly increase, totalling roughly 100 kb/d, stemmed primarily from the Goliat field, as output rose by 58 kb/d to 97 kb/d following an extended shutdown that lasted from September through December. Smaller increases came from a number of fields, including Troll, which suffered gas outages in December.

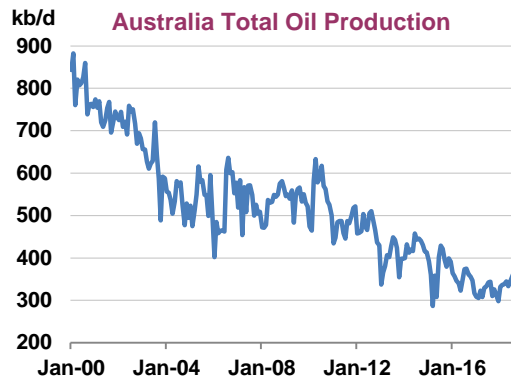
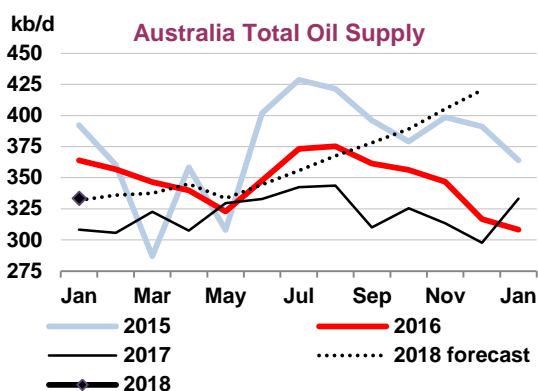
In early April, a consortium consisting of Repsol (55%), Okea (15%), Lotos E&P (20%) and Kufpec (10%) announced that it has brought forward the anticipated start-up date of the 60 kb/d Yme redevelopment project from 2020 to the end of 2019 after a revised plan was approved by the Petroleum and Energy Ministry. Operator Repsol and its partners plan to invest Nkr 8.2 billion (\$1 billion) to produce an additional 65 mb from the field.



Revised data for the **UK** show that production in January was a six-year high of 1.13 mb/d. February output fell by 60 kb/d but for the first two months of 2018 production was 35 kb/d higher than a year ago. After posting a 20 kb/d decline last year, UK production is expected to expand by 100 kb/d in 2018.

## OECD Asia Oceania

**Australian** oil output rose by 35 kb/d in January to 330 kb/d, from December's three-year low. Production has declined steadily since peaking at around 800 kb/d in 2000. Following a drop of 25 kb/d in 2016, output fell by another 30 kb/d last year.

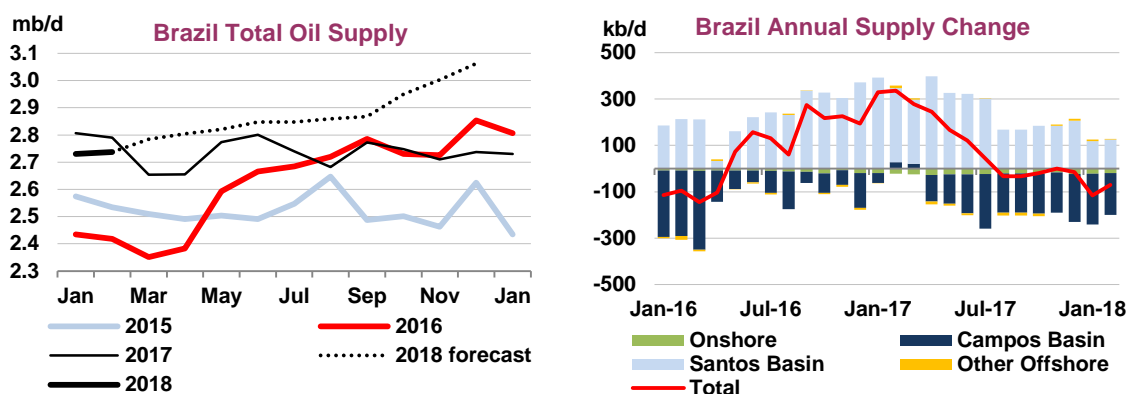


The start-up of new liquefied natural gas (LNG) facilities is expected to reverse declines this year, however, as new condensate and NGL output offset declines at mature crude oil fields. Notably, Inpex is planning to start up the Ichthys LNG project in April or May, slightly later than earlier plans. Once fully operational, Ichthys is expected to produce 8.9 million tonnes of LNG a year, along with about 30 kb/d of LPG and roughly 100 kb/d of condensate. Further gains will come from Chevron's Wheatstone LNG project that exported its first condensate cargo in February. The plant's second train should come online in the second quarter this year raising condensate output to 30 kb/d. Lastly, the Prelude floating LNG project is set to start up later this year, adding another 40 kb/d of condensate. Providing a partial offset, Woodside will suspend production from its Vincent crude oil field for a year starting in May, as the FPSO that operates the field will be taken offline for modifications ahead of the launch of the 40 kb/d Greater Enfield crude oil project in mid-2019. The Vincent field produced 17 kb/d in 4Q17. In all, Australian oil supplies are expected to rise by 40 kb/d this year, to average 360 kb/d.

## Non-OECD

### Latin America

**Brazilian** total oil production held steady in February at around 2.7 mb/d, running below year earlier levels for a fourth consecutive month, as a 200 kb/d y-o-y increase in production from the Santos Basin failed to offset declines in the more mature Campos Basin and at onshore fields. According to Petrobras, the relatively weak output numbers were mainly due to the operational issues at the P-18 and P-20 platforms that operate in the Marlim field in the Campos Basin, and the FPSO Cidade de Angra dos Reis, located in the Lula field in the Santos Basin pre-salt. Output at Lula nevertheless inched up another 8 kb/d m-o-m to a record 850 kb/d, 160 kb/d higher than a year ago. Supplies from the Cidade de Caraguatatuba FPSO, that started up in December 2016 but were temporarily suspended for nearly three months from last September, were just shy of 40 kb/d by February.



Production is expected to return to growth from March. Petrobras plans to bring on stream another two FPSOs during the first half of 2018, including the P-74 FPSO at the Buzios field and the Tartarugas Verde E Mestiça FPSO that was delayed from last year. An additional five FPSOs are set to come on line during the second half of the year. In all, output is forecast to expand by 120 kb/d in 2018, assuming a start-up of new units towards the end of the year.

The 15<sup>th</sup> oil auction was completed in March. It offered offshore blocks in both the Campos and Santos Basins as well as a number of onshore blocks. ExxonMobil teamed up with Petrobras, Statoil and Qatar Petroleum, to win four of the nine blocks on offer in the Campos Basin. Exxon paid Real roughly \$860 million in signing bonuses to win stakes in eight blocks, including six as operator. Brazil sold 22 of the 68 blocks on offer in the auction, although the onshore blocks did not get any bids. Total signing bonuses reached a record \$2.4 billion topping the previous record of \$1.1 billion set in the 14<sup>th</sup> Round held in September 2017 even as Brazil's Federal Audit Court removed the bid round's two most

promising blocks ahead of the sale. The two blocks will possibly be sold together with the adjacent Saturno production sharing area that will be offered on 7 June.

**Colombian** oil production dropped by 40 kb/d in February from a month earlier, to 825 kb/d. Output was also sharply lower than a year earlier (4.7%) as operations were disrupted by outages and shutdowns. In particular, the country's largest producer, Ecopetrol, was forced to shut three of its most productive fields, Castilla, Chichimene, and Acacias, due to protester blockades. The Ministry of Energy and Mines noted that average output for January and February was in line with the official full-year target of 840 kb/d. Production has fallen sharply recently due to cutbacks in investment. As recently as February 2016, Colombian oil production was 960 kb/d.

## Middle East

In early April, **Bahrain** announced the discovery of a significant oil and gas field located off the west coast. According to the Ministry of Oil and Gas Affairs, the Khalij Al Bahrain field is estimated to hold reserves of at least 80 billion barrels of tight oil and deep gas reserves in the region of 10-20 trillion cubic feet – making it the country's largest ever discovery. The oil minister said the field could produce 200 kb/d in five years with the help of foreign companies. Bahrain produced roughly 200 kb/d of oil in 2017, of which 50 kb/d came from the Bahrain (Awali) oil field and 150 kb/d from the Abu Saafa field that it shares with Saudi Arabia. According to JODI data, crude oil output fell from 209 kb/d in November to 120 kb/d in December before recovering to 143 kb/d in January. Bahrain had pledged to cut output by 10 kb/d from its October 2016 baseline.

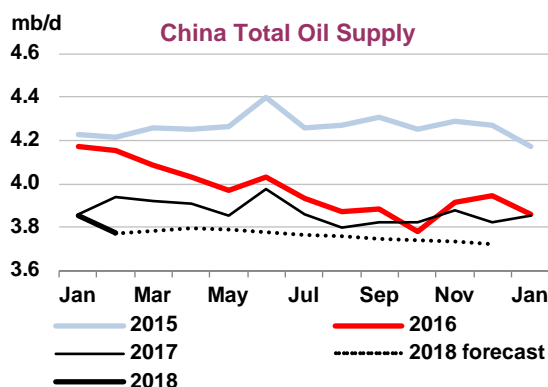
## Asia

**China's** top three oil companies, PetroChina, Sinopec and CNOOC, saw revenues soar in 2017 as higher prices more than offset the impact of falling production. Their domestic crude oil output dropped by 140 kb/d last year, or 4%, yet net revenues increased for all three companies. PetroChina's upstream operating profits surged by 392% to around \$2.5 billion from \$500 million in 2016. In contrast, Sinopec reported a total loss of \$7.3 billion in its exploration and production segment. Upstream revenues increased by 36% to \$25 billion, which fell short of its operating expense. CNOOC reported \$3.9 billion in net profit, up from only \$1 billion 2016, its best annual result since 2014. Total revenues were up 27% to nearly \$30 billion in 2017, also the best result since 2014.

China's National Energy Administration has set a 2018 domestic crude production target of 190 million mt (3.82 mb/d), largely unchanged from the 2017 level. CNOOC, which announced on 20 March it had put its Weizhou 6-13 oilfield in the Beibu gulf of South China Sea into production ahead of schedule, raised its oil and gas output target by around 1.3% for 2018, setting a 50% higher target for capital expenditures, amounting to around \$11-13 billion.

PetroChina, meanwhile, is shifting its efforts towards gas in support of Beijing's goal of promoting cleaner fuels. In its latest annual report, China's largest oil and gas producer announced it aims to produce 100.12 bcm of gas in 2018, up 3.3% compared with 2017 while targeting a 0.1% increase in crude output to 888.2 mb. The company set its capex budget for the year at roughly \$36 billion, about 4.4% higher than the 2017 spending.

Sinopec, the world's biggest refiner, has allocated yuan 117 billion of capital expenditure for 2018, up from an actual spend of 99.38 billion yuan last year. That includes a 55% increase in upstream spending



to yuan 48.5 billion. The company expects to produce 290 mb of crude oil in 2018, or approximately 795 kb/d, which is slightly down from 293.7 mb in 2017 and would mean Sinopec's oil output declining for a fourth straight year. It also plans to produce 974.1 bcf of natural gas, up 6.8% from 2017.

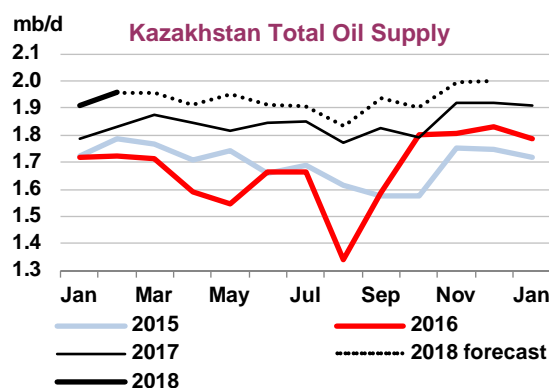
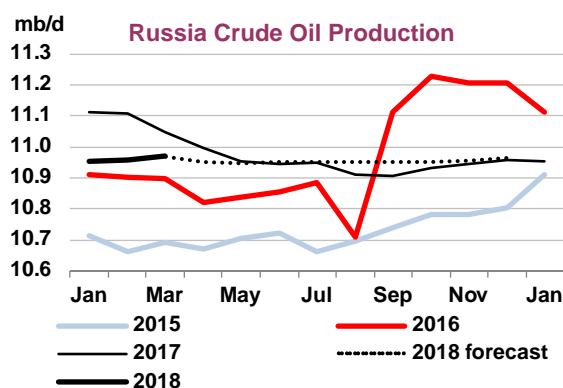
Despite lofty targets, Chinese crude oil production is forecast to decline by 100 kb/d in 2018, to 3.65 mb/d. Total oil supplies, including CTLs, are forecast to average 3.8 mb/d this year.

## Africa

Crude shipments out of **Ghana** recovered in March, to nearly 190 kb/d according to preliminary tanker tracking data from Kpler. February exports fell to only 112 kb/d, the lowest since April 2017 as Tullow shut its Jubilee field for four to six weeks to perform maintenance. The field will shut again for three weeks towards the end of the year.

## Former Soviet Union

**Russian crude and condensate** production inched higher in March, to 10.97 mb/d - 80 kb/d below a year earlier and 260 kb/d lower than the October 2016 baseline<sup>1</sup>. Including natural gas liquids, output was 11.35 mb/d. While compliance with agreed output cuts fell to 82%, the lowest since April, Energy Minister Alexander Novak said in a statement that Russia will fully comply with its pledge in April. According to Novak, the increase in oil output in March was due to "high demand for gas and seasonality on the domestic market".



**Azeri** oil output eased by 12 kb/d in March, to 795 kb/d, according to ministry data. Output was 19 kb/d lower than the October 2016 baseline, compared with agreed cuts of 35 kb/d. As such, compliance improved to 55%, compared with 22% a month earlier and 77% on average since the start of the pact.

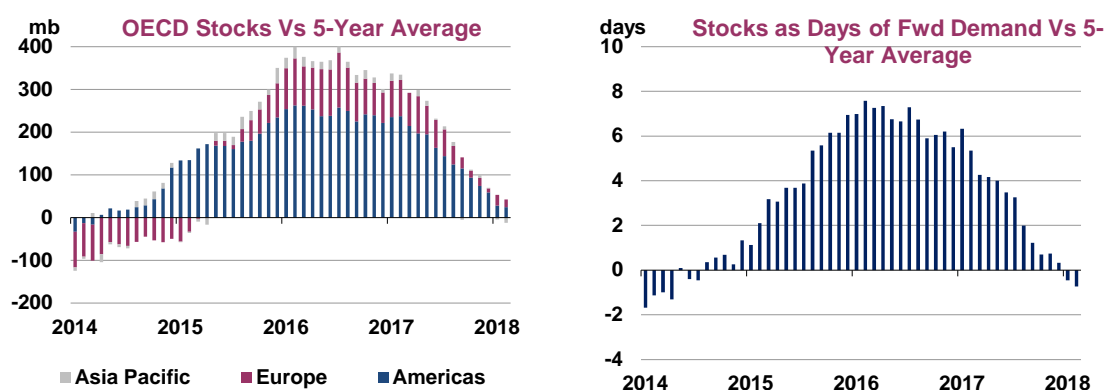
**Kazakh** oil supply, meanwhile, rose by 45 kb/d in February, to a record 1.96 mb/d, on higher production from Kashagan. Output from the field ramped up by 54 kb/d to 256 kb/d, the highest yet, after operations resumed 18 months ago. Production at Tengiz inched 15 kb/d lower to 598 kb/d while Karachaganak output held largely steady at around 290 kb/d. Loading schedules show CPC shipments reached a record high in March of just over 1.4 mb/d, although Kazakh output likely registered a marginal decline due to renewed production problems at Kashagan. According to the North Caspian Operating Company, crude production from Kashagan will be suspended briefly for maintenance in spring 2018. While no information on the timing and duration of the works were available at the time of writing, scheduled CPC Blend loadings suggest output fell further in April, with exports 8.7% lower m-o-m due to a reduction in scheduled Kashagan shipments.

<sup>1</sup> Data reported by the Russian oil ministry in tons. IEA converts the data using a fixed rate of 7.3 bbl/tonne.

# STOCKS

## Summary

OECD commercial stocks declined by 25.6 mb month-on-month (m-o-m) in February to 2 841 mb, the lowest level since April 2015. While a decrease is expected at this time of year when heating demand is at its highest in the northern hemisphere and refineries begin to cut runs for maintenance work, the fall was three times greater than usual. OECD inventories have fallen for six of the last seven months and have declined sharply versus the five-year average, used by OPEC as a metric to measure the success of its output cuts. At end-February, OECD stocks were just 30 mb above the five-year average, with oil products in deficit. The surplus has decreased steadily in the OECD Americas helped by strong refinery utilisation and at the end of February it was just 24 mb above the average.



The five-year average basis of OECD inventories is set to increase by 8 mb in March, 17 mb in April and 27 mb in May, meaning that stocks only have to remain unchanged between February-May for the remaining surplus to be eroded. Taking into account preliminary stock figures for March and the expected stock draws we see globally during 2Q18 (assuming stable OPEC output), we estimate it likely that OECD stocks will reach the average by April or May. When stocks are expressed in days of forward demand, OECD inventories have been below the five-year average since January 2018 as a result of the stock reduction and the increase in OECD demand seen in the last few years. If the metric were the comparison to the ten-year average, the surplus would mathematically increase by 78 mb to 108 mb in February and would likely take several more months to draw down.

### Preliminary Industry Stock Change in February 2018 and Fourth Quarter 2017

	February 2018 (preliminary)				Fourth Quarter 2017			
	(million barrels)				(million barrels per day)			
	Am	Europe	As. Ocean	Total	Am	Europe	As. Ocean	Total
<b>Crude Oil</b>	<b>3.2</b>	<b>4.9</b>	<b>-6.5</b>	<b>1.7</b>	<b>0.12</b>	<b>0.18</b>	<b>-0.23</b>	<b>0.06</b>
Gasoline	8.2	0.5	-0.7	8.0	0.29	0.02	-0.03	0.28
Middle Distillates	-5.5	-6.5	-2.9	-15.0	-0.20	-0.23	-0.10	-0.54
Residual Fuel Oil	-0.6	-0.2	-0.9	-1.7	-0.02	-0.01	-0.03	-0.06
Other Products	-15.7	-1.1	-0.6	-17.3	-0.56	-0.04	-0.02	-0.62
<b>Total Products</b>	<b>-13.7</b>	<b>-7.3</b>	<b>-5.1</b>	<b>-26.0</b>	<b>-0.49</b>	<b>-0.26</b>	<b>-0.18</b>	<b>-0.93</b>
Other Oils <sup>1</sup>	2.0	-0.9	-2.4	-1.3	0.07	-0.03	-0.09	-0.05
<b>Total Oil</b>	<b>-8.4</b>	<b>-3.2</b>	<b>-14.0</b>	<b>-25.6</b>	<b>-0.30</b>	<b>-0.12</b>	<b>-0.50</b>	<b>-0.92</b>

<sup>1</sup> Other oils includes NGLs, feedstocks and other hydrocarbons.

In February, OECD crude stocks increased by 1.7 mb with gains registered in Europe (+4.9 mb) and the Americas (+3.2 mb). However, the increase was far less than implied by seasonal patterns due to high refinery utilisation in North America and lower crude imports in Japan. Oil product stocks, meanwhile, drew in line with seasonal expectations by 26 mb to 1 430 mb. Cold weather in North America continued to push middle distillates and other product stocks (largely US LPG) lower, whereas gasoline inventories increased unexpectedly thanks to higher refinery runs and lower demand.



Preliminary data for March is mixed. US oil stocks declined by a further 17 mb m-o-m with a sharp fall in diesel and gasoline inventories. By contrast, Japan's stocks increased by 7.5 mb with higher crude and middle distillate holdings and Europe's stocks gained 8.3 mb, also because of crude.

### Revisions versus March 2018 Oil Market Report

	Americas		Europe		Asia Oceania		OECD	
	Dec-17	Jan-18	Dec-17	Jan-18	Dec-17	Jan-18	Dec-17	Jan-18
<b>Crude Oil</b>	<b>1.4</b>	<b>-2.3</b>	<b>0.0</b>	<b>-8.6</b>	<b>0.0</b>	<b>-2.3</b>	<b>1.4</b>	<b>-13.2</b>
Gasoline	-0.4	1.0	-0.1	0.4	0.0	-0.3	-0.5	1.0
Middle Distillates	0.5	-4.7	0.0	7.5	0.0	0.8	0.5	3.6
Residual Fuel Oil	0.1	-0.3	0.0	2.3	0.0	0.6	0.1	2.6
Other Products	-1.6	7.1	0.0	3.5	0.0	-1.1	-1.6	9.4
<b>Total Products</b>	<b>-1.4</b>	<b>3.0</b>	<b>-0.1</b>	<b>13.7</b>	<b>0.0</b>	<b>-0.1</b>	<b>-1.5</b>	<b>16.6</b>
Other Oils <sup>1</sup>	0.5	-10.2	0.0	3.0	0.0	-0.1	0.5	-7.3
<b>Total Oil</b>	<b>0.6</b>	<b>-9.4</b>	<b>-0.1</b>	<b>8.1</b>	<b>0.0</b>	<b>-2.5</b>	<b>0.4</b>	<b>-3.9</b>

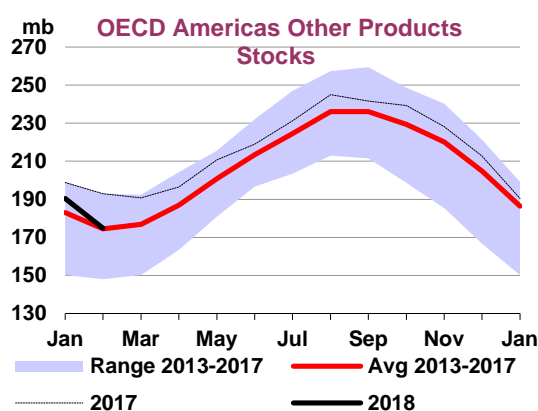
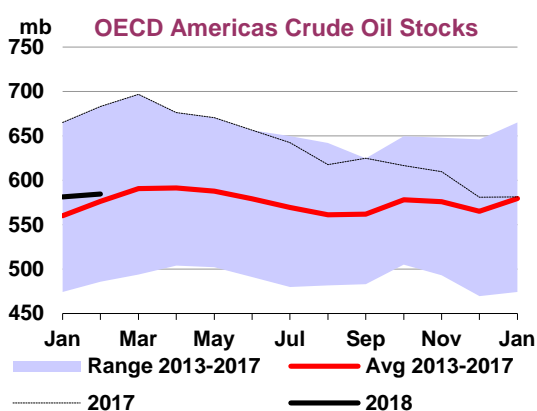
<sup>1</sup> Other oils includes NGLs, feedstocks and other hydrocarbons.

OECD oil inventories were revised up by 0.4 mb in December and down by 3.9 mb in January. The largest revisions were made in the Americas and Europe for January and largely offset each other. There is a break in stocks between December 2017 and January 2018 for refinery feedstocks in Switzerland, as more detailed information on refinery activity is now collected by the national administration, however the impact on overall OECD stock levels is negligible.

## Recent OECD industry stock changes

### OECD Americas

Commercial stocks in the OECD Americas fell more than usual in February, by 8.4 mb to reach 1 470 mb. At end month, stocks were at their lowest level since March 2015 and 24 mb above the five-year average. High processing rates at US refineries limited the seasonal crude stock build in the region to just 3.2 mb instead of the 16.2 mb recorded over the last five years. High crude exports of 1.5 mb/d contributed. Crude stocks were 584 mb at end-February, still close to their lowest level in more than two years. In Canada, crude stocks were 118 mb at the end of January, up 6.5 mb from October, before an outage on the Keystone pipeline. No official figures were available for February, but data from *Kayrros* showed crude stocks in the storage hubs of Edmonton and Hardisty building during February-March, as rail facilities struggled to increase oil throughput amid competition with grain and winter weather.



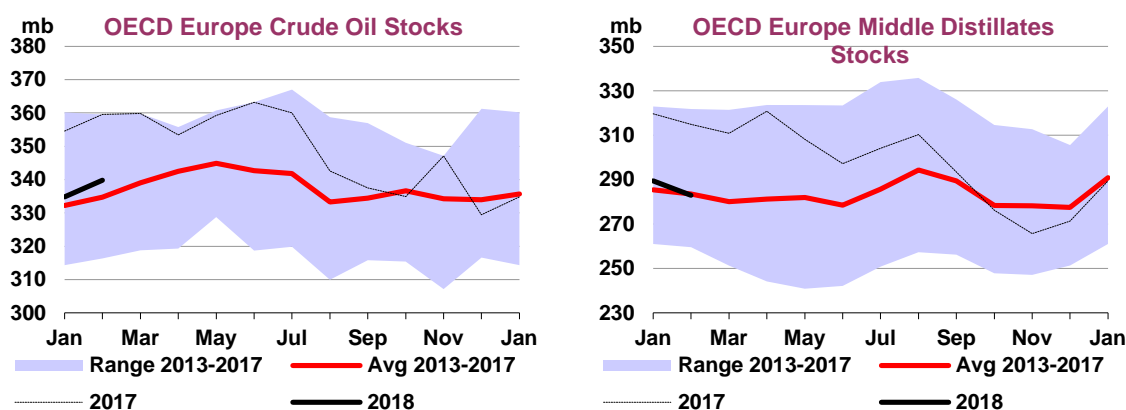
Oil product holdings declined seasonally by 13.7 mb to 707 mb, with a larger-than-normal draw of 15.7 mb in other products (largely US LPG) driven by lower-than-usual temperatures in North America. Draws in the category amounted to 38.1 mb over the January-February period, the largest seen in more

than ten years and larger than during the polar vortex of early 2016. Middle distillate inventories also fell 5.5 mb to 211 mb, whereas gasoline stocks increased counter-seasonally by 8.2 mb to 284 mb. Gasoline stocks were at the top of the five-year range at the end of the month, thanks to higher refining runs and lower demand rather than an increase in imports.

Preliminary data from the EIA, however, show US gasoline stocks falling steeply during March by 12.8 mb in line with seasonal expectations, thanks to higher demand. The US exported increased volumes to Mexico and Latin America, but imports also rose on the month. Diesel stocks, meanwhile, fell by 6.9 mb, whereas other products and fuel oil holdings increased. Crude stockpiles were broadly unchanged on the month, but this contrasted once again with the typical build of 16.4 mb seen during March. Crude exports averaged 1.7 mb/d during the month, close to their highest ever and at the end of the month they reached another weekly record of 2.2 mb/d.

## OECD Europe

Commercial stocks in OECD Europe declined counter-seasonally in February, weighed down by higher heating oil consumption and lower oil product imports. They were 980 mb at end-month, down 3.2 mb m-o-m and just 18 mb above the five-year average. Crude stocks built seasonally by 4.9 mb to reach 340 mb. Refinery runs eased some 500 kb/d from January with seasonal maintenance works scheduled at several plants while seaborne crude imports fell 170 kb/d, according to *Kpler*.

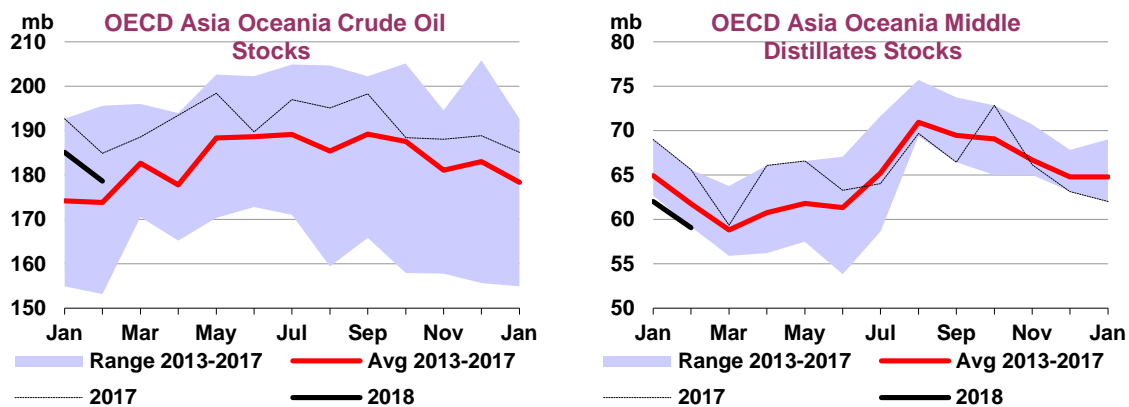


In oil products, middle distillate stocks moved the most as they declined 6.5 mb m-o-m to reach 283 mb and were below the five-year average for only the third time since April 2015. Higher demand for heating oil linked to cold weather and lower runs at refineries contributed. Other product movements were mostly anticipated and in line with seasonal norms. Gasoline stocks rose 0.5 mb, even as exports increased to their highest level in several months due to strong demand in West Africa. Fuel oil stocks fell 0.2 mb and other product stocks declined 1.1 mb.

Preliminary data from Euroilstock show an overall oil stock build of 8.3 mb in March largely driven by rising crude inventories (+9.3 mb). Oil product stocks drew 1.1 mb with falls seen in gasoline and middle distillates, whereas fuel oil holdings increased.

## OECD Asia Oceania

Commercial stocks in OECD Asia Oceania fell sharply in February by 14 mb to 391 mb, their lowest level since April 2015. Stocks were 12 mb below the five-year average at end-month, meaning that Asia Oceania was the only OECD region in deficit. Crude stocks declined 6.5 mb due to a large drop in imports to Japan from 3.5 mb/d in January to 2.9 mb/d in February, according to *Kpler*. Oil products behaved seasonally with stocks falling 5.1 mb against an average of 4.4 mb. Middle distillates declined 2.9 mb due to higher heating demand, slightly less than the average drop of 3.2 mb over the last five years.

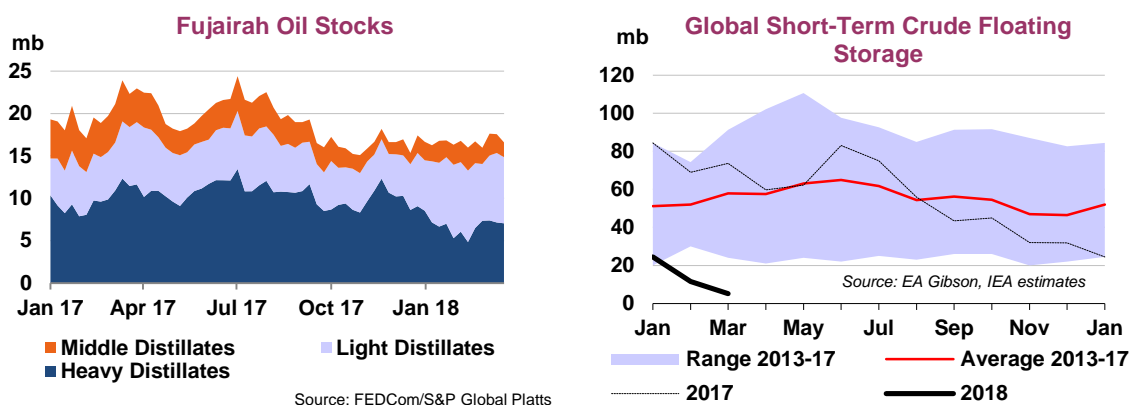


Preliminary data from the *Petroleum Association of Japan* (PAJ) show oil inventories rising counter-seasonally in March by 7.5 mb. Kerosene holdings, in particular, increased, because of higher temperatures and an early end to the winter heating season. Crude stockpiles also increased by 4.8 mb – they normally fall at this time of year – owing to higher refinery utilisation.

## Other stock developments

Stockpiles in the 20 non-OECD countries covered by the JODI database (Saudi Arabia, Chinese Taipei, Cyprus, Ecuador, Brazil, Philippines, Slovenia, Brunei Darussalam, Hong Kong, Malta, Croatia, Romania, Lithuania, Bahrain, Bulgaria, Iraq, India, Angola, Qatar, Nigeria) increased 15.4 mb m-o-m in January. Crude stocks in Saudi Arabia declined 4.2 mb to 241 mb, their lowest level since December 2011, but stock gains in other OPEC countries (Nigeria, Qatar, Angola, Iraq) and in India more than offset this loss.

During March, short-term crude floating storage dropped to 5.2 mb, its lowest level in nearly ten years, according to shipbroker *EA Gibson*. They identified Asia Pacific as the only region with volumes of oil stored offshore. Other estimates, including from *Kpler*, showed floating storage higher due to full tanks in China's Shandong province and rising congestion at Chinese ports. On the products front, market sources identified several tankers laden with gasoline waiting offshore Amsterdam-Rotterdam-Antwerp and Singapore, a sign of short-term demand weakness.



Data from *China Oil Gas and Petrochemicals* (China OGP) covering Chinese oil majors show commercial stocks rising by a sharp 25.9 mb m-o-m. Diesel inventories increased by 29.3 mb amid a seasonal slowdown in industrial and farming activity linked to the Chinese New Year. Crude stocks rose by 3.1 mb and kerosene increased by 0.1 mb, whereas gasoline stocks declined by 6.7 mb. Crude imports were around 8.4 mb/d in February, implying an overall crude stock draw of 33 mb for the month. We estimate that crude stocks fell once again in March, though by less than in February, as imports picked up. During 1Q18, it is likely that Chinese crude stocks showed a small draw in contrast with 2017's sharp build.

Oil inventories in Fujairah rose by a modest 0.7 mb in March to reach 16.9 mb, their highest level since November, according to figures available from *FEDCom/S&P Global Platts*. A recovery in fuel oil and bunker fuel inventories following the largest fall since data began to be published in 2017 was the main reason. Singaporean stocks also rose 2.1 mb to 47 mb, with higher light and middle distillate inventories, according to data from *International Enterprise*.

### China's SPR to fill at higher rate in 2018

Over the past 15 years, China has built up the world's most ambitious strategic crude reserves programme since the US, Japan and Europe created theirs in the 1970s. The pace of China's build has been the subject of much speculation because of its significance to global markets and its secretive nature. The rate of filling has fallen in the last few years, reflecting technical challenges in commissioning some underground facilities and reduced urgency in an era of plentiful supply.

We estimate that China's SPR filled by 27 mb (75 kb/d) in 2017, about half the rate of the previous year. Four sites saw some activity during the year, of which three are underground. CNPC's Jinzhou rock cavern in Liaoning filled the bulk of its reserves in 2016 and finished at the start of 2017. CNOOC's Huizhou rock cavern in Guangdong finished its fill at the end of 2017 after starting in 2016. The second phase of Aoshan, on Zhoushan island, was filled during 2017, while Sinopec's Zhanjiang rock cavern continued to fill, reaching more than half of capacity by the end of 2017, according to various sources and IEA estimates.

Given that several facilities can store crude on behalf of the government, the real quantity of SPR builds for the year is likely to be even higher. However, it is impossible to determine accurately. China's National Bureau of Statistics said at the start of 2018 that the SPR had reached 274 mb by mid-2017, up 33 mb (90 kb/d) from the middle of 2016 and marking a stark deceleration from the fill rate in 2015-16. However, the Jinzhou, Huizhou and Zhanjiang reserves were not listed in the government's update, leaving the possibility that the overall stock expansion counted by authorities took place at other sites.

IEA Estimate Of China's SPR Sites And Their Status

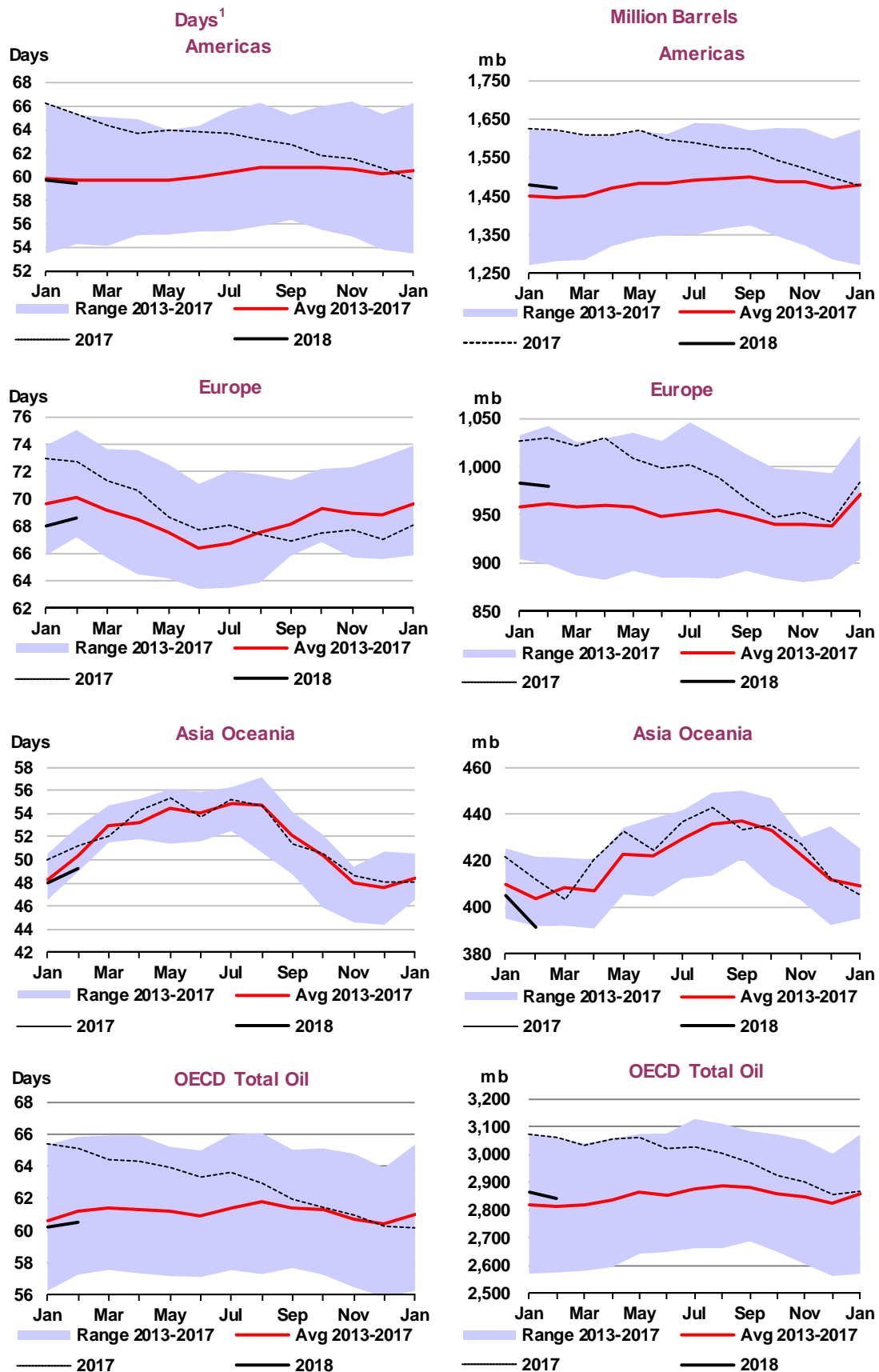
Operator	Location	Capacity (mb)	Status	Completion
Sinopec	Zhenhai	32.7	filled	3Q06
Sinochem	Aoshan/Zhoushan 1	31.4	filled	4Q07
Sinopec	Huangdao 1	20.1	filled	4Q07
CNPC	Dalian	18.9	filled	4Q08
CNPC	Lanzhou	18.9	filled	4Q11
CNPC	Dushanzi 1	18.9	filled	4Q11
Sinopec	Tianjin 1	20.1	filled	4Q14
Sinopec	Huangdao 2	18.9	filled	3Q16
CNPC	Jinzhou	18.9	filled	1Q17
CNOOC	Huizhou	31.4	filled	4Q17
Sinochem	Aoshan/Zhoushan 2	19.0	filled	1Q17
Sinopec	Zhanjiang	44.0	filling	2018
Sinopec	Tianjin 2	20.1	filling	2018-2019
Sinopec	Caofeidian	38.0	planned	2018-2019
CNPC	Jintan	15.7	planned	2020
Sinopec	Yangpu	18.0	planned	2020
CNPC	Shanshan	39.0	planned	2020
Sinopec	Huaining	31.0	planned	Post 2020

In addition, it is likely that certain SPR sites drew some of their crude to relieve temporary shortages. CNPC's Dushanzi reserve, filled in 2011 and situated in a landlocked area with problematic access to crude, drew to two-thirds of its capacity during 2017, according to satellite figures from data analytics company *Kayrros*. The same pattern was seen at the Tianjin Phase 2 SPR site for unknown reasons. Overall, we estimate that China's SPR reached 287 mb at the end of 2017, some of which was stored at commercial facilities on behalf of the government. This means the government has completed 57% of the 500 mb target set in 2004 for the first three phases of strategic stock builds.

In 2018, builds are likely to continue at Zhanjiang, which we estimate will reach full capacity by year-end, while Tianjin Phase 2 and Caofeidian – both above-ground tank farms – could also take some fills. We estimate the overall SPR crude build for 2018 at 34.5 mb (95 kb/d), but this does not account for possible builds at commercial tank farms. Beyond 2018, little is known about the advancement of the Jintan, Yangpu, Shanshan and Huaining facilities and it is therefore possible that commissioning will slip beyond the planned 2020 date. Nevertheless, if current trade tensions between the US and China were to escalate, and given that the US is a growing supplier of crude to Chinese refiners, it is possible that the SPR programme will benefit from renewed impetus.

## 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

Outright crude prices rose modestly in March as compliance with the OPEC output agreement remained strong and heightened geopolitical tensions, particularly related to possible sanctions on Iran, increased the possibility of supply disruptions. However, gains were limited in the face of moderate demand from refiners due to seasonal maintenance in the northern hemisphere. Production in West Texas continues to grow but prices of LTO came under pressure from export constraints as pipeline flows neared capacity. Global product price movements were mixed. In the US, gasoline prices moved up with the change to summer specification fuel, and globally naphtha gained strength thanks to petrochemical demand and lower refinery output.

## Futures markets

Oil futures markets ICE Brent and NYMEX WTI showed small gains in March. Brent peaked at \$70.45/bbl on 23 March, having previously reached the \$70/bbl level in January before falling back. Geopolitical turmoil, along with further falls in Venezuelan output has boosted oil markets. In the US, although production continues to grow impressively, constraints in manpower, materials and transportation are starting to have an impact. Furthermore, those producers party to the OPEC/non-OPEC output cuts have continued to signal their commitment to maintaining high rates of compliance. The reduction in global stock levels seen over the last year means that oil prices are increasingly reactive to geopolitical shocks although, to some extent, increasing US production can provide a cushion. Price increases slowed later in the month with the risk of trade disputes and interest rate rises taking a toll on the global economic outlook. At the time of writing, front-month Brent futures were trading at \$72.06/bbl, as the threat of a trade war receded and on reports of unrest in the Middle East. NYMEX WTI prices have been better insulated from recent market volatility and the front month spread moved briefly into contango in mid-March, and again in early April, as stocks grew in Cushing.

### Prompt Month Oil Futures Prices

(monthly and weekly averages, \$/bbl)

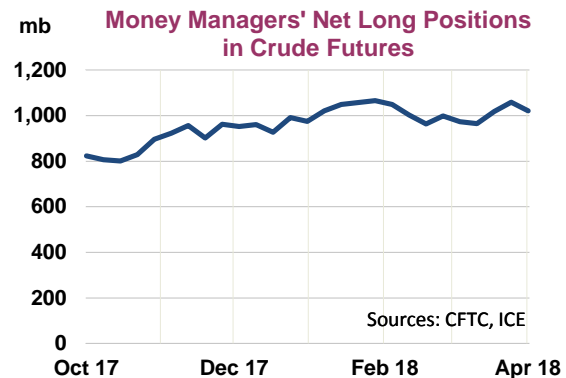
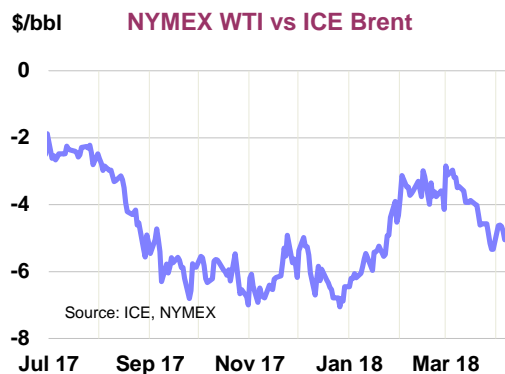
	Jan	Feb	Mar	Mar-Feb Avg Chg	% Chg	Week Commencing:				
						05 Mar	12 Mar	19 Mar	26 Mar	02 Apr
<b>NYMEX</b>										
Light Sweet Crude Oil	63.66	62.18	62.77	0.59	0.9	61.70	61.31	64.16	65.03	63.10
RBOB	78.08	74.46	81.85	7.39	9.9	80.22	80.43	83.55	84.56	82.77
ULSD	87.27	81.49	81.13	-0.35	-0.4	79.13	79.22	82.92	84.85	83.05
ULSD (\$/mmbtu)	15.39	14.37	14.31	-0.06	-0.4	13.96	13.97	14.62	14.96	14.65
Henry Hub Natural Gas (\$/mmbtu)	3.16	2.66	2.70	0.04	1.4	2.74	2.73	2.63	2.69	2.70
<b>ICE</b>										
Brent	69.08	65.73	66.72	0.99	1.5	64.95	65.16	68.46	70.01	67.84
Gasoil	82.20	77.70	78.79	1.08	1.4	76.66	77.05	80.72	82.84	81.77
<b>Prompt Month Differentials</b>										
NYMEX WTI - ICE Brent	-5.42	-3.55	-3.95	-0.40		-3.25	-3.85	-4.30	-4.98	-4.74
NYMEX ULSD - WTI	23.61	19.31	18.36	-0.94		17.43	17.91	18.76	19.82	19.95
NYMEX RBOB - WTI	14.42	12.28	19.08	6.80		18.52	19.12	19.39	19.53	19.67
NYMEX 3-2-1 Crack (RBOB)	17.48	14.62	18.84	4.22		18.16	18.72	19.18	19.63	19.76
NYMEX ULSD - Natural Gas (\$/mmbtu)	12.23	11.71	11.61	-0.10		11.21	11.24	11.99	12.28	11.95
ICE Gasoil - ICE Brent	13.12	11.97	12.07	0.09		11.71	11.89	12.26	12.83	13.93

Source: ICE, NYMEX.

Money managers increased their net long positions in Brent and WTI futures to 1 059 mb at the end of March, almost reaching the historic high seen in January. The backwardated market structure has slowed the sale of short positions as investors with long positions can earn money by rolling prompt contracts



into lower-priced forward contracts each month. The outright ratio of longs to shorts reached 18.9 to 1 on 27 March, well above the long term average of 4.7 to 1.



The Brent-Dubai exchange of futures for swaps (EFS) stood at \$4.22/bbl on 29 March, the highest premium since June 2014, making the economics of shipping from the Atlantic to Asia-Pacific increasingly challenging and reducing the attractiveness of crude sales linked to Brent. Refinery maintenance in Asia has weighed on the Dubai price.

## Spot crude oil prices

The Brent-WTI spread increased to \$5.33/bbl on 30 March, the largest differential since mid-January. Brent was boosted by the possibility of the collapse of the Iran nuclear deal, while Cushing stocks made a modest recovery. A widening Brent-WTI spread should improve the economics of US crude exports.

### Spot crude oil prices and differentials

## Table Unavailable

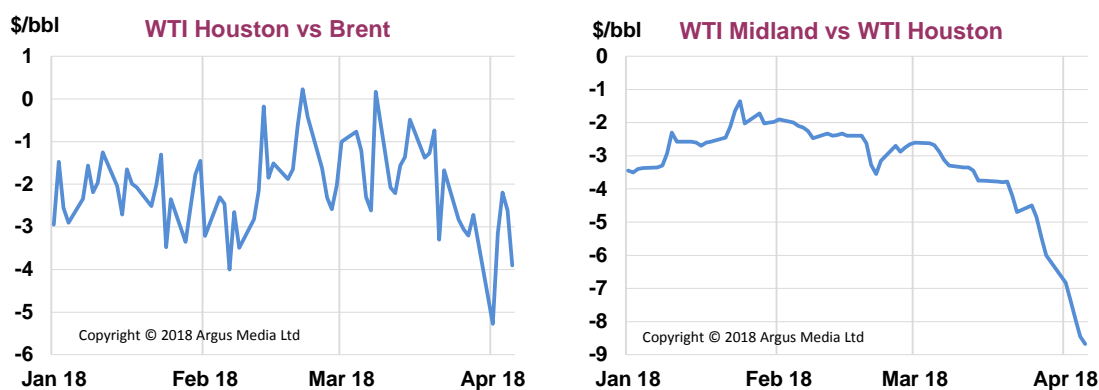
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In North America, further increases in production of light, sweet crude from the Permian basin put pressure on Midland, Bakken and Louisiana Light Sweet (LLS) prices relative to WTI Cushing and WTI Houston. Permian crude prices suffered in the face of limited pipeline capacity to transport oil to Houston for export. On 6 April the discount of WTI Midland to WTI Houston was \$8.70/bbl, a record level, and sufficient to cover the cost of transporting Permian crude to Houston via Cushing, a less direct route, or by rail or truck. As detailed in the recently published *Oil 2018* (Special feature: North American oil looking for a way out), pipeline availability out of West Texas is due to reach full capacity by 2H18 and

remain constrained until mid-2019 when planned infrastructure additions are completed. Some upstream operators, such as ConocoPhillips, have announced that they will slow drilling activity until more midstream capacity comes online.

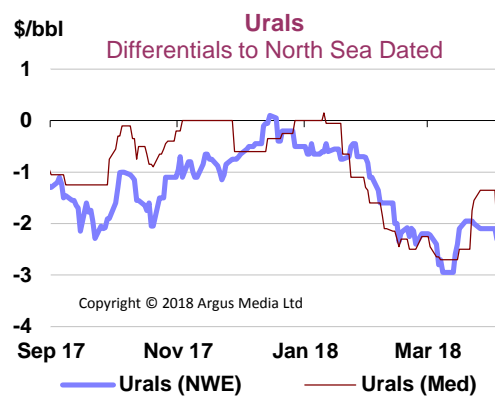
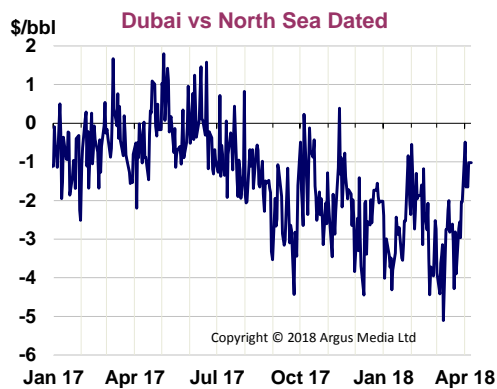
The differential of Brent to WTI Houston, arguably a better indication of the competitiveness of US exports than Brent to WTI Cushing, widened in March and there was demand for US crude from India, China and Taiwan. Asia-Pacific buyers continue to increase their imports of US light sweet crudes at the expense of similar grades from Nigeria and the North Sea. Cushing prices are expected to be boosted when the expansion of the Ozark pipeline, connecting Cushing to the Wood River refinery in Illinois, comes on line next month. Sour grades Mars and Poseidon strengthened in the second half of the month as Gulf Coast refinery utilisation increased and with the announcement that a second VLCC had been successfully loaded at the Louisiana Offshore Oil Port (LOOP). The discount of heavy sour West Canada Select to Cushing narrowed slightly due to increased throughput on the Keystone pipeline and with maintenance at some sites. Some Canadian producers announced reduced drilling programs for oil sands in the face of ongoing pipeline constraints.



The prices of Brent, Forties, Ekofisk and Oseberg fell against North Sea Dated futures reflecting lower demand. The Forties differential to North Sea Dated fell from +\$0.75/bbl at the beginning of March to -\$0.8/bbl at the end of the month. Demand for all North Sea crudes was depressed due to European refinery maintenance and as buyers in Asia-Pacific increasingly sourced crude from the US.

Libya's Es Sider differential to North Sea Dated fell by \$0.85/bbl due to higher exports. Algeria's Saharan blend picked up on the back of demand from Indonesia and India and higher prices for competing regional light, sweet crudes. Strong Chinese demand pushed West African crude differentials to North Sea Dated to their highest in one year at the beginning of March, however, they subsequently eased. Ongoing refinery maintenance weighed on demand and Indian buyers have taken more US LTO instead of crude from West Africa. Furthermore, as West African crudes are priced off Brent they are currently expensive against those linked to the Dubai price. However, there was strong US Atlantic Coast demand for Nigerian crudes which, when transportation costs are included, are cheaper than Bakken crude railed in from North Dakota.

Urals for delivery in North West Europe fell to a discount of -\$2.95/bbl against North Sea Dated on 8 March, the weakest since October 2016, due to European refinery maintenance, poor fuel oil cracks and reduced competitiveness against crudes from the Middle East and US. Demand in North West Europe picked up later in the month but remained depressed in the Mediterranean region. Severe weather conditions at the Russian port of Novorossiysk disrupted exports on several occasions throughout the month but this had little effect on prices. Kazakhstan's CPC crude blend prices were up \$0.60/bbl against North Sea Dated in March as exports reached record levels of 1.41 mb/d. Strong demand from Asian buyers has seen CPC blend trading at a premium of over \$2/bbl to Urals in recent months. Azeri Light crude was boosted by demand from Canada, the US and Uruguay.

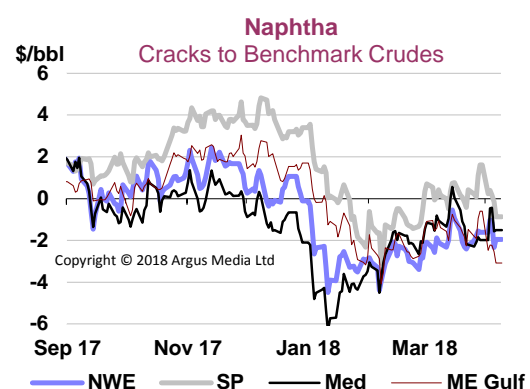
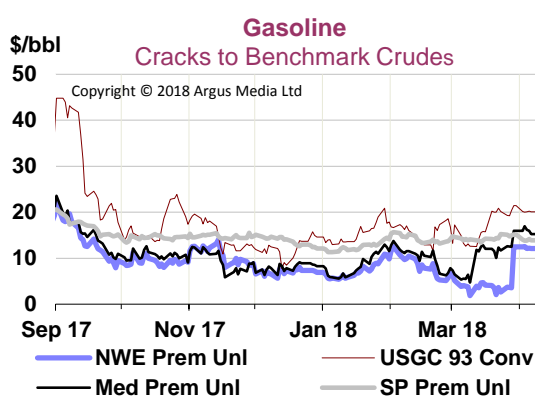


Refinery maintenance in Asia hampered demand for Middle Eastern crudes Al Shaheen, Qatar Marine and Oman. Physical prices continued to decline throughout the month, relative to swaps, and flipped into contango on 2 March suggesting the market is well supplied. The price of Iraq's Basra Light and Basra Heavy was boosted on the announcement that April maintenance at the export terminal will see reduced supplies.

## Spot product prices

The majority of global product prices rose slightly in March, in line with increases seen in crude oil. Exceptions included European gasoline and Asian jet and kerosene fuel prices.

North West Europe gasoline prices fell sharply in March, with Rotterdam barge quotes down \$4.70/bbl, and the low prices supported exports to West Africa and the US. A temporary seasonal slowdown in gasoline demand appeared to be the main reason. Eurobob gasoline was pressured from 16 to 28 March when barge vs swap quotes fell by over \$6/bbl as sellers reduced their stocks of winter specification fuel. Refining margins and prices picked up later in the month as production shifted to more expensive summer blends. This transition also buoyed US Gulf Coast unleaded prices, which rose \$2.20/bbl. The gasoline futures market is currently in contango and there have been recent reports of increases to gasoline floating storage offshore Europe and Asia as traders store fuel in anticipation of realising higher prices in the near future.



North West Europe diesel prices rose only slightly even as the market was amply supplied by imports from Russia, Saudi Arabia and India. Recently, Russian and Indian plant upgrades have boosted diesel production. Late in the month, US ultra low sulphur diesel (ULSD) prices were pushed up thanks to cold weather in the Northeast and farming demand in the Midwest.

Global gasoil and heating oil prices strengthened in the first half of the month thanks to improved refining margins in Europe. Later, rising supplies tempered the gains. A pickup in demand for middle

distillates in Asia had little impact on prices. However, upcoming refinery maintenance in the region may squeeze supplies.

The price of jet and kerosene fuel fell in Asia in line with seasonal reduced demand and increased supply from Qatar, India and Bahrain. In Singapore, the physical price of jet fuel relative to swaps dropped sharply, just about remaining in backwardation from mid-month.

Global naphtha prices returned to growth last month, rising by between \$2.20/bbl and \$3.10/bbl. Despite being a relatively expensive feedstock, strong naphtha demand for use in petrochemical plants came from South Korea, China and Japan. The price was further supported by tight supplies during planned and unplanned refinery shutdowns and demand for gasoline blending. With high naphtha prices US LPG is increasingly competitive as a cracker feedstock and so is increasing its market share in Asia.

### Spot product prices

## Table Unavailable

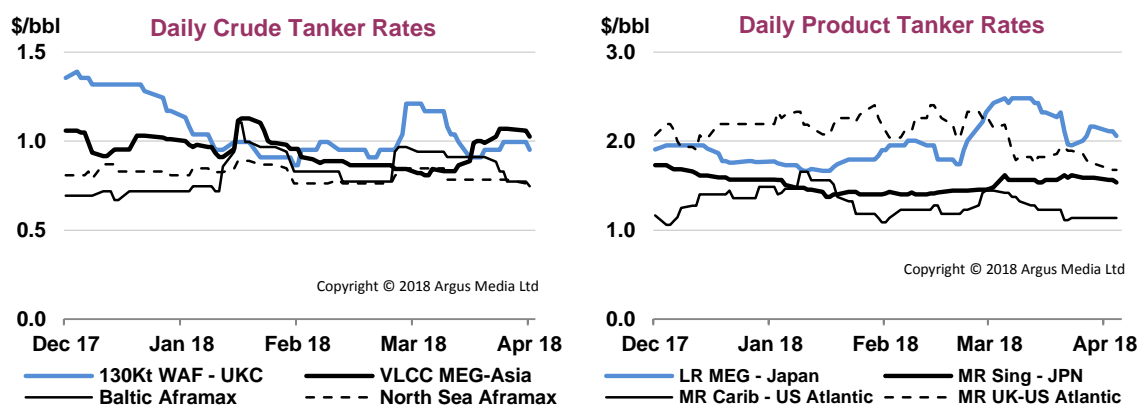
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High Sulphur Fuel Oil (HSFO) and Low Sulphur Fuel Oil (LSFO) differentials fell across the board due to soft US demand for bunkers and as Russia kept the European market well supplied. April maintenance at some Russian refineries may cause a short-term disruption to markets this month.

## Freight

Fundamentals for freight markets remain depressed as the fleet continues to grow and tighter physical supplies of crude mean there is reduced demand for floating storage. Ongoing weak freight rates and strong steel prices are seeing ship demolition surge. However, this is not having much of an impact on freight rates as the scrapped vessels are often older than the 15-year age limit increasingly being insisted on by charterers.



The rate for Very Large Crude Carriers (VLCCs) on the Middle East Gulf (MEG) to Asia route picked up from a six-month low to \$1.07/bbl at the end of the month on increased demand. Suexmaxes on the West Africa to North West Europe route stood at \$0.95/bbl on 4 April, the same level as at the beginning of March. Baltic Aframax rates were also little changed.

Clean product freight has been faring slightly better and there has been an increase in shipments from the MEG as refineries there restarted following maintenance shutdowns. East of Suez, the benchmark LR MEG-Japan rate was supported by increased demand and less abundant supply of tankers than in crude markets. Rates on the UK Continent to US Atlantic Coast route fell to \$1.68/bbl on 4 April, from \$2.22/bbl at the beginning of March, as last month's demand from West Africa fell and there was plentiful supply of tonnage. Growth of the product tanker fleet has been more moderate than for crude tankers.

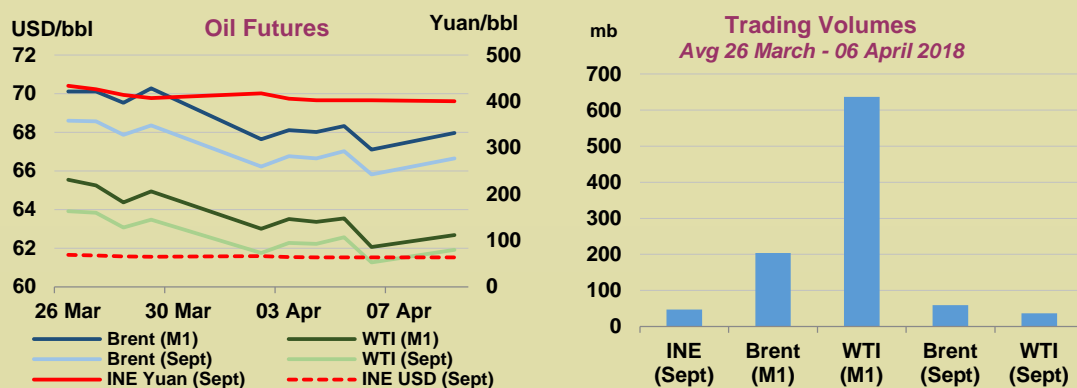
### China's crude futures off to a strong start

The Shanghai International Energy Exchange (INE) launched China's first commodity derivative open to foreign investors on 26 March and got off to a robust start with over 40 mb traded by Chinese and international players. Support for the new benchmark was also evidenced by the announcement that it will be used to price Middle East crude in a purchase agreement between Unipet (Sinopec's trading company) and Shell. The ambition is for the benchmark to become a reliable regional instrument for physical transactions and hedging and, in the future, compete with established price markers such as ICE Brent and NYMEX WTI which, despite the fact their constituent grades account for less than 5% of total crude production, are used as the price reference for around 60% and 20% respectively of the world's daily crude trade. So far trading volumes for Chinese futures are a fraction of those for Brent and WTI front month contracts, which is unsurprising for a marker that is only a few weeks old. However, trading volumes for the September contracts are at similar levels<sup>1</sup>. On April 6, open interest for the September contract was 9 164 lots (of 1 000 barrels), having increased from 3 114 lots on the first day of trading. This shows that money is flowing into the market but, when compared to the levels for front month and September Brent and WTI contracts, it is relatively low.

This is not the first time the Chinese government has dipped their toes in the crude futures markets. An attempt in the early 1990s failed due to heavy speculative activity undermining the stability of prices and the most recent launch has been mooted, and repeatedly delayed, since 2012. There are various reasons why Chinese market participants desire a yuan-denominated benchmark. In 2017, China overtook the US as the world's largest net importer of crude with levels set to reach 10 mb/d by 2023. Trading on the new yuan-denominated exchange would allow Chinese importers to hedge their currency risks which, due to capital controls, can be significant.

<sup>1</sup> In order to establish liquidity, the first month for crude delivery against the Chinese futures contract is September, after this, contracts are available on a monthly basis.

### China's crude futures exchange off to a strong start (continued)



Source: Bloomberg

As the medium and heavy sour crudes included in the benchmark are more representative of those used by refiners in China and others in the region than lighter sweeter Brent and WTI, it can improve transparency over Asian supply and demand and so result in more competitive pricing. It has been suggested that it will allow Chinese buyers more clout over the pricing of their imports. However, the perception of too much customer influence would hamper the benchmark's chance of success. Although the exchange is expected to be mostly used by domestic customers, to ensure adequate liquidity, international players need to be enticed to make use of its hedging and arbitrage opportunities. To this end, the Chinese government has offered tax holidays and the relaxation of some capital controls. Crude producing countries such as Iran and Venezuela, who are at risk from US sanctions, may also be interested in the prospect of conducting non-US dollar denominated deals. The US dollar is currently used to price the majority of commodities and this presents an opportunity for the yuan to take some of its market share.

Despite meticulous planning for the launch by the Chinese authorities, there remain significant challenges to ensuring adequate liquidity. Of concern is the history of intervention in commodity markets and a lack of market transparency, which will deter some investors. Furthermore, oil suppliers may prefer to be paid in US dollars, particularly if they are limited in what they can do with yuan denominated revenues. The current incentives, tax holidays etc., may not be enough to offset the additional risk and complications of trading on the new exchange. From the successful launches of other Chinese commodities contracts, which are not open to foreigners, such as steel, iron ore and copper, we can expect to see small domestic traders providing much of the liquidity. However, this characteristic can result in price volatility that is not caused by market fundamentals. INE does not publish the amount of open interest held by small retail investors, and so it is impossible to determine who has been active in the contract so far. Another issue is the trading hours, and the limited overlap with other financial centres, such as London and New York, where a large pool of potential international traders are based.

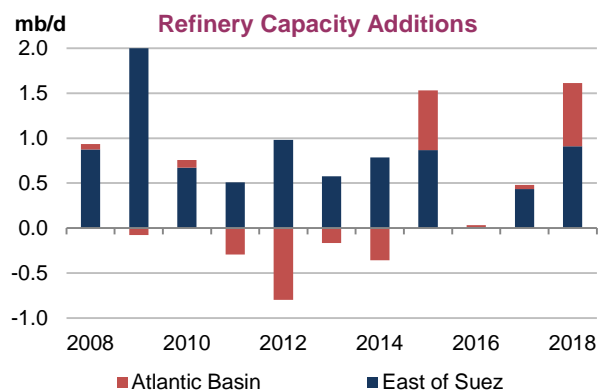
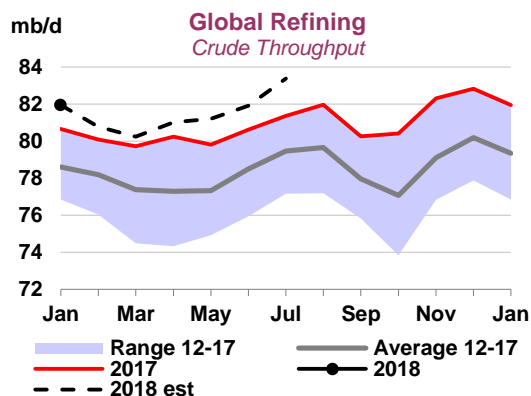
These issues are not insurmountable, and the exchange has certainly got off to an impressive start. Ultimately, it seems likely that the success of the Chinese futures contract will depend heavily on how market liberalisation evolves and how the authorities respond to market-driven commodity price and currency movements. However, a first step is to establish the benchmark as a reliable instrument for physical transactions and hedging. This alone would be an accomplishment. Even if this is achieved, more time, likely many years, is needed for the benchmark to become an outright price marker similar to Brent or WTI.



# REFINING

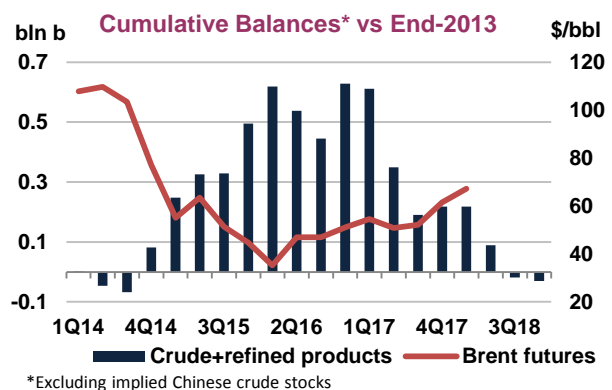
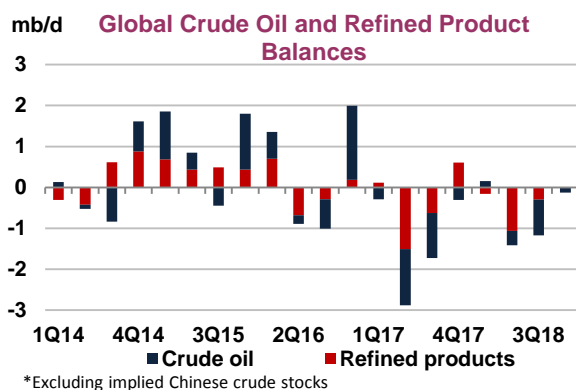
## Summary

After two years of relatively low-key growth, capacity additions are back with a vengeance. Newcomers are looking to shake-up the status quo in an attempt to grab market share. By end-2018, we expect to see 1.6 mb/d of net new capacity, higher than 2018 total demand growth of 1.5 mb/d and well above the estimated growth in demand for *refined* products. East of Suez accounts for more than half of the new capacity, and the Atlantic Basin also sees some growth. *Perfect storm brewing for refiners?* explains why this could weigh heavily on refining margins this year.



Our throughput estimate for 1Q18 is revised up by 200 kb/d, but the forecast for 2Q18 has been reduced by 560 kb/d due to a higher maintenance information, further deterioration in Venezuela and the expectation of tighter crude oil markets this summer. Crude oil throughput swings up 3.1 mb/d from March to July, while the seasonal crude burn (e.g. in the Middle East) starts ramping up, too. As discussed in *Supply*, OPEC March output was at the lowest level in nearly three years, and if the group's crude production stays flat from these levels, crude oil in 2Q18 will again see draws after a build in 1Q18.

While our monthly throughput forecast by country goes only to July 2018, we have also provisionally modelled global quarterly forecasts of refinery intake for the rest of the year, based on refined product demand and crude oil supply. If refineries were to run at the levels required for a balanced refined product markets, crude oil stocks would need to draw by 1.1 mb/d in 3Q18, which would be the fastest rate since 3Q13's 1.3 mb/d draw.



However, a more likely scenario is continued draws in refined products in 3Q18, with runs below the required levels, alongside a significant draw in crude oil. At this rate, both the refined product overhang and the global crude oil overhang (excluding Chinese implied crude oil stock builds), measured in terms

of cumulative balances starting from 1Q14, will turn negative in 3Q18. If crude oil tightness results in significantly higher prices, this may affect refining margins to the extent that the seasonal throughput increase will be constrained, and product inventories will draw to an even greater extent.

### Global Refinery Crude Throughput<sup>1</sup>

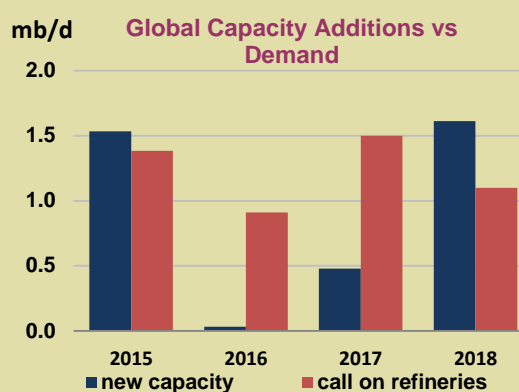
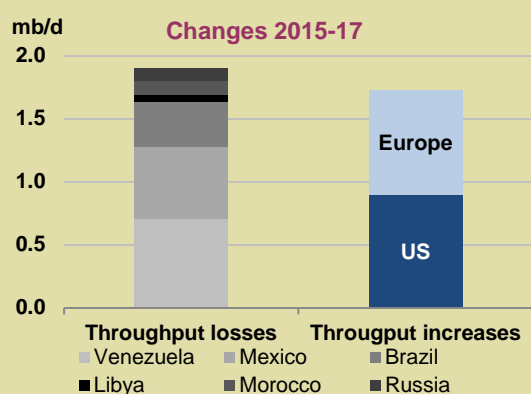
(million barrels per day)

	4Q17	2017	Jan 18	Feb 18	Mar 18	1Q18	Apr 18	May 18	Jun 18	2Q18	Jul 18
Americas	19.2	19.3	19.2	18.5	19.2	19.0	19.5	19.9	20.0	19.8	20.1
Europe	12.4	12.3	12.5	12.1	11.5	12.0	12.0	12.0	12.2	12.1	12.7
Asia Oceania	7.2	7.0	7.4	7.1	7.0	7.2	7.0	6.7	6.4	6.7	7.1
<b>Total OECD</b>	<b>38.9</b>	<b>38.6</b>	39.0	37.8	37.8	<b>38.2</b>	38.5	38.6	38.6	<b>38.6</b>	39.9
FSU	6.9	6.8	7.0	7.0	7.0	7.0	6.7	6.7	7.0	6.8	7.1
Non-OECD Europe	0.6	0.5	0.5	0.6	0.5	0.5	0.5	0.5	0.6	0.5	0.6
China	11.8	11.3	11.6	11.9	11.7	11.7	11.7	11.5	11.8	11.7	11.9
Other Asia	10.4	10.3	10.7	10.6	10.2	10.5	10.3	10.5	10.6	10.5	10.6
Latin America	3.8	3.8	3.6	3.5	3.6	3.6	3.8	3.7	3.6	3.7	3.6
Middle East	7.5	7.4	7.3	7.3	7.4	7.3	7.4	7.6	7.6	7.6	7.7
Africa	1.9	1.9	2.0	2.0	2.0	2.0	1.9	2.0	1.9	1.9	2.0
<b>Total Non-OECD</b>	<b>42.9</b>	<b>42.1</b>	42.8	42.9	42.4	<b>42.7</b>	42.4	42.5	43.2	<b>42.7</b>	43.4
<b>Total</b>	<b>81.7</b>	<b>80.8</b>	81.8	80.7	80.1	<b>80.9</b>	80.9	81.1	81.8	<b>81.3</b>	83.3
<i>Year-on-year change</i>	<i>2.0</i>	<i>1.1</i>	<i>1.3</i>	<i>0.7</i>	<i>0.5</i>	<i>0.8</i>	<i>0.8</i>	<i>1.4</i>	<i>1.3</i>	<i>1.2</i>	<i>2.0</i>

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

### Perfect storm brewing for refiners?

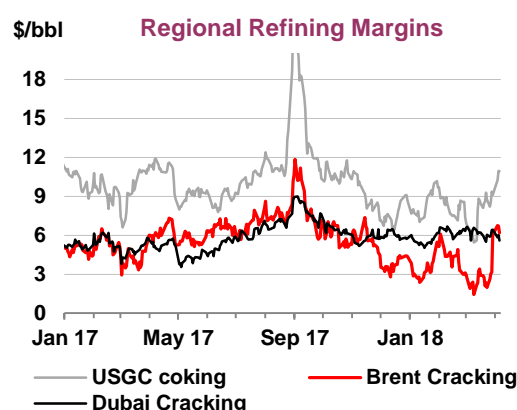
The period of 2015-17 has been touted as the refining industry's mini golden age or silver age, but we have argued in this *Report* that the positive economics enjoyed by some refiners were mostly thanks to the rather bleak circumstances of others. Since 2015, refining throughput has decreased year-on-year in Mexico, Brazil, Venezuela and its Caribbean neighbours, to the tune of 1.6 mb/d, mostly due to poor margins and operational considerations. Morocco's refinery closure in a legal dispute, Libya's conflict and Russia's tightening of downstream fiscal rules brought another 0.3 mb/d reduction in throughput. This gave ample room to refiners in the Atlantic Basin that were able to sustainably increase refinery throughput, e.g. in the US Gulf Coast and Europe. Exports of refined products from the US to Mexico and Latin American countries increased by 70% to over 2.3 mb/d.



Moreover, the refining industry saw no net addition to capacity in 2016, and in 2017, only 0.5 mb/d was added. At the same time, lower oil prices boosted demand growth, while a slowdown in alternative product sources resulted in refined product demand rising by 3.8 mb/d in the three years to 2017. This year, refined product demand growth is less than the planned additions of new capacity. With crude oil markets looking set for a tighter summer, refinery margins are likely to meet some strong headwinds this summer.

## Margins

Most regional refining margins retreated in March due to the increase in crude oil prices. European gasoline cracks declined \$3/bbl amid product destocking prior to the switch to summer grades at the end of March. In the US, the switch happened earlier in the month, which arrested the declining trend and helped to register a positive m-o-m growth. However, US Gulf Coast margins still suffered from lower middle distillates cracks. In the US Midcontinent, higher gasoline cracks pushed up refinery margins, offsetting weaker middle distillate cracks. Singapore margins saw narrower negative swings, with some opposing developments in product cracks. The end of the winter heating season in North East Asia weighed on kerosene, and high-sulphur fuel oil cracks were also lower m-o-m. Stronger naphtha and gasoil partly offset the impact.



### IEA/KBC Global Indicator Refining Margins<sup>1</sup>

	Monthly Average				Change	Average for week ending:					
	Dec 17	Jan 18	Feb 18	Mar 18	Mar 18-Feb 18	09 Mar	16 Mar	23 Mar	30 Mar	06 Apr	
<b>NW Europe</b>											
Brent (Cracking)	3.80	3.49	4.26	2.71	↓ -1.56	2.04	2.81	2.41	3.72	6.55	
Urals (Cracking)	3.44	3.27	5.18	4.43	↓ -0.76	4.22	4.92	3.82	4.94	7.61	
Brent (Hydroskimming)	-0.42	-1.03	-0.19	-1.30	↓ -1.11	-1.87	-0.84	-1.47	-0.87	1.33	
Urals (Hydroskimming)	-1.34	-1.89	0.27	-0.08	↓ -0.35	-0.08	0.78	-0.64	-0.28	1.80	
<b>Mediterranean</b>											
Es Sider (Cracking)	5.46	5.08	5.49	5.80	↑ 0.32	4.20	6.25	6.05	7.64	9.22	
Urals (Cracking)	4.69	4.42	6.56	6.58	↑ 0.02	5.60	7.54	6.76	6.89	8.97	
Es Sider (Hydroskimming)	1.49	0.82	1.37	0.05	↓ -1.33	0.07	0.00	0.00	0.00	0.00	
Urals (Hydroskimming)	-0.54	-1.29	1.13	0.98	↓ -0.16	0.36	2.22	1.03	0.51	2.69	
<b>US Gulf Coast</b>											
50/50 HLS/LLS (Cracking)	7.02	7.92	7.50	6.82	↓ -0.68	5.07	7.02	7.83	7.91	8.94	
Mars (Cracking)	3.32	3.63	3.63	2.71	↓ -0.93	1.68	3.63	3.36	2.37	3.40	
ASCI (Cracking)	3.10	3.25	3.27	2.38	↓ -0.89	1.39	3.28	2.98	2.08	3.09	
50/50 HLS/LLS (Coking)	8.72	9.91	9.43	8.68	↓ -0.75	6.77	8.79	9.76	9.98	10.90	
50/50 Maya/Mars (Coking)	7.63	8.47	8.19	7.71	↓ -0.48	6.07	7.89	8.64	8.81	10.71	
ASCI (Coking)	7.97	8.89	8.55	7.56	↓ -0.99	6.05	8.06	8.45	8.08	8.98	
<b>US Midcon</b>											
WTI (Cracking)	13.39	11.48	7.80	9.23	↑ 1.43	9.33	9.66	8.33	10.24	10.77	
30/70 WCS/Bakken (Cracking)	16.01	14.98	12.66	13.17	↑ 0.52	13.53	14.19	12.42	12.89	12.30	
Bakken (Cracking)	14.57	13.16	10.12	11.44	↑ 1.32	11.13	12.10	10.88	12.24	13.00	
WTI (Coking)	15.33	13.57	9.67	11.09	↑ 1.42	11.19	11.44	10.11	12.29	12.67	
30/70 WCS/Bakken (Coking)	19.21	18.53	15.73	16.10	↑ 0.37	16.36	16.84	15.31	16.29	15.58	
Bakken (Coking)	15.30	13.94	10.80	12.15	↑ 1.35	11.85	12.77	11.55	13.03	13.72	
<b>Singapore</b>											
Dubai (Hydroskimming)	1.50	0.54	1.47	1.18	↓ -0.29	1.54	1.54	0.65	0.64	0.42	
Tapis (Hydroskimming)	1.43	0.26	2.36	1.75	↓ -0.61	1.01	2.36	1.18	2.41	3.19	
Dubai (Hydrocracking)	6.00	5.57	6.32	6.15	↓ -0.17	6.22	6.22	5.79	6.18	5.83	
Tapis (Hydrocracking)	5.26	4.50	6.29	5.57	↓ -0.72	4.69	5.93	5.10	6.59	7.18	

<sup>1</sup> 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

The start of the maintenance season weighed heavily on February throughput, with runs down 1.3 mb/d m-o-m. The strong y-o-y performance in the US and Europe was offset by lower throughput in Mexico and Japan. Regional peak spring maintenance shifts gradually west to east. The US programme peaked in February; the European programme, which was especially heavy this year, peaked in March; OECD Asia will see peak shutdowns in May.

### Refinery Crude Throughput and Utilisation in OECD Countries

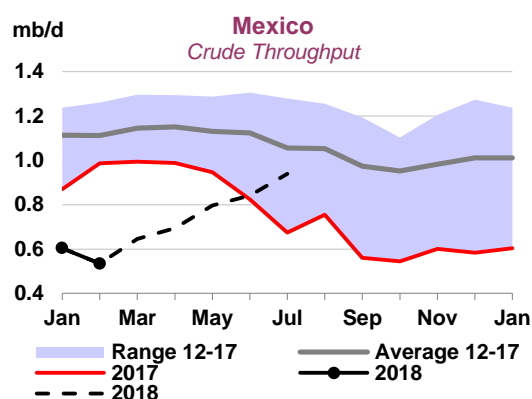
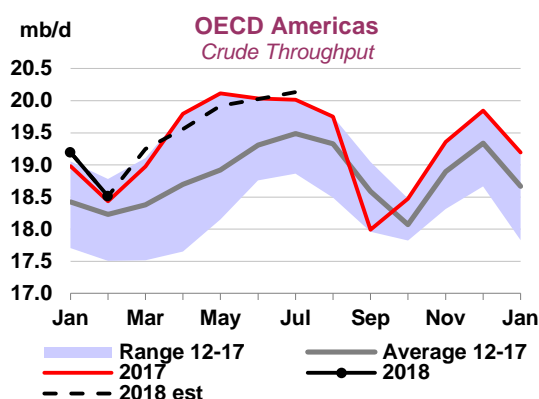
(million barrels per day)

	Sep 17	Oct 17	Nov 17	Dec 17	Jan 18	Feb 18	Change from		Utilisation rate <sup>1</sup>	
							Jan 18	Feb 17	Feb 18	Feb 17
US <sup>2</sup>	15.46	16.06	16.84	17.27	16.63	16.02	-0.62	0.47	85%	82%
Canada	1.78	1.70	1.73	1.78	1.76	1.77	0.00	0.07	88%	88%
Chile	0.19	0.17	0.19	0.20	0.19	0.20	0.00	-0.01	86%	88%
Mexico	0.55	0.53	0.59	0.57	0.59	0.52	-0.07	-0.45	32%	59%
<b>OECD Americas<sup>3</sup></b>	<b>17.98</b>	<b>18.47</b>	<b>19.35</b>	<b>19.83</b>	<b>19.18</b>	<b>18.50</b>	<b>-0.68</b>	<b>0.08</b>	<b>81%</b>	<b>81%</b>
France	1.24	1.23	1.25	1.21	1.17	1.18	0.01	0.12	95%	85%
Germany	2.03	1.99	1.93	2.00	1.95	1.93	-0.02	0.08	95%	91%
Italy	1.45	1.45	1.44	1.45	1.36	1.34	-0.02	0.00	77%	77%
Netherlands	1.10	0.97	1.03	1.06	1.19	1.15	-0.04	0.03	89%	87%
Spain	1.41	1.30	1.30	1.37	1.41	1.28	-0.14	0.07	91%	86%
United Kingdom	1.15	1.12	1.06	1.08	1.05	0.99	-0.06	-0.04	78%	81%
Other OECD Europe	4.25	4.29	4.34	4.36	4.33	4.28	-0.05	0.11	88%	86%
<b>OECD Europe</b>	<b>12.63</b>	<b>12.35</b>	<b>12.35</b>	<b>12.52</b>	<b>12.46</b>	<b>12.14</b>	<b>-0.32</b>	<b>0.37</b>	<b>88%</b>	<b>85%</b>
Japan	3.16	2.89	3.20	3.41	3.30	3.24	-0.05	-0.26	91%	98%
South Korea	2.89	3.16	3.21	3.25	3.24	3.12	-0.12	-0.04	99%	100%
Other Asia Oceania	0.83	0.88	0.84	0.88	0.86	0.77	-0.09	0.02	89%	87%
<b>OECD Asia Oceania</b>	<b>6.88</b>	<b>6.93</b>	<b>7.26</b>	<b>7.54</b>	<b>7.40</b>	<b>7.13</b>	<b>-0.26</b>	<b>-0.28</b>	<b>94%</b>	<b>97%</b>
<b>OECD Total</b>	<b>37.48</b>	<b>37.74</b>	<b>38.96</b>	<b>39.90</b>	<b>39.04</b>	<b>37.78</b>	<b>-1.26</b>	<b>0.16</b>	<b>85%</b>	<b>85%</b>

<sup>1</sup> Expressed as a percentage, based on crude throughput and current operable refining capacity

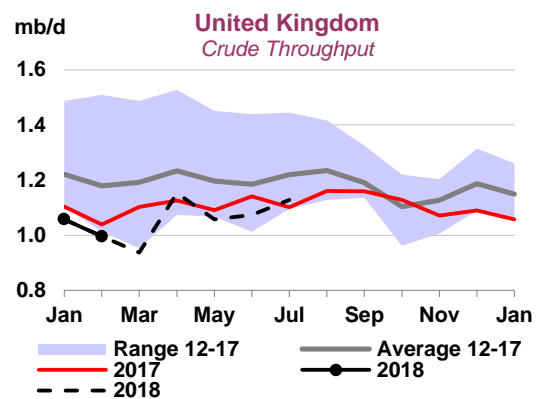
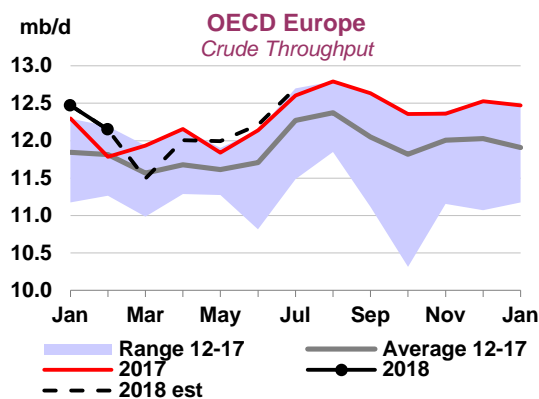
<sup>2</sup> US\$0

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



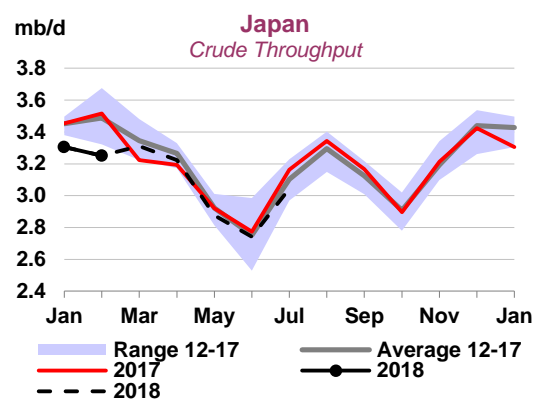
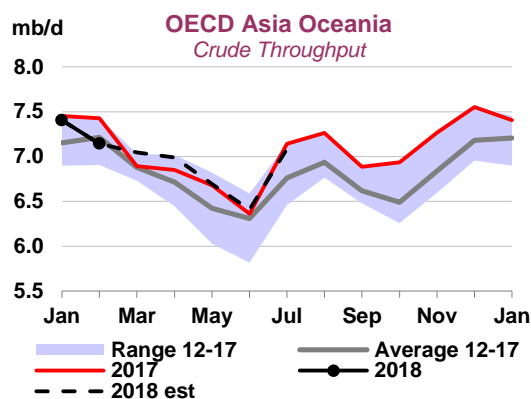
The **US** baseline throughput has effectively shifted 0.5 mb/d higher, to around 16 mb/d at heaviest maintenance, with seasonal throughput peaks sustained above 17 mb/d. At the same time, **Mexico's** industry has downsized, with February throughput at the lowest level in recent decades. Runs fell to just

520 kb/d, implying a 32% utilisation rate. Our outlook has not changed even though Pemex recently announced that refineries have increased processing rates and are targeting throughput of 900 kb/d in 2Q18.



February throughput in **OECD Europe** fell 320 kb/d m-o-m, but was still up 365 kb/d y-o-y. In March, a particularly heavy scheduled maintenance programme is estimated to have further cut throughput to 11.5 mb/d. Outages persist through May even though runs recover from the March low and move to seasonal peaks in 3Q18. While the outlook for Europe as a whole is rather optimistic, not every country will be fortunate. In the **UK**, for example, February throughput fell below 1 mb/d, the lowest seasonal number in our records. Scaled down refining capacity, combined with maintenance outages have resulted in throughput levels that in the past could have only happened due to force majeure.

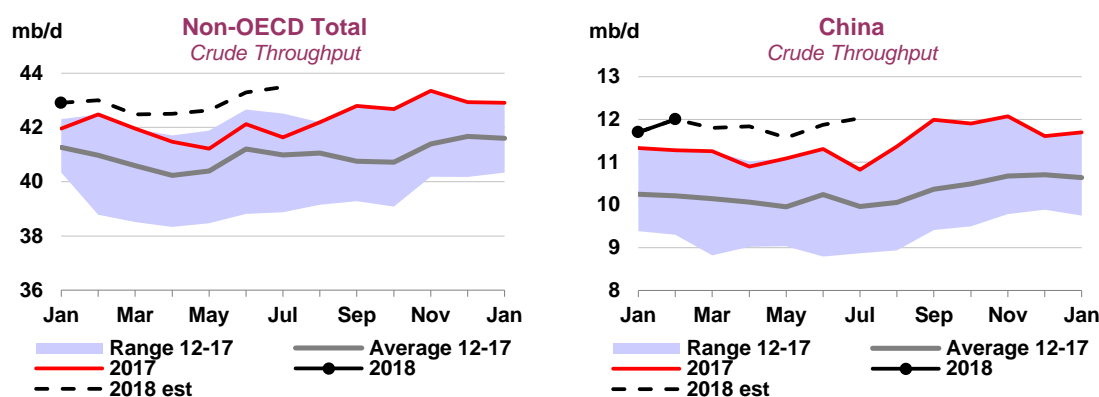
In **OECD Asia**, refiners are dialling down from the peak winter rates, with February runs down 200 kb/d m-o-m. The throughput slowdown continues until May-June, with spring maintenance capping runs at just 6.5 mb/d. The usual swift recovery into July will see throughput back above 7 mb/d. **Japan's** throughput was 200 kb/d on average lower y-o-y in January-February due to an unusual maintenance programme at this time of the year, but no annual declines are forecast.



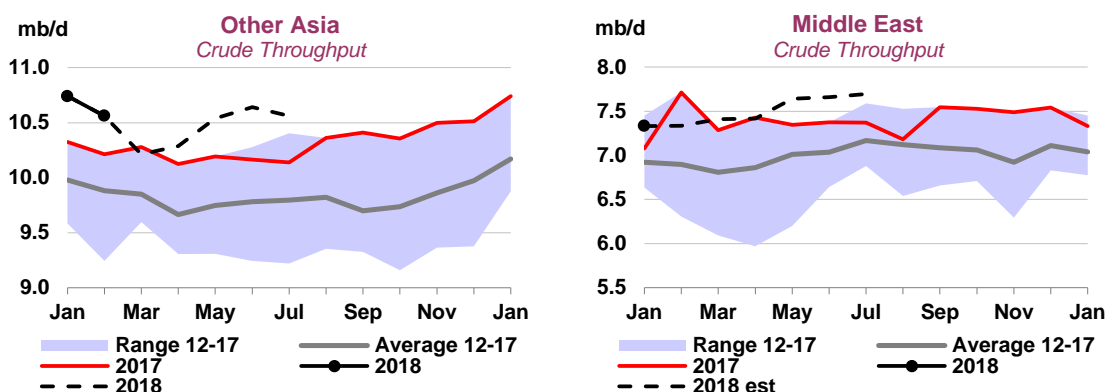
## Non-OECD refinery throughput

Non-OECD refining intake picked up noticeably in the last four months of 2017, as previously sluggish throughput combined with strong demand growth helped clear most of the refined product inventory overhang by end-2017. The rest of the cushion is expected to be consumed during 2Q18 maintenance season. This supports a generally more optimistic refining outlook, barring a significant negative reaction by refining margins and demand to tighter crude oil markets. Our forecast for 2Q18 and July sees runs increasing y-o-y by 1.4 mb/d on average.

No new data for China were available before the publication of this report, but we have revised our assessment for several historical months. For August 2017, throughput is now estimated at 11.3 mb/d (up by 200 kb/d), as secondary evidence indicates that PetroChina's new refinery in Yunnan province, where it is the sole such facility, very likely started operations in August, while the province's data throughput data only started appearing in September. We have also amended our January and February throughput assessments, for which only combined data are reported, by lowering January and increasing February throughput. The spring maintenance season affects our May-June forecast, with runs expected to return to 12 mb/d in July.



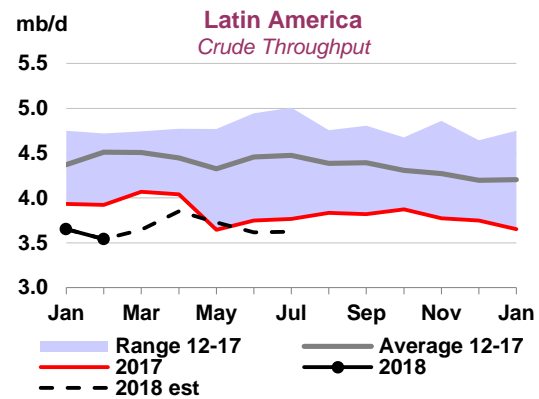
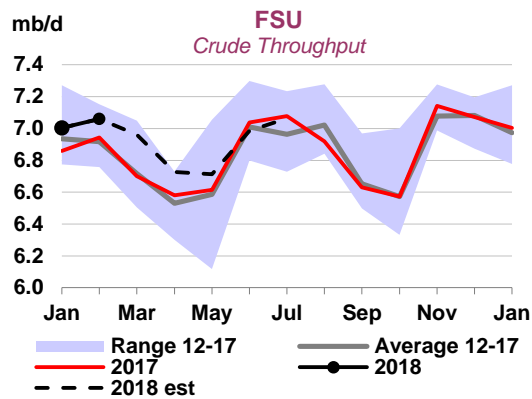
February throughput in **India** was down 120 kb/d from January's record 5.3 mb/d, with March expected to show a similar m-o-m decrease. The forecast through July does not see runs above 5.1 mb/d due to seasonal factors (maintenance followed by the monsoon season). This still results in annual growth of 180 kb/d, supported by higher demand growth in the absence of last year's negative factors such as the government sales tax and demonetisation. **Vietnam** is the other country with annual throughput growth, as the 200 kb/d Nghi Son complex is expected to be commissioned in the coming months.



In the Middle East, January runs are assessed at 7.3 mb/d, up 250 kb/d y-o-y. This is entirely from **Saudi Arabia**, where throughput increased 500 kb/d y-o-y, even though it was down 200 kb/d from December's record 2.8 mb/d. Saudi throughput is expected to fall further due to a heavy maintenance programme, but should bounce back in May. The start of a 120 kb/d unit in **Iran**, as part of the Persian Gulf Star condensate splitter complex, also contributes to the increase in regional throughput levels to about 7.6-7.7 mb/d in May-July, up 300 kb/d y-o-y.

**Russian** throughput in February was finalised 100 kb/d lower, at 5.7 mb/d, with the forecast also revised down on maintenance. Throughput is expected to fall 180 kb/d from 1Q18 to 2Q18, but starts to recover in June. Only a modest annual growth is expected this year. **Kazakhstan's** small capacity expansion projects to the tune of 30 kb/d that were reportedly finalised at the end of last year, have yet to show up in the throughput statistics.





Annual declines in Latin America accelerated in January-February to about 300 kb/d on average, driven by **Venezuela**, where the situation keeps getting worse, and **Brazil**, where February throughput stayed flat from January's very low levels. Venezuela is reportedly on the verge of shutting down several refining units, according to a union leader, including part of the 900 kb/d Paraguana complex and the two remaining standalone refineries Puerto la Cruz and El Palito. General state of neglect and severe lack of materials and funds for maintenance is rendering operations uneconomic and potentially unsafe. The May-July throughput forecast is revised down to just 300 kb/d, awaiting further developments. Overall, our 2Q18 throughput forecast for the region is 200 kb/d lower than previously published.

**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
<b>OECD DEMAND</b>																	
Americas	24.2	24.6	24.6	24.5	25.1	24.8	24.7	24.5	25.0	25.0	25.1	24.9	25.0	25.0	25.2	25.3	25.1
Europe	13.5	13.8	13.6	13.9	14.4	14.2	14.0	13.9	14.3	14.8	14.4	14.4	14.0	14.3	14.8	14.6	14.4
Asia Oceania	8.1	8.1	8.6	7.7	7.8	8.4	8.1	8.6	7.8	7.9	8.4	8.2	8.6	7.7	7.8	8.3	8.1
Total OECD	45.8	46.4	46.8	46.1	47.3	47.4	46.9	47.0	47.0	47.6	48.0	47.4	47.6	47.1	47.8	48.3	47.7
<b>NON-OECD DEMAND</b>																	
FSU	4.7	4.6	4.5	4.5	4.9	4.8	4.7	4.5	4.7	5.0	4.8	4.7	4.6	4.7	5.0	4.9	4.8
Europe	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.8	0.7	0.7	0.7	0.8	0.8	0.8	0.8
China	10.8	11.6	11.8	12.0	11.6	11.9	11.8	12.5	12.6	12.2	12.6	12.4	12.7	13.0	12.7	13.2	12.9
Other Asia	11.8	12.4	13.0	13.0	12.7	13.0	12.9	13.1	13.5	13.2	13.5	13.3	13.6	13.9	13.6	14.1	13.8
Americas	6.9	6.7	6.5	6.6	6.7	6.5	6.6	6.4	6.6	6.7	6.6	6.6	6.4	6.6	6.7	6.6	6.6
Middle East	8.4	8.4	7.9	8.4	8.7	8.1	8.3	7.9	8.5	8.6	8.0	8.3	7.9	8.6	8.9	8.3	8.4
Africa	4.1	4.3	4.3	4.3	4.2	4.3	4.3	4.4	4.3	4.2	4.3	4.3	4.5	4.4	4.3	4.4	4.4
Total Non-OECD	47.4	48.6	48.6	49.6	49.4	49.4	49.3	49.5	50.9	50.7	50.5	50.4	50.4	51.9	51.9	52.2	51.6
<b>Total Demand<sup>1</sup></b>	<b>93.1</b>	<b>95.0</b>	<b>95.4</b>	<b>95.7</b>	<b>96.8</b>	<b>96.8</b>	<b>96.2</b>	<b>96.5</b>	<b>98.0</b>	<b>98.3</b>	<b>98.5</b>	<b>97.8</b>	<b>98.1</b>	<b>99.0</b>	<b>99.6</b>	<b>100.5</b>	<b>99.3</b>
<b>OECD SUPPLY</b>																	
Americas <sup>4</sup>	19.1	20.0	19.9	19.0	19.3	19.7	19.5	19.9	19.8	20.2	21.2	20.3	21.3	21.5	22.0	22.6	21.9
Europe	3.3	3.5	3.6	3.4	3.3	3.6	3.5	3.6	3.5	3.4	3.4	3.5	3.6	3.5	3.4	3.6	3.5
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	23.6	24.0	25.0	24.1	25.3	25.4	25.9	26.6	25.8
<b>NON-OECD SUPPLY</b>																	
FSU	13.9	14.1	14.3	14.1	14.0	14.6	14.2	14.4	14.3	14.3	14.4	14.4	14.5	14.4	14.4	14.5	14.4
Europe	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
China	4.2	4.3	4.1	4.0	3.9	3.9	4.0	3.9	3.9	3.8	3.8	3.9	3.8	3.8	3.8	3.7	3.8
Other Asia <sup>2</sup>	3.5	3.6	3.7	3.6	3.5	3.5	3.6	3.5	3.4	3.4	3.4	3.5	3.4	3.4	3.3	3.3	3.4
Americas <sup>2,4</sup>	4.4	4.6	4.3	4.4	4.6	4.6	4.5	4.6	4.5	4.5	4.5	4.5	4.5	4.6	4.6	4.8	4.6
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	1.2	1.2	1.2
Africa <sup>2</sup>	1.8	1.8	1.7	1.6	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.8	1.8	1.8	1.7	1.8
Total Non-OECD	29.2	29.7	29.5	29.1	29.1	29.7	29.3	29.5	29.3	29.2	29.3	29.3	29.3	29.3	29.2	29.4	29.3
Processing gains <sup>3</sup>	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	2.4	2.8	2.4	2.4	2.1	2.5	2.8	2.6	2.5
Total Non-OPEC Supply	56.6	58.1	57.7	56.7	57.2	57.9	57.4	57.7	57.7	58.3	58.9	58.1	59.0	59.6	60.2	60.9	59.9
<b>OPEC</b>																	
Crude	30.7	31.8	32.3	32.5	32.9	33.4	32.8	32.1	32.3	32.7	32.3	32.3	32.0				
NGLs	6.4	6.6	6.6	6.8	6.9	6.8	6.8	6.8	6.9	6.9	6.9	6.9	6.9	6.9	7.0	7.0	7.0
Total OPEC	37.1	38.4	39.0	39.3	39.8	40.2	39.6	38.9	39.2	39.6	39.2	39.2	38.9				
<b>Total Supply<sup>4</sup></b>	<b>93.6</b>	<b>96.5</b>	<b>96.6</b>	<b>96.1</b>	<b>96.9</b>	<b>98.2</b>	<b>97.0</b>	<b>96.6</b>	<b>96.9</b>	<b>97.8</b>	<b>98.1</b>	<b>97.4</b>	<b>97.9</b>				
<b>STOCK CHANGES AND MISCELLANEOUS</b>																	
<b>Reported OECD</b>																	
Industry	0.4	0.8	0.4	0.4	0.1	-0.9	0.0	0.3	-0.2	-0.5	-1.3	-0.4					
Government	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	-0.1	-0.1	-0.1	-0.1					
Total	0.4	0.8	0.4	0.4	0.1	-0.8	0.0	0.3	-0.3	-0.6	-1.4	-0.5					
Floating storage/Oil in transit	0.0	0.3	0.2	0.3	-0.2	0.2	0.1	-0.3	-0.3	-0.7	0.3	-0.3					
Miscellaneous to balance <sup>5</sup>	0.1	0.4	0.6	-0.4	0.3	2.0	0.6	0.1	-0.5	0.9	0.7	0.3					
<b>Total Stock Ch. &amp; Misc</b>	<b>0.5</b>	<b>1.5</b>	<b>1.3</b>	<b>0.3</b>	<b>0.2</b>	<b>1.4</b>	<b>0.8</b>	<b>0.1</b>	<b>-1.1</b>	<b>-0.5</b>	<b>-0.4</b>	<b>-0.5</b>	<b>-0.1</b>				
<b>Memo items:</b>																	
Call on OPEC crude + Stock ch. <sup>6</sup>	30.2	30.4	31.1	32.2	32.7	32.1	32.0	32.0	33.4	33.2	32.7	32.8	32.1	32.5	32.4	32.6	32.4

<sup>1</sup> 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.

<sup>2</sup> Other Asia includes Indonesia throughout. Latin America excludes Ecuador throughout. Africa excludes Angola, Gabon and Equatorial Guinea throughout.

<sup>3</sup> Net volumetric gains and losses in the refining process and marine transportation losses.

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

<sup>5</sup> Includes changes in non-reported stocks in OECD and non-OECD areas.

<sup>6</sup> 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
<b>OECD DEMAND</b>																	
Americas	-	-	-	-	-	-	-	-	-	-	-	-	0.3	-	-	-	0.1
Europe	-	-	-	-	-	-	-	-	-	-	-	-	-0.1	-0.1	-0.1	-	-0.1
Asia Oceania	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total OECD	-	-	-	-	-	-	-	-	-	-	-	-	0.3	-0.1	-0.1	-	-
<b>NON-OECD DEMAND</b>																	
FSU	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Europe	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
China	-	-	-	-	-	-	-	-	-	-	-	-	-0.2	0.1	0.1	0.1	-
Other Asia	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Americas	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-0.1	-0.1	-
Middle East	-	-	-	-	-	-	-	-	-	-	-	-	0.1	-	-	-	-
Africa	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Non-OECD	-	-	-	-	-	-	-	-	-	-	-	-	-0.3	0.1	-	-	-
<b>Total Demand</b>	-	-	-	-	-	-	-	-	-	-	-	-	<b>0.1</b>	-	<b>-0.1</b>	-	-
<b>OECD SUPPLY</b>																	
Americas	-	-	-	-	-	-	-	-	-	-	0.1	-	-	-0.1	-	-	-
Europe	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Asia Oceania	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total OECD	-	-	-	-	-	-	-	-	-	-	0.1	-	-	-0.1	0.1	-	-
<b>NON-OECD SUPPLY</b>																	
FSU	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Europe	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
China	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Asia	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Americas	-	-	-	-	-	-	-	-	-	-	-	-	-	-0.1	-	-	-
Middle East	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Africa	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Non-OECD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-0.1	-
Processing gains	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Global Biofuels	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Non-OPEC Supply	-	-	-	-	-	-	-	-	-	-	-	-	-	-0.1	0.1	-	-
<b>OPEC</b>																	
Crude	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NGLs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total OPEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total Supply</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>STOCK CHANGES AND MISCELLANEOUS</b>																	
<b>REPORTED OECD</b>																	
Industry	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Government	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Floating storage/Oil in transit	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Miscellaneous to balance	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total Stock Ch. &amp; Misc</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Memo items:</b>																	
Call on OPEC crude + Stock ch.	-	-	-	-	-	-	-	-	-	-	-	-	0.1	0.1	-0.2	-	-

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
<b>Demand (mb/d)</b>																
Americas	24.55	24.59	24.47	25.05	24.85	24.74	24.47	24.96	24.98	25.09	24.88	25.03	25.00	25.20	25.34	25.14
Europe	13.83	13.60	13.93	14.44	14.19	14.04	13.95	14.33	14.76	14.44	14.37	13.99	14.34	14.80	14.62	14.44
Asia Oceania	8.06	8.57	7.70	7.84	8.38	8.12	8.56	7.76	7.90	8.43	8.16	8.61	7.73	7.78	8.33	8.11
<b>Total OECD</b>	<b>46.44</b>	<b>46.76</b>	<b>46.10</b>	<b>47.33</b>	<b>47.42</b>	<b>46.91</b>	<b>46.98</b>	<b>47.05</b>	<b>47.64</b>	<b>47.96</b>	<b>47.41</b>	<b>47.63</b>	<b>47.07</b>	<b>47.77</b>	<b>48.28</b>	<b>47.69</b>
Asia	23.96	24.76	25.05	24.29	24.87	24.74	25.57	26.11	25.40	26.06	25.79	26.29	26.87	26.28	27.23	26.67
Middle East	8.37	7.87	8.40	8.70	8.12	8.27	7.92	8.49	8.65	7.98	8.26	7.92	8.59	8.86	8.25	8.41
Americas	6.71	6.47	6.58	6.66	6.53	6.56	6.45	6.57	6.68	6.58	6.57	6.44	6.60	6.68	6.62	6.59
FSU	4.59	4.52	4.53	4.88	4.84	4.69	4.46	4.69	4.96	4.81	4.73	4.59	4.72	5.02	4.88	4.80
Africa	4.26	4.32	4.33	4.18	4.32	4.29	4.42	4.31	4.23	4.32	4.32	4.45	4.38	4.27	4.41	4.38
Europe	0.69	0.69	0.73	0.72	0.72	0.71	0.71	0.74	0.75	0.75	0.74	0.74	0.76	0.76	0.77	0.76
<b>Total Non-OECD</b>	<b>48.58</b>	<b>48.63</b>	<b>49.62</b>	<b>49.43</b>	<b>49.40</b>	<b>49.27</b>	<b>49.52</b>	<b>50.91</b>	<b>50.67</b>	<b>50.50</b>	<b>50.41</b>	<b>50.43</b>	<b>51.91</b>	<b>51.86</b>	<b>52.17</b>	<b>51.60</b>
<b>World</b>	<b>95.02</b>	<b>95.39</b>	<b>95.72</b>	<b>96.76</b>	<b>96.82</b>	<b>96.18</b>	<b>96.51</b>	<b>97.96</b>	<b>98.31</b>	<b>98.46</b>	<b>97.82</b>	<b>98.06</b>	<b>98.98</b>	<b>99.64</b>	<b>100.45</b>	<b>99.29</b>
of which: US50	19.53	19.54	19.50	19.94	19.77	19.69	19.49	20.01	19.92	20.05	19.87	20.13	20.11	20.18	20.30	20.18
Europe 5*	8.13	8.09	8.14	8.34	8.21	8.19	8.30	8.36	8.51	8.29	8.37	8.13	8.28	8.49	8.38	8.32
China	11.56	11.75	12.03	11.58	11.87	11.81	12.45	12.61	12.16	12.55	12.45	12.72	12.98	12.70	13.17	12.89
Japan	4.12	4.44	3.70	3.79	4.18	4.03	4.33	3.64	3.69	4.12	3.94	4.33	3.55	3.63	4.04	3.89
India	4.24	4.65	4.63	4.40	4.56	4.56	4.58	4.79	4.54	4.83	4.68	4.94	5.09	4.78	5.16	5.00
Russia	3.45	3.45	3.38	3.70	3.60	3.53	3.35	3.51	3.76	3.58	3.55	3.46	3.53	3.80	3.65	3.61
Brazil	3.18	3.02	3.07	3.13	3.07	3.07	3.01	3.05	3.17	3.12	3.09	3.01	3.10	3.16	3.14	3.10
Saudi Arabia	3.42	3.02	3.39	3.53	3.11	3.26	2.88	3.35	3.57	3.08	3.22	2.98	3.45	3.64	3.18	3.32
Canada	2.37	2.33	2.32	2.46	2.40	2.38	2.35	2.34	2.50	2.50	2.42	2.30	2.29	2.46	2.47	2.38
Korea	2.47	2.66	2.55	2.60	2.72	2.63	2.69	2.56	2.64	2.72	2.65	2.70	2.61	2.57	2.68	2.64
Mexico	2.01	2.05	2.02	2.01	2.03	2.03	1.96	1.98	1.90	1.88	1.93	1.92	1.96	1.90	1.89	1.92
Iran	1.84	1.84	1.82	1.79	1.82	1.82	1.84	1.85	1.81	1.82	1.83	1.86	1.92	1.87	1.89	1.89
<b>Total</b>	<b>66.31</b>	<b>66.85</b>	<b>66.54</b>	<b>67.27</b>	<b>67.33</b>	<b>67.00</b>	<b>67.23</b>	<b>68.06</b>	<b>68.16</b>	<b>68.55</b>	<b>68.01</b>	<b>68.49</b>	<b>68.87</b>	<b>69.20</b>	<b>69.96</b>	<b>69.13</b>
% of World	69.8%	70.1%	69.5%	69.5%	69.5%	69.7%	69.7%	69.5%	69.3%	69.6%	69.5%	69.8%	69.6%	69.4%	69.6%	69.6%
<b>Annual Change (% per annum)</b>																
Americas	1.6	0.7	0.5	0.4	1.5	0.8	-0.5	2.0	-0.3	1.0	0.6	2.3	0.1	0.9	1.0	1.0
Europe	2.2	0.5	1.9	1.1	2.5	1.5	2.6	2.8	2.2	1.7	2.3	0.3	0.1	0.3	1.3	0.5
Asia Oceania	0.1	-1.3	1.1	1.2	2.1	0.8	-0.1	0.8	0.8	0.5	0.5	0.6	-0.4	-1.6	-1.2	-0.7
<b>Total OECD</b>	<b>1.5</b>	<b>0.3</b>	<b>1.0</b>	<b>0.8</b>	<b>1.9</b>	<b>1.0</b>	<b>0.5</b>	<b>2.0</b>	<b>0.6</b>	<b>1.1</b>	<b>1.1</b>	<b>1.4</b>	<b>0.0</b>	<b>0.3</b>	<b>0.7</b>	<b>0.6</b>
Asia	5.9	5.7	3.6	1.2	2.7	3.3	3.3	4.2	4.6	4.8	4.2	2.8	2.9	3.4	4.5	3.4
Middle East	-0.6	1.1	-1.4	-1.5	-2.6	-1.2	0.6	1.1	-0.6	-1.7	-0.2	0.0	1.1	2.5	3.4	1.8
Americas	-2.1	-2.4	-2.2	-1.8	-2.6	-2.3	-0.3	-0.1	0.3	0.7	0.2	-0.1	0.5	0.0	0.6	0.3
FSU	-1.6	5.2	-1.7	1.9	3.9	2.3	-1.3	3.5	1.7	-0.5	0.9	2.8	0.7	1.2	1.4	1.5
Africa	3.0	2.8	3.7	1.1	-4.1	0.7	2.3	-0.5	1.3	0.1	0.8	0.8	1.5	0.7	2.1	1.3
Europe	3.9	4.5	6.1	3.1	2.2	4.0	1.5	2.0	4.0	4.1	2.9	4.7	3.1	1.6	3.7	3.1
<b>Total Non-OECD</b>	<b>2.6</b>	<b>3.5</b>	<b>1.5</b>	<b>0.4</b>	<b>0.5</b>	<b>1.4</b>	<b>1.8</b>	<b>2.6</b>	<b>2.5</b>	<b>2.2</b>	<b>2.3</b>	<b>1.8</b>	<b>2.0</b>	<b>2.4</b>	<b>3.3</b>	<b>2.4</b>
<b>World</b>	<b>2.0</b>	<b>1.9</b>	<b>1.3</b>	<b>0.6</b>	<b>1.2</b>	<b>1.2</b>	<b>1.2</b>	<b>2.3</b>	<b>1.6</b>	<b>1.7</b>	<b>1.7</b>	<b>1.6</b>	<b>1.0</b>	<b>1.4</b>	<b>2.0</b>	<b>1.5</b>
<b>Annual Change (mb/d)</b>																
Americas	0.39	0.18	0.11	0.11	0.36	0.19	-0.12	0.49	-0.07	0.25	0.14	0.55	0.03	0.22	0.24	0.26
Europe	0.29	0.07	0.26	0.16	0.35	0.21	0.35	0.40	0.32	0.25	0.33	0.04	0.02	0.04	0.19	0.07
Asia Oceania	0.01	-0.11	0.09	0.09	0.17	0.06	-0.01	0.06	0.06	0.05	0.04	0.05	-0.03	-0.13	-0.10	-0.05
<b>Total OECD</b>	<b>0.69</b>	<b>0.14</b>	<b>0.46</b>	<b>0.36</b>	<b>0.88</b>	<b>0.46</b>	<b>0.22</b>	<b>0.94</b>	<b>0.31</b>	<b>0.54</b>	<b>0.50</b>	<b>0.64</b>	<b>0.02</b>	<b>0.14</b>	<b>0.32</b>	<b>0.28</b>
Asia	1.33	1.34	0.87	0.29	0.64	0.79	0.81	1.06	1.11	1.19	1.04	0.72	0.76	0.88	1.17	0.88
Middle East	-0.05	0.09	-0.12	-0.13	-0.22	-0.10	0.05	0.09	-0.05	-0.14	-0.01	0.00	0.09	0.21	0.27	0.15
Americas	-0.14	-0.16	-0.15	-0.12	-0.18	-0.15	-0.02	-0.01	0.02	0.05	0.01	-0.01	0.03	0.00	0.04	0.02
FSU	-0.08	0.22	-0.08	0.09	0.18	0.10	-0.06	0.16	0.08	-0.02	0.04	0.12	0.03	0.06	0.07	0.07
Africa	0.13	0.12	0.15	0.04	-0.19	0.03	0.10	-0.02	0.05	0.00	0.03	0.04	0.06	0.03	0.09	0.06
Europe	0.03	0.03	0.04	0.02	0.02	0.03	0.01	0.01	0.03	0.03	0.02	0.03	0.02	0.01	0.03	0.02
<b>Total Non-OECD</b>	<b>1.21</b>	<b>1.64</b>	<b>0.72</b>	<b>0.20</b>	<b>0.26</b>	<b>0.70</b>	<b>0.89</b>	<b>1.29</b>	<b>1.25</b>	<b>1.10</b>	<b>1.13</b>	<b>0.91</b>	<b>1.00</b>	<b>1.19</b>	<b>1.67</b>	<b>1.20</b>
<b>World</b>	<b>1.90</b>	<b>1.78</b>	<b>1.19</b>	<b>0.56</b>	<b>1.14</b>	<b>1.16</b>	<b>1.12</b>	<b>2.24</b>	<b>1.55</b>	<b>1.64</b>	<b>1.64</b>	<b>1.55</b>	<b>1.02</b>	<b>1.33</b>	<b>1.99</b>	<b>1.47</b>
<b>Revisions to Oil Demand from Last Month's Report (mb/d)</b>																
Americas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.01	0.35	0.02	-0.01	0.03	0.10
Europe	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.07	-0.10	-0.08	-0.02	-0.07
Asia Oceania	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00	-0.01	-0.02	0.00
<b>Total OECD</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.03</b>	<b>0.01</b>	<b>0.31</b>	<b>-0.08</b>	<b>-0.09</b>	<b>-0.01</b>	<b>0.03</b>
Asia	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.01	-0.26	0.09	0.06	0.12	0.00
Middle East	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.01	0.00	0.07	0.03	0.00	0.03	0.03
Americas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.02	-0.02	-0.05	-0.07	-0.04
FSU	0.00	0.00	0.02	0.00	-0.01	0.00	-0.03	0.00	0.01	0.00	0.00	-0.01	-0.01	0.00	0.00	0.00
Africa	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.01	0.00	-0.05	-0.02	-0.02	-0.03	-0.03
Europe	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01	0.00
<b>Total Non-OECD</b>	<b>0.00</b>	<b>0.00</b>	<b>0.02</b>	<b>0.00</b>	<b>-0.01</b>	<b>0.00</b>	<b>-0.03</b>	<b>0.00</b>	<b>0.01</b>	<b>0.00</b>	<b>-0.01</b>	<b>-0.26</b>	<b>0.08</b>	<b>-0.01</b>	<b>0.04</b>	<b>-0.04</b>
<b>World</b>	<b>0.00</b>	<b>0.00</b>	<b>0.02</b>	<b>0.00</b>	<b>-0.01</b>	<b>0.00</b>	<b>-0.03</b>	<b>0.00</b>	<b>0.01</b>	<b>0.03</b>	<b>0.00</b>	<b>0.05</b>	<b>0.00</b>	<b>-0.10</b>	<b>0.03</b>	<b>0.00</b>
<b>Revisions to Oil Demand Growth from Last Month's Report (mb/d)</b>																
World	0.00	-0.01	0.01	-0.01	0.01	0.00	-0.03	-0.02	0.02	0.04	0.00	0.09	0.00	-0.11	0.00	-0.01

\* France, Germany, Italy, Spain and UK

**Table 2a**  
**OECD REGIONAL OIL DEMAND<sup>1</sup>**  
(million barrels per day)

										Latest month vs.	
	2016	2017	1Q17	2Q17	3Q17	4Q17	Nov 17	Dec 17	Jan 18 <sup>2</sup>	Dec 17	Jan 17
<b>Americas</b>											
LPG and ethane	3.27	3.25	3.50	3.07	2.96	3.45	3.54	3.76	4.18	0.42	0.41
Naphtha	0.35	0.34	0.35	0.36	0.34	0.33	0.33	0.32	0.27	-0.05	-0.07
Motor gasoline	11.10	11.08	10.64	11.30	11.36	11.01	10.93	11.00	10.42	-0.58	0.28
Jet and kerosene	1.90	1.98	1.89	1.97	2.04	2.03	2.02	2.04	1.92	-0.12	0.04
Gasoil/diesel oil	5.07	5.15	5.14	5.10	5.10	5.26	5.43	5.11	5.58	0.47	0.66
Residual fuel oil	0.60	0.66	0.67	0.69	0.60	0.69	0.74	0.62	0.61	-0.01	-0.13
Other products	2.44	2.42	2.28	2.48	2.58	2.33	2.40	2.18	2.32	0.13	-0.01
<b>Total</b>	<b>24.74</b>	<b>24.88</b>	<b>24.47</b>	<b>24.96</b>	<b>24.98</b>	<b>25.09</b>	<b>25.39</b>	<b>25.02</b>	<b>25.29</b>	<b>0.27</b>	<b>1.19</b>
<b>Europe</b>											
LPG and ethane	1.21	1.20	1.27	1.18	1.15	1.18	1.17	1.23	1.31	0.07	-0.04
Naphtha	1.11	1.21	1.30	1.13	1.21	1.21	1.22	1.20	1.24	0.03	-0.05
Motor gasoline	1.90	1.92	1.79	1.99	2.01	1.88	1.90	1.85	1.78	-0.07	0.09
Jet and kerosene	1.37	1.44	1.29	1.46	1.63	1.40	1.33	1.35	1.30	-0.05	0.02
Gasoil/diesel oil	6.28	6.48	6.32	6.42	6.53	6.64	6.84	6.48	5.85	-0.63	-0.19
Residual fuel oil	0.89	0.89	0.89	0.86	0.90	0.93	0.91	0.94	0.86	-0.07	-0.05
Other products	1.28	1.23	1.10	1.29	1.34	1.20	1.23	1.12	1.03	-0.09	-0.03
<b>Total</b>	<b>14.04</b>	<b>14.37</b>	<b>13.95</b>	<b>14.33</b>	<b>14.76</b>	<b>14.44</b>	<b>14.60</b>	<b>14.18</b>	<b>13.37</b>	<b>-0.81</b>	<b>-0.25</b>
<b>Asia Oceania</b>											
LPG and ethane	0.83	0.79	0.89	0.77	0.74	0.78	0.77	0.87	0.86	-0.01	-0.04
Naphtha	1.96	2.09	2.14	1.98	2.05	2.17	2.17	2.19	2.14	-0.05	0.00
Motor gasoline	1.55	1.55	1.47	1.53	1.62	1.57	1.57	1.63	1.45	-0.18	0.12
Jet and kerosene	0.90	0.92	1.17	0.73	0.72	1.06	1.07	1.27	1.27	0.00	0.09
Gasoil/diesel oil	1.84	1.92	1.90	1.90	1.89	1.98	2.08	2.02	1.85	-0.17	0.12
Residual fuel oil	0.65	0.56	0.64	0.51	0.52	0.56	0.56	0.63	0.65	0.02	-0.03
Other products	0.40	0.34	0.35	0.34	0.35	0.31	0.32	0.32	0.35	0.03	0.04
<b>Total</b>	<b>8.12</b>	<b>8.16</b>	<b>8.56</b>	<b>7.76</b>	<b>7.90</b>	<b>8.43</b>	<b>8.54</b>	<b>8.93</b>	<b>8.58</b>	<b>-0.35</b>	<b>0.30</b>
<b>OECD</b>											
LPG and ethane	5.31	5.24	5.66	5.02	4.85	5.41	5.47	5.86	6.35	0.49	0.33
Naphtha	3.42	3.64	3.79	3.46	3.60	3.71	3.73	3.72	3.65	-0.07	-0.12
Motor gasoline	14.55	14.55	13.91	14.82	15.00	14.46	14.40	14.47	13.65	-0.82	0.49
Jet and kerosene	4.17	4.34	4.34	4.15	4.39	4.49	4.42	4.66	4.49	-0.17	0.15
Gasoil/diesel oil	13.20	13.54	13.36	13.42	13.52	13.87	14.35	13.61	13.28	-0.33	0.59
Residual fuel oil	2.15	2.11	2.20	2.06	2.01	2.17	2.22	2.18	2.12	-0.06	-0.21
Other products	4.11	3.99	3.72	4.12	4.26	3.85	3.95	3.63	3.70	0.08	0.01
<b>Total</b>	<b>46.91</b>	<b>47.41</b>	<b>46.98</b>	<b>47.05</b>	<b>47.64</b>	<b>47.96</b>	<b>48.54</b>	<b>48.13</b>	<b>47.25</b>	<b>-0.89</b>	<b>1.24</b>

<sup>1</sup> 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.

<sup>2</sup> Latest official OECD submissions (MOS).

**Table 2b**  
**OIL DEMAND IN SELECTED OECD COUNTRIES<sup>1</sup>**  
(million barrels per day)

	2016	2017	1Q17	2Q17	3Q17	4Q17	Nov 17	Dec 17	Jan 18 <sup>2</sup>	Latest month vs.	
										Dec 17	Jan 17
<b>United States<sup>3</sup></b>											
LPG and ethane	2.47	2.49	2.69	2.36	2.26	2.66	2.73	2.92	3.36	0.44	0.41
Naphtha	0.22	0.23	0.24	0.24	0.21	0.22	0.23	0.22	0.21	-0.01	-0.01
Motor gasoline	9.32	9.32	8.95	9.54	9.56	9.23	9.14	9.20	8.74	-0.45	0.24
Jet and kerosene	1.62	1.69	1.61	1.69	1.72	1.73	1.73	1.76	1.63	-0.13	0.02
Gasoil/diesel oil	3.88	3.94	3.95	3.91	3.87	4.02	4.17	3.93	4.39	0.46	0.61
Residual fuel oil	0.33	0.36	0.37	0.37	0.30	0.39	0.43	0.39	0.34	-0.05	-0.12
Other products	1.86	1.85	1.69	1.91	2.01	1.79	1.85	1.66	1.79	0.13	0.07
<b>Total</b>	<b>19.69</b>	<b>19.87</b>	<b>19.49</b>	<b>20.01</b>	<b>19.92</b>	<b>20.05</b>	<b>20.28</b>	<b>20.08</b>	<b>20.46</b>	<b>0.38</b>	<b>1.23</b>
<b>Japan</b>											
LPG and ethane	0.44	0.42	0.50	0.40	0.37	0.42	0.42	0.50	0.48	-0.01	-0.01
Naphtha	0.76	0.78	0.83	0.75	0.75	0.81	0.82	0.82	0.78	-0.03	-0.07
Motor gasoline	0.90	0.88	0.82	0.87	0.95	0.90	0.89	0.94	0.82	-0.13	0.10
Jet and kerosene	0.50	0.51	0.73	0.36	0.33	0.61	0.61	0.79	0.77	-0.02	0.03
Diesel	0.43	0.42	0.43	0.41	0.42	0.43	0.44	0.45	0.38	-0.07	-0.01
Other gasoil	0.35	0.35	0.39	0.32	0.31	0.37	0.38	0.42	0.39	-0.03	0.03
Residual fuel oil	0.34	0.29	0.33	0.27	0.27	0.29	0.28	0.33	0.34	0.01	-0.01
Other products	0.31	0.29	0.30	0.27	0.29	0.29	0.29	0.31	0.34	0.03	0.07
<b>Total</b>	<b>4.03</b>	<b>3.94</b>	<b>4.33</b>	<b>3.64</b>	<b>3.69</b>	<b>4.12</b>	<b>4.15</b>	<b>4.55</b>	<b>4.31</b>	<b>-0.24</b>	<b>0.13</b>
<b>Germany</b>											
LPG and ethane	0.10	0.14	0.14	0.15	0.14	0.12	0.14	0.13	0.12	-0.01	-0.02
Naphtha	0.38	0.40	0.46	0.39	0.39	0.37	0.38	0.37	0.30	-0.07	-0.14
Motor gasoline	0.42	0.43	0.42	0.45	0.44	0.43	0.45	0.41	0.46	0.05	0.06
Jet and kerosene	0.20	0.21	0.20	0.21	0.23	0.20	0.20	0.20	0.17	-0.02	-0.04
Diesel	0.76	0.77	0.75	0.78	0.78	0.76	0.81	0.70	0.64	-0.06	-0.06
Other gasoil	0.36	0.37	0.39	0.36	0.35	0.36	0.39	0.33	0.33	0.00	-0.06
Residual fuel oil	0.09	0.09	0.10	0.08	0.08	0.10	0.10	0.10	0.11	0.01	0.00
Other products	0.10	0.10	0.08	0.11	0.11	0.09	0.10	0.06	0.06	0.00	-0.01
<b>Total</b>	<b>2.41</b>	<b>2.50</b>	<b>2.54</b>	<b>2.52</b>	<b>2.52</b>	<b>2.43</b>	<b>2.58</b>	<b>2.30</b>	<b>2.18</b>	<b>-0.11</b>	<b>-0.26</b>
<b>Italy</b>											
LPG and ethane	0.11	0.11	0.13	0.10	0.10	0.12	0.12	0.14	0.12	-0.01	-0.02
Naphtha	0.09	0.11	0.11	0.11	0.12	0.11	0.12	0.10	0.12	0.02	-0.01
Motor gasoline	0.18	0.17	0.16	0.18	0.18	0.17	0.16	0.17	0.16	-0.01	0.01
Jet and kerosene	0.10	0.10	0.08	0.11	0.13	0.09	0.07	0.09	0.09	0.00	0.01
Diesel	0.46	0.47	0.45	0.47	0.46	0.48	0.48	0.47	0.45	-0.02	0.04
Other gasoil	0.09	0.09	0.08	0.08	0.09	0.10	0.10	0.10	0.06	-0.04	-0.02
Residual fuel oil	0.06	0.07	0.07	0.06	0.08	0.06	0.06	0.06	0.06	0.01	0.00
Other products	0.16	0.16	0.15	0.16	0.16	0.16	0.17	0.14	0.15	0.00	0.02
<b>Total</b>	<b>1.25</b>	<b>1.28</b>	<b>1.23</b>	<b>1.28</b>	<b>1.32</b>	<b>1.30</b>	<b>1.29</b>	<b>1.27</b>	<b>1.21</b>	<b>-0.06</b>	<b>0.03</b>
<b>France</b>											
LPG and ethane	0.12	0.11	0.14	0.10	0.10	0.11	0.11	0.12	0.14	0.02	-0.02
Naphtha	0.10	0.10	0.12	0.10	0.11	0.07	0.08	0.08	0.11	0.03	-0.01
Motor gasoline	0.17	0.18	0.16	0.19	0.20	0.18	0.18	0.18	0.16	-0.02	0.01
Jet and kerosene	0.15	0.16	0.15	0.16	0.18	0.15	0.14	0.16	0.15	-0.01	0.00
Diesel	0.70	0.72	0.71	0.73	0.73	0.72	0.73	0.72	0.66	-0.07	-0.01
Other gasoil	0.25	0.25	0.28	0.21	0.25	0.26	0.27	0.28	0.23	-0.05	-0.09
Residual fuel oil	0.04	0.06	0.06	0.05	0.06	0.06	0.06	0.06	0.06	0.00	-0.01
Other products	0.12	0.12	0.09	0.14	0.13	0.11	0.12	0.10	0.08	-0.02	0.00
<b>Total</b>	<b>1.66</b>	<b>1.71</b>	<b>1.72</b>	<b>1.68</b>	<b>1.76</b>	<b>1.66</b>	<b>1.68</b>	<b>1.69</b>	<b>1.59</b>	<b>-0.10</b>	<b>-0.15</b>
<b>United Kingdom</b>											
LPG and ethane	0.16	0.15	0.16	0.15	0.14	0.14	0.14	0.14	0.16	0.02	-0.01
Naphtha	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.04	0.04	0.00	0.01
Motor gasoline	0.29	0.29	0.28	0.30	0.29	0.28	0.30	0.28	0.27	-0.02	-0.01
Jet and kerosene	0.31	0.32	0.32	0.31	0.33	0.32	0.32	0.33	0.32	0.00	0.01
Diesel	0.52	0.52	0.49	0.53	0.52	0.54	0.56	0.54	0.46	-0.08	0.03
Other gasoil	0.13	0.14	0.12	0.14	0.15	0.14	0.15	0.13	0.10	-0.03	0.01
Residual fuel oil	0.03	0.03	0.03	0.02	0.03	0.03	0.03	0.03	0.03	0.00	0.00
Other products	0.11	0.12	0.11	0.12	0.12	0.11	0.11	0.11	0.10	-0.02	-0.01
<b>Total</b>	<b>1.59</b>	<b>1.58</b>	<b>1.53</b>	<b>1.59</b>	<b>1.60</b>	<b>1.60</b>	<b>1.63</b>	<b>1.60</b>	<b>1.47</b>	<b>-0.12</b>	<b>0.03</b>
<b>Canada</b>											
LPG and ethane	0.37	0.36	0.39	0.32	0.32	0.40	0.42	0.43	0.37	-0.07	-0.04
Naphtha	0.10	0.10	0.09	0.09	0.11	0.10	0.10	0.10	0.06	-0.04	-0.05
Motor gasoline	0.85	0.85	0.80	0.86	0.89	0.85	0.86	0.84	0.79	-0.04	0.03
Jet and kerosene	0.14	0.15	0.13	0.14	0.17	0.14	0.14	0.14	0.15	0.01	0.02
Diesel	0.30	0.29	0.30	0.29	0.29	0.29	0.29	0.29	0.28	0.00	0.00
Other gasoil	0.24	0.29	0.26	0.26	0.32	0.33	0.34	0.29	0.30	0.01	0.06
Residual fuel oil	0.04	0.05	0.05	0.06	0.05	0.04	0.05	0.04	0.05	0.01	0.00
Other products	0.34	0.34	0.33	0.32	0.36	0.35	0.36	0.34	0.32	-0.02	-0.04
<b>Total</b>	<b>2.38</b>	<b>2.42</b>	<b>2.35</b>	<b>2.34</b>	<b>2.50</b>	<b>2.50</b>	<b>2.56</b>	<b>2.45</b>	<b>2.32</b>	<b>-0.13</b>	<b>-0.03</b>

<sup>1</sup> 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.

<sup>2</sup> Latest official OECD submissions (MOS).

<sup>3</sup> US figures exclude US territories.



**Table 3**  
**WORLD OIL PRODUCTION**

(million barrels per day)

	2016	2017	2018	4Q17	1Q18	2Q18	3Q18	4Q18	Jan 18	Feb 18	Mar 18
<b>OPEC</b>											
Crude Oil											
Saudi Arabia	10.42	9.96		9.99	9.95				9.98	9.96	9.92
Iran	3.55	3.80		3.81	3.81				3.80	3.82	3.81
Iraq	4.42	4.47		4.45	4.45				4.46	4.46	4.44
UAE	3.05	2.93		2.90	2.84				2.85	2.80	2.87
Kuwait	2.88	2.71		2.70	2.70				2.70	2.70	2.70
Neutral Zone	0.00	0.00		0.00	0.00				0.00	0.00	0.00
Qatar	0.65	0.61		0.61	0.60				0.62	0.58	0.60
Angola	1.71	1.64		1.62	1.55				1.57	1.57	1.52
Nigeria	1.47	1.53		1.60	1.67				1.68	1.68	1.65
Libya	0.39	0.83		1.00	1.01				1.00	1.03	0.99
Algeria	1.11	1.05		1.02	1.01				1.02	1.04	0.98
Equatorial Guinea	0.14	0.13		0.13	0.13				0.13	0.13	0.13
Ecuador	0.55	0.53		0.53	0.52				0.52	0.51	0.52
Venezuela	2.24	1.97		1.75	1.55				1.61	1.55	1.49
Gabon	0.23	0.20		0.21	0.21				0.21	0.20	0.21
<b>Total Crude Oil</b>	<b>32.80</b>	<b>32.35</b>		<b>32.31</b>	<b>32.00</b>				<b>32.15</b>	<b>32.03</b>	<b>31.83</b>
Total NGLs <sup>1</sup>	6.78	6.87	6.96	6.85	6.91	6.93	6.98	7.01	6.91	6.91	6.91
<b>Total OPEC<sup>2</sup></b>	<b>39.59</b>	<b>39.22</b>		<b>39.17</b>	<b>38.91</b>				<b>39.06</b>	<b>38.94</b>	<b>38.74</b>
<b>NON-OPEC<sup>2,3</sup></b>											
<b>OECD</b>											
<b>Americas</b>	19.48	20.26	21.87	21.16	21.32	21.49	22.05	22.58	21.17	21.41	21.39
United States	12.53	13.19	14.71	13.97	14.16	14.60	14.77	15.28	13.95	14.12	14.41
Mexico	2.47	2.23	2.08	2.13	2.14	2.09	2.05	2.02	2.19	2.15	2.09
Canada	4.47	4.83	5.08	5.05	5.01	4.80	5.22	5.28	5.03	5.13	4.89
Chile	0.01	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Europe</b>	3.52	3.48	3.51	3.42	3.60	3.48	3.40	3.57	3.67	3.57	3.56
UK	1.03	1.01	1.12	0.99	1.09	1.12	1.08	1.17	1.13	1.06	1.08
Norway	1.99	1.97	1.90	1.91	2.00	1.86	1.83	1.91	2.03	2.01	1.97
Others	0.49	0.50	0.50	0.52	0.51	0.50	0.49	0.49	0.52	0.50	0.50
<b>Asia Oceania</b>	0.43	0.39	0.43	0.38	0.40	0.41	0.43	0.47	0.40	0.41	0.41
Australia	0.35	0.32	0.36	0.31	0.34	0.34	0.37	0.41	0.33	0.34	0.34
Others	0.08	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
<b>Total OECD</b>	<b>23.42</b>	<b>24.13</b>	<b>25.81</b>	<b>24.96</b>	<b>25.33</b>	<b>25.38</b>	<b>25.88</b>	<b>26.63</b>	<b>25.25</b>	<b>25.38</b>	<b>25.36</b>
<b>NON-OECD</b>											
<b>Former USSR</b>	14.24	14.36	14.43	14.38	14.46	14.42	14.36	14.46	14.43	14.47	14.47
Russia	11.34	11.36	11.34	11.33	11.34	11.33	11.33	11.34	11.33	11.34	11.35
Others	2.90	3.00	3.09	3.05	3.12	3.09	3.03	3.13	3.10	3.14	3.12
<b>Asia<sup>2</sup></b>	7.57	7.33	7.13	7.27	7.22	7.15	7.10	7.04	7.31	7.20	7.15
China	3.98	3.87	3.77	3.84	3.80	3.79	3.76	3.73	3.86	3.77	3.78
Malaysia	0.71	0.69	0.68	0.69	0.70	0.68	0.68	0.67	0.73	0.68	0.68
India	0.85	0.86	0.83	0.85	0.84	0.83	0.83	0.83	0.84	0.85	0.83
Indonesia	0.88	0.85	0.82	0.84	0.83	0.83	0.82	0.81	0.83	0.83	0.83
Others	1.15	1.06	1.02	1.05	1.04	1.03	1.02	1.01	1.05	1.06	1.01
<b>Europe</b>	0.14	0.13	0.12	0.13	0.13	0.12	0.12	0.12	0.13	0.13	0.13
<b>Americas<sup>2</sup></b>	4.48	4.54	4.64	4.55	4.54	4.61	4.63	4.76	4.55	4.48	4.59
Brazil	2.61	2.74	2.86	2.73	2.75	2.82	2.86	3.00	2.73	2.74	2.78
Argentina	0.61	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58
Colombia	0.88	0.86	0.83	0.86	0.85	0.83	0.82	0.81	0.86	0.83	0.85
Others	0.38	0.37	0.37	0.37	0.36	0.37	0.37	0.37	0.37	0.34	0.38
<b>Middle East<sup>2,4</sup></b>	1.27	1.24	1.22	1.22	1.20	1.23	1.23	1.23	1.18	1.20	1.22
Oman	1.01	0.98	0.97	0.98	0.98	0.97	0.97	0.97	0.97	0.97	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	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Others	0.21	0.21	0.20	0.19	0.18	0.20	0.20	0.20	0.15	0.18	0.20
<b>Africa</b>	1.66	1.71	1.77	1.74	1.75	1.78	1.79	1.75	1.79	1.71	1.75
Egypt	0.67	0.64	0.62	0.65	0.64	0.63	0.62	0.61	0.64	0.64	0.63
Others	0.99	1.07	1.15	1.10	1.11	1.16	1.17	1.14	1.15	1.07	1.12
<b>Total Non-OECD</b>	<b>29.34</b>	<b>29.32</b>	<b>29.30</b>	<b>29.29</b>	<b>29.30</b>	<b>29.32</b>	<b>29.23</b>	<b>29.36</b>	<b>29.38</b>	<b>29.19</b>	<b>29.32</b>
Processing gains <sup>5</sup>	2.27	2.29	2.32	2.29	2.32	2.32	2.32	2.32	2.32	2.32	2.32
Global Biofuels	2.34	2.40	2.50	2.38	2.07	2.55	2.82	2.55	2.06	2.08	2.06
<b>TOTAL NON-OPEC</b>	<b>57.37</b>	<b>58.14</b>	<b>59.93</b>	<b>58.93</b>	<b>59.02</b>	<b>59.56</b>	<b>60.24</b>	<b>60.86</b>	<b>59.02</b>	<b>58.98</b>	<b>59.06</b>
<b>TOTAL SUPPLY</b>	<b>96.96</b>	<b>97.36</b>		<b>98.10</b>	<b>97.93</b>				<b>98.08</b>	<b>97.92</b>	<b>97.80</b>

<sup>1</sup> Includes condensates reported by OPEC countries, oil from non-conventional sources, e.g. NGLs in Qatar and Nigeria and non-oil inputs to Saudi Arabian MTBE.

<sup>2</sup> Latin America excludes Ecuador throughout. Africa excludes Angola, Gabon and Equatorial Guinea throughout. Asia includes Indonesia throughout.

<sup>3</sup> Comprises crude oil, condensates, NGLs and oil from non-conventional sources

<sup>4</sup> Includes small amounts of production from Jordan and Bahrain.

<sup>5</sup> Net volumetric gains and losses in refining and marine transportation losses.

**Table 4**  
**OECD INDUSTRY STOCKS<sup>1</sup> AND QUARTERLY STOCK CHANGES**

	RECENT MONTHLY STOCKS <sup>2</sup>					PRIOR YEARS' STOCKS <sup>2</sup>			STOCK CHANGES			
	in Million Barrels					in Million Barrels			in mb/d			
	Oct2017	Nov2017	Dec2017	Jan2018	Feb2018*	Feb2015	Feb2016	Feb2017	1Q2017	2Q2017	3Q2017	4Q2017
<b>OECD Americas</b>												
Crude	616.5	609.7	580.9	581.2	584.5	567.9	647.9	683.0	0.56	-0.44	-0.34	-0.48
Motor Gasoline	248.4	253.9	267.8	276.2	284.4	278.5	285.9	285.9	0.02	-0.03	-0.18	0.17
Middle Distillate	201.3	202.4	219.0	216.8	211.3	196.7	240.6	239.8	-0.13	-0.02	-0.15	0.09
Residual Fuel Oil	38.3	37.7	35.2	37.4	36.8	43.7	52.2	45.1	0.00	-0.08	0.02	-0.08
Total Products <sup>3</sup>	727.3	722.1	734.8	720.8	707.2	697.1	765.5	763.7	-0.43	0.19	-0.06	-0.14
Total <sup>4</sup>	1542.0	1523.3	1498.7	1478.4	1469.9	1427.1	1584.1	1619.3	0.10	-0.13	-0.26	-0.79
<b>OECD Europe</b>												
Crude	334.9	347.1	329.5	334.8	339.8	322.0	357.6	359.5	0.18	0.04	-0.28	-0.09
Motor Gasoline	90.0	92.2	98.9	101.2	101.7	106.7	108.3	105.1	0.02	-0.09	-0.06	0.13
Middle Distillate	276.2	265.7	271.3	289.4	282.9	259.6	321.8	314.9	0.06	-0.15	-0.04	-0.24
Residual Fuel Oil	62.0	60.4	59.0	62.8	62.6	67.9	81.8	70.9	-0.02	-0.04	-0.07	0.00
Total Products <sup>3</sup>	539.9	531.2	543.0	574.2	566.9	530.9	610.2	597.4	0.16	-0.30	-0.09	-0.13
Total <sup>4</sup>	948.2	952.5	942.4	983.4	980.1	919.1	1042.1	1029.2	0.34	-0.25	-0.37	-0.25
<b>OECD Asia Oceania</b>												
Crude	188.4	188.1	188.9	185.1	178.6	173.1	195.6	184.9	-0.03	0.01	0.09	-0.10
Motor Gasoline	23.0	23.7	22.7	23.6	22.9	23.7	24.6	24.8	-0.01	0.02	-0.02	0.00
Middle Distillate	72.8	66.2	63.2	62.0	59.1	59.2	59.4	65.6	-0.05	0.04	0.03	-0.04
Residual Fuel Oil	20.9	21.1	19.0	19.8	18.9	18.4	18.7	19.5	0.01	0.03	-0.02	0.00
Total Products <sup>3</sup>	182.8	176.1	164.7	160.6	155.5	158.2	163.1	166.1	-0.08	0.16	0.03	-0.08
Total <sup>4</sup>	435.4	426.9	412.1	405.2	391.2	391.9	421.7	412.2	-0.13	0.23	0.10	-0.23
<b>Total OECD</b>												
Crude	1139.8	1144.8	1099.2	1101.2	1102.9	1063.0	1201.1	1227.4	0.71	-0.39	-0.53	-0.67
Motor Gasoline	361.4	369.8	389.4	401.0	409.0	408.9	418.9	415.8	0.03	-0.09	-0.26	0.29
Middle Distillate	550.3	534.3	553.5	568.2	553.2	515.5	621.8	620.3	-0.12	-0.13	-0.15	-0.19
Residual Fuel Oil	121.2	119.1	113.2	120.0	118.3	130.0	152.8	135.5	-0.01	-0.09	-0.08	-0.08
Total Products <sup>3</sup>	1450.0	1429.4	1442.6	1455.6	1429.5	1386.1	1538.7	1527.1	-0.35	0.04	-0.13	-0.35
Total <sup>4</sup>	2925.6	2902.7	2853.2	2866.9	2841.3	2738.2	3047.9	3060.8	0.31	-0.16	-0.53	-1.27

**OECD GOVERNMENT-CONTROLLED STOCKS<sup>5</sup> AND QUARTERLY STOCK CHANGES**

	RECENT MONTHLY STOCKS <sup>2</sup>					PRIOR YEARS' STOCKS <sup>2</sup>			STOCK CHANGES			
	in Million Barrels					in Million Barrels			in mb/d			
	Oct2017	Nov2017	Dec2017	Jan2018	Feb2018*	Feb2015	Feb2016	Feb2017	1Q2017	2Q2017	3Q2017	4Q2017
<b>OECD Americas</b>												
Crude	669.0	661.3	662.8	664.2	664.7	691.0	695.1	694.8	-0.04	-0.14	-0.06	-0.12
Products	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.00	0.00	0.00	0.00
<b>OECD Europe</b>												
Crude	207.4	207.0	206.0	205.0	204.6	208.9	206.3	205.7	0.00	0.03	0.00	-0.02
Products	265.0	266.7	270.6	274.8	275.1	257.7	266.6	275.0	0.02	-0.03	-0.06	0.04
<b>OECD Asia Oceania</b>												
Crude	385.0	385.4	384.4	383.4	383.4	386.2	384.2	384.1	0.00	0.01	0.00	-0.01
Products	38.3	38.6	38.7	38.7	38.7	32.0	34.4	38.0	0.01	0.00	0.00	0.00
<b>Total OECD</b>												
Crude	1261.4	1253.7	1253.2	1252.6	1252.6	1286.1	1285.6	1284.6	-0.04	-0.09	-0.06	-0.15
Products	305.3	307.4	311.3	315.5	315.8	291.7	303.0	314.9	0.03	-0.03	-0.05	0.04
Total <sup>4</sup>	1570.2	1564.6	1567.6	1571.0	1571.4	1581.4	1592.3	1602.8	0.00	-0.12	-0.12	-0.11

\* estimated

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

2 Closing stock levels.

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

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

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

**Table 5**  
**TOTAL STOCKS ON LAND IN OECD COUNTRIES<sup>1</sup>**  
('millions of barrels' and 'days')<sup>3</sup>

	End December 2016		End March 2017		End June 2017		End September 2017		End December 2017 <sup>3</sup>	
	Stock Level	Days Fwd <sup>2</sup> Demand	Stock Level	Days Fwd Demand	Stock Level	Days Fwd Demand	Stock Level	Days Fwd Demand	Stock Level	Days Fwd Demand
<b>OECD Americas</b>										
Canada	183.3	78	184.9	79	182.7	73	185.7	74	189.2	-
Chile	11.2	33	11.9	35	11.2	32	12.5	37	11.5	-
Mexico	47.3	24	47.6	24	49.3	26	46.5	25	43.8	-
United States <sup>4</sup>	2031.6	104	2034.5	102	2011.2	101	1980.3	99	1897.0	-
Total <sup>4</sup>	2295.5	94	2301.1	92	2276.5	91	2247.2	90	2163.5	86
<b>OECD Asia Oceania</b>										
Australia	33.9	30	33.3	28	35.4	30	33.7	28	34.2	-
Israel	-	-	-	-	-	-	-	-	-	-
Japan	562.5	130	546.3	150	566.3	154	571.3	139	562.8	-
Korea	230.3	86	237.8	93	236.4	89	243.5	89	230.6	-
New Zealand	8.9	48	8.2	48	9.0	54	8.1	44	7.5	-
Total	835.6	98	825.6	106	847.1	107	856.6	102	835.1	97
<b>OECD Europe<sup>5</sup></b>										
Austria	22.8	88	24.3	94	21.8	76	22.1	83	21.4	-
Belgium	47.4	71	47.8	76	46.6	72	44.1	66	41.4	-
Czech Republic	21.9	115	22.5	101	21.4	93	21.4	97	21.5	-
Denmark	30.5	201	27.2	169	27.3	172	23.6	146	23.4	-
Estonia	2.4	72	2.6	94	2.7	98	2.2	80	3.0	-
Finland	42.3	220	44.8	224	43.4	214	44.7	236	41.1	-
France	162.2	94	167.7	100	165.4	94	165.2	99	165.7	-
Germany	285.4	112	280.4	111	276.8	110	274.1	113	278.7	-
Greece	33.9	115	35.1	118	32.4	100	32.3	109	32.4	-
Hungary	24.5	151	24.3	144	25.2	145	26.2	148	25.4	-
Ireland	11.8	78	12.8	86	12.1	79	10.1	63	11.0	-
Italy	124.3	101	134.4	105	133.7	101	127.7	98	125.1	-
Latvia	2.4	69	2.4	58	3.3	77	1.5	43	2.5	-
Luxembourg	0.7	12	0.7	12	0.7	12	0.6	11	0.6	-
Netherlands	152.6	155	154.7	158	156.1	162	149.7	161	142.5	-
Norway	22.9	113	22.9	107	22.0	98	22.0	81	23.3	-
Poland	67.4	116	69.8	110	69.5	103	69.2	104	71.8	-
Portugal	22.7	101	26.5	110	24.0	96	24.1	101	22.9	-
Slovak Republic	12.1	151	12.8	151	13.0	140	12.1	122	11.4	-
Slovenia	4.5	96	4.9	94	5.1	92	4.7	88	5.2	-
Spain	129.0	101	136.5	106	128.7	98	127.2	98	119.1	-
Sweden	50.7	163	52.6	162	53.2	160	42.3	131	35.6	-
Switzerland	35.2	158	35.5	162	34.5	160	35.4	148	33.9	-
Turkey	79.1	100	81.4	83	84.0	76	83.9	81	83.2	-
United Kingdom	82.3	54	81.2	51	80.7	50	77.5	49	80.1	-
Total	1471.0	105	1505.8	105	1483.5	101	1444.0	100	1422.2	102
<b>Total OECD</b>	<b>4602.1</b>	<b>98</b>	<b>4632.5</b>	<b>98</b>	<b>4607.0</b>	<b>97</b>	<b>4547.7</b>	<b>95</b>	<b>4420.8</b>	<b>93</b>
<b>DAYS OF IEA Net Imports<sup>6</sup> -</b>	<b>200</b>	<b>-</b>	<b>203</b>	<b>-</b>	<b>196</b>	<b>-</b>	<b>192</b>	<b>-</b>	<b>187</b>	

<sup>1</sup> 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.

<sup>2</sup> 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.

<sup>3</sup> End December 2017 forward demand figures are IEA Secretariat forecasts.

<sup>4</sup> US figures exclude US territories. Total includes US territories.

<sup>5</sup> Data not available for Iceland.

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

## TOTAL OECD STOCKS

CLOSING STOCKS	Total	Government <sup>1</sup> controlled Millions of Barrels	Industry	Total	Government <sup>1</sup> controlled Days of Fwd. Demand <sup>2</sup>	Industry
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	4633	1595	3039	101	35	66
2Q2016	4668	1592	3076	99	34	65
3Q2016	4679	1596	3084	99	34	65
4Q2016	4602	1600	3002	98	34	64
1Q2017	4632	1600	3033	98	34	64
2Q2017	4607	1588	3019	97	33	63
3Q2017	4548	1578	2970	95	33	62
4Q2017	4421	1568	2853	93	33	60

<sup>1</sup> Includes government-owned stocks and stock holding organisation stocks held for emergency purposes.

<sup>2</sup> Days of forward demand calculated using actual demand except in 4Q2017 (when latest forecasts are used).

**Table 6**  
**IEA MEMBER COUNTRY DESTINATIONS OF SELECTED CRUDE STREAMS<sup>1</sup>**  
(million barrels per day)

	2015	2016	2017	1Q17	2Q17	3Q17	4Q17	Nov 17	Dec 17	Jan 18	Year Earlier	
											Jan 17	change
<b>Saudi Light &amp; Extra Light</b>												
Americas	0.63	0.69	0.59	0.70	0.75	0.44	0.47	0.46	0.51	0.44	0.54	-0.10
Europe	0.78	0.79	0.69	0.64	0.78	0.64	0.68	0.85	0.49	0.48	0.64	-0.16
Asia Oceania	1.25	1.40	1.56	1.65	1.49	1.56	1.53	1.63	1.61	1.53	1.67	-0.14
<b>Saudi Medium</b>												
Americas	0.37	0.44	0.33	0.43	0.35	0.28	0.27	0.36	0.28	0.24	0.41	-0.17
Europe	0.03	0.01	0.01	0.01	0.00	0.01	0.02	-	0.02	0.04	-	-
Asia Oceania	0.44	0.41	0.37	0.33	0.33	0.41	0.41	0.40	0.57	0.36	0.27	0.09
<b>Canada Heavy</b>												
Americas	1.90	2.04	2.23	2.31	2.25	2.21	2.16	1.99	2.37	2.32	2.29	0.03
Europe	0.01	0.01	0.02	0.01	-	0.03	0.04	0.06	0.01	0.03	0.02	0.02
Asia Oceania	-	-	-	-	-	-	-	-	-	-	-	-
<b>Iraqi Basrah Light<sup>2</sup></b>												
Americas	0.17	0.42	0.63	0.53	0.67	0.55	0.75	0.77	0.74	0.63	0.43	0.20
Europe	0.72	0.81	0.77	0.76	0.84	0.76	0.71	0.68	0.68	0.79	0.78	0.02
Asia Oceania	0.41	0.46	0.40	0.42	0.39	0.41	0.39	0.42	0.45	0.62	0.51	0.10
<b>Kuwait Blend</b>												
Americas	0.13	0.14	0.11	0.19	0.18	0.04	0.03	-	0.09	0.07	0.16	-0.08
Europe	0.13	0.19	0.20	0.20	0.22	0.25	0.14	0.07	0.18	0.13	0.22	-0.08
Asia Oceania	0.65	0.66	0.68	0.71	0.68	0.67	0.67	0.74	0.62	0.79	0.69	0.11
<b>Iranian Light</b>												
Americas	-	-	-	-	-	-	-	-	-	-	-	-
Europe	0.09	0.21	0.27	0.38	0.25	0.25	0.20	0.24	0.22	0.20	0.34	-0.15
Asia Oceania	0.01	0.01	0.01	0.01	0.00	0.02	0.01	-	0.01	0.03	-	-
<b>Iranian Heavy<sup>3</sup></b>												
Americas	-	-	-	-	-	-	-	-	-	-	-	-
Europe	0.02	0.21	0.52	0.41	0.52	0.59	0.54	0.61	0.40	0.49	0.31	0.19
Asia Oceania	0.27	0.52	0.57	0.73	0.43	0.57	0.54	0.54	0.49	0.43	0.69	-0.26
<b>BFOE</b>												
Americas	0.01	0.02	0.02	0.02	0.01	0.02	0.01	-	-	-	0.06	-
Europe	0.49	0.44	0.45	0.39	0.41	0.49	0.52	0.42	0.74	0.44	0.30	0.14
Asia Oceania	0.06	0.05	0.10	0.09	0.06	0.09	0.14	0.09	0.20	0.07	0.09	-0.03
<b>Kazakhstan</b>												
Americas	0.00	0.01	-	-	-	-	-	-	-	-	-	-
Europe	0.64	0.70	0.75	0.76	0.78	0.74	0.72	0.71	0.82	1.04	0.80	0.23
Asia Oceania	0.06	0.03	0.10	0.05	0.09	0.15	0.13	0.14	0.14	0.21	0.05	0.15
<b>Venezuelan 22 API and heavier</b>												
Americas	0.67	0.63	0.48	0.52	0.61	0.41	0.39	0.37	0.37	0.36	0.48	-0.12
Europe	0.09	0.05	0.04	0.06	0.04	0.05	0.03	0.02	0.01	0.02	0.12	-0.09
Asia Oceania	-	-	-	-	-	-	-	-	-	-	-	-
<b>Mexican Maya</b>												
Americas	0.50	0.53	0.58	0.54	0.63	0.50	0.67	0.73	0.62	0.61	0.62	-0.01
Europe	0.15	0.17	0.20	0.20	0.18	0.17	0.26	0.21	0.23	0.23	0.19	0.03
Asia Oceania	0.01	0.05	0.07	0.06	0.07	0.07	0.10	0.08	0.10	0.02	0.09	-0.06
<b>Russian Urals</b>												
Americas	-	-	0.01	-	-	0.02	0.01	-	-	-	-	-
Europe	1.61	1.72	1.64	1.64	1.57	1.68	1.66	1.72	1.49	1.31	1.89	-0.58
Asia Oceania	-	-	0.01	-	0.02	0.02	-	-	-	-	-	-
<b>Cabinda and Other Angola</b>												
North America	0.11	0.16	0.07	0.04	-	0.17	0.07	-	0.14	-	-	-
Europe	0.42	0.27	0.11	0.09	0.07	0.17	0.10	0.13	0.12	0.09	0.13	-0.03
Pacific	0.02	0.01	0.01	-	0.01	0.03	-	-	-	-	-	-
<b>Nigerian Light<sup>4</sup></b>												
Americas	0.02	0.07	0.04	0.02	0.04	0.05	0.06	-	-	-	0.03	-
Europe	0.57	0.39	0.39	0.36	0.46	0.38	0.38	0.33	0.39	0.44	0.41	0.03
Asia Oceania	-	0.01	0.02	0.02	0.03	0.03	0.01	-	0.01	0.01	0.01	0.00
<b>Libya Light and Medium</b>												
Americas	-	-	0.02	-	-	0.03	0.03	0.08	-	-	-	-
Europe	0.22	0.20	0.54	0.41	0.37	0.67	0.70	0.85	0.69	0.66	0.41	0.26
Asia Oceania	0.01	0.02	0.03	0.04	0.04	0.01	0.03	0.02	0.03	0.02	0.07	-0.05

<sup>1</sup> 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.

<sup>2</sup> Iraqi Total minus Kirkuk.

<sup>3</sup> Iranian Total minus Iranian Light.

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

**Table 7**  
**REGIONAL OECD IMPORTS<sup>1,2</sup>**  
(thousand barrels per day)

	2015	2016	2017	1Q17	2Q17	3Q17	4Q17	Nov 17	Dec 17	Jan 18	Year Earlier	
											Jan 17	% change
<b>Crude Oil</b>												
Americas	4026	4542	4361	4558	4664	4289	3941	3894	3797	4068	4772	-15%
Europe	9505	9253	9709	9490	9632	9779	9930	10464	9533	9667	9945	-3%
Asia Oceania	6573	6669	6826	7006	6450	6921	6926	6953	7265	7181	7139	1%
Total OECD	20103	20464	20896	21055	20746	20989	20797	21312	20596	20915	21856	-4%
<b>LPG</b>												
Americas	10	20	20	23	16	15	25	34	22	38	27	40%
Europe	418	445	437	505	425	421	400	387	416	481	504	-5%
Asia Oceania	518	566	548	603	586	467	537	526	557	532	550	-3%
Total OECD	947	1031	1005	1132	1028	903	962	947	995	1051	1081	-3%
<b>Naphtha</b>												
Americas	14	10	19	19	19	18	20	25	3	4	6	-24%
Europe	345	348	378	390	372	363	389	349	415	444	366	21%
Asia Oceania	950	905	978	980	976	968	988	1004	907	996	939	6%
Total OECD	1309	1263	1376	1389	1367	1350	1397	1378	1325	1444	1311	10%
<b>Gasoline<sup>3</sup></b>												
Americas	670	735	727	575	891	880	560	491	391	449	661	-32%
Europe	105	100	162	151	141	129	224	208	256	74	217	-66%
Asia Oceania	93	84	100	119	97	94	92	102	81	104	71	46%
Total OECD	868	919	989	845	1129	1103	876	801	728	628	950	-34%
<b>Jet &amp; Kerosene</b>												
Americas	141	169	171	148	144	181	210	192	158	148	157	-6%
Europe	445	504	506	465	469	552	535	611	459	496	479	3%
Asia Oceania	66	74	78	112	68	46	89	94	86	83	95	-13%
Total OECD	651	747	755	724	681	780	833	897	702	726	731	-1%
<b>Gasoil/Diesel</b>												
Americas	76	67	77	81	37	48	144	136	221	238	70	240%
Europe	1161	1340	1375	1390	1375	1389	1345	1326	1406	1398	1275	10%
Asia Oceania	158	195	194	204	206	188	178	201	159	191	174	10%
Total OECD	1395	1601	1646	1675	1617	1624	1667	1663	1785	1826	1519	20%
<b>Heavy Fuel Oil</b>												
Americas	116	149	131	141	103	153	128	154	116	192	110	75%
Europe	537	477	240	271	215	299	174	109	188	186	386	-52%
Asia Oceania	173	153	146	145	180	106	153	124	185	183	156	18%
Total OECD	826	779	517	557	498	559	456	387	489	562	651	-14%
<b>Other Products</b>												
Americas	675	652	717	705	694	722	745	741	759	759	711	7%
Europe	701	774	1008	1113	1118	827	979	1111	998	976	1024	-5%
Asia Oceania	343	344	260	301	244	243	253	287	238	282	312	-10%
Total OECD	1719	1770	1985	2120	2055	1792	1977	2140	1995	2016	2047	-2%
<b>Total Products</b>												
Americas	1702	1802	1862	1692	1904	2018	1832	1773	1670	1828	1742	5%
Europe	3712	3988	4106	4286	4114	3981	4047	4102	4137	4055	4251	-5%
Asia Oceania	2301	2321	2305	2464	2357	2111	2291	2338	2213	2370	2298	3%
Total OECD	7715	8110	8273	8442	8376	8110	8169	8213	8020	8252	8290	0%
<b>Total Oil</b>												
Americas	5728	6344	6223	6250	6568	6307	5773	5668	5467	5895	6514	-9%
Europe	13216	13241	13815	13776	13746	13760	13977	14566	13670	13722	14195	-3%
Asia Oceania	8874	8990	9131	9471	8807	9032	9217	9291	9478	9550	9437	1%
Total OECD	27818	28574	29169	29496	29121	29099	28966	29525	28616	29167	30146	-3%

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

<sup>2</sup> Excludes intra-regional trade.

<sup>3</sup> Includes additives.

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