

# Oil Market Report

**15 March 2017**

## HIGHLIGHTS

- **Having expanded by 1.6 mb/d in 2016, global oil product demand growth is expected to ease back to 1.4 mb/d in 2017.** Early indicators of 1Q17 demand support this, with slowdowns seen in January in Japan, Germany, Korea and India.
- **Global oil supplies rose 260 kb/d in February as OPEC and non-OPEC producers pumped more.** At 96.52 mb/d, world oil production stood 170 kb/d below a year ago. OPEC posted a year-on-year decline for the second month running. In 2017 non-OPEC output is set to rise 0.4 mb/d to 58.1 mb/d.
- **OPEC crude output rose by 170 kb/d in February to 32 mb/d, putting compliance with the group's supply cut at 91% for the month.** Saudi Arabia raised output by 180 kb/d month-on-month, but flows remained below its agreed target.
- **OECD commercial inventories rose in January for the first time in six months by 48 mb, or 1.5 mb/d, to 3 030 mb,** underpinned by near-record US crude stocks and gains in Europe. Preliminary data show a modest draw of 5 mb in February despite further builds in US crude.
- **Benchmark crude prices moved in a tight range of \$55-56/bbl through February,** before falling more than \$3/bbl on 8-9 March. Sour crude Dubai maintained the gains achieved against Brent in recent months, while middle distillates and gasoline prices rose in most regions.
- **Refinery throughput growth recovered to 0.9 mb/d y-o-y in 4Q16, but will slow down to a 0.6 mb/d increase in 1Q17, before surging by 1.9 mb/d in 2Q17.** This reflects a recovery from 2Q16's unusually low levels, with implied refined product stock drawdowns supporting higher throughput.

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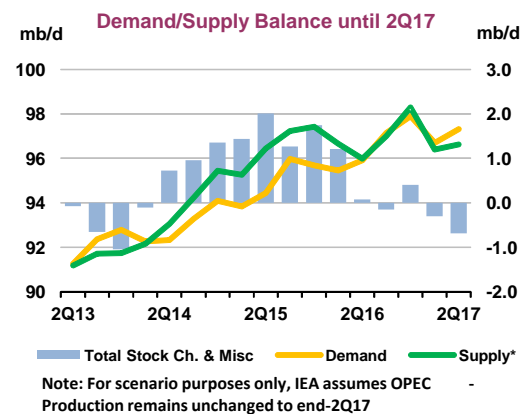
## TAKING STOCK

The price of oil has been stuck in a narrow range since the conclusion in mid-December of the OPEC/non-OPEC production accords. The thinking was that a floor had been put under prices, at an unspoken level of \$50/bbl, so producers were probably comforted by the fact that Brent crude oil barely moved much below or above \$55/bbl. Until 7 March, that is. The sudden move downwards saw prices return to almost exactly the same level as on 30 November – just below \$52/bbl for Brent – when the OPEC deal was announced. The main trigger for the recent fall was mainly US-centred, caused by yet another build in crude oil stocks reported in preliminary weekly data from the Energy Information Administration (EIA).

The stock build should not, however, be much of a surprise. Prior to the Vienna agreement production from OPEC countries was increasing relentlessly; from September to November inclusive output surged by an estimated 580 kb/d. Export volumes are still appearing in storage around the world and, as part of this, US stocks are building. The US is seeing a triple surge in supply: rising imports (exports are also growing), rising domestic production and falling refinery utilisation. For crude imports, volumes so far this year are close to 400 kb/d higher than a year ago; US crude oil production has increased by 400 kb/d since September; and refinery runs fell from 17 mb/d at the start of the year to only 15.5 mb/d at the beginning of March. It is hardly surprising, therefore, that we have a big backlog of unabsorbed crude oil.

Broadening the picture, new data for total OECD oil stocks confirms the legacy of higher production last year. Stocks started falling in August from record high levels and by end-December were 120 mb lower, an average decline of nearly 800 kb/d. However, in January we saw an abrupt about turn with OECD stocks increasing by 48 mb (1.5 mb/d) and preliminary data for February suggests they have fallen back again only modestly.

So, the market is still dealing with a vast amount of past supply, which will take time to work its way through the system. Meanwhile, demand growth has not provided any further encouragement after three consecutive months when we upgraded our estimates. Our annual outlook for 2017 remains unchanged with demand expected to grow by a healthy 1.4 mb/d, although within the annual average we revised down our 1Q17 growth forecast by 0.3 mb/d and revised up our 4Q17 forecast by the same amount.



Beyond the nervousness about this legacy supply and concerns about rising production today from some non-OPEC countries; the implementation of the OPEC production agreement appears in February to have maintained the solid start seen in January. For the first two months of the deal the compliance rate averaged 98%, although the figure is very heavily influenced by Saudi Arabia whose rate was considerably higher at 135%. For the eleven non-OPEC countries that are pledged to cut 558 kb/d of production, there is, as yet, far less data visibility. Russia, which makes up more than half the total non-OPEC reduction, has consistently said that its cut would be gradual, and this is also the case for some other countries. Provisionally, we estimate that the non-OPEC countries have cut production by 37% of their commitment in the first two months of the year.

The market needs time for the full impact of the big supply cuts under the output reduction agreements to be felt. We do not predict OPEC production per se, but if current production levels were maintained to June when the output deal expires, there is an implied market deficit of 0.5 mb/d for 1H17, assuming, of course, nothing changes elsewhere in supply and demand. For those looking for a re-balancing of the oil market the message is that they should be patient, and hold their nerve. In the meantime, the volatility that suddenly broke out last week will probably recur, as the IEA has regularly warned.

# DEMAND

## Summary

- **Having expanded by 1.6 mb/d in 2016, global oil product demand growth is forecast to decelerate to 1.4 mb/d in 2017**, easing back as the heavy price declines of 2016 are not replicated in the current forward curve. Brent crude oil prices fell by one-sixth in 2016.
- **The latest monthly data contained a number of notable changes.** Official December releases for the US surprised to the upside, showing demand 0.5 mb/d higher than implied by the weekly data, while both Japanese and UK data came in lower than expected. Similarly, in January much stronger than anticipated demand occurred in Russia and France, whereas Germany, Japan, India and Korea were unexpectedly on the downside.
- **Indian oil demand fell sharply in January**, the contraction itself not being a shock – as the recent currency reform was bound to negatively impact on demand – but rather its scale. Demand contracted by 130 kb/d year-on-year (y-o-y) in January, a dramatic about-face from the previous six-month trend when demand grew by 235 kb/d.
- **Sizeable baseline data revisions for 4Q16 have delayed the potential return of Japanese demand growth.** Downside adjustments to 4Q16 Japanese LPG data led the way, with LPG demand growth now reported to be half that previously cited.
- **The recent acceleration in Russian demand growth, which commenced mid-2016, continues to gather pace.** Pulled up by sharp gains in industrial fuel use, y-o-y oil demand growth rose to a 10-month high of 0.3 mb/d in January.

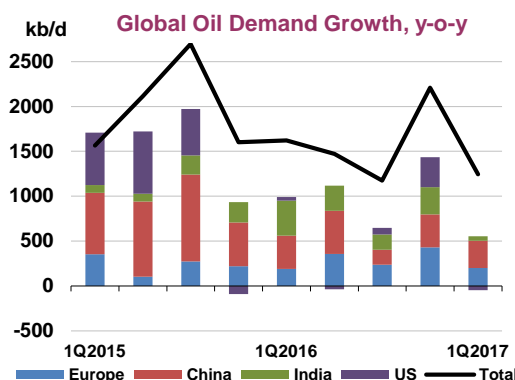
### Global Oil Demand (2015-2017)

	(million barrels per day)*														
	1Q15	2Q15	3Q15	4Q15	2015	1Q16	2Q16	3Q16	4Q16	2016	1Q17	2Q17	3Q17	4Q17	2017
Africa	4.1	4.1	4.0	4.1	4.1	4.2	4.2	4.1	4.2	4.2	4.3	4.3	4.2	4.4	4.3
Americas	31.1	31.2	31.8	31.3	31.4	31.0	31.1	31.8	31.5	31.3	30.9	31.2	31.8	31.6	31.4
Asia/Pacific	32.3	31.7	31.6	32.7	32.1	33.3	32.8	32.3	33.8	33.1	34.0	33.5	33.4	34.8	33.9
Europe	14.1	14.3	14.9	14.4	14.4	14.3	14.7	15.1	14.9	14.8	14.5	14.8	15.1	14.8	14.8
FSU	4.4	4.6	4.8	4.7	4.6	4.7	4.6	4.9	5.0	4.8	4.8	4.8	5.1	5.1	4.9
Middle East	7.9	8.6	8.9	8.4	8.4	8.0	8.5	8.9	8.4	8.5	8.2	8.6	9.0	8.6	8.6
<b>World</b>	<b>93.8</b>	<b>94.4</b>	<b>96.0</b>	<b>95.7</b>	<b>95.0</b>	<b>95.4</b>	<b>95.9</b>	<b>97.1</b>	<b>97.9</b>	<b>96.6</b>	<b>96.7</b>	<b>97.3</b>	<b>98.6</b>	<b>99.2</b>	<b>98.0</b>
Annual Chg (%)	1.7	2.3	2.9	1.7	2.1	1.7	1.6	1.2	2.3	1.7	1.3	1.5	1.5	1.4	1.4
Annual Chg (mb/d)	1.6	2.1	2.7	1.6	2.0	1.6	1.5	1.2	2.2	1.6	1.2	1.4	1.5	1.3	1.4
Changes from last OMR (mb/d)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	-0.3	-0.1	0.1	0.3	0.0

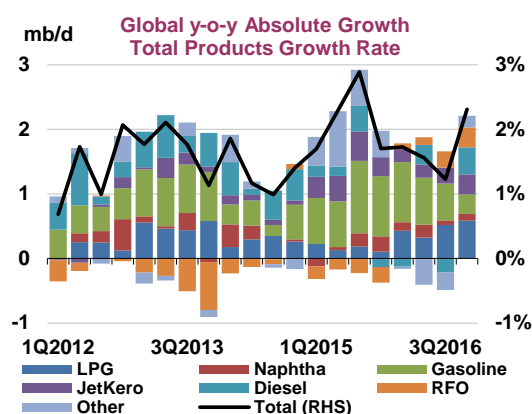
\* Including biofuels

## Global Overview

Global growth for 2016 and the projection for 2017 as a whole remain unchanged, but the latest data – that is December and January releases – contained several notable incidents. For example, the latest official US monthly data showed oil product demand at 20.0 mb/d in December, 0.5 mb/d up on the previous estimate. Other sizeable adjustments include renewed declines in Japan and the UK; surprise y-o-y January contractions in Korea, India and Germany; as well as sharp January gains in Russia



and France. Even so, the global backdrop remains roughly unchanged with global demand growth easing back from 1.6 mb/d in 2016 to 1.4 mb/d in 2017. Momentum is forecast to ease marginally in 2017 as the sharp price declines of 2016 – Brent falling by roughly one-sixth – are unlikely to be repeated.



The latest data reinforces the dramatic variation in global growth seen in 2016, y-o-y gains bottoming-out in 3Q16 at 1.2 mb/d before rallying in 4Q16 to 2.2 mb/d, on a combination of cold weather, country-specific surges in industrial activity and a number of one-off factors. Chinese demand growth, for example, all but vanished in 3Q16 due to forced factory closures ahead of September's G20 meeting in Hangzhou, which particularly impacted diesel. Reduced 3Q16 industrial activity in many countries, which for some rebounded in 4Q16, further added to the dramatic global growth swings, once again particularly for diesel. Data for industrial growth for

Russia, the US, Japan and Europe all significantly turned up in 4Q16, supporting more rapid increases in industrial oil use, or at least curbing the scale of the previous declines. Finally, colder weather conditions provided additional 4Q16 impetus. Both France and Germany reported the number of heating-degree-days to be one-third higher in 4Q16 compared to the year earlier. Japan saw a near one-quarter increase, the US and Korea nearer 10%.

Preliminary 1Q17 estimates depict global demand at 96.7 mb/d, 1.2 mb/d up on the year earlier but 0.3 mb/d lower than the estimate carried in last month's *Report*. This sharp slowdown, from the upwardly revised 2.2 mb/d y-o-y 4Q16 growth estimate, arose as renewed declines took hold in Japan and the UK, alongside surprise y-o-y January contractions in Korea, India and Germany.

## OECD

Growth remains the overriding theme for OECD oil demand, despite a clear deceleration taking hold post-November. Preliminary January numbers show growth of 270 kb/d y-o-y, or 0.6%, roughly one-third of December's expansion or a fifth of November; with growth easing across the barrel.

### OECD Demand based on Adjusted Preliminary Submissions - January 2017

	(million barrels per day)													
	Gasoline		Jet/Kerosene		Diesel		Other Gasoil		RFO		Other		Total Products	
	mb/d	% pa	mb/d	% pa	mb/d	% pa	mb/d	% pa	mb/d	% pa	mb/d	% pa	mb/d	% pa
<b>OECD Americas*</b>	<b>10.44</b>	<b>0.3</b>	<b>1.83</b>	<b>6.4</b>	<b>4.51</b>	<b>2.6</b>	<b>0.64</b>	<b>17.0</b>	<b>0.65</b>	<b>11.8</b>	<b>6.06</b>	<b>-5.49</b>	<b>24.13</b>	<b>0.3</b>
US50	8.74	0.7	1.54	6.6	3.66	2.9	0.32	22.6	0.38	13.2	4.59	-4.10	19.22	0.9
Canada	0.83	-2.2	0.14	4.3	0.30	-0.6	0.26	18.5	0.04	-5.2	0.87	0.32	2.45	1.1
Mexico	0.73	-3.0	0.08	10.5	0.35	0.9	0.04	-12.1	0.13	29.3	0.49	-23.83	1.81	-7.2
<b>OECD Europe</b>	<b>1.72</b>	<b>2.2</b>	<b>1.22</b>	<b>2.4</b>	<b>4.29</b>	<b>5.2</b>	<b>1.61</b>	<b>1.3</b>	<b>0.88</b>	<b>-6.6</b>	<b>3.57</b>	<b>2.28</b>	<b>13.28</b>	<b>2.4</b>
Germany	0.39	6.0	0.17	4.4	0.69	6.0	0.41	-8.1	0.10	-20.0	0.50	-9.54	2.27	-2.0
United Kingdom	0.27	0.5	0.30	-4.1	0.45	-0.7	0.12	17.2	0.02	-14.2	0.33	2.01	1.50	0.3
France	0.14	7.3	0.14	0.9	0.64	6.5	0.28	15.0	0.04	-21.4	0.45	6.81	1.70	6.6
Italy	0.18	-2.6	0.08	8.8	0.39	1.6	0.07	-3.7	0.06	-5.1	0.36	7.64	1.15	2.4
Spain	0.10	2.0	0.11	10.9	0.42	5.0	0.19	7.0	0.14	-11.1	0.31	15.77	1.27	5.8
<b>OECD Asia &amp; Oceania</b>	<b>1.45</b>	<b>-1.7</b>	<b>1.19</b>	<b>-2.4</b>	<b>1.18</b>	<b>-1.7</b>	<b>0.49</b>	<b>-2.6</b>	<b>0.67</b>	<b>-9.1</b>	<b>3.33</b>	<b>1.47</b>	<b>8.32</b>	<b>-1.3</b>
Japan	0.83	-0.7	0.75	-1.7	0.37	3.0	0.36	-0.8	0.34	-6.6	1.60	-2.60	4.26	-1.8
Korea	0.20	-7.1	0.22	-9.3	0.32	-10.6	0.10	-5.2	0.28	-13.7	1.48	6.90	2.60	-1.1
Australia	0.30	-2.1	0.16	2.0	0.41	-1.0	0.00	0.0	0.03	4.7	0.16	-3.19	1.06	-1.1
<b>OECD Total</b>	<b>13.61</b>	<b>0.3</b>	<b>4.23</b>	<b>2.7</b>	<b>9.98</b>	<b>3.1</b>	<b>2.74</b>	<b>3.8</b>	<b>2.20</b>	<b>-2.7</b>	<b>12.97</b>	<b>-1.70</b>	<b>45.73</b>	<b>0.6</b>

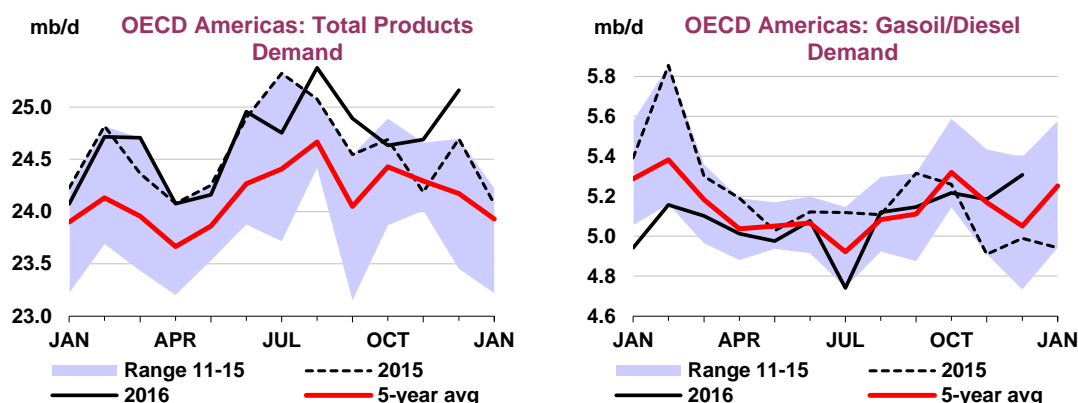
\* Including US territories



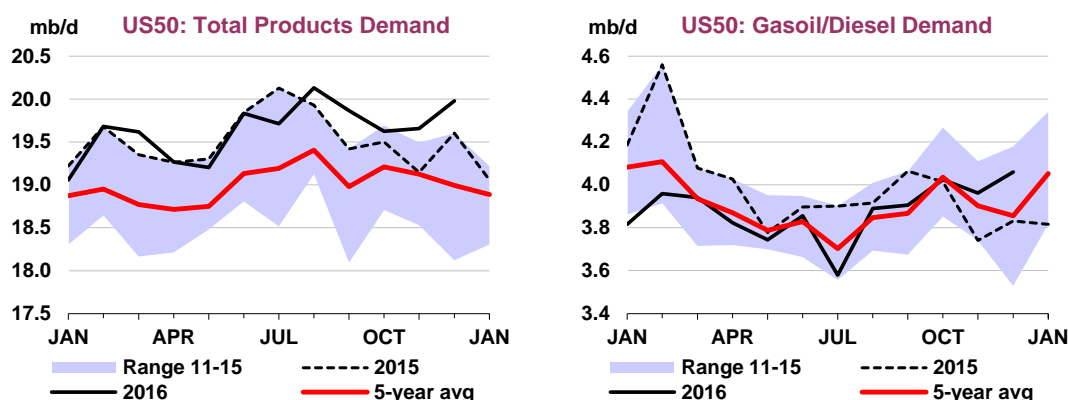
The recent deceleration in OECD oil demand growth is forecast to continue through 2017, with the y-o-y change likely to flip back into negative territory in 2H17 as longer-term structural trends resume. For the year as a whole, OECD oil product demand is forecast to average 46.8 mb/d in 2017, essentially flat on 2016.

## Americas

Garnering renewed support from some surprisingly robust US December demand numbers, total oil product demand for the OECD Americas surged to a four-month high of 25.2 mb/d. Although December's 0.5 mb/d y-o-y growth was due to robust gains in gasoline and gasoil/diesel, the latter particularly stood out with growth in the OECD Americas in December escalating to a 22-month high of 315 kb/d. The 265 kb/d y-o-y gain in gasoline was a three-month high.

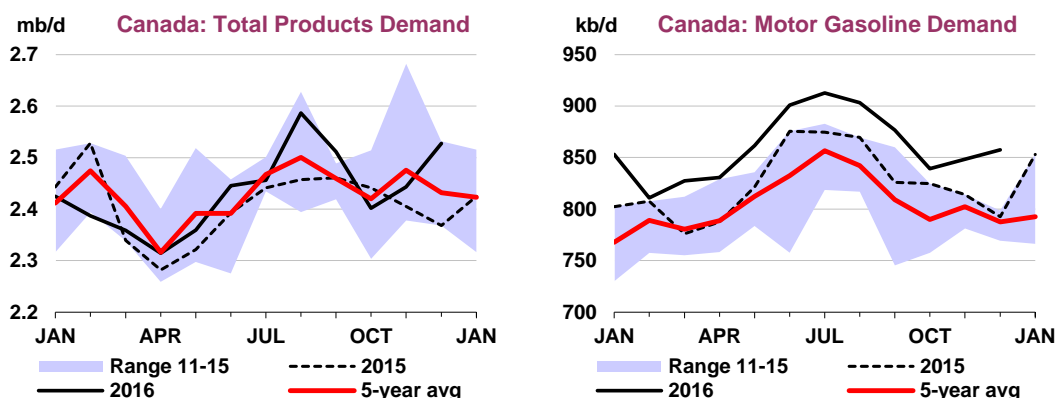


US oil product demand growth in December dominated the reported uptick in the OECD Americas, accounting for roughly 80% of the total y-o-y gain. December's growth warrants particular attention, not just because, at 0.4 mb/d, it was the third gain in 2016, but also because it was in contrast to the y-o-y decline anticipated by the weekly statistics. Higher gasoline and gasoil/diesel growth were the main factors.

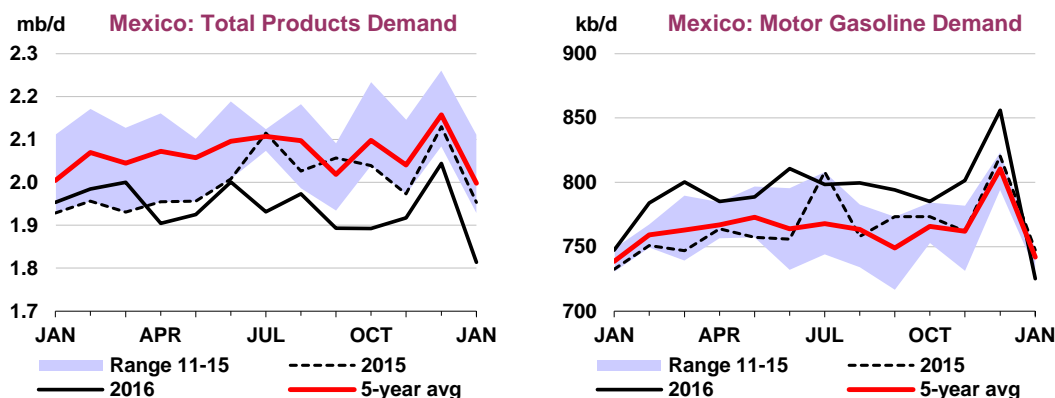


Averaging 19.6 mb/d in 2016, US oil product demand grew at its slowest pace in five years (+105 kb/d). Prior to the presidential election, momentum stuttered before rebounding in line with improved confidence as shown by the large increases seen in stock markets. Having seen falls through most of 2016, gasoil/diesel demand returned to growth, rising sharply in both November and December, by 220 kb/d and 230 kb/d respectively y-o-y. Colder weather certainly played a part, as did recovering industrial activity. The Federal Reserve reported that December saw the first y-o-y increase in US industrial activity (0.7%) since mid-2015.

Preliminary estimates of January-February US demand, based upon weekly data releases, show an absence of y-o-y growth. US demand in 1Q17 is estimated at 19.4 mb/d, roughly unchanged y-o-y, feeding into a 19.7 mb/d prediction for the year as a whole, equivalent to annual growth of 50 kb/d.



**Canadian** oil product demand rose sharply in December, up 85 kb/d m-o-m and 160 kb/d y-o-y, pulled up by a combination of very cold winter weather and resurgent road transport demand. Climbing to a four-month high of 2.5 mb/d in December, it did not see its normal seasonal fall; the previous five years showed an average 45 kb/d month-on-month (m-o-m) decline in December. Canadian gasoline demand, in particular, normally declines m-o-m in December. Incorporating December data, demand for the year as a whole averaged 2.4 mb/d, 30 kb/d up on the year, the largest increase since 2012. A flattening of growth is foreseen for 2017, but demand will still average 2.4 mb/d.

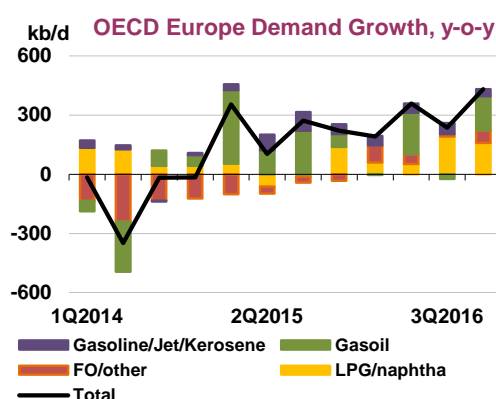


In contrast, for **Mexico** much weaker than expected January numbers pulled down the initial estimate of demand, with both LPG and gasoline demand falling sharply. Averaging 1.8 mb/d in January, Mexican oil product demand fell by a much larger than expected 140 kb/d y-o-y. Lower petrochemical demand potentially acted as the catalyst, with officially reported LPG demand of 325 kb/d in January roughly 100 kb/d below year-ago levels, and naphtha 20 kb/d below the year earlier. Further investigations are, however, underway to see if, post-liberalisation, potential additional import flows into Mexico are not being missed, hypothetically downplaying true Mexican oil product demand. To date, the lower than expected January demand estimate feeds through the 2017 outlook with a decline of 45 kb/d to 1.9 mb/d.

## Europe

The latest European numbers generally continued to surprise to the upside, with estimates of gasoil/diesel demand offering particular strength. Preliminary January estimates point towards a further y-o-y gain of 315 kb/d, continuing the generally rising trend seen since mid-2014 when oil prices first

began to slide heavily. January's gain is modestly slower than the 4Q16 increase of 430 kb/d y-o-y. Supported by strong gains throughout the year, European oil product demand averaged 14.1 mb/d in 2016, a level that is likely to be repeated in 2017. Robust gains across all of the major industrial fuels supported an average European demand gain of 305 kb/d in 2016; petrochemical feedstocks and gasoil/diesel (see *Strong momentum for European gasoil/diesel, but growth set to diminish*) leading the upside. Weaker gains/modest declines in gasoil/diesel, residual fuel oil and gasoline trimming European demand growth back to around 50 kb/d in 2017.

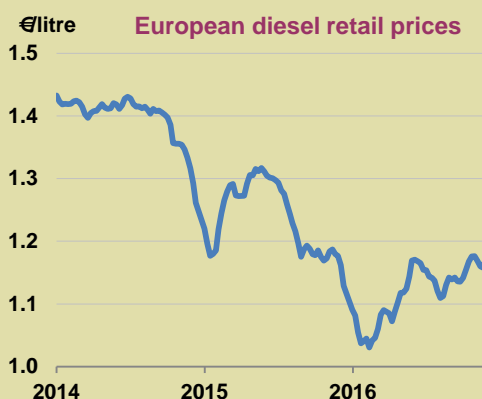
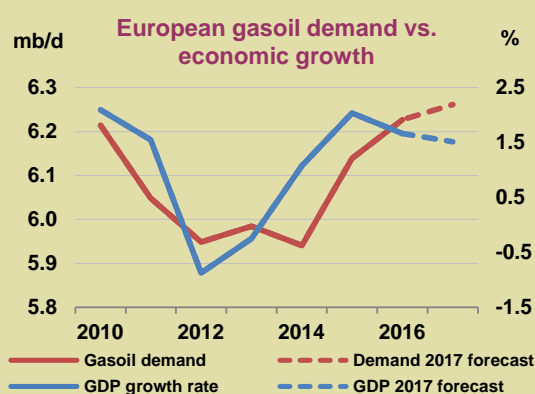


### Strong momentum for European gasoil/diesel, but growth set to diminish

After the weak performance since the 2008 economic crisis, European gasoil/diesel demand began to rally in 2014, mainly triggered by an economic recovery and the significant drop in retail prices, together with robust diesel car sales. Total gasoil/diesel demand in Europe increased by 3% in 2015, the highest in the last decade, to 6.1 mb/d. Momentum slowed in 2016, leading to weaker growth of 1.4%, and demand growth is set to diminish further in 2017.

According to the International Monetary Fund's *World Economic Outlook*, released in October 2016 (updated in January 2017), the Euro area's GDP resumed growth in 2014, and reached 2% in 2015 – its highest level for five years – before slightly easing to 1.7% in 2016. Other economic indicators, such as the industrial production index and retail trade have also seen growth since 2014. This led to a rise in construction activity and freight traffic, which resulted in higher European demand for gasoil/diesel.

Meanwhile, European retail diesel prices dropped sharply following the collapse of crude oil prices since mid-2014. In 2015, average retail prices (including taxes) for diesel declined by 11% y-o-y to 1.24 euros per litre, the steepest drop in the last decade. In 2016, there was a further 9% fall, but prices have recently returned to an upward trend.



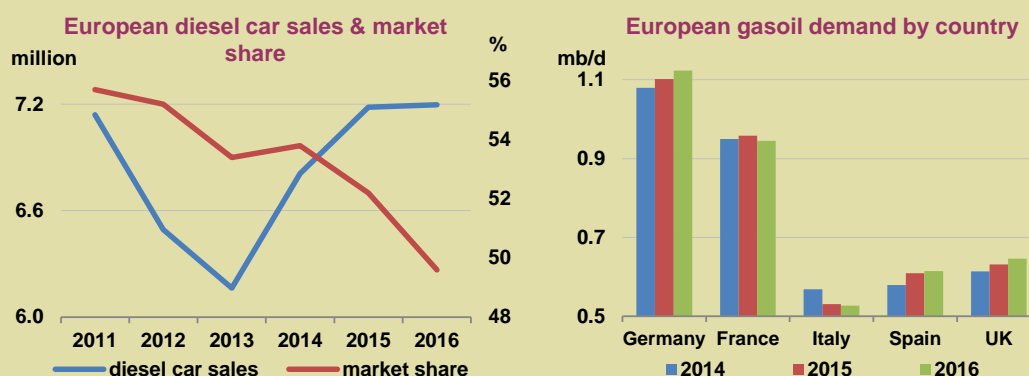
The combination of an economic recovery and low pump prices drove rapid vehicle sales. From 2014 to 2016, more than 40 million passenger cars were sold in Europe, equivalent to an average annual growth rate of approximately 8%. Although the market share for diesel vehicles has declined for five consecutive years, overall vehicle sales have been strong enough to offset any losses. In 2014 and 2015, 6.8 million and 7.2 million diesel cars, respectively, were added to the European vehicle fleet, equating to sales growth of 10% and 5.5%. Momentum slowed considerably in 2016, however, with growth easing back to a mere 0.2%, due to marginally slower economic growth and an uptick in retail prices. Deliberate government efforts to bring down the previously preferential tax treatment of diesel versus gasoline, for example in France, and the Volkswagen emissions scandal may also have impacted diesel car sales.



### Strong momentum for European gasoil/diesel, but growth set to diminish (continued)

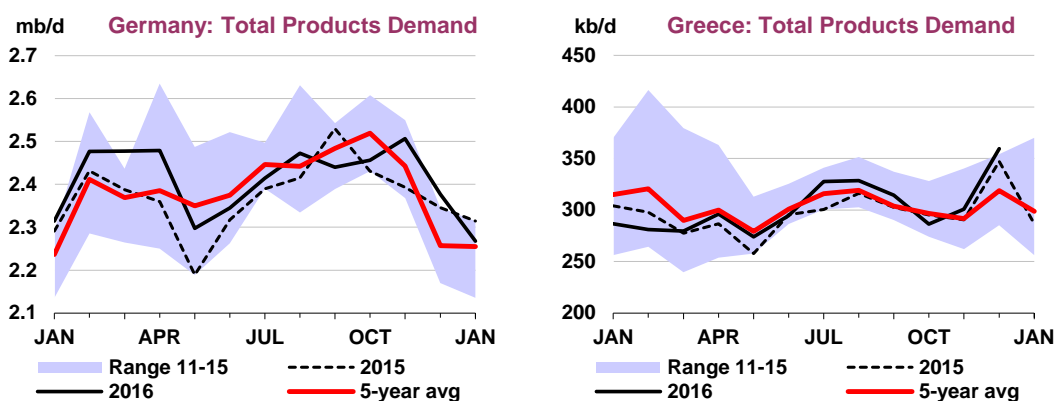
Triggered by the improved market conditions, European gasoil/diesel demand rose significantly in 2015 and 2016, with y-o-y growth at 3% and 1.4%, respectively. Germany, France, Italy, Spain and the UK together accounted for over 80% of Western European diesel car registrations, and contributed 60% of the total gasoil/diesel demand. Germany alone consumes nearly one fifth of the gasoil/diesel in Europe, and is the main driver of the total demand growth. Spain and the UK also saw demand growing over the past two years, while demand in France and Italy remained flat or declined.

The lost momentum in 2016 was partly offset by cold weather, continuing to support robust 2H16 European gasoil/diesel demand. The cold winter in 2H16 saw quarter-on-quarter (q-o-q) European gasoil demand growth escalate from -2.6% in 1Q16 and 0.0% in 2Q16, to 2.1% in 3Q16 and 3.4% in 4Q16, when unusually cold winter conditions hit; the converse true for 1Q16. Prior to 2016, the five-year average q-o-q growth rate for European gasoil was a much more muted 2.1% in the fourth quarter. The impact of cold weather will ebb over the forecast as the long-term trend in European countries is towards using natural gas for heating purposes.

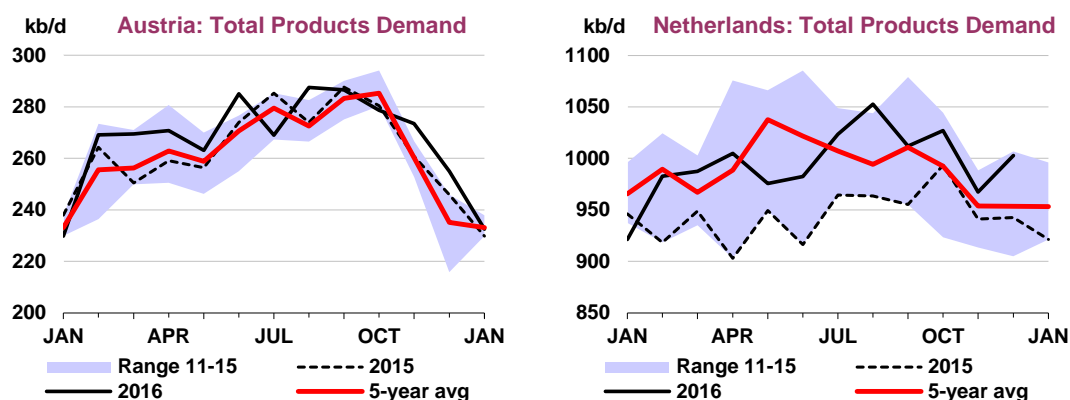


In 2017, European gasoil/diesel demand may see a further slowdown in the growth, as diesel car sales are expected to drop, while retail prices potentially edge higher. The International Monetary Fund forecasts the Euro area's GDP growth rate at 1.6% in 2017, 0.1% lower than last year. The IEA estimates European gasoil/diesel demand in 2017 to be 6.3 mb/d, a y-o-y growth of 0.6%. The downward trend in growth may continue beyond 2017, as efficiency improvements continue to have a major impact.

Leading growth contributors in January included Spain, Switzerland, France, Italy, Poland and Austria. **Germany**, however, provided a partial offset, offering a warning that demand growth in the region may not be sustained. German oil product demand fell in January by 45 kb/d y-o-y, or 2%, as residual fuel oil, LPG and naphtha all saw heady declines. The German decline came just one month after the Federal Statistics Office reported a somewhat surprising 0.7% y-o-y dip in industrial activity, while the Federal Motor Transport Authority reported new car registrations on a declining trend; registrations were 241 400 in January, compared to 340 000 in June.



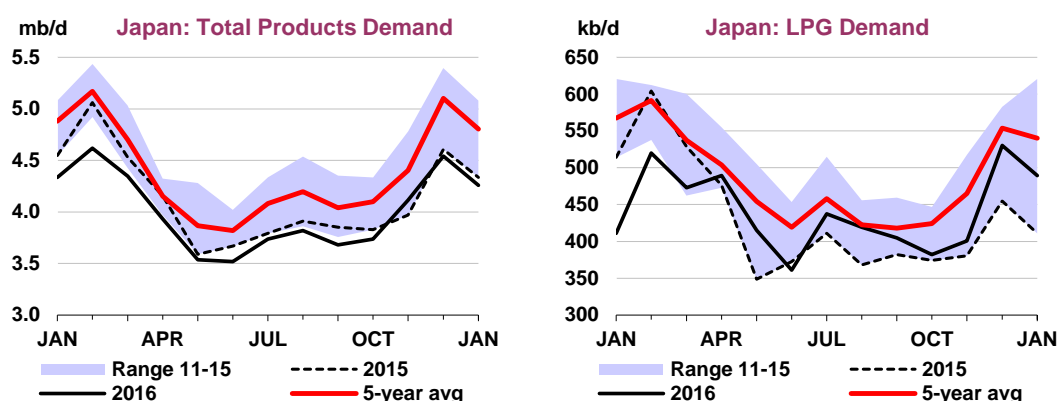
A number of European countries also saw much higher than previously anticipated December demand numbers, including Poland, Greece, the Netherlands and Austria. **Greece**, for example, saw a second consecutive month of 3.6% y-o-y growth, pulled up by sizeable gains in middle distillates. **Austrian** demand, meanwhile, also rose for a second consecutive month in December, while preliminary numbers point towards a further, albeit slower, gain in January. Additional gasoil/diesel demand provided the majority of the recent Austrian upside, as industrial activity reaccelerated post-July, rising by 3.6% y-o-y in November and 2.1% in December. Correspondingly Austrian gasoil demand rose by 6.0% y-o-y in November and 5.4% in December. Considering this latest data, Austrian demand averaged 270 kb/d in 2016, 1.9% up on the year earlier.



Accelerating sharply towards the end of 2016, demand in the **Netherlands** continues to gain support from the petrochemical sector, as strong gains in naphtha demand since 4Q15 have lent considerable support. Averaging exactly 1 mb/d in December, Dutch oil product demand posted a rapid 60 kb/d, or 6.4%, y-o-y gain, taking average deliveries for 2016 as a whole up to 995 kb/d, a gain of 50 kb/d on the year earlier. Growth is forecast to slow in 2017 to around 20 kb/d.

## Asia Oceania

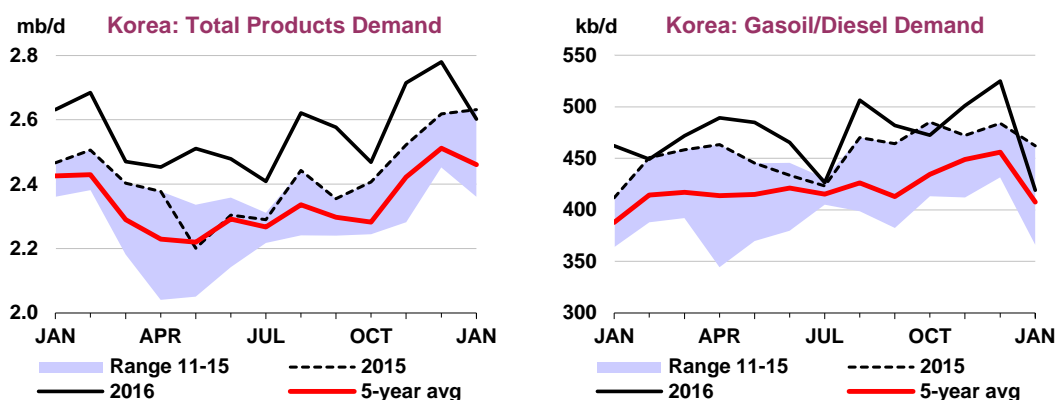
Preliminary indicators of January demand in OECD Asia Oceania showed regional demand falling by a 10-month high of 105 kb/d as the region's two largest consumers suffered somewhat surprising declines. The Korean drop was less predictable than Japan's, as Korean demand had grown strongly for 17 consecutive months. Japan's fall was less surprising but still bucked the 4Q16's uptick, now marginally reversed on baseline data adjustments.



The long awaited return of y-o-y **Japanese** oil product demand growth – previously assumed for 4Q16 – has been delayed following downside baseline data revisions for LPG. Whereas previously 4Q16 LPG demand growth was envisaged at 70 kb/d, the updated official series shows a considerably more muted

35 kb/d y-o-y expansion. Other components of Japanese demand that were revised lower in 4Q16 include gasoline and residual fuel oil demand, but these were due to official December numbers coming in below our prior forecasts rather than any baseline data adjustments. Overall Japanese demand averaged 4.1 mb/d in 4Q16, 5 kb/d below the year earlier, leaving demand averaging 4.0 mb/d in 2016 as a whole, on average 130 kb/d below 2015.

Preliminary estimates for January 2017 suggest continued weaknesses in Japan, with demand down 1.8% y-o-y to an average of 4.3 mb/d. Sharp declines in residual fuel oil, jet/kerosene and 'other products' led the decline.



In January, the long-running uptrend in **Korean** oil demand ended abruptly. Having risen, y-o-y in every month since July 2015, January 2017's 30 kb/d dip came as something of a surprise. Korean demand averaging out at a three-month low of 2.6 mb/d in January, was pulled down by sharp corrections in middle distillates and heavier products. Having seen growth of 160 kb/d in 2016, we had long been anticipating a slowdown in 2017 but perhaps it has arrived earlier than anticipated.

## Non-OECD

Accounting for roughly three out of every five extra barrels of oil products demanded in 4Q16, non-OECD countries continue to dominate global growth but not as strongly as in previous years. Prior to 2015, for example, non-OECD economics accounted for all of the world's demand growth, even offsetting declines in the OECD (2011-12 and 2014). The contribution of non-OECD economies has since steadily declined, easing back to 71.9% in 2015 and 60.7% in 4Q16. Lower oil prices were at least partially responsible, as big oil producing countries, e.g. Saudi Arabia, Russia and Brazil, saw their domestic economies struggle. In demand-terms, this was more than enough to offset the additional support lower prices provided to net-importer countries, e.g. China and India. Dependent upon potentially higher oil prices, non-OECD oil demand growth accelerates to 1.4 mb/d or 2.8% in 2017, from 1.2 mb/d or 2.4% in 2016. The International Monetary Fund's January 2017 *World Economic Outlook* anticipates stronger economic growth in such countries, adding four-tenths of a percentage point in 2017 to +4.5%, from 4.1% in 2016. Non-OECD oil demand rises to an estimated 51.2 mb/d in 2017, from 49.8 mb/d in 2016.

## China

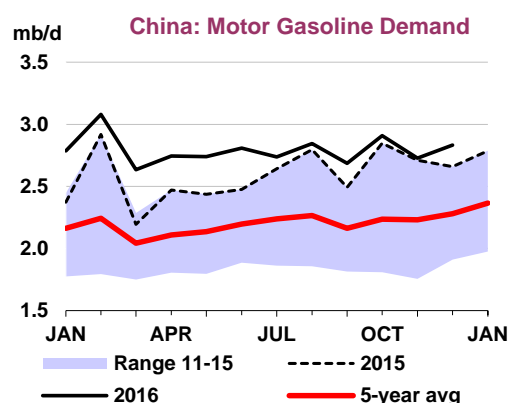
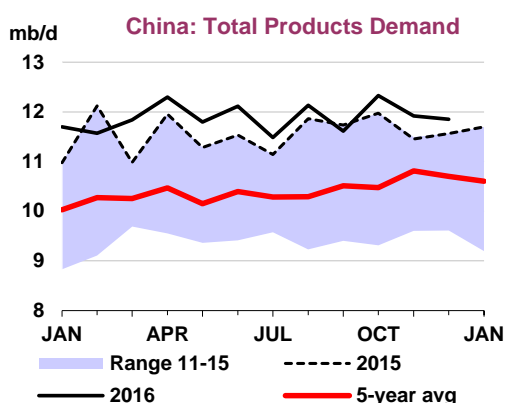
A combination of low winter temperatures and stuttering industrial demand kept Chinese oil demand growth relatively restrained, at around 2% y-o-y, in December. Although strong gains remain entrenched in the Chinese transport sector – supporting gasoline and jet/kerosene – demand for industrial fuels generally edged lower y-o-y.

### China: Demand by Product

(thousand barrels per day)

	Demand			Annual Chg (kb/d)		Annual Chg (%)	
	2015	2016	2017	2016	2017	2016	2017
LPG & Ethane	1,112	1,379	1,532	267	153	24.0	11.1
Naphtha	1,002	1,076	1,105	74	29	7.4	2.7
Motor Gasoline	2,582	2,793	3,004	211	211	8.2	7.5
Jet Fuel & Kerosene	606	649	692	43	43	7.0	6.7
Gas/Diesel Oil	3,342	3,288	3,325	-54	37	-1.6	1.1
Residual Fuel Oil	293	207	153	-87	-54	-29.5	-26.0
Other Products	2,606	2,497	2,421	-109	-76	-4.2	-3.0
<b>Total Products</b>	<b>11,543</b>	<b>11,888</b>	<b>12,231</b>	<b>345</b>	<b>344</b>	<b>3.0</b>	<b>2.9</b>

For 4Q16, Chinese oil product demand averaged exactly 12 mb/d, 365 kb/d up on the year earlier, a growth rate similar to that for the year as a whole (+345 kb/d). A similar gain is forecast for 2017, taking net Chinese demand up to 12.2 mb/d, supported by relatively strong growth in the Chinese transport and petrochemical sectors.



### Non-OECD: Demand by Product

(thousand barrels per day)

	Demand			Annual Chg (kb/d)		Annual Chg (%)	
	2Q16	3Q16	4Q16	3Q16	4Q16	3Q16	4Q16
LPG & Ethane	5,779	5,908	6,181	375	561	6.8	10.0
Naphtha	2,670	2,617	2,698	3	46	0.1	1.7
Motor Gasoline	10,974	11,059	11,206	327	220	3.0	2.0
Jet Fuel & Kerosene	3,129	3,239	3,197	99	116	3.2	3.8
Gas/Diesel Oil	14,963	14,560	14,854	-30	23	-0.2	0.2
Residual Fuel Oil	5,255	5,351	5,420	145	265	2.8	5.1
Other Products	7,158	7,171	7,010	-77	110	-1.1	1.6
<b>Total Products</b>	<b>49,929</b>	<b>49,904</b>	<b>50,565</b>	<b>842</b>	<b>1,341</b>	<b>1.7</b>	<b>2.7</b>

### Other Non-OECD

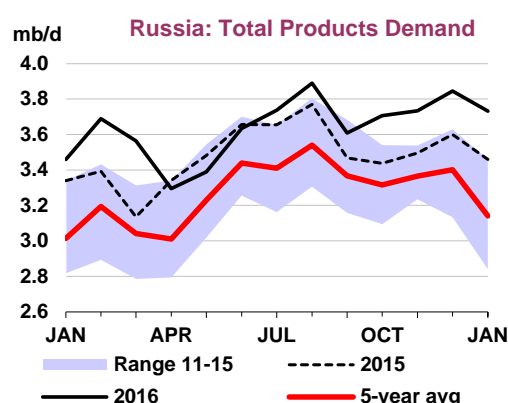
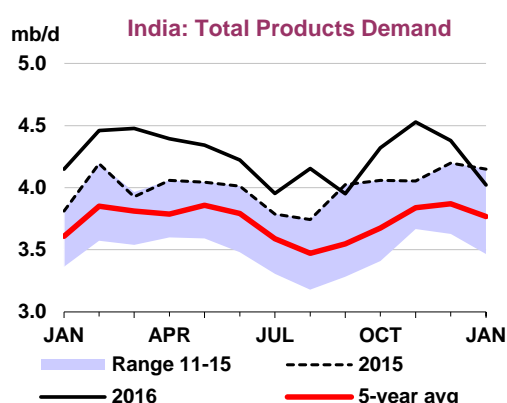
Slowing economic activity saw **Indian** oil demand fall heavily in January, down by 130 kb/d y-o-y. The sharpest contractions were felt in the heavier products, notably bitumen and residual fuel, followed by the middle distillates, while LPG and naphtha continued to grow, albeit insufficiently to offset the sizeable gains elsewhere. Both economic activity and, by default, Indian oil demand struggled as the country implemented its major currency reform, withdrawing notes representing 86% of all cash in the domestic economy. Although we anticipate both economic activity and prospective oil demand growth picking up over the remainder of the year, the demonetisation will leave a legacy, particularly through

1Q17. Oil demand growth of approximately 265 kb/d is foreseen in 2017, pushing total demand up to 4.5 mb/d, but slightly below the 2016 growth rate.

### Non-OECD: Demand by Region

(thousand barrels per day)

	Demand			Annual Chg (kb/d)		Annual Chg (%)	
	2Q16	3Q16	4Q16	3Q16	4Q16	3Q16	4Q16
Africa	4,222	4,111	4,236	133	115	3.4	2.8
Asia	25,194	24,497	25,530	636	1,053	2.7	4.3
FSU	4,604	4,938	5,013	140	277	2.9	5.9
Latin America	6,661	6,788	6,657	-74	-144	-1.1	-2.1
Middle East	8,541	8,867	8,421	-8	20	-0.1	0.2
Non-OECD Europe	706	703	709	15	20	2.2	3.0
<b>Total Products</b>	<b>49,929</b>	<b>49,904</b>	<b>50,565</b>	<b>842</b>	<b>1,341</b>	<b>1.7</b>	<b>2.7</b>



The recent uptick in **Russian** oil demand growth that started mid-2016 continues to gather momentum. The latest data shows growth of 0.3 mb/d y-o-y in January, a 10-month high, taking demand up to 3.8 mb/d. A combination of exceptionally cold winter weather and strong gains in industrial activity led the continued acceleration. The Federal State Statistics Service cited overall industrial activity up 2.3% y-o-y in January, extending the gains seen since 2015.

### Russia: Demand by Product

(thousand barrels per day)

	Demand			Annual Chg (kb/d)		Annual Chg (%)	
	2015	2016	2017	2016	2017	2016	2017
LPG & Ethane	467	495	514	28	19	6.0	3.9
Naphtha	114	117	148	3	30	2.7	25.8
Motor Gasoline	830	828	833	-2	5	-0.2	0.5
Jet Fuel & Kerosene	241	232	235	-9	3	-3.7	1.3
Gas/Diesel Oil	665	722	737	58	15	8.7	2.0
Residual Fuel Oil	413	420	410	7	-10	1.7	-2.5
Other Products	750	813	867	63	54	8.4	6.6
<b>Total Products</b>	<b>3,481</b>	<b>3,629</b>	<b>3,744</b>	<b>148</b>	<b>115</b>	<b>4.3</b>	<b>3.2</b>

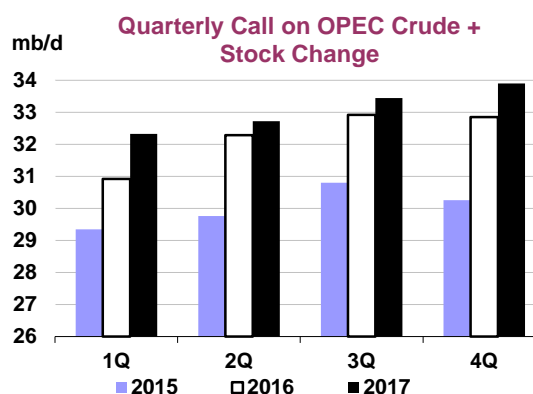
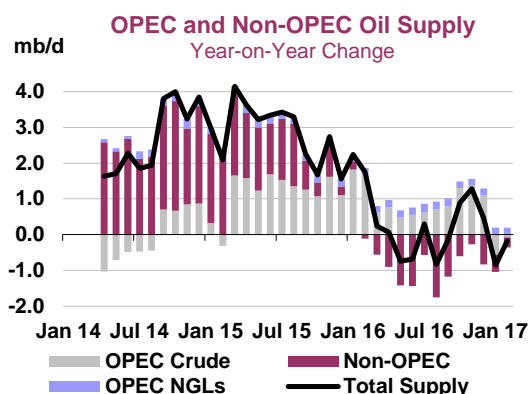
Source: Petromarket RG, IEA



# SUPPLY

## Summary

- **Global oil supplies rose 260 kb/d in February as OPEC and non-OPEC producers pumped more.** At 96.52 mb/d, world oil production stood 170 kb/d below a year ago. After nearly two years of annual output gains, OPEC posted a year-on-year decline for the second month running.
- **OPEC crude output rose by 170 kb/d in February to 32 mb/d, with compliance with the group's supply cut easing to 91% from an upwardly revised 105% in January.** Saudi Arabia raised output by 180 kb/d month-on-month (m-o-m), but flows remained below its agreed target.
- **At 32.3 mb/d, the call on OPEC crude during 1Q17 is higher than average output of 31.9 mb/d so far this year, which could lead to a draw in global inventories.** The call rises by 400 kb/d to 32.7 mb/d in 2Q17. It is unclear at this stage whether OPEC will extend its six-month supply pact to the end of the year.
- **Non-OPEC oil production increased by 90 kb/d in February, to 57.8 mb/d, largely due to higher US output.** Estimates for both 2016 and 2017 remain largely unchanged from last month's *Report*, with total non-OPEC liquids output seen rising 0.4 mb/d in 2017 to average 58.1 mb/d.
- **Compliance from the 11 non-OPEC countries that pledged to cut output by a combined 558 kb/d is assessed at 40% in January.** With little information on production levels for February available at the time of writing, the group's output was seen slightly higher following rising output from Kazakhstan and Sudan/South Sudan and with Russian production essentially unchanged.



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

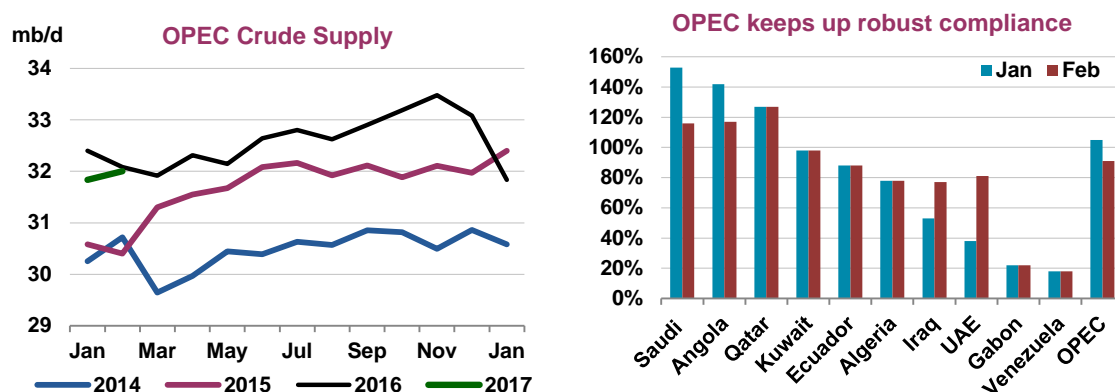
## OPEC crude oil supply

OPEC kept up robust adherence to its 1.2 mb/d supply cut in February. Crude supply rose 170 kb/d to 32 mb/d, with compliance easing to 91% from an upwardly revised 105% in January. After nearly two years of sustained year-on-year (y-o-y) growth, OPEC production so far in 2017 has fallen below year earlier levels by an average 320 kb/d.

Saudi Arabia is shouldering the bulk of OPEC's reduction and tanker tracking data suggest that Riyadh is focusing its cutback on North America. Saudi supply in February rose 180 kb/d m-o-m to 9.98 mb/d, still

below Riyadh's agreed target of 10.06 mb/d. Along with Saudi Arabia, Angola and Qatar have also cut by more than required for two months running. Kuwait has carried out its cut in full.

The UAE moved within sight of its output target in February after the start of oil field maintenance reduced supply by 60 kb/d. Compliance tightened in Iraq, where exports, including from the Kurdistan Regional Government (KRG), fell in February. Gabon and Venezuela are the farthest above their production targets.



Iran and Nigeria – spared from OPEC cuts - raised supply during February. Preliminary data show a substantial m-o-m jump in shipments of crude from Iran, which was granted a slight increase under the 2017 OPEC output pact. Relative calm in Nigeria allowed for a 30 kb/d rise in production. A recovery in Libya, also exempt from cuts, is proving fragile, with supply slipping in February due to oil field maintenance. Renewed fighting around the country's strategic eastern ports could lead to a deeper decline in March.

### OPEC Crude Production

(million barrels per day)

	Jan 2017 Supply	Feb 2017 Supply	Supply Baseline <sup>1</sup>	Agreed Cut	Actual Cut <sup>2</sup>	January Compliance	February Compliance	2017 Average Compliance
Algeria	1.05	1.05	1.09	-0.05	-0.04	78%	78%	78%
Angola	1.64	1.66	1.75	-0.08	-0.09	142%	117%	129%
Ecuador	0.53	0.53	0.55	-0.03	-0.02	88%	88%	88%
Gabon	0.20	0.20	0.20	-0.01	0.00	22%	22%	22%
Iran <sup>3</sup>	3.75	3.82	3.71	0.09	0.11	NA	NA	NA
Iraq	4.45	4.40	4.56	-0.21	-0.16	53%	77%	65%
Kuwait	2.71	2.71	2.84	-0.13	-0.13	98%	98%	98%
Qatar	0.61	0.61	0.65	-0.03	-0.04	127%	127%	127%
Saudi Arabia	9.80	9.98	10.54	-0.49	-0.56	153%	116%	135%
UAE	2.96	2.90	3.01	-0.14	-0.11	38%	81%	60%
Venezuela	2.05	2.05	2.07	-0.10	-0.02	18%	18%	18%
<b>Total OPEC 11</b>	<b>29.75</b>	<b>29.91</b>	<b>30.97</b>	<b>-1.16</b>	<b>-1.06</b>	<b>105%</b>	<b>91%</b>	<b>98%</b>
Libya <sup>4</sup>	0.69	0.67						
Nigeria <sup>4</sup>	1.40	1.43						
<b>Total OPEC</b>	<b>31.84</b>	<b>32.01</b>						

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

<sup>2</sup> From OPEC supply baseline.

<sup>3</sup> Iran was given a slight increase.

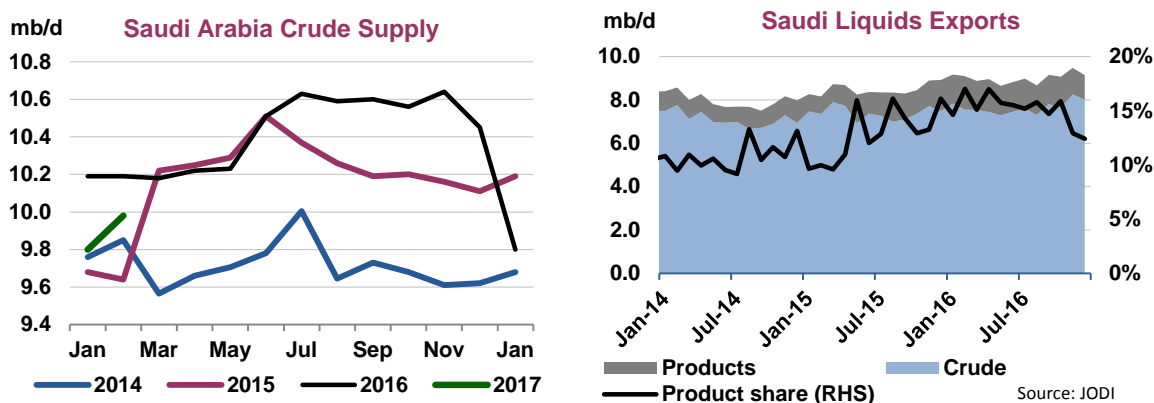
<sup>4</sup> Libya and Nigeria are exempt from cuts.

At 32.3 mb/d, the call on OPEC crude during 1Q17 is higher than average output of 31.9 mb/d so far this year, which could lead to a draw in global inventories. The call rises by 400 kb/d to 32.7 mb/d during 2Q17. It is unclear at this stage whether OPEC will extend its six-month supply pact to the end of the year.

Further reductions have come from some non-OPEC producers who have committed to a collective cut of nearly 600 kb/d in coordinated action with OPEC. The overall 1.8 mb/d reduction could be undermined by rising supply from OPEC producers not subject to cuts. So far, supply from Libya is up 160 kb/d from October, while Nigerian production is 20 kb/d below our estimate for October.

Supply from **Saudi Arabia** rose by 180 kb/d to 9.98 mb/d in February – still below the Kingdom's 10.06 mb/d output target and down 660 kb/d from a record rate of 10.64 mb/d in November. Upon receipt of more complete data, our Saudi estimate for January was adjusted down to 9.8 mb/d, the lowest level since February 2015. Tanker tracking estimates suggest the Kingdom has made cuts in exports to the US relative to the end of 2016.

In the run-up to the OPEC output deal, crude exports surged to historic highs. In November, crude shipments climbed to a record 8.26 mb/d and then eased to 8.01 mb/d in December, according to the latest official data from the Joint Organisations Data Initiative (JODI). Crude exports during 2016 were 7.65 mb/d, up 260 kb/d on the previous year.

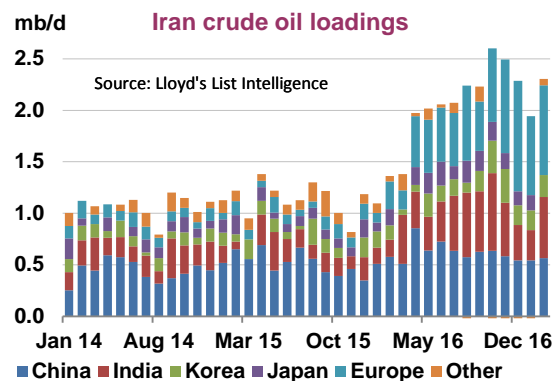
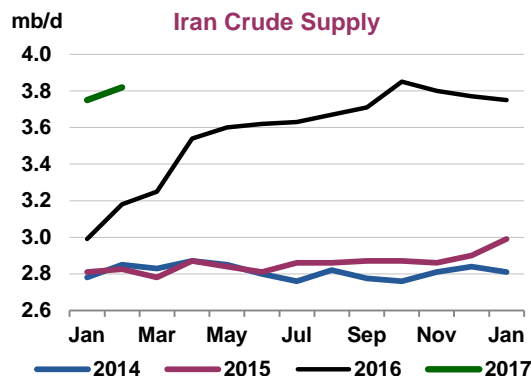


Saudi Aramco has meanwhile trimmed its monthly formula prices for April exports to Asia. Market participants had expected prices to rise, but Aramco cut differentials on all grades except Arab Heavy, which was unchanged.

On the domestic front, Saudi power plants burned roughly 500 kb/d of crude oil during 2016, some 70 kb/d below the previous year, according to JODI data. This year should see further reductions as an energy efficiency drive gathers pace and the giant Wasit gas plant reaches full capacity.

Saudi Arabia's Gulf neighbours are also at or near full compliance with their OPEC targets. **Kuwaiti** production has held around 2.71 mb/d since January. **Qatari** supply was steady at 610 kb/d in February. Output from the **UAE** was down 60 kb/d to 2.9 mb/d in February due to the start of maintenance at the onshore oil fields that produce benchmark Murban crude. The offshore fields that pump Das Blend are scheduled for maintenance from May. After lengthy negotiations, the Abu Dhabi National Oil Co (Adnoc) has lined up foreign partners for a 40% holding in the Abu Dhabi Co for Onshore Petroleum Operations (Adco), which includes the fields that pump Murban. CNPC and a private Chinese firm paid a combined \$2.67 billion for a 12% stake. CNPC secured 8% and CEFC China Energy got a 4% share. BP, a partner in the original 75-year Abu Dhabi onshore concession that expired in January 2014, agreed to take a 10% stake. In 2015, Total won a 10% share in the onshore fields that account for half the UAE's crude output.

**Iranian** supply in February climbed by 70 kb/d to 3.82 mb/d, up 640 kb/d on a year ago. Tehran was given the green light to raise output to 3.8 mb/d under the 30 November OPEC agreement, and since then Iranian production has averaged 3.78 mb/d.

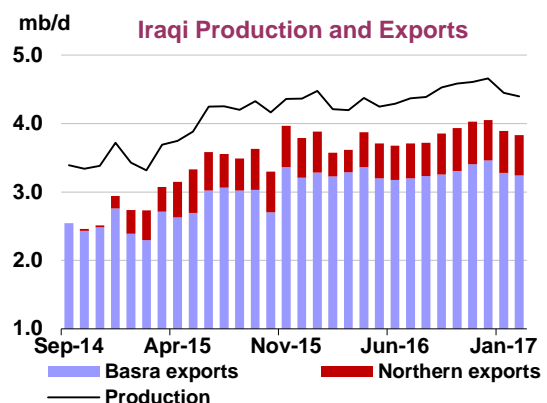


Preliminary tanker tracking data show exports of Iranian crude oil rising to 2.3 mb/d during February after falling to around 1.9 mb/d in January. Crude oil shipments during 4Q16 were just under 2.4 mb/d, with Europe accounting for roughly 40% of that volume. Roughly 870 kb/d was loaded for Europe during February, up 100 kb/d from the previous month.

In Asia, India nosed ahead of China to rank as Iran's top lifter during February after crude oil loadings jumped 300 kb/d to 590 kb/d, according to initial tanker data. Heavy buying from Indian refiners pushed Iranian purchases in 2016 to roughly 440 kb/d from 200 kb/d in 2015. Sales to China edged up to 565 kb/d during February. Japan appeared to refrain from lifting in February. Exports to Korea crept up to 210 kb/d. Shipments of condensate from Iran's South Pars gas project rose to 230 kb/d from 190 kb/d during January, although preliminary figures are subject to revision.

The National Iranian Oil Co (NIOC) has delayed the launch of a new heavy crude, West of Karun, as the southwestern oil fields that pump the grade build up flows. It was expected to make its debut last year, but shipments are now set for the end of June. Azadegan, Yaran and Yadavaran - the fields that will provide the West of Karun exports - are producing roughly 300 kb/d. The grade will be similar in quality to Iraqi Basra Heavy.

Development of these onshore fields on the border with Iraq are crucial to Iran's production plans. Target output from the fields is 1 mb/d, but achieving that goal will require the help of Western oil companies. South Azadegan is expected to be the first oil development project offered to international oil companies (IOCs). NIOC has signed memoranda of understanding with IOCs, including Royal Dutch Shell, to study South Azadegan, which bumps up against the Shell-operated Majnoon field in Iraq.



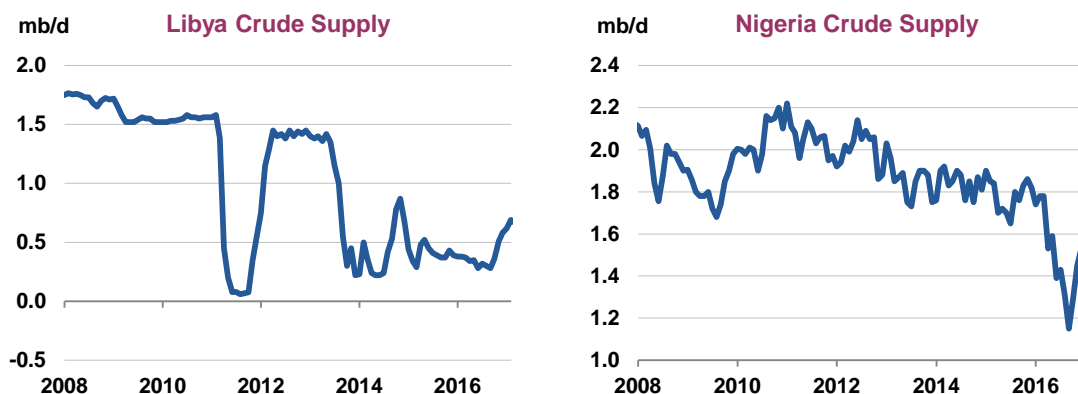
**Iraqi** production, including from the KRG, declined by 50 kb/d in February to 4.4 mb/d – the lowest level since August. Overall exports of crude to world markets eased 60 kb/d to 3.83 mb/d in February, down 220 kb/d from record levels of 4.05 mb/d reached in December. Iraq had vowed to curb its southern exports to help honour its OPEC commitment and shipments of Basra crude from Gulf terminals slipped to 3.24 mb/d in February. Northern exports along the KRG pipeline to Turkey dipped to 590 kb/d.

Loading programmes suggest still lower Iraqi exports from Gulf ports in March, but preliminary schedules are only indicative and often revised. Baghdad is believed to have reduced output by coordinating maintenance on fields that are operated by international companies, such as the BP-run Rumaila, as well as the so-called national effort fields of Nassiriya, Bin Umar and Luhais.

Iraq has meanwhile upgraded its official proven reserves estimates for the first time since 2010, raising the figure by 10 billion barrels to 153 billion barrels. The upgrade was based on exploration efforts across seven southern and central Iraqi fields. Lukoil's 3 billion barrel find in Block 10, a recent discovery, is thought to be a major supporting factor.

Escalating violence in **Libya** is threatening a production comeback that had lifted flows above 700 kb/d in early 2017. Supply dipped to 670 kb/d in February due to maintenance at fields in the core Sirte Basin. Production began to rise once the work was completed, but the recovery was set back in early March after an armed faction took over the Es Sider and Ras Lanuf terminals from the Libyan National Army (LNA). Crude shipments of some 50 kb/d to 80 kb/d were halted and production slowed to around 620 kb/d after the clashes forced the Waha oil company to halt output as a precautionary measure.

The LNA ended lengthy blockades at the strategic eastern terminals seven months ago, which led to a substantial increase in production. The 350 kb/d Es Sider terminal and the 220 kb/d Ras Lanuf port were badly damaged in previous militant attacks and are running far below capacity. Reports that the LNA had retaken the ports could not be confirmed at the time of writing. Neighbouring **Algeria** has reportedly curbed production at its largest oil field Hassi Messaoud to bring it into line with its supply target. Production held steady at 1.05 mb/d in February.



**Nigerian** output rose by 30 kb/d in February, a month in which the oil sector was spared further sabotage. Militant attacks have subsided after the government intensified negotiations with Niger Delta leaders who are seeking a greater share of oil revenues.

Crude oil production of 1.43 mb/d in February was down 350 kb/d on a year ago when rebels began to target major oil pipelines and ports. Although output has recovered from 30-year lows of roughly 1.2 mb/d during the summer, it is likely to be some time before Nigeria can return to full production capacity. The major Forcados oil export terminal, which can ship more than 200 kb/d, remains offline, but oil ministry officials expect repairs to be completed in the second quarter.

Scheduled maintenance on the 225 kb/d offshore Bonga oil field during March and part of April will also keep production below capacity. Nigeria's minister of state for oil Emmanuel Kachikwu reckons the country will need around \$40 billion -- or an annual \$10 billion over the next several years -- to revitalise the oil sector.



Elsewhere in West Africa, production in **Angola** edged up to 1.66 mb/d. In early February, Eni started up the offshore East Hub project (in block 15/06) five months ahead of schedule. Eventual East Hub output of 80 kb/d is expected to raise overall block 15/06 production to 150 kb/d. Output in **Gabon** held steady at 200 kb/d. Total agreed in February to sell interests in its mature oil fields (roughly 13 kb/d) to Perenco in a deal worth \$350 million. Shell, which has operated in Gabon for more than five decades, is in talks to sell its onshore operations - including the Rabi and Gamba oil fields - as part of its divestment plan.

Supply from **Venezuela** was steady at 2.05 mb/d in February, 350 bkd/ below a year ago, as the country lurches deeper into a recession that is battering the oil sector. A cash crunch at Petroleos de Venezuela (PDVSA) has led to operational difficulties at oil fields and facilities, which knocked annual output in 2016 down to 2.24 mb/d, the lowest in nearly three decades. Nearly all of Venezuela's foreign currency is generated through crude shipments, but a lower oil price environment and mismanagement have left PDVSA short of cash to pay suppliers or spend on upstream investment. Production in **Ecuador** held at 525 kb/d in February.

## Non-OPEC overview

Non-OPEC oil production rose by 90 kb/d in February, as rebounding US output offset declines elsewhere. At 57.8 mb/d, total non-OPEC supplies were 285 kb/d lower than a year earlier, of which the US accounts for roughly half. US production declines bottomed out in September last year, when output stood close to 1 mb/d below a year earlier, but has since recovered markedly. Freezing temperatures hampered drilling activities in North Dakota in December, but momentum is clearly building to support higher output over the course of 2017. US operators have brought additional oil rigs back to service in each of the past eight weeks, with 617 rigs operating in early March, compared with 386 a year ago.

The recovery path of US tight oil is key to rebalancing the oil market over 2017, so is the compliance of the 11 non-OPEC countries that agreed to curb output. Alongside OPEC reductions, non-OPEC countries agreed to a combined 558 kb/d cut to speed up the drawdown of excess inventories that accumulated over 2015 and 2016. According to preliminary IEA estimates, they curbed output by 225 kb/d from October – the agreed reference month – through January, representing an overall compliance level of 40%. Of this, Russia accounted for 116 kb/d, Mexico 73 kb/d and Oman 46 kb/d. Only Kazakhstan and Malaysia saw output rising from October to January based on our initial estimates.

### Non-OPEC Supply Reduction Commitments

thousand barrels per day (kb/d)

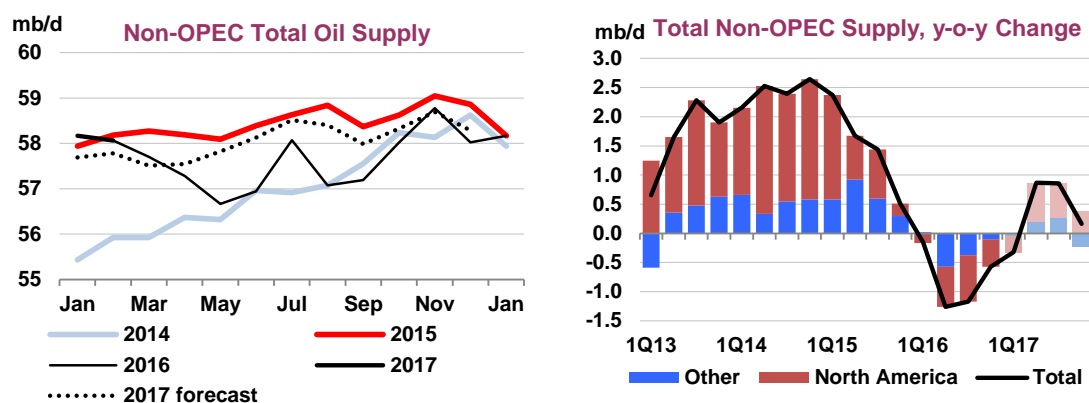
Country	IEA Oct Oil Output	IEA Jan Oil Output	IEA Feb Oil Output <sup>2</sup>	Agreed Cut	Actual Cut <sup>3</sup>	January Compliance	February Compliance
Azerbaijan	815	803	787	-35	-27	34%	78%
Kazakhstan	1,723	1,763	1,801	-20	78	-199%	-389%
Mexico	2,395	2,322	2,306	-100	-90	73%	90%
Oman	1,020	973	972	-45	-47	103%	105%
Russia	11,597	11,481	11,478	-300	-119	39%	40%
Others <sup>1</sup>	1,491	1,473	1,504	-58	13	31%	-23%
<b>Total</b>	<b>19,040</b>	<b>18,815</b>	<b>18,848</b>	<b>-558</b>	<b>-192</b>	<b>40%</b>	<b>34%</b>

1 Bahrain, Brunei, Equatorial Guinea, Malaysia, Sudan and South Sudan

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

3 From IEA October baseline

Although little data on February production levels was available at the time of writing, the eleven's output is seen marginally increasing as higher output from Kazakhstan and rising crude shipments from the two Sudans offset reductions elsewhere. Russian supply was largely unchanged. Russian officials have repeatedly announced that the 300 kb/d cut would be gradual and only met by the end of the six-month period. While February data is preliminary and subject to change, compliance is calculated at 34%.



While February oil production was slightly higher than expected, overall growth for 2017 is largely unchanged since last month's *Report* at around 390 kb/d, to 58.1 mb/d. The key contributors are the US, which is expected to see total liquids output expand by 390 kb/d, Brazil (210 kb/d), Canada (170 kb/d) and Kazakhstan (170 kb/d). The biggest declines will stem from Mexico and China, where output will slide by 220 kb/d and 190 kb/d, respectively.

### Non-OPEC Supply

(million barrels per day)

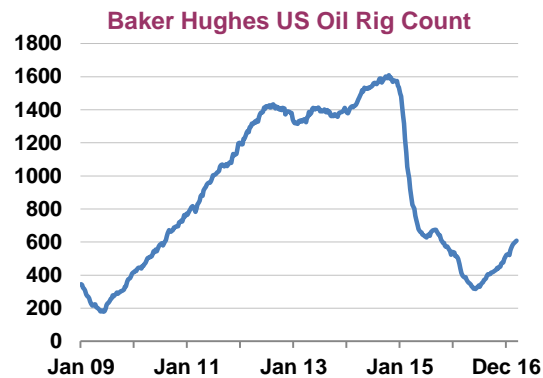
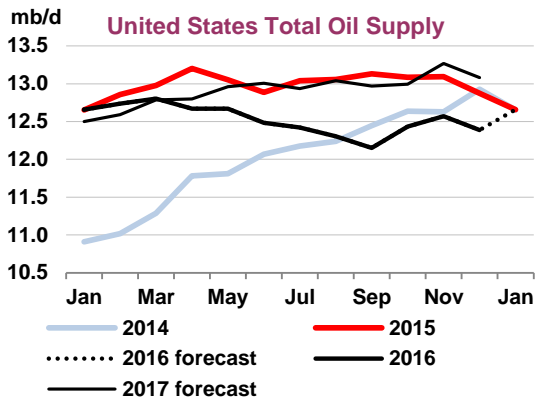
	2015	1Q16	2Q16	3Q16	4Q16	2016	1Q17	2Q17	3Q17	4Q17	2017
Americas	20.0	19.9	19.0	19.3	19.6	19.5	19.6	19.6	19.9	20.0	19.8
Europe	3.5	3.6	3.4	3.3	3.6	3.5	3.6	3.5	3.3	3.5	3.5
Asia Oceania	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
<b>Total OECD</b>	<b>23.9</b>	<b>24.0</b>	<b>22.8</b>	<b>23.1</b>	<b>23.7</b>	<b>23.4</b>	<b>23.6</b>	<b>23.5</b>	<b>23.6</b>	<b>24.0</b>	<b>23.7</b>
Former USSR	14.0	14.3	14.0	14.0	14.5	14.2	14.4	14.3	14.3	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	4.3	4.2	4.1	3.9	3.9	4.0	3.9	3.9	3.8	3.8	3.8
Other Asia	3.6	3.6	3.6	3.5	3.6	3.6	3.5	3.5	3.5	3.5	3.5
Latin America	4.6	4.4	4.4	4.6	4.6	4.5	4.6	4.6	4.7	4.7	4.7
Middle East	1.3	1.3	1.3	1.3	1.3	1.3	1.2	1.2	1.2	1.2	1.2
Africa	2.1	2.0	1.9	1.9	2.0	1.9	1.9	1.9	1.9	1.9	1.9
<b>Total Non-OECD</b>	<b>30.0</b>	<b>29.8</b>	<b>29.4</b>	<b>29.4</b>	<b>30.0</b>	<b>29.6</b>	<b>29.8</b>	<b>29.5</b>	<b>29.6</b>	<b>29.7</b>	<b>29.6</b>
Processing Gains	2.2	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
Global Biofuels	2.3	1.9	2.5	2.7	2.3	2.4	2.0	2.5	2.8	2.5	2.4
<b>Total Non-OPEC</b>	<b>58.5</b>	<b>58.0</b>	<b>57.0</b>	<b>57.4</b>	<b>58.3</b>	<b>57.7</b>	<b>57.7</b>	<b>57.8</b>	<b>58.3</b>	<b>58.4</b>	<b>58.1</b>
Annual Chg (mb/d)	1.5	-0.2	-1.3	-1.2	-0.6	-0.8	-0.3	0.9	0.9	0.2	0.4
Changes from last OMR (mb/d)	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	-0.1	0.0

## OECD

### North America

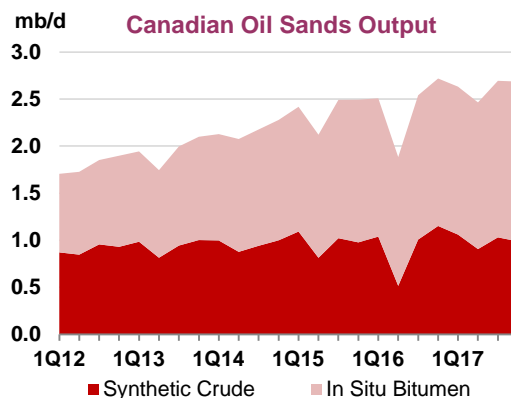
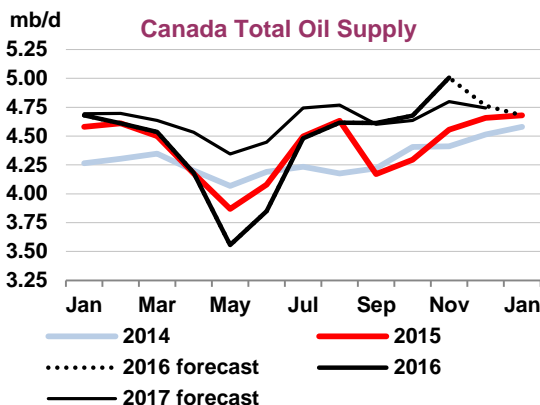
**US – December actual:** US total oil production dropped by more than 180 kb/d in December to 12.4 mb/d, 485 kb/d lower than a year earlier. Roughly half the drop stemmed from crude and condensates, which averaged 8.78 mb/d in the last month of 2016. Freezing temperatures hampered hydraulic fracturing operations – most notably in the Bakken shale play. As a result, North Dakota's crude production dropped 8.6% month on month, and by 18% from a year earlier, to 944 kb/d. Texas production also fell by 17 kb/d, despite increased activity in the Permian, while supplies from offshore Gulf of Mexico rose 47 kb/d m-o-m, to 1728 kb/d - its highest level since September 2009. Compounding declines in crude output, US NGLs supplies dropped by 255 kb/d, to just shy of 3.35 mb/d, while output of non-crude (additives/oxygenates and other hydrocarbons) rose.

Despite the production decline, there is no doubt that the output trend is upwards. In December, crude production was already 220 kb/d higher than the low-point reached in September and, while often revised, the Energy Information Administration's weekly US production estimates show US crude production rising for five consecutive months through February, to reach 9 mb/d last month – its highest level since March 2016. In the latest weekly data point, production stood above year-earlier levels for the first time since January 2016. The total US oil rig count rose from a low of 318 in May last year to 617 rigs in early March.



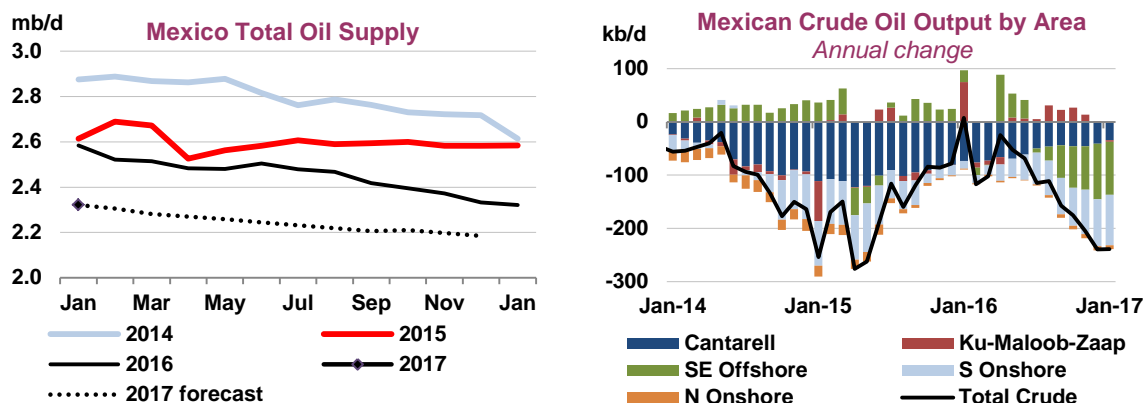
While a lot of attention is given to US tight oil development, Repsol and Armstrong Energy announced in early March they had made the largest US onshore conventional hydrocarbon discovery in 30 years. The companies' Horseshoe and Pikka discoveries in the Nanushuk play in Alaska's North Slope is estimated to hold approximately 1.2 billion barrels of recoverable light oil. A preliminary development plan for Pikka anticipates production to start up at around 120 kb/d by 2021.

**Canada – November actual, Alberta/Newfoundland December actual:** Total Canadian oil production surged 330 kb/d in November to surpass 5 mb/d for the first time. Albertan oil sands output accounted for most of the gain. Un-upgraded bitumen production rose 85 kb/d, to 1.6 mb/d – its highest ever and 140 kb/d more than a year earlier. Canadian Natural Resources Limited started up the latest phase of its Horizon mine and upgrader last year, which by November had reached its 45 kb/d nameplate capacity. Synthetic crude oil production rose by nearly 120 kb/d in November, to 1.225 mb/d – also a new record high. Data published by Alberta Energy Regulator show Albertan oil output dropping 110 kb/d in December. Bitumen output was 55 kb/d lower while upgraded output fell 100 kb/d. Production offshore Newfoundland also declined by 13 kb/d m-o-m to 234 kb/d. Following gains of 80 kb/d in 2016, total Canadian oil production is forecast to expand by 170 kb/d in 2017, to 4.64 mb/d.



**Mexico - January actual:** Total Mexican oil output dropped by another 10 kb/d in January, as a 15 kb/d drop in crude production was slightly offset by higher NGLs. At 2.32 mb/d, total liquids supply stood

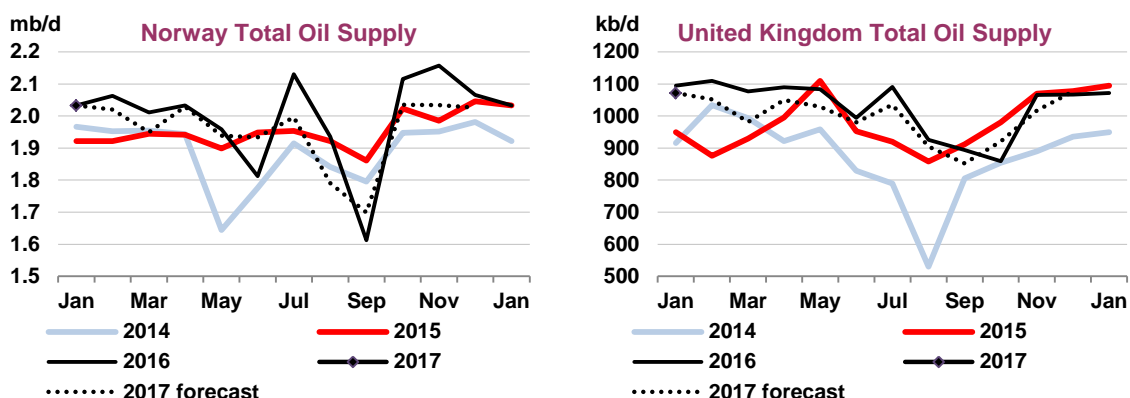
73 kb/d below October production, compared with a 100 kb/d agreed output cut. Supplies were 260 kb/d lower than a year earlier, of which crude oil accounted for 240 kb/d. In contrast to the year earlier, declines stemmed mostly from the offshore South and Southeast regions, down 95 kb/d and 100 kb/d respectively. The biggest drops stemmed from the Abkatún-Pol Chuc production system, which has seen production drop from 300 kb/d a year ago to 214 kb/d in the latest month. Output declines at Cantarell have slowed with production largely stabilising at around 200 kb/d since October. Since the start of 2017, Pemex no longer publishes weekly preliminary oil production statistics.



## North Sea

Loadings data published by Reuters suggest North Sea oil production continued to trend higher through February before falling back quite sharply in March. Crude loadings scheduled for March were 1.95 mb/d, nearly 200 kb/d lower than those planned for February. Loadings of the four North Sea benchmark crudes – Brent, Forties, Oseberg and Ekofisk (BFOE), dropped by 100 kb/d m-o-m to 884 kb/d in March, compared with 1.03 mb/d in January.

**Norway – December actual, January provisional:** Norwegian oil production dropped another 30 kb/d in January to average 2.03 mb/d, according to preliminary data from the Norwegian Petroleum Directorate. Production data for December was revised down by roughly 30 kb/d to 2.07 mb/d. Aker BP's Ivar Aasen field, which started up on 24 December, added 6 kb/d in the month. Field level data for January is not yet available. On 16 February, Eni restarted its Goliat platform in the Barents Sea, after outages and technical problems has halted production for the most part since late December.



**UK – December actual, January preliminary:** UK total oil output was largely unchanged in December from a month earlier, at 1.07 mb/d. Oil production rose sharply in November, up 200 kb/d from the month earlier as Buzzard – UK's largest field - came back on line from maintenance and produced 173 kb/d. Preliminary January data suggest output was largely unchanged at around 1.07 mb/d.

For 2016 as a whole, UK oil production rose for the second year in a row in 2016, increasing by 60 kb/d to 1.03 mb/d. Crude and condensate output rose by 40 kb/d to 935 kb/d while output of natural gas liquids rose 20 kb/d to 80 kb/d. Output should be boosted in the near term by the imminent start-up of the BP operated Schiehallion development (Quad 204) west of Shetland. Cairn Energy, meanwhile, is on track to start up its Kraken development in 2Q17 and plans to commission its Catcher project by the end of the year. Overall UK output is nevertheless expected to see a marginal decline in 2017, to 1 mb/d, as decline at mature fields and maintenance offset growth from new projects.

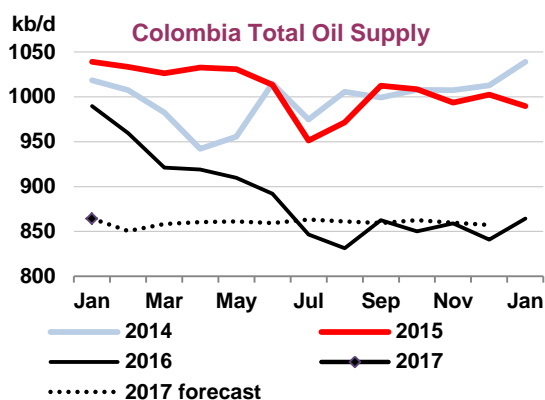
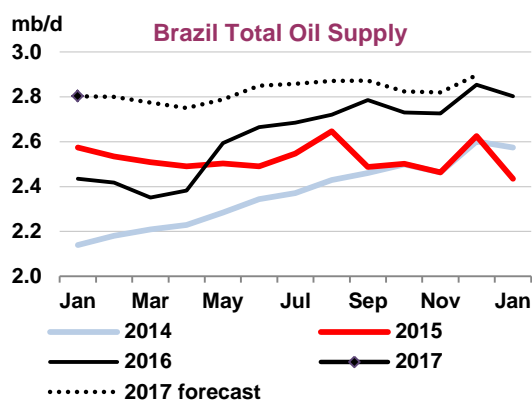
## Non-OECD

### Latin America

**Brazil – January actual:** Brazilian oil production dropped by 50 kb/d in January to 2.8 mb/d, but was still 370 kb/d higher than a year earlier. Petrobras said the decline was the result of planned maintenance at the P-40 platform located at the Marlim field and at one of the production wells connected to the Cidade de Anchieta Floating Production Storage and Offloading vessel (FPSO) in the Parque de Baleias area, both located in the Campos Basin. As such, output from the post-salt region dropped 60 kb/d from the previous month, to 1.4 mb/d. Production from pre-salt fields in the Santos Basin continued to grow, however, as new production units ramped up. The FPSO Cidade de Caraguatatuba, which was commissioned in the Lapa field in December, produced an average 29 kb/d from one well over January. Overall Santos Basin production was 20 kb/d higher than a month earlier, at a record 1.08 mb/d.

Brazilian output is expected to grow by more than 210 kb/d on average in 2017, as new production units are commissioned. In addition to the 150 kb/d Caraguatatuba FPSO, which started up in December, Petrobras is about to launch its 150 kb/d P-66 FPSO at Lula South. The commissioning of the replica P-67 FPSO to be installed in the Lula North is expected to commence towards the end of the year, as will the Cidade de Campos dos Goytacazes, which will be deployed at the Tartaruga Mestica and Tartaruga Verde fields in the Campos basin.

Brazil's Mines and Energy Ministry announced on 24 February that it would cut in half the requirements to use locally produced goods and services in oil field exploration and production for upcoming bid rounds. Oil companies will be required to source 50% of goods and services locally for both exploration and development. For the offshore, local content requirements were cut to 18% for exploration, 25% for well construction, 40% for collection and transportation systems and 25% for stationary production systems. The new rule, which still has to be approved by the National Energy Policy Council, would make upcoming bid rounds more attractive to international companies and remove some supply bottlenecks that have worsened since the massive corruption scandal involving Petrobras and a number of suppliers broke out in 2014.





**Colombian** crude production averaged 860 kb/d in January, an increase of 23 kb/d from the previous month but 125 kb/d, or 12.7%, below a year earlier. Output could have dropped again in February, however, as pumping operations along the Cano-Limon pipeline – Colombia's second largest – were halted due to a bomb attack by rebels. Field level production data available through September show that over the first nine months of 2016, output at Rubiales dropped by 25 kb/d y-o-y. Total Rubiales production has declined from 165 kb/d at the start of 2015 to 123 kb/d in September. Ecopetrol took over the operatorship of Rubiales in July, from Pacific Exploration and Production Company, which held the license previously. Following output declines of 120 kb/d on average in 2016, Colombian supplies are expected to decline another 30 kb/d in 2017.

### Middle East

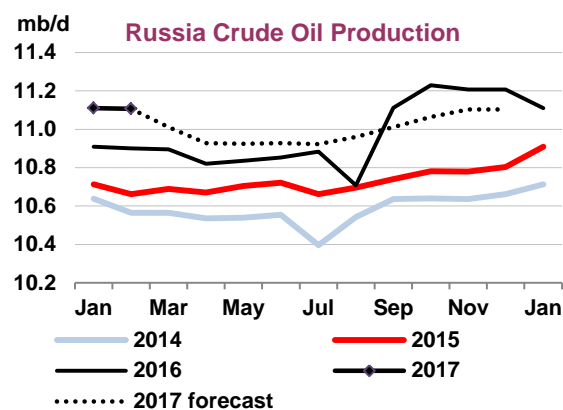
**Oman - January actual:** Oman cut its total crude and condensate production by another 30 kb/d in January to 965 kb/d, in full compliance with its 45 kb/d output cut as part of the OPEC/non-OPEC deal. Oman produced 1.01 mb/d in October, the reference month for which compliance is calculated, and said it targets output to average 970 kb/d over the first half of 2017, compared to 1 mb/d in the same period last year.

**Bahrain** – Bahrain's total oil production is estimated at 206 kb/d in December, of which 57 kb/d is crude and NGLs produced at home and roughly 150 kb/d comes from the Abu Saafa field, which it holds jointly with Saudi Aramco. Bahrain has pledged to cut output by 10 kb/d.

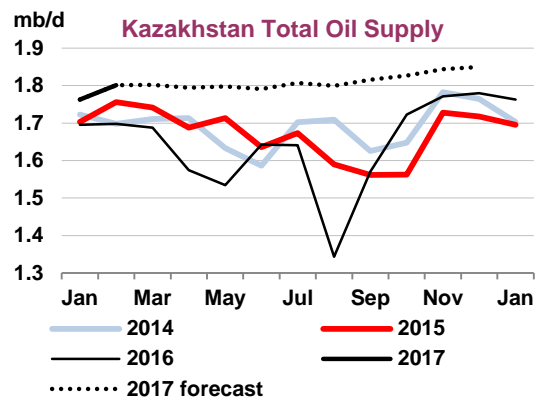
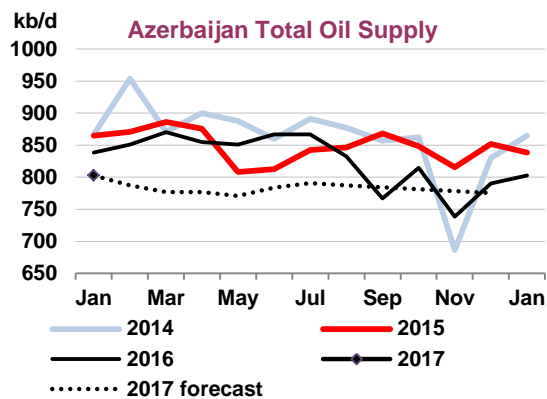
### Former Soviet Union

**Russia – January actual, February provisional:** After posting a 100 kb/d cut in January, Russian crude and condensate output was essentially unchanged in February. At 11.1 mb/d, production was 120 kb/d lower than the benchmark October 2016 reference production agreed with OPEC, representing 40% compliance with its 300 kb/d output pledge. Russia has always said it would reach its target by the end of the six-month period, however, and that output would be cut by 200 kb/d in 1Q17. So far, Rosneft has made up most of the production cut, lowering output by 82 kb/d since October. Lukoil has reduced supplies by 17 kb/d over the same period, while Gazpromneft has lowered output by 23 kb/d and Surgutneftegaz by 11 kb/d.

According to Sberbank Research, the drop in output since October is resulting from a slow-down in development drilling rather than the shutting of marginal wells. The idle well count in February (21,601) was roughly on a par with the January figure, and the share of idle wells stood at 12.5%, in line with that of October 2016. In contrast, the latest available drilling figures (for January) indicate a deceleration in development drilling growth to just 4% y-o-y, with Gazprom Neft, Rosneft (excluding RN Holding and Bashneft) and Slavneft reporting declines of 36%, 8% and 17%, respectively. Despite the recent output cuts, February oil production was roughly 200 kb/d higher than a year ago.



**Azerbaijan – January actual:** Azeri oil production, including roughly 50 kb/d of condensate from Shah Deniz, averaged 803 kb/d in January, 12 kb/d more than a month earlier, but 12 kb/d less than our October estimate. Azerbaijan has committed to reduce output by 35 kb/d under the terms of the OPEC/non-OPEC agreement. In January, Interfax quoted Azeri Energy Minister Natig Aliyev as saying that Azerbaijan had reduced its oil production to 789 kb/d in January and earlier this month the Minister said that output in February had been cut to 776 kb/d, moving closer to the agreed target.



**Kazakhstan – January actual, February preliminary:** Kazakh crude and condensate production rose by nearly 40 kb/d in February to average 1.718 mb/d, according to the latest official data. The increase stemmed mostly from Kashagan, which produced 170 kb/d last month, only five months after start up. The field is expected to reach 180 kb/d by mid-year before ramping up towards its nameplate capacity of 360 kb/d over 2018. Tengiz output also rose. With the latest increase, February total oil output of 1.8 mb/d stood nearly 80 kb/d higher than our October estimate, which includes roughly 80 kb/d of NGLs from gas processing plants. Kazakhstan has pledged to cut output by 20 kb/d, but has said that output from Kashagan, Tengiz and Karachaganak would be exempt for production restraints.

## Africa

Oil production in **Sudan** and **South Sudan** is assessed at around 200 kb/d in February, 20 kb/d higher than October estimates based on tanker tracking data for crude leaving the Red Sea port of Marsa Bashayer. Land locked South Sudan, which controls the majority of Sudan's oil resources since gaining independence in 2011, has been fighting a costly civil war and is dependent on export infrastructure through Sudan to market its crude. It is currently unclear how much of the export volumes originate from either of the two countries.

## Asia

**Malaysia – January actual:** According to data from the central bank of Malaysia, crude and condensate production averaged 673 kb/d in January, compared with 638 kb/d in October. Malaysia has agreed with OPEC and other producers to curb output by 20 kb/d but is seeing increased production from new projects. Shell started production from the deepwater Malikai platform in December and production is expected to peak at 60 kb/d.

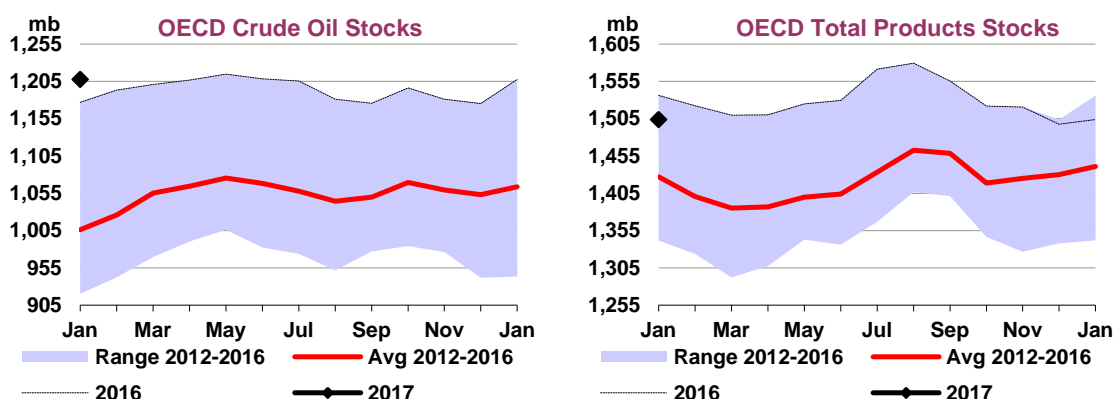
**Vietnam – February preliminary:** Vietnam's General Statistics Office estimate that crude oil production averaged 277 kb/d in February, 6 kb/d less than a month earlier and 36 kb/d less than the previous year. Final January data was revised up slightly, to 284 kb/d. After recording declines of 9% on average for 2016, Vietnam's crude oil production is forecast to drop another 10% in 2017, to 272 kb/d.

**Brunei – December actual:** According to data submitted to JODI, Brunei's oil production was 109 kb/d in December, 26 kb/d lower than that reported for October. Brunei has committed to curb output by 4 kb/d under the terms of the OPEC/non-OPEC deal.

# STOCKS

## Summary

- **OECD industry inventories rose for the first time in six months by a sizeable 48 mb (or 1.5 mb/d) to reach 3 030 mb at end-January**, underpinned by near-record US crude stocks and gains in Europe.
- **The increase, caused by higher imports from cargoes in transit through 4Q16**, was enough to trigger a more than \$3/bbl fall in the front-month Brent price on 8-9 March.
- **Preliminary data show oil stocks in the OECD drawing by a modest 5 mb in February**, highlighting that market re-balancing is gradual rather than rapid.



## Global Overview

After five straight months of inventory draws, OECD inventories built by a sizeable 48 mb (or 1.5 mb/d) in January to top the symbolic 3 000 mb mark once again. The build was largely caused by rising crude stocks in the US from higher production, rising imports and lower refinery runs. The January stock build by itself erased around 40% of the cumulative drop in OECD stocks seen between July and December 2016. An open arbitrage window from the Middle East to the US in 4Q16 showed up in imports data several weeks later and subsequently went into stocks. The news was enough to push down front-month Brent prices by more than \$3/bbl on 8-9 March. Europe also played a significant part in the January build with higher crude stocks of 12.8 mb and product inventories up by 10 mb linked to an increase in imports of middle distillates and reduced export opportunities for gasoline. The January OECD stocks build comes just as the production cuts agreed by OPEC and some non-OPEC producers take effect. For 1H17, our implied stock change between supply and demand shows a draw of 500 kb/d, assuming current OPEC output is maintained until the end of June. The actual build in OECD stocks in January reminds us that it may be some time before global stocks start to fall. At the end of January OECD stocks were 302 mb above the five-year average.

## OECD inventory position at end-January and revisions to preliminary data

OECD industry stocks in January built for the first time since July 2016 to end the month at 3 030 mb, up by 48 mb (1.5 mb/d) month-on-month and back above the symbolic 3 000 mb mark. The build was largely driven by rising stocks in the US and Europe, whereas Asian oil inventories were little changed on the month. Crude stockpiles across the OECD grew by 32.3 mb to 1 208 mb at end-January, their highest level since June 2016, while NGLs stockpiles across the OECD were up 9.3 mb to 318 mb. Oil product stocks grew more moderately by 6.3 mb to 1 504 mb. A seasonal pickup in demand for LPG and steady US propane exports to Asia helped offset builds in diesel and gasoline. Overall OECD stocks remained 302 mb above the five-year average at the end of January.

## Preliminary Industry Stock Change in January 2017 and Fourth Quarter 2016

	January 2017 (preliminary)				Fourth Quarter 2016			
	(million barrels)				(million barrels per day)			
	Am	Europe	As. Ocean	Total	Am	Europe	As. Ocean	Total
<b>Crude Oil</b>	<b>23.2</b>	<b>12.8</b>	<b>-3.6</b>	<b>32.3</b>	<b>0.75</b>	<b>0.41</b>	<b>-0.12</b>	<b>1.04</b>
Gasoline	20.8	4.6	1.6	27.0	0.67	0.15	0.05	0.87
Middle Distillates	5.1	7.2	4.8	17.1	0.17	0.23	0.16	0.55
Residual Fuel Oil	-0.7	-1.3	0.3	-1.7	-0.02	-0.04	0.01	-0.05
Other Products	-32.2	-0.6	-3.4	-36.2	-1.04	-0.02	-0.11	-1.17
<b>Total Products</b>	<b>-7.0</b>	<b>10.0</b>	<b>3.3</b>	<b>6.3</b>	<b>-0.22</b>	<b>0.32</b>	<b>0.11</b>	<b>0.20</b>
Other Oils <sup>1</sup>	7.6	0.0	1.6	9.3	0.25	0.00	0.05	0.30
<b>Total Oil</b>	<b>23.9</b>	<b>22.7</b>	<b>1.3</b>	<b>47.9</b>	<b>0.77</b>	<b>0.73</b>	<b>0.04</b>	<b>1.54</b>

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

Preliminary data for February show OECD inventories resuming their draws, even if by only 5.3 mb (less than 0.2 mb/d) on the month. Crude stocks are likely to have increased further on the back of record high inventories in the US prompted by continuing high imports and robust crude and NGLs production. Meanwhile, oil products likely drew by a significant 23.3 mb in February with ongoing exports of propane from the US to Asia as well as lower refinery runs in some regions. Gasoline, middle distillates and fuel oil inventories were all likely to have drawn in February.

## Revisions versus February 2017 Oil Market Report

	(million barrels)							
	Americas		Europe		Asia Oceania		OECD	
	Nov-16	Dec-16	Nov-16	Dec-16	Nov-16	Dec-16	Nov-16	Dec-16
<b>Crude Oil</b>	<b>-0.1</b>	<b>-1.3</b>	<b>1.3</b>	<b>8.4</b>	<b>0.1</b>	<b>-1.7</b>	<b>1.3</b>	<b>5.4</b>
Gasoline	0.0	-4.7	0.0	1.6	0.1	-0.5	0.2	-3.6
Middle Distillates	0.0	-4.5	1.9	2.5	0.0	1.4	1.9	-0.6
Residual Fuel Oil	0.1	-0.7	0.3	0.8	0.0	-0.2	0.3	-0.1
Other Products	0.0	5.7	0.3	-2.7	0.0	0.7	0.3	3.7
<b>Total Products</b>	<b>0.1</b>	<b>-4.2</b>	<b>2.5</b>	<b>2.2</b>	<b>0.1</b>	<b>1.4</b>	<b>2.7</b>	<b>-0.6</b>
Other Oils <sup>1</sup>	0.2	-7.7	0.3	-0.6	0.0	-0.4	0.5	-8.6
<b>Total Oil</b>	<b>0.1</b>	<b>-13.1</b>	<b>4.2</b>	<b>10.0</b>	<b>0.2</b>	<b>-0.7</b>	<b>4.5</b>	<b>-3.8</b>

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

Revised data shows that OECD inventories were 4.5 mb higher for November and down by 3.8 mb for December. For November, crude oil, oil products and "other oil" inventories were raised by 1.3 mb, 2.7 mb and 0.5 mb, respectively. For December, crude oil stocks were raised by 5.4 mb, whereas other oils were reduced by 8.6 mb and oil products by 0.6 mb.

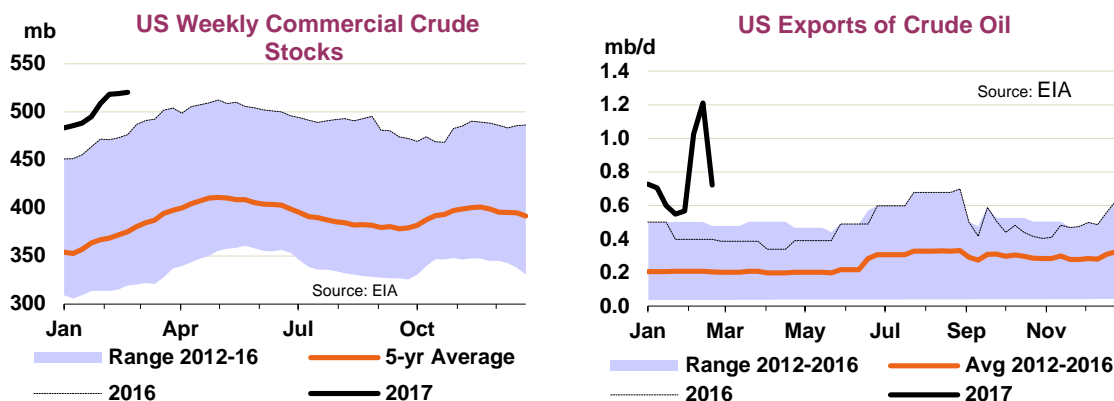
## Recent OECD industry stock changes

## OECD Americas

Commercial holdings in the OECD Americas rose by 23.9 mb to 1 624 mb in January, erasing all the losses seen the previous month. Crude stocks were by far the largest contributor to the overall build, rising by 23.2 mb, or just over 700 kb/d, to 668 mb. The build was somewhat surprising as the US exported in January the largest volume of crude seen since the lifting of the export ban at the beginning of 2016. Crude was shipped to Canada, Europe, Latin America and Asia, highlighting the geographic diversity of buyers of US crude. However, much higher imports into the US Gulf Coast and maintenance at some refineries more than offset higher exports. Imports from the Middle East rose in January, reflecting the arrival of long-haul cargoes booked at the end of 2016 before US crude prices fell to a discount to international crudes such as Dubai.

Gasoline inventories also showed a big increase in January of 20.8 mb, 9.5 mb higher than the average build seen over the last five years. They closed the month at 289 mb, their highest in a year, due to a seasonal slowdown in demand and the effect of steady cargo imports into the US Northeast. Middle

distillate stocks also built counter-seasonally by 5.1 mb to 243 mb. However, despite these builds, oil product stockpiles drew overall in January thanks to a significant draw in 'other products' (largely US propane) of 32.1 mb, the largest seen in our records. After reaching a historical high of 260 mb in September 2016 – on a par with gasoline stocks – OECD Americas 'other product' stocks fell by a combined 70.4 mb in the September 2016-January 2017 period. With gasoline stocks rising at the same time, the gap was 99.6 mb at the end of January, underlying the change in fortunes for both products (even if largely for seasonal reasons). The fall in US propane stocks was due to a seasonal pickup in heating demand as well as a steady flow of exports to Asia helped by the opening of new export terminals in 2H16. US combined propane and propylene exports rose to a record high of 1.2 mb/d at end-January and were 1 mb/d in February.



Preliminary data from the Energy Information Administration (EIA) suggest the trends seen in January continued well into February, except for gasoline. US crude stocks rose by a further 23 mb to a record high, helped by a slowdown in refinery runs and continuing high imports. The price differential between US crudes and Dubai has stayed relatively narrow since February, so the trend of higher imports from the Middle East is unlikely to continue into March, whereas exports will be incentivised. Oil product stocks drew by 25 mb over February due to the lower refinery runs, with all categories seeing falls. Gasoline stocks fell 3.6 mb on the month with lower imports and higher implied demand ahead of the switch to summer specification fuel, while middle distillate inventories were down 5 mb. The Strategic Petroleum Reserve (SPR) also drew supplies in early March for the first time since May 2014 following sales made by the Department of Energy. A total of 18 mb of crude will be sold from the SPR over the next few months.

## OECD Europe

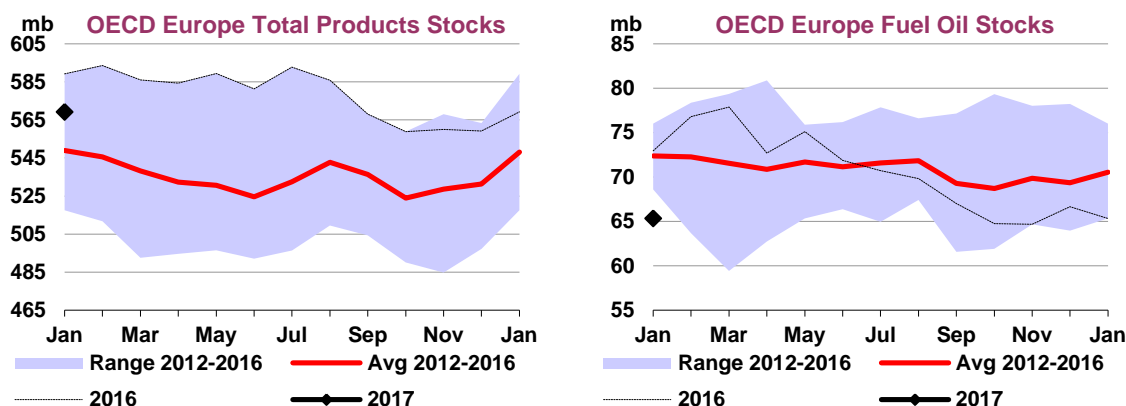
European industry inventories built by a seasonal 22.7 mb to reach 991 mb at end-January, with equal gains registered in crude and oil products. Crude stockpiles were up 12.8 mb on the month to 352 mb, a five-month high, due to lower runs at refineries. During the month, there was a steady flow of North Sea and Brent-related crudes to Asia linked to OPEC output cuts and the narrowing of the Brent-Dubai price spread, but the headline figure still shows a build. There were increases in all major European consuming countries, including Germany, France, Italy, the UK and the Netherlands.

Middle distillate stocks also rose by 7.2 mb on the month to 302 mb, helped by higher imports from the US and the Middle East as refineries commenced maintenance. Gasoline inventories increased by 4.6 mb to 103 mb as arbitrage opportunities to the US Northeast closed due to unfavourable economics and oversupply. Fuel oil inventories fell to 66 mb with continuing high shipments to Asia. Total European oil product inventories built by 10 mb to 569 mb in January and have stayed in a narrow range of 559-569 mb since September 2016.

Preliminary data from Euroilstock for 16 European countries showed refinery runs and total industry stocks little changed in February, falling by 1.6 mb on the month thanks to draws in crude and fuel oil.

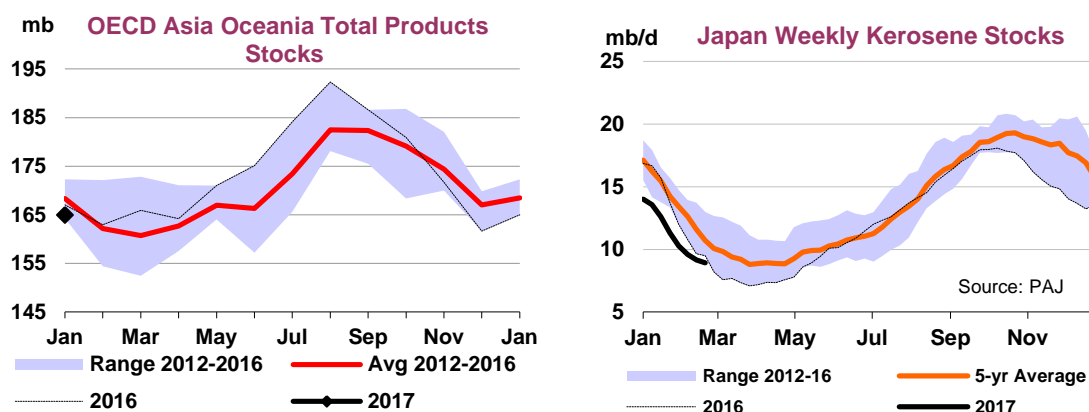


Middle distillate inventories were estimated to have risen by 5.1 mb due to higher imports, while gasoline stocks were relatively unchanged. Reports concerning oil products held in independent storage in Northwest Europe showed stocks building through February and early March, particularly for gasoline and fuel oil due to reduced arbitrage opportunities, whereas gasoil stocks fell.



## OECD Asia Oceania

Commercial stocks in OECD Asia Oceania showed fewer changes in January than in the Americas and Europe, building by a mere 1.3 mb to 416 mb at end-month. Crude inventories drew seasonally by 3.6 mb to 188 mb, with falls seen in Japan (3.5 mb) and Korea (0.2 mb). By contrast, oil products built 3.3 mb to 165 mb. Korean oil product stocks showed the biggest rise (3.1 mb), followed by Japan (0.2 mb), suggesting that Korean refineries increased throughput during the month. Gasoline holdings rose 1.6 mb to 25 mb, middle distillate stocks gained 4.8 mb to 68 mb thanks to higher imports following strong demand the previous month. Finally, 'other products' (largely LPG and naphtha) drew in line with higher demand from petrochemical crackers and despite steady imports into the region.

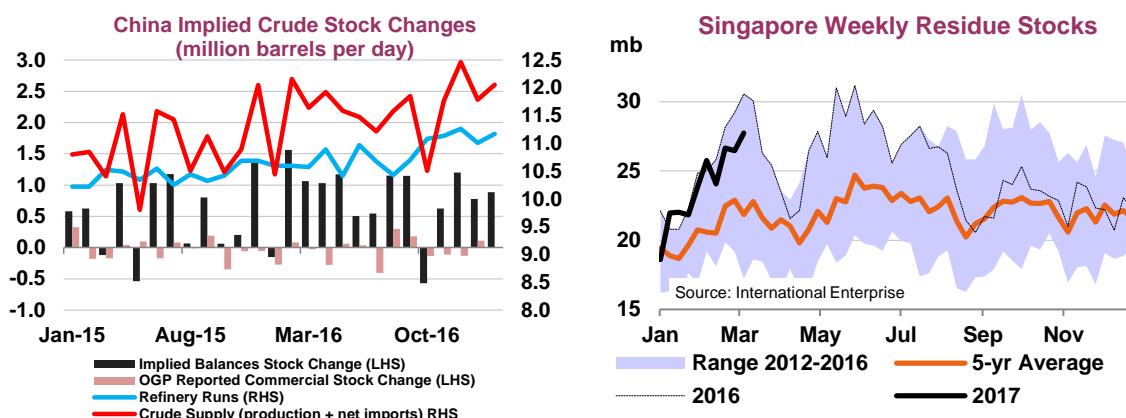


Preliminary weekly data from the *Petroleum Association of Japan (PAJ)* suggest that total oil stocks fell by a modest 3.8 mb in February, largely due to lower kerosene and naphtha stocks (2.2 mb and 0.6 mb respectively), while crude stocks also drew by 0.5 mb on the month. Utilisation rates at Japan's refineries were unchanged during the month.

## Recent developments in Singapore and China stocks

Data from *China Oil, Gas and Petrochemicals (China OGP)* indicate that Chinese commercial crude stocks rose by 3.4 mb in January and that gasoil stocks increased by a significant 22 mb ahead of Chinese New Year. Gasoline inventories fell by 8.1 mb while kerosene stocks were up 0.9 mb. On a year-on-year basis, crude stocks were down 9.8 mb and oil products up by 8.5 mb due to higher refinery throughput. Total

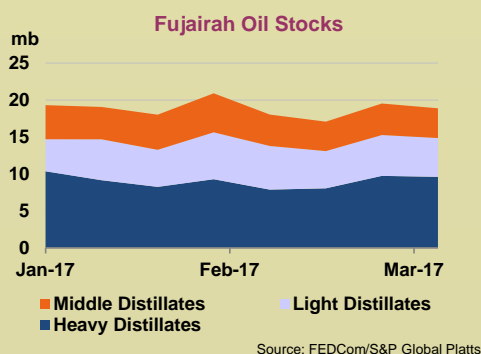
Chinese crude stocks (both commercial and government) were likely to have kept increasing through January-February as supplies (Chinese crude production plus net imports) were estimated to have outpaced refinery runs by some 850 kb/d in both months.



Singaporean fuel oil inventories recovered strongly over January and February after falling to a 20-month low in December on a surge of imports from Russia, Europe and the Middle East. They stood at 26 mb by end-February, up 3 mb from January and 6.3 mb from December, and at their highest since July, according to weekly data from *International Enterprise*. In other figures, light distillate stocks fell 0.5 mb month-on-month in February to 13 mb and middle distillate inventories fell by 0.2 mb to 13 mb.

### Fujairah releases new inventory data

In January 2017, *FEDCom* and *S&P Global Platts* started publishing weekly inventory data for Fujairah covering all terminals in the Emirate in line with existing practices for Amsterdam-Rotterdam-Antwerp (ARA), Houston and Singapore. The aim is to develop Fujairah as an oil trading hub for the Middle East, from its current position as the world's second largest bunkering port for ships travelling between Europe, Africa and Asia. Fujairah is in a strategic location, just outside the Strait of Hormuz. The inventory data is released every Wednesday at 9 am London time for closing stocks held the previous Monday night. The IEA will publish Fujairah inventories as part of this *Report* on a monthly basis.

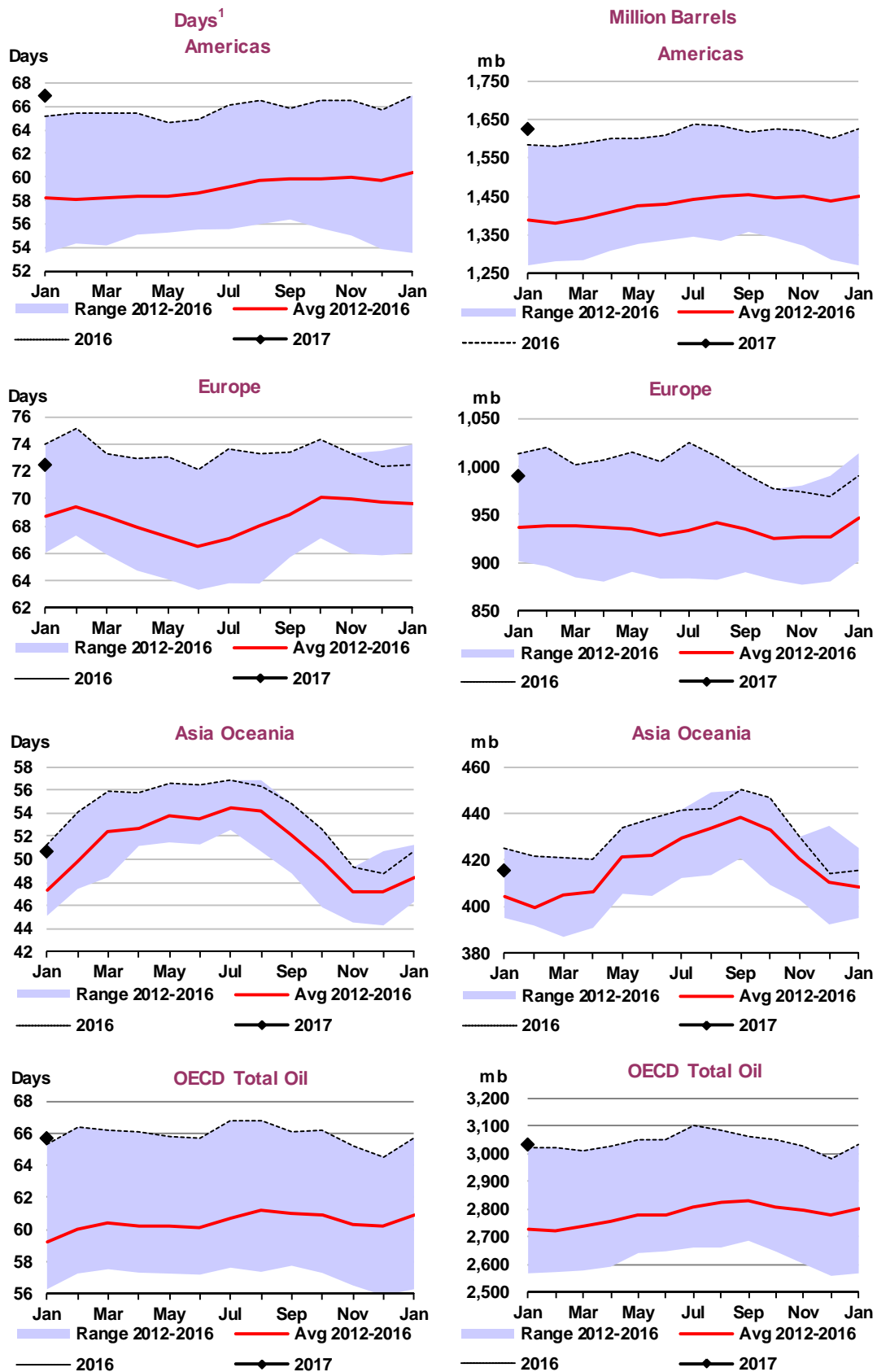


Data show that Fujairah held between 17-21 mb of oil in storage from January to March, of which about half was bunker fuel and heavy fuel oil, and the rest light and middle distillates. Heavy distillate stocks were 9.6 mb on 6 March, down from 10.4 mb on 16 January, while light distillate inventories were up 0.9 mb to 5.3 mb and middle distillate stocks were down 0.6 mb to 4 mb. This new development makes Fujairah the only regular public inventory data point for the Middle East and goes some way to improve transparency. Other statistics for the Middle East are available from the *Joint Oil Data Initiative (JODI)* database for Saudi Arabia, Bahrain, Iraq and Qatar, but they are in arrears.

The development goes hand in hand with the emergence of independent pricing benchmarks for the Middle East. Wholesale oil product prices in the Middle East are calculated against Singapore prices plus the cost of freight. In October 2016, Platts launched independent assessments for gasoline, gasoil, jet fuel and fuel oil in a bid to replace the existing framework. The Middle East currently has 17.3 mb of commercial storage under construction or expansion, almost all of it situated in the UAE. There are 11 projects underway in Fujairah and Sharjah with a combined capacity of 13.4 mb.

## Regional OECD End-of-Month Industry Stocks

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

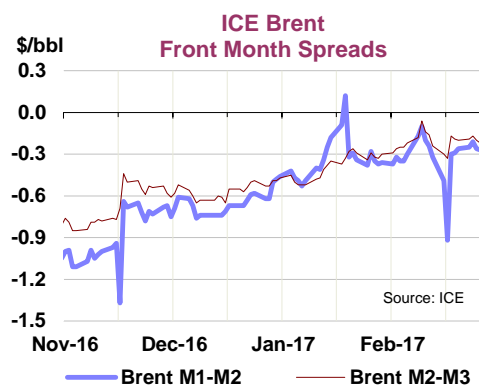
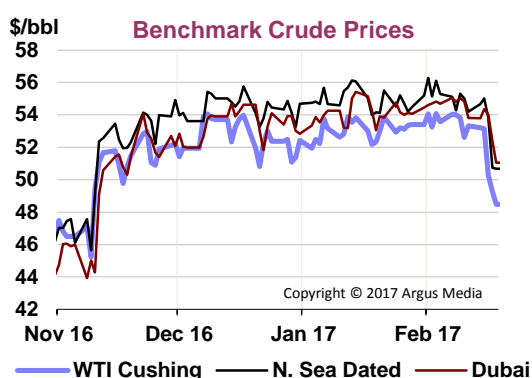


1 Days of forward demand are based on average demand over the next three months

# PRICES

## Summary

- **Benchmark crude prices moved in a tight range of \$55-56/bbl through February**, before bulging crude inventories in the US pushed them down more than \$3/bbl on 8-9 March.
- **Sour crude Dubai maintained most of the gains achieved against Brent and WTI in recent months, thanks to OPEC output cuts.** The price of alternatives to Libyan grades gained in the Mediterranean as fighting erupted once again.
- **Middle distillate and gasoline prices benefitted from strong support in February**, but fuel oil fell after several months of high prices due to steady inflows into Asia.
- **Spot freight rates for dirty and clean tankers fell across the board in February due to the ongoing impact of OPEC output cuts** and with closed arbitrage opportunities in several product markets.



## Market overview

Benchmark crude prices moved in a tight range of \$55-56/bbl in February, which saw a continuation of the trends observed in recent months. However, rising inventories, particularly in the US, raised questions about the pace of the market's rebalancing and brought prices down a peg in early March. At the time of writing, front-month Brent futures were trading at \$50.80/bbl. In February and early March, sour grades such as Dubai maintained most of the gains achieved against rival benchmarks at the start of the year, even if Urals delivered to Europe fell in relative terms. A still open arbitrage to Asia supported differentials for West African and Caspian crudes, with a steady flow of cargoes headed to Asia. Fighting near Libya's export terminals pushed up the price of alternative sweet grades such as Azeri Light in the Mediterranean. Global spot product prices benefitted from stronger support than crude oil in February, with gains in middle distillates and gasoline. However, Asian fuel oil fell after several months of high prices, due to lower demand and steady inflows, in turn putting pressure on prices in Europe. Naphtha continued to be in high demand in Asia, but falling LPG prices in early March threatened this position.

## Futures markets

Front-month ICE Brent crude futures were remarkably stable in February, rising by a modest \$0.49/bbl month-on-month to \$56/bbl. Prices moved in a tight range of \$55-56/bbl, showing even less volatility than in December-January following the OPEC output deal. However, on 8-9 March, prices fell by more than \$3/bbl as bulging crude inventories in the US caused traders to question the pace of the global market's rebalancing. Brent intermonth spreads narrowed in February, generally continuing the uptrend seen since late November, showing an expectation of tighter physical supplies over the next few months.

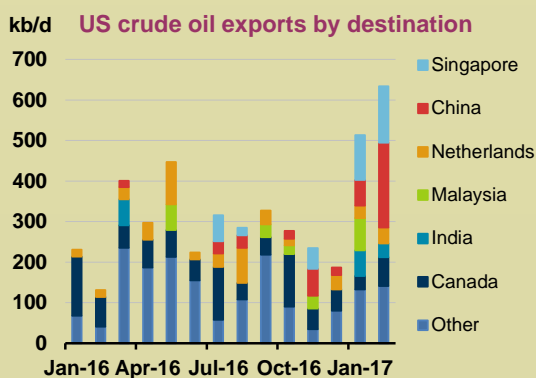
The Month 1-Month 2 spread was trading in a contango of \$0.26/bbl on 8 March, from \$0.67/bbl at the end of 2016. Growing US crude exports helped the Month 1-Month 2 WTI spread rise to minus \$0.27/bbl on 21 February, its narrowest since October 2016, but it has since widened out. The Brent-WTI spread narrowed through February before widening again in March with higher US crude inventories and expectations of rising US crude production. At the time of writing, the Brent-WTI spread was trading at \$2.90/bbl, its widest in several weeks.

### US crude exports on the rise

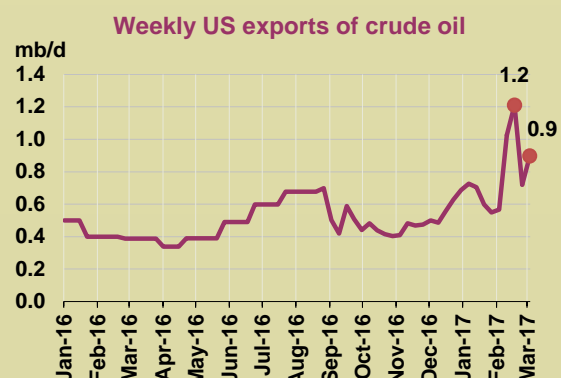
Canada was the final destination for 427kb/d (92%) of US crude and condensate exports in 2015, according to the Energy Information Administration. Even if they still represented the lion's share of flows, exports to Canada fell both in absolute and relative terms in 2016, reaching 302 kb/d (58%) of all exports. The drop took place as the Brent-WTI spread narrowed from an average of \$4.84/bbl in 2015 to \$1.66/bbl in 2016, making Canada a more attractive market for Nigeria, Algeria and Saudi Arabia. But the increase in options available to US exporters that came with the lifting of the 40-year crude oil export ban at the end of 2015 was no doubt the decisive factor. Condensate exports were allowed since 2014, but only represent a small share of all volumes.

In 2016, US crude oil and condensate reached new markets as diverse as Europe (82 kb/d), Asia (52 kb/d) and South America (40 kb/d). In Asia, the largest importers of US crude include Korea, Singapore, China and Japan. In Europe, they are the Netherlands, Italy, and the UK. Destinations in Latin America, e.g. Curacao, Colombia and Guatemala also figure prominently. US exports increased further at the start of 2017 and reached a record 1.2 mb/d in the week to 17 February as result of a combination of several factors e.g., US crudes remained at a discount to their international counterparts, previous developments in infrastructure, rising production and decrease in refinery throughput in February. All this led to more US crude available to be exported.

A further diversification of markets occurred at the same time. Asian countries such as China (137 kb/d), Singapore (124 kb/d), Malaysia (79 kb/d) and India (49 kb/d) imported roughly 390 kb/d of total US crude oil cargoes during the period, followed by Canada and the Netherlands. In January to February, Canada imported only 52 kb/d of US crude exports, down from 110 kb/d during the same period in 2016.



Source: Tanker tracking data



Source: EIA

Midstream companies have been able to move crude oil from highly-productive basins like Eagle Ford or the Permian to tank terminals in the US Gulf Coast, in some cases through joint-venture agreements. At the same time, rising exports have been underpinned by new and existing coastal loading facilities in the Gulf Coast. In October 2016, export opportunities were enhanced when Occidental Petroleum opened its 300 kb/d export terminal at Ingleside, TX, which is able to handle Suezmax vessels. Generally speaking, however, most Houston area terminals are only able to accommodate smaller Aframax tankers and the flows are not yet large enough to enable the loading of bigger ones, forcing operators into ship-to-ship transfers offshore to load crude on larger tankers for export, thus leading to a significant increase in costs. Therefore, the ability of US exporters to step up exports in future months will also depend on whether US midstream system and coastal facilities are able to keep pace with growing US crude oil production.

## Prompt Month Oil Futures Prices

(monthly and weekly averages, \$/bbl)

	Dec	Jan	Feb	Feb-Jan Avg Chg	% Chg	Week Commencing:				
						06 Feb	13 Feb	20 Feb	27 Feb	06 Mar
<b>NYMEX</b>										
Light Sweet Crude Oil	52.17	52.61	53.46	0.85	1.6	52.88	53.20	54.02	53.57	50.88
RBOB	66.23	66.13	64.44	-1.69	-2.5	64.77	64.52	63.53	67.36	69.12
ULSD	69.79	69.04	68.93	-0.11	-0.2	68.89	68.56	68.98	67.68	65.59
ULSD (\$/mmbtu)	12.31	12.18	12.16	-0.02	-0.2	12.15	12.09	12.17	11.94	11.57
Henry Hub Natural Gas (\$/mmbtu)	3.58	3.29	2.91	-0.38	-11.7	3.10	2.89	2.60	2.78	2.92
<b>ICE</b>										
Brent	54.92	55.51	56.00	0.49	0.9	55.64	55.75	56.25	55.77	53.72
Gasoil	64.96	65.44	66.32	0.87	1.3	65.83	66.13	66.66	65.81	63.79
<b>Prompt Month Differentials</b>										
NYMEX WTI - ICE Brent	-2.75	-2.90	-2.54	0.36		-2.76	-2.55	-2.23	-2.20	-2.84
NYMEX ULSD - WTI	17.62	16.43	15.47	-0.96		16.01	15.36	14.96	14.11	14.71
NYMEX RBOB - WTI	14.06	13.52	10.98	-2.54		11.89	11.32	9.51	13.79	18.24
NYMEX 3-2-1 Crack (RBOB)	15.24	14.49	12.48	-2.01		13.26	12.66	11.33	13.90	17.07
NYMEX ULSD - Natural Gas (\$/mmbtu)	8.72	8.88	9.25	0.37		9.05	9.20	9.57	9.16	8.65
ICE Gasoil - ICE Brent	10.04	9.93	10.32	0.38		10.19	10.38	10.41	10.04	10.07

Source: ICE, NYMEX.

## Spot crude oil prices

Spot crude oil prices increased slightly in February as OPEC production cuts started to be felt in physical markets. Sour grades such as Dubai maintained most of the gains achieved against rival benchmarks in previous weeks and a still open arbitrage to Asia pushed up differentials for West African crudes.

## Spot Crude Oil Prices and Differentials

(monthly and weekly averages, \$/bbl)

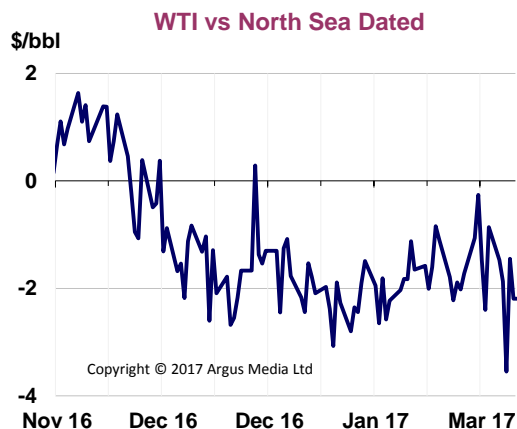
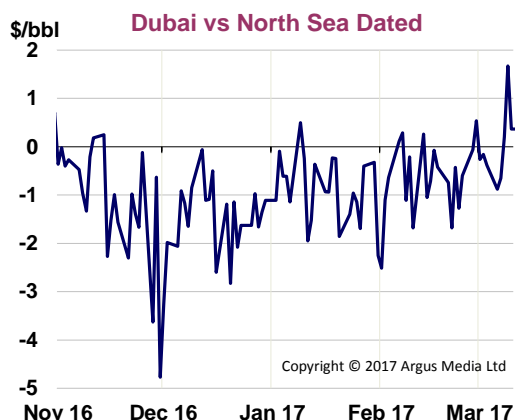
	Dec	Jan	Feb	Feb-Jan Avg Chg	%	Week Commencing:				
						06 Feb	13 Feb	20 Feb	27 Feb	06 Mar
<b>Crudes</b>										
North Sea Dated	53.57	54.58	55.06	0.48	0.9	54.57	54.62	55.60	54.78	52.98
Brent (Asia) Mth 1	54.42	55.31	55.92	0.61	1.1	55.47	55.70	56.31	55.83	54.37
WTI (Cushing) Mth 1	52.02	52.51	53.40	0.90	1.7	52.88	53.20	53.74	53.57	50.88
Urals (Mediterranean)	52.29	53.42	53.67	0.25	0.5	52.77	53.22	54.46	53.55	51.58
Dubai	52.08	53.68	54.41	0.73	1.4	54.05	54.23	54.65	54.71	53.13
Tapis (Dated)	54.72	55.42	56.00	0.58	1.0	55.47	55.54	56.60	55.78	53.98
<b>Differential to North Sea Dated</b>										
WTI (Cushing)	-1.55	-2.08	-1.66	0.42		-1.69	-1.42	-1.86	-1.21	-2.11
Urals (Mediterranean)	-1.28	-1.16	-1.39	-0.23		-1.80	-1.40	-1.14	-1.23	-1.40
Dubai	-1.48	-0.90	-0.65	0.25		-0.52	-0.40	-0.94	-0.06	0.14
Tapis (Dated)	1.15	0.84	0.94	0.10		0.90	0.92	1.00	1.00	1.00
<b>Prompt Month Differential</b>										
Forward Cash Brent Mth1-Mth2	-0.56	-0.39	-0.29	0.10		-0.35	-0.35	-0.10	-0.45	-0.31
Forward WTI Cushing Mth1-Mth2	-1.00	-0.77	-0.48	0.30		-0.55	-0.45	-0.35	-0.43	-0.53
Forward Dubai Mth1-Mth2	-0.19	0.02	-0.12	-0.14		-0.16	-0.13	-0.05	0.02	-0.07

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Global benchmark North Sea Dated rose \$0.48/bbl to \$55.06/bbl in February, little changed from the previous month. The price of Forties in late February fell to its lowest level against Brent in three months on plentiful supplies and upcoming refinery maintenance in Northwest Europe. North Sea flows to Asia hit a record high last January and remained incentivised through February thanks to continuing high crude prices in the Middle East and Asia.



West African crude prices benefitted from the same dynamics seen in December-January with continued strong demand from Asia linked to OPEC output cuts. Nigeria's Qua Iboe averaged \$55.90/bbl during the month, up \$0.93/bbl from January. Angola's Girassol gained \$0.81/bbl to \$55.21/bbl. Physical differentials were capped by refinery maintenance in Northwest Europe as well as the narrowing contango in Brent, which encouraged traders to offer barrels out of storage from South Africa. Some of the lighter grades such as Agbami and Akpo saw differentials fall to a one-year low due to strong competition from similar grades delivered into the Mediterranean.



Prices for Russian Urals for delivery in Northwest Europe rose by \$0.29/bbl in February to \$52.94/bbl, but fell relative to North Sea Dated on plentiful supplies, despite output cuts and lower margins for simple refineries. Fighting erupted near the Es Sider terminal in Libya, pushing up the price of alternative sweet grades such as Azeri Light, which showed some of the largest month-on-month gains globally in February. CPC differentials came under relative pressure during the month with growing supplies from the Kashagan field feeding into larger loading programmes.

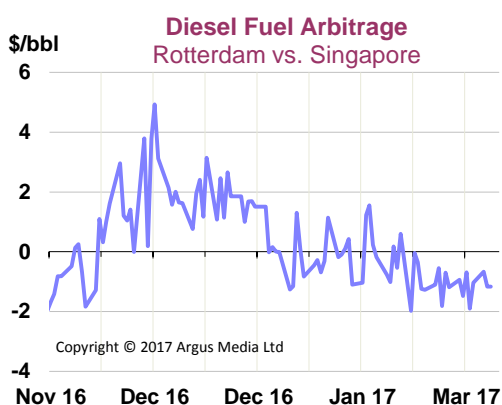
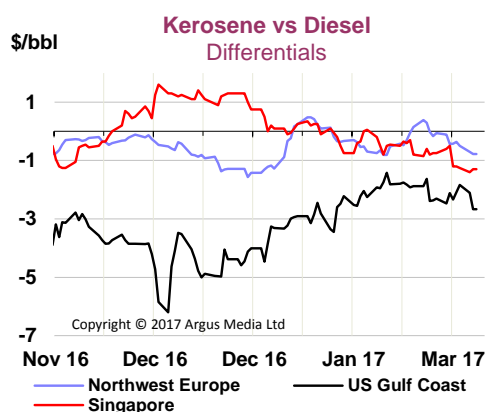
Dubai maintained the gains achieved against rival benchmarks over the last few months as OPEC output curbs cut into the supply of sour crudes. It rose \$0.73/bbl on the month to \$54.41/bbl. Dubai Month 1-Month 2 swaps were in a slim contango during most of February, after trading in backwardation through parts of January, but longer dated spreads rose, indicating expectations of tighter supplies ahead.

## Spot product prices

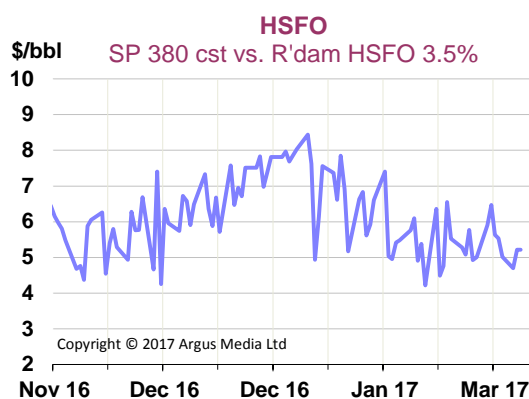
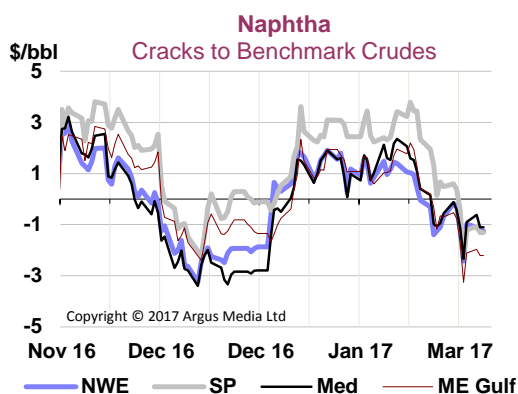
Global spot product prices benefitted from stronger support than crude oil in February, with gains seen in middle distillates and gasoline. However, fuel oil fell after several months of high prices, due to lower demand and steady inflows into Asia. Naphtha continued to be in high demand in Asia, but milder weather in the northern hemisphere and falling LPG prices at the start of March threatened this position.

Gasoline was one of the strongest performers across the barrel in Europe in February. It was buoyed by steady import demand from West Africa and the Middle East, and the impending switch to the more expensive summer specification, despite tight arbitrage economics to the US. FOB Rotterdam premium unleaded gasoline barge prices averaged \$66.04/bbl, up \$1.84/bbl from January, and the premium to North Sea Dated rose \$1.36/bbl to \$10.98/bbl. By contrast, US gasoline prices came under pressure with rising stocks and slow demand, reducing the need for imports. US Gulf unleaded gasoline pipeline prices were \$65.04/bbl in February, down \$1.48/bbl on the month, and the premium to WTI crude narrowed. In February, a cargo of US gasoline was even exported from the US East Coast – traditionally the largest importing region in the US – to West Africa. US gasoline was also seen headed from the Gulf Coast to the Caribbean, Mexico and Asia. In Asia, prices were boosted by a refinery outage in the Middle East, but

plentiful supplies of MTBE reduced the cost of blending and put pressure on the spread between high and low-octane gasolines. By early March, US demand for gasoline imports looked set to increase with rising consumption, the switch to summer grades and falling refinery output.



Middle distillate prices rose in February thanks to strong demand in Europe and Asia, even if high sulphur gasoil grades increased more than ultra-low sulphur diesel and jet fuel. By early March, prices rose on the expectation of lower refinery output and maintenance outages. Singaporean 500 ppm gasoil cargo prices averaged \$66.76/bbl, up \$1.60/bbl on the month and up \$0.88/bbl relative to Dubai crude. The spread between high and low sulphur gasoil grades narrowed. The Asian regrade – the spread between jet and gasoil – turned in favour of gasoil in early February as demand for kerosene heating fell with milder temperatures in North Asia. Europe remained well supplied with Russian, Middle East and US diesel, forcing Indian suppliers to look to Singapore to place their cargoes. Rotterdam diesel barge prices rose \$1.08/bbl to \$66.13/bbl in February, and jet was up \$1.04/bbl to \$65.80/bbl. Rhine water levels increased in early March, enabling suppliers to load full barges and helping Amsterdam-Rotterdam-Antwerp stocks draw.



Naphtha prices remained supported through February as a seasonal pickup in demand for heating boosted LPG premiums and made it uneconomic for petrochemical crackers. FOB Rotterdam naphtha barges averaged \$55.44/bbl, down \$0.24/bbl from January, while FOB Singapore cargo prices were at \$56.58/bbl, up \$0.87/bbl. European naphtha prices fell against North Sea Dated crude, whereas Asian prices rose against Dubai, highlighting strong demand for imports. The arbitrage from Europe to Asia was open from late January onwards to late February and a total of 11.7-12.6 mb was estimated to have left Europe for Asia in March, more than in recent months. By early March, however, naphtha's premium to crude fell quickly as traders reacted to falling LPG prices, milder weather in the northern hemisphere and a slew of Indian exports before the end of the country's financial year. The East-West spread between Asia and Europe narrowed to a two-month low in early March, making the arbitrage largely uneconomic for deliveries in April-May.

Benchmark Singaporean high sulphur fuel oil prices fell relative to crude oil in February after a strong start to the year. They averaged \$49.87/bbl, down \$1.42/bbl from January, while the discount to Dubai widened by \$2.14/bbl. Steady arbitrage supplies into East Asia, pegged by analysts at 49-50 mb for February, capped physical prices. There was ongoing speculation through February about trading activity for March due to a surge in open interest in the Singapore 380 cst swap contract. Although trading activity rose in March, prices failed to rally and early in the month swaps had fallen into a contango. Singapore residual fuel oil inventories stood at 26 mb by end-February, their highest level since July, due to a surge in imports. European fuel oil prices were little changed in February as poor demand and higher supply from the UAE following a refinery outage offset steady exports to Asia. By early March, Mediterranean high sulphur fuel oil prices had risen to a premium over Northwest Europe on relatively stronger bunker fuel demand in the region.

### Spot Product Prices

(monthly and weekly averages, \$/bbl)

	Dec	Jan	Feb	Feb-Jan Chg	%	Week Commencing:					Dec	Jan	Feb	Chg
						06 Feb	13 Feb	20 Feb	27 Feb	06 Mar				
<b>Rotterdam, Barges FOB</b>														
	<b>Differential to Dated Brent</b>													
Premium Unl 10 ppm	61.75	64.20	66.04	1.84	2.9	66.17	66.49	65.72	63.70	61.54	8.18	9.61	10.98	1.36
Naphtha	51.47	55.68	55.44	-0.24	-0.4	55.85	55.31	54.65	53.75	52.38	-2.10	1.10	0.38	-0.72
Jet/Kerosene	64.00	64.76	65.80	1.04	1.6	65.42	65.43	66.34	65.24	62.95	10.43	10.17	10.74	0.57
ULSD 10ppm	64.89	65.05	66.13	1.08	1.7	66.12	65.65	66.25	65.60	63.69	11.32	10.46	11.07	0.60
Gasoil 0.1%	63.51	63.94	65.20	1.26	2.0	65.03	64.79	65.45	64.52	62.44	9.94	9.36	10.14	0.78
LSFO 1%	48.29	50.55	48.97	-1.57	-3.1	49.39	48.71	48.34	48.24	46.83	-5.28	-4.03	-6.08	-2.05
HSFO 3.5%	43.58	44.35	44.45	0.10	0.2	44.04	44.64	44.74	44.64	42.73	-9.99	-10.24	-10.61	-0.37
<b>Mediterranean, FOB Cargoes</b>														
	<b>Differential to Urals</b>													
Premium Unl 10 ppm	63.63	65.85	67.37	1.53	2.3	67.66	68.04	66.76	64.57	61.73	11.34	12.42	13.70	1.28
Naphtha	49.70	54.21	54.46	0.26	0.5	54.72	54.56	53.78	52.56	51.13	-2.60	0.78	0.79	0.01
Jet Aviation fuel	62.61	63.81	65.12	1.31	2.0	64.63	64.83	65.79	64.45	62.24	10.32	10.39	11.45	1.06
ULSD 10ppm	64.11	65.37	66.59	1.22	1.9	66.59	66.25	66.68	65.70	63.52	11.82	11.94	12.92	0.97
Gasoil 0.1%	62.79	64.48	65.56	1.08	1.7	65.54	65.09	65.72	64.64	62.50	10.50	11.06	11.89	0.83
LSFO 1%	49.24	52.63	50.83	-1.80	-3.4	51.39	50.63	50.09	49.90	48.43	-3.05	-0.79	-2.84	-2.05
HSFO 3.5%	45.04	46.85	46.82	-0.03	-0.1	46.50	47.03	47.05	46.95	44.99	-7.25	-6.58	-6.85	-0.27
<b>US Gulf, FOB Pipeline</b>														
	<b>Differential to LLS</b>													
Super Unleaded	71.25	72.23	70.10	-2.13	-3.0	69.58	69.35	70.44	70.64	70.89	17.72	18.18	14.95	-3.22
Unleaded	65.66	66.52	65.04	-1.48	-2.2	64.81	63.90	65.55	64.41	63.01	12.14	12.46	9.89	-2.57
Jet/Kerosene	62.80	63.70	65.58	1.87	2.9	65.62	65.29	65.72	64.30	61.52	9.28	9.64	10.43	0.78
ULSD 10ppm	67.38	66.74	67.57	0.83	1.2	67.39	67.13	67.89	66.47	64.03	13.85	12.68	12.42	-0.26
Heating Oil	60.42	61.97	62.67	0.70	1.1	62.13	62.14	63.23	61.83	59.35	6.90	7.91	7.52	-0.39
No. 6 3%*	45.22	45.76	45.94	0.18	0.4	45.69	45.98	45.78	46.43	43.82	-8.30	-8.30	-9.21	-0.91
<b>Singapore, FOB Cargoes</b>														
	<b>Differential to Dubai</b>													
Premium Unleaded	66.68	69.47	69.90	0.42	0.6	70.62	70.68	68.48	66.61	65.64	14.59	15.79	15.49	-0.30
Naphtha	51.51	55.71	56.58	0.87	1.6	56.76	57.48	55.57	54.12	52.00	-0.58	2.03	2.17	0.15
Jet/Kerosene	64.10	65.17	66.26	1.09	1.7	65.94	66.16	66.57	65.86	63.88	12.02	11.49	11.85	0.37
Gasoil 0.05%	62.91	65.15	66.76	1.60	2.5	66.43	66.63	67.32	66.81	65.15	10.83	11.47	12.35	0.88
LSWR Cracked	59.15	58.46	53.14	-5.32	-9.1	52.96	52.43	52.24	52.81	51.32	7.07	4.78	-1.27	-6.05
HSFO 180 CST	51.44	52.01	50.82	-1.20	-2.3	50.44	51.18	50.85	50.90	49.34	-0.64	-1.67	-3.59	-1.92
HSFO 380 CST 4%	50.27	51.28	49.87	-1.42	-2.8	49.32	50.17	49.95	50.35	48.45	-1.81	-2.40	-4.54	-2.14

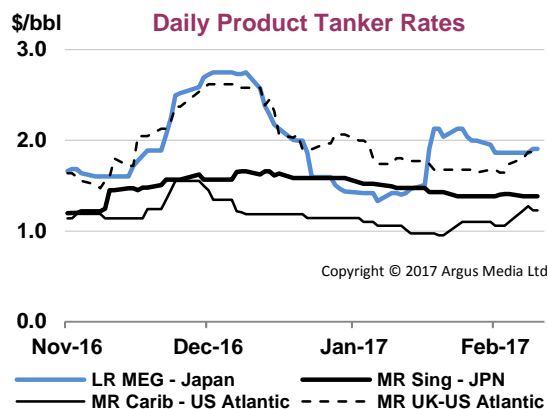
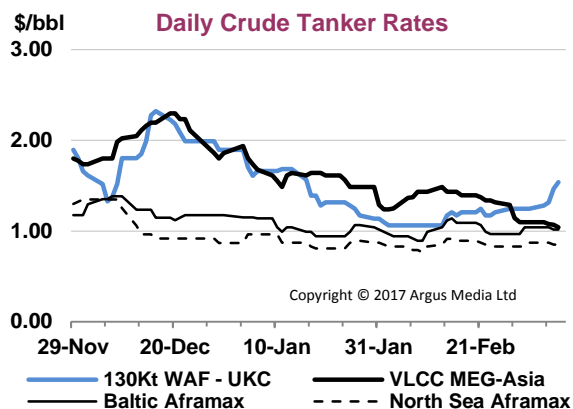
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\* Waterborne

## Freight

Freight rates for **Very Large Crude Carriers (VLCCs)** fell slightly in February as new vessels added to the ample supply, and loadings from OPEC countries were reduced. The rate on the Middle East Gulf (MEG) to Asia route was \$1.36/bbl on average, down from \$1.60/bbl in January, and it tumbled to as low as \$1.04/bbl in early March.

**Suezmaxes** on the West Africa to Northwest Europe route fell to a four-month low in February due to continuing low production from Nigeria. Also, the narrow Brent-Dubai spread meant Asian refiners sought to buy larger cargoes on board VLCCs. Suezmaxes were chartered for \$1.14/bbl on average, down from \$1.47/bbl in January. By March 9, however, Suezmax rates had recovered to \$1.54/bbl with increased activity. For smaller **Aframax** ships, rates were stable in February.



Clean product rates **West of Suez** also fell in February. Freight on the benchmark UK Continent-US Atlantic Coast route averaged \$1.73/bbl in February, down from \$2.20/bbl in January, with few opportunities to send gasoline from Europe to the US due to bulging stocks and low seasonal demand. An increase in voyages from the Baltic Sea to Northwest Europe, and strong demand for imports in West Africa, helped keep a floor under prices.

**East of Suez**, the benchmark LR MEG-Japan rate fell to \$1.76/bbl in February, from \$2.05/bbl in January, with a refinery outage in the Middle East and lack of demand for cargoes keeping prices suppressed. Rates recovered in the second half of the month with higher demand for naphtha cargoes in Asia.

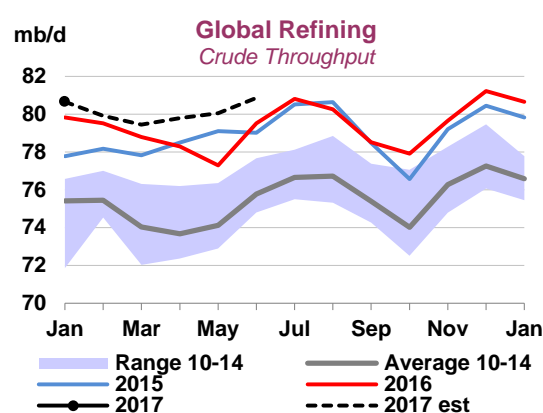
# REFINING

## Summary

- **Global refinery crude throughput rose 860 kb/d year-on-year (y-o-y) in 4Q16 to 79.5 mb/d**, only 280 kb/d lower than in 3Q16. Following gains of 1.6 mb/d in 2015, runs increased 440 kb/d last year. This is well below the observed demand growth in 2016 of 1.6 mb/d.
- **Our forecast for 1Q17 runs is at 79.9 mb/d, reflecting a more modest annual growth of 630 kb/d as 1Q16 throughput was at relatively high levels.** Throughput gains 410 kb/d from 4Q16.
- **Our forecast for 2Q17 implies massive annual growth of 1.9 mb/d** with runs reaching 80.1 mb/d, the highest on record, as implied product stocks drawdowns support higher throughput.

## Global refinery overview

The latest data for 4Q16 refinery throughput points to strong activity after two quarters of no annual growth. Estimated at almost 0.9 mb/d, the increase is still well below the 1.5 mb/d seen in 1Q16. The throughput gain is dwarfed by the 2.2 mb/d increase in product demand. Some 0.6 mb/d of demand growth came from LPG (which is supplied mostly from non-refinery sources), supported by ongoing strength in India and heating demand in the US, where propane is the main product used for this purpose. The low throughput set against the robust demand growth supports the data set out in our stocks section showing that product inventories, particularly in the OECD, drew in 4Q16.



Our forecast for 1Q17 runs is for a slightly more modest 0.6 mb/d year-on-year (y-o-y) gain from 1Q16's somewhat elevated levels. By contrast, the base effect for 2Q17 exaggerates the y-o-y change as runs are forecast to surge by 1.9 mb/d. This includes a rebound effect from particularly low levels in 2Q16 when throughput sank 0.5 mb/d below year-earlier.

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

(million barrels per day)

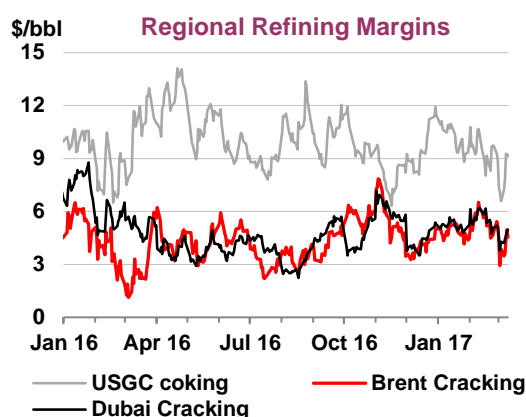
	Dec 16	4Q2016	2016	Jan 17	Feb 17	Mar 17	1Q2017	Apr 17	May 17	Jun 17	2Q2017
Americas	19.1	18.6	18.9	19.0	18.3	18.6	18.7	19.0	19.1	19.5	19.2
Europe	12.5	12.3	11.9	12.4	11.8	11.7	12.0	11.6	11.7	11.8	11.7
Asia Oceania	7.4	6.9	6.9	7.4	7.3	7.1	7.3	6.9	6.9	6.8	6.8
<b>Total OECD</b>	<b>38.9</b>	<b>37.8</b>	<b>37.7</b>	<b>38.8</b>	<b>37.4</b>	<b>37.5</b>	<b>37.9</b>	<b>37.5</b>	<b>37.7</b>	<b>38.0</b>	<b>37.7</b>
FSU	7.2	7.0	6.8	6.9	7.0	6.8	6.9	6.7	6.7	6.9	6.8
Non-OECD Europe	0.6	0.6	0.5	0.5	0.5	0.4	0.5	0.5	0.6	0.6	0.6
China	11.3	11.2	10.8	11.2	11.3	11.1	11.2	11.1	11.0	11.2	11.1
Other Asia	10.7	10.5	10.4	10.6	10.5	10.3	10.5	10.5	10.6	10.6	10.6
Latin America	3.9	4.0	4.2	4.2	4.2	4.3	4.2	4.3	4.3	4.3	4.3
Middle East	6.3	6.5	6.7	6.4	6.8	6.8	6.6	6.9	6.9	7.0	6.9
Africa	2.2	2.1	2.1	2.0	2.2	2.1	2.1	2.1	2.1	2.1	2.1
<b>Total Non-OECD</b>	<b>42.2</b>	<b>41.7</b>	<b>41.5</b>	<b>41.8</b>	<b>42.5</b>	<b>41.8</b>	<b>42.0</b>	<b>42.2</b>	<b>42.3</b>	<b>42.7</b>	<b>42.4</b>
<b>Total</b>	<b>81.1</b>	<b>79.5</b>	<b>79.2</b>	<b>80.6</b>	<b>79.8</b>	<b>79.3</b>	<b>79.9</b>	<b>79.7</b>	<b>80.0</b>	<b>80.8</b>	<b>80.1</b>
<b>Year-on-year change</b>	<b>0.8</b>	<b>0.9</b>	<b>0.4</b>	<b>0.8</b>	<b>0.4</b>	<b>0.6</b>	<b>0.6</b>	<b>1.5</b>	<b>2.8</b>	<b>1.3</b>	<b>1.9</b>

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

## Margins

Middle distillates cracks supported margins in Europe and Singapore in February as stronger demand coincided with lower imports of winter specification diesel and kerosene. Middle East outages tightened product supply East of Suez. Gasoline cracks in Europe also performed better month-on-month with renewed flows to West Africa and into the Red Sea.

In contrast, US margins were weighed down by product oversupply. Despite a 700 kb/d m-o-m fall in US February throughput, product fundamentals remained weak as the refined product stocks draw was below the seasonal average, with end-February distillate and gasoline stocks at record seasonal highs.



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

	Monthly Average				Change	Average for week ending:					
	Nov 16	Dec 16	Jan 17	Feb 17	Feb 17-Jan 17	10 Feb	17 Feb	24 Feb	03 Mar	10 Mar	
<b>NW Europe</b>											
Brent (Cracking)	5.65	4.02	4.85	5.44	↑ 0.59	6.06	5.72	4.79	4.36	4.21	
Urals (Cracking)	7.01	5.44	5.69	6.46	↑ 0.77	6.95	6.67	6.17	5.70	5.41	
Brent (Hydroskimming)	2.27	0.82	1.66	1.56	↓ -0.10	2.26	1.74	0.78	0.76	0.74	
Urals (Hydroskimming)	2.61	1.02	0.97	1.41	↑ 0.44	1.77	1.65	1.24	1.15	0.87	
<b>Mediterranean</b>											
Es Sider (Cracking)	7.80	6.36	6.98	7.68	↑ 0.69	8.30	8.12	6.96	6.54	6.20	
Urals (Cracking)	7.39	5.71	6.20	6.90	↑ 0.70	7.75	7.30	6.13	5.94	5.81	
Es Sider (Hydroskimming)	4.60	3.38	4.37	4.44	↑ 0.08	5.20	4.87	3.56	3.39	3.21	
Urals (Hydroskimming)	2.83	1.10	1.67	2.07	↑ 0.41	2.85	2.57	1.36	1.47	1.40	
<b>US Gulf Coast</b>											
50/50 HLS/LLS (Cracking)	5.83	7.73	8.47	7.57	↓ -0.90	8.04	7.03	7.49	6.26	6.83	
Mars (Cracking)	4.51	5.91	6.28	4.96	↓ -1.32	5.50	4.43	4.71	3.81	4.32	
ASCI (Cracking)	4.37	5.74	5.92	4.52	↓ -1.41	5.02	4.04	4.29	3.48	4.04	
50/50 HLS/LLS (Coking)	7.35	9.34	9.94	8.92	↓ -1.02	9.40	8.29	8.84	7.67	8.37	
50/50 Maya/Mars (Coking)	8.09	9.56	10.13	9.51	↓ -0.62	10.05	8.91	9.36	7.85	8.54	
ASCI (Coking)	8.84	10.31	10.36	9.02	↓ -1.34	9.59	8.37	8.87	7.44	8.23	
<b>US Midcon</b>											
WTI (Cracking)	6.26	8.22	8.20	6.89	↓ -1.31	6.26	7.76	6.73	8.21	10.22	
30/70 WCS/Bakken (Cracking)	7.78	8.76	8.16	7.43	↓ -0.73	7.09	8.43	6.89	8.68	10.66	
Bakken (Cracking)	8.20	8.99	8.84	8.14	↓ -0.71	7.64	9.20	7.61	9.40	11.54	
WTI (Coking)	7.69	9.75	9.57	8.10	↓ -1.47	7.35	9.00	7.96	9.74	12.00	
30/70 WCS/Bakken (Coking)	10.09	11.10	10.43	9.63	↓ -0.80	9.05	10.73	9.28	11.08	13.44	
Bakken (Coking)	8.75	9.57	9.34	8.54	↓ -0.80	7.97	9.63	8.03	9.97	12.26	
<b>Singapore</b>											
Dubai (Hydroskimming)	2.35	0.84	1.37	1.05	↓ -0.32	1.16	1.35	0.74	0.53	0.48	
Tapis (Hydroskimming)	5.30	3.96	4.45	3.75	↓ -0.70	4.25	4.13	2.86	3.07	3.30	
Dubai (Hydrocracking)	6.08	4.28	5.17	5.59	↑ 0.42	5.91	5.85	5.17	4.57	4.63	
Tapis (Hydrocracking)	6.96	5.09	6.29	7.03	↑ 0.75	7.64	7.62	6.24	6.07	6.31	

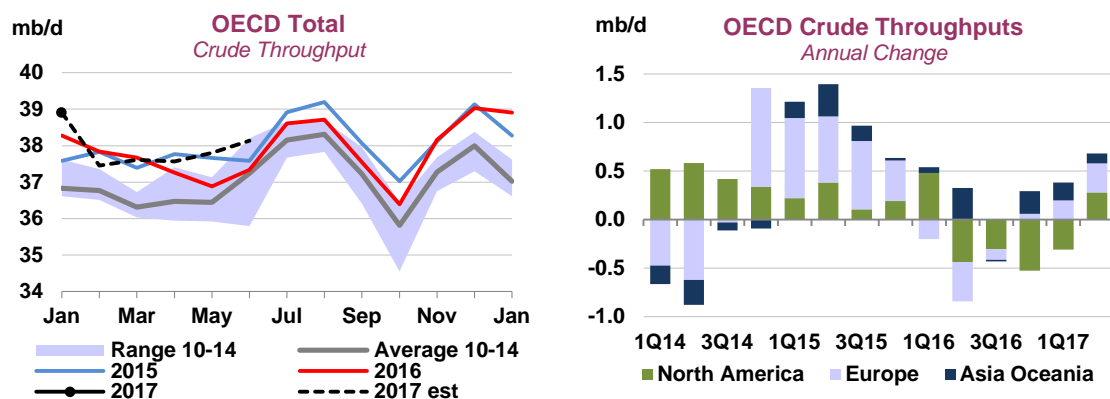
<sup>1</sup> Global Indicator Refining Margins are calculated for various complexity configurations, each optimised for processing the specific crude(s) in a specific refining centre. Margins include energy cost, but exclude other variable costs, depreciation and amortisation. Consequently, reported 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)

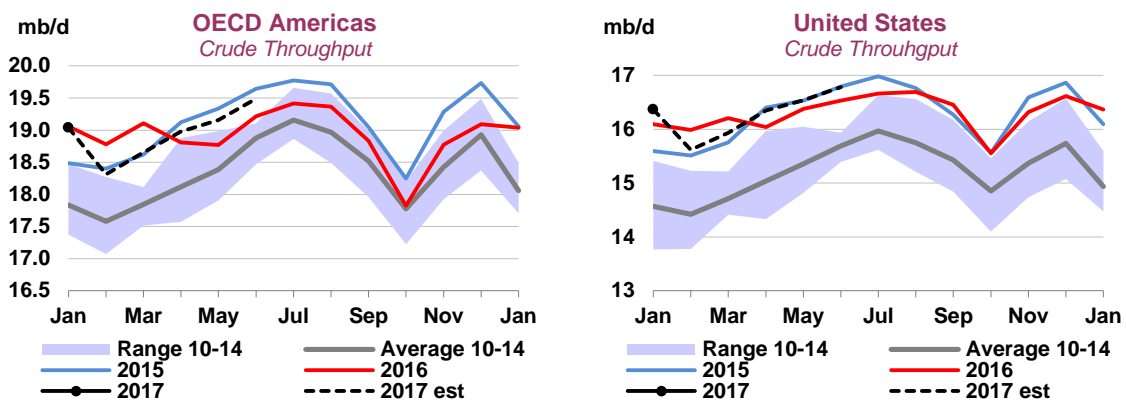


## OECD refinery throughput

December throughput for OECD countries was finalised with only a small downward revision for the US (110 kb/d), and an upward revision for Japan (190 kb/d). In 4Q16, runs were down y-o-y for the third consecutive quarter. January preliminary data came out stronger, especially for Europe, supporting a higher forecast for 1Q17. In the musical chairs of Atlantic Basin refining now it is the turn for European refiners to enjoy consistently strong activity while their US and other North American counterparts are operating at lower utilisation rates than the year before. Problems in the Mexican downstream continue, coupled with maintenance outages in the US.

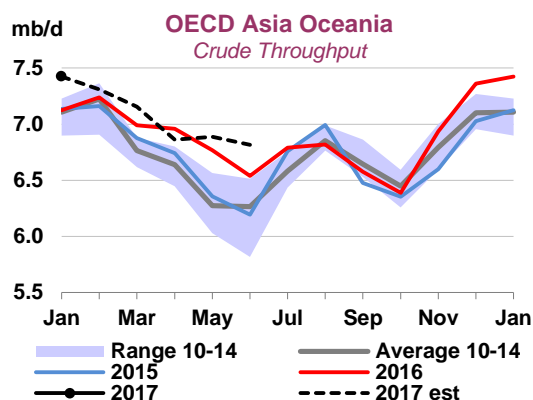
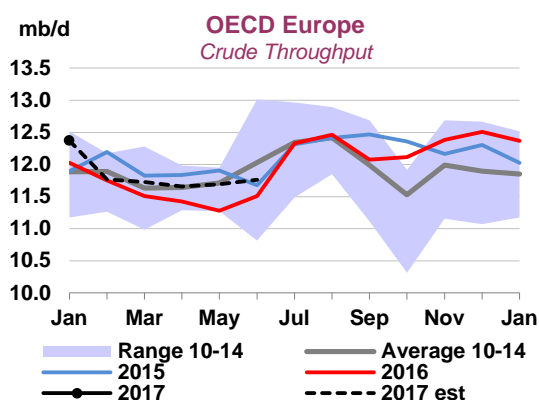


January throughput in the OECD Americas was flat y-o-y, but weekly data for the US and Canada implies a 470 kb/d y-o-y decrease in February. In 1Q17, throughput is forecast to be 310 kb/d lower y-o-y, rebounding in 2Q17 to 19.2 mb/d. Mexican refining had its worst result in decades in 4Q16, with utilisation rates at just 47%. Throughput levels are expected to improve by the end of 2Q17, but they will still be below 1 mb/d, or under 65% of capacity.



European refiners took up the baton from their North American counterparts in keeping Atlantic Basin product markets supplied, especially in the light of ongoing underperformance in Latin America and a significant maintenance programme in the Middle East. As opposed to the first three quarters of the year, 4Q16 registered y-o-y growth of 60 kb/d. Preliminary January data are 340 kb/d higher y-o-y. This supported a 360 kb/d upward revision to the 1Q17 forecast.

In OECD Asia Oceania, 4Q16 was finalised at a strong 230 kb/d y-o-y growth. The forecast for 1Q17 is revised up by 150 kb/d to 7.3 mb/d, the highest quarterly average in the last nine years. The first quarter is traditionally the annual peak of refining activity in this region, due to winter peak demand for heating fuel. South Korea, which has single-handedly driven the recent gains in OECD Asia Oceania, is forecast to see the first ever quarter of refinery throughput averaging above 3 mb/d.



### Refinery Crude Throughput and Utilisation in OECD Countries

(million barrels per day)

	Aug 16	Sep 16	Oct 16	Nov 16	Dec 16	Jan 17	Change from Dec 16	Jan 16	Utilisation rate <sup>1</sup> Jan 17	Jan 16
US <sup>2</sup>	16.59	16.36	15.45	16.22	16.51	16.27	-0.25	0.27	0.88	0.88
Canada	1.75	1.54	1.39	1.62	1.61	1.70	0.09	-0.06	0.86	0.89
Chile	0.17	0.18	0.17	0.16	0.19	0.20	0.01	0.02	0.87	0.79
Mexico	0.85	0.75	0.80	0.77	0.77	0.86	0.09	-0.25	0.52	0.68
<b>OECD Americas<sup>3</sup></b>	<b>19.36</b>	<b>18.83</b>	<b>17.81</b>	<b>18.77</b>	<b>19.08</b>	<b>19.03</b>	<b>-0.05</b>	<b>-0.02</b>	<b>0.85</b>	<b>0.86</b>
France	1.22	1.20	1.23	1.32	1.22	1.13	-0.09	-0.03	0.91	0.83
Germany	2.00	1.99	1.95	1.94	1.98	1.93	-0.05	0.01	0.95	0.95
Italy	1.41	1.39	1.23	1.38	1.40	1.40	0.00	0.10	0.80	0.74
Netherlands	1.10	1.13	1.10	1.16	1.11	1.12	0.02	0.01	0.87	0.86
Spain	1.33	1.31	1.42	1.42	1.39	1.29	-0.10	0.07	0.85	0.81
United Kingdom	1.12	1.13	1.11	1.14	1.15	1.09	-0.05	-0.05	0.86	0.83
Other OECD Europe	4.28	3.92	4.06	4.02	4.25	4.40	0.15	0.23	0.91	0.86
<b>OECD Europe</b>	<b>12.45</b>	<b>12.06</b>	<b>12.10</b>	<b>12.37</b>	<b>12.50</b>	<b>12.36</b>	<b>-0.14</b>	<b>0.34</b>	<b>0.89</b>	<b>0.85</b>
Japan	3.22	3.00	2.77	3.18	3.46	3.45	-0.01	0.08	1.00	0.91
South Korea	2.89	2.83	2.87	2.99	3.10	3.19	0.09	0.22	0.93	0.90
Other Asia Oceania	0.70	0.74	0.74	0.76	0.79	0.77	-0.02	0.00	0.78	0.78
<b>OECD Asia Oceania</b>	<b>6.81</b>	<b>6.57</b>	<b>6.38</b>	<b>6.93</b>	<b>7.35</b>	<b>7.42</b>	<b>0.06</b>	<b>0.30</b>	<b>0.94</b>	<b>0.89</b>
<b>OECD Total</b>	<b>38.62</b>	<b>37.45</b>	<b>36.30</b>	<b>38.06</b>	<b>38.93</b>	<b>38.80</b>	<b>-0.13</b>	<b>0.63</b>	<b>0.88</b>	<b>0.86</b>

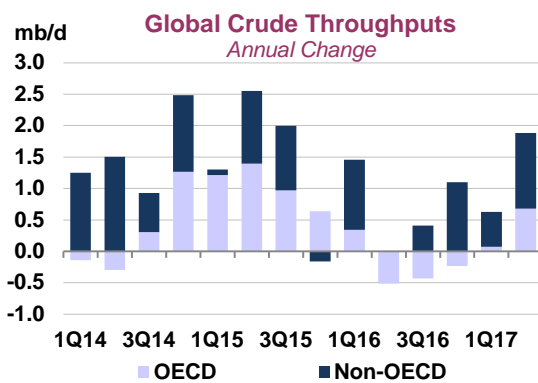
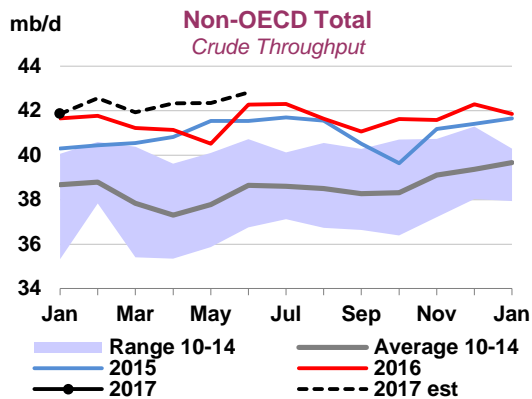
<sup>1</sup> Expressed as a percentage, based on crude throughput and current operable refining capacity

<sup>2</sup> US50

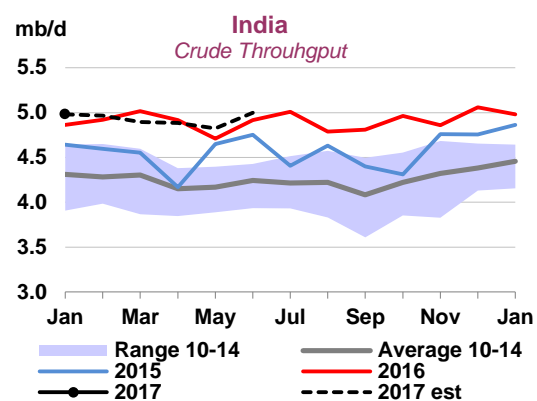
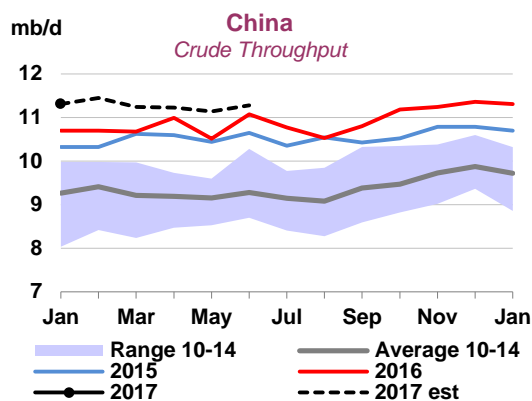
<sup>3</sup> OECD Americas includes Chile and OECD Asia Oceania includes Israel. OECD Europe includes Slovenia and Estonia, though neither country has a refinery

## Non-OECD refinery throughput

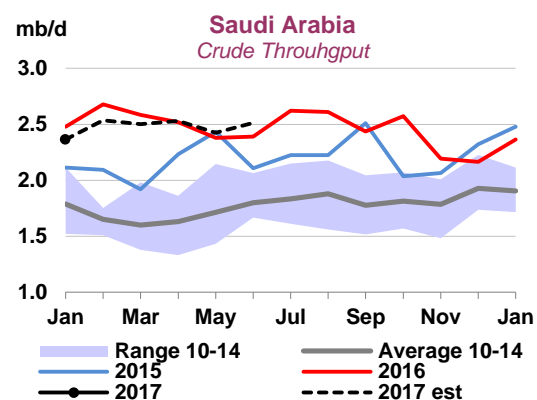
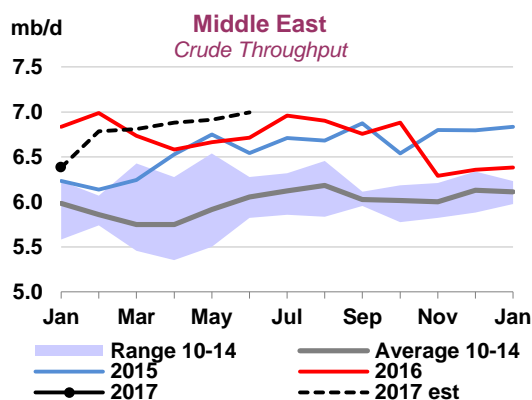
Non-OECD accounted for all of 2016's global throughput gains, more than offsetting the declines in OECD countries, but the growth rate of 650 kb/d was subdued as it was in 2015 (530 kb/d), compared to an average 1 mb/d growth of the previous five years. All incremental throughput came from East of Suez refining centres as Latin America, FSU and Africa went into a second consecutive year of annual declines. The latter regions combined lost about 480 kb/d throughput y-o-y, while Asia and the Middle East combined added 1.1 mb/d. This essentially came from three countries as China and India added 350 kb/d each, and Saudi Arabia slightly less at 280 kb/d. Venezuela and Brazil led the throughput declines at 190 kb/d and 120 kb/d respectively, while, interestingly, Middle East refiners, with the exception of Saudi Arabia and the UAE, were either flat or down y-o-y.



In 4Q16, the annual change in non-OECD throughput accelerated to almost 1.1 mb/d, with China accounting for roughly half of the increase, up 0.56 mb/d y-o-y. With January-february throughput already finalised, Chinese growth is forecast to stay strong in 1Q17, up 0.64 mb/d y-o-y, moderating somewhat to 0.36 mb/d in 2Q17, supported by new capacity coming online. India, after closely following China in 2016, will see growth all but disappear in 1Q17, and then recover by a very small 60 kb/d in 2Q17, due to lack of new capacity.



Large maintenance programmes in the Middle East, particularly in Saudi Arabia, resulted in the first y-o-y throughput decline since 1Q15 of about 200 kb/d. In 4Q16, throughput in the Middle East was down 360 kb/d from 6.86 mb/d in 3Q16, with only a marginal recovery expected in 1Q17, when runs are forecast to reach 6.65 mb/d, before ramping up to 6.9 mb/d in 2Q17.



Overall, 1Q17 total non-OECD throughput is forecast to increase by a modest 560 kb/d y-o-y, rebounding to 1.2 mb/d in 2Q17, reaching a record quarterly average of 42.4 mb/d.

**Table 1**  
**WORLD OIL SUPPLY AND DEMAND**

(million barrels per day)

	2013	2014	1Q15	2Q15	3Q15	4Q15	2015	1Q16	2Q16	3Q16	4Q16	2016	1Q17	2Q17	3Q17	4Q17	2017
<b>OECD DEMAND</b>																	
Americas	24.2	24.2	24.5	24.4	25.0	24.5	24.6	24.5	24.4	25.0	24.8	24.7	24.4	24.5	25.0	24.8	24.7
Europe	13.6	13.5	13.5	13.6	14.2	13.7	13.7	13.6	13.9	14.4	14.2	14.1	13.8	14.1	14.4	14.0	14.1
Asia Oceania	8.3	8.1	8.7	7.6	7.7	8.2	8.0	8.5	7.6	7.8	8.3	8.1	8.5	7.6	7.7	8.2	8.0
Total OECD	46.1	45.8	46.6	45.6	46.9	46.5	46.4	46.7	46.0	47.2	47.3	46.8	46.7	46.2	47.1	47.1	46.8
<b>NON-OECD DEMAND</b>																	
FSU	4.5	4.7	4.4	4.6	4.8	4.7	4.6	4.7	4.6	4.9	5.0	4.8	4.8	4.8	5.1	5.1	4.9
Europe	0.7	0.6	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
China	10.4	10.8	11.3	11.6	11.6	11.7	11.5	11.7	12.1	11.7	12.0	11.9	12.0	12.2	12.2	12.5	12.2
Other Asia	11.7	12.0	12.3	12.6	12.3	12.8	12.5	13.1	13.1	12.8	13.5	13.1	13.5	13.7	13.5	14.1	13.7
Americas	6.6	6.8	6.6	6.8	6.9	6.8	6.8	6.5	6.7	6.8	6.7	6.6	6.5	6.6	6.8	6.8	6.7
Middle East	8.0	8.4	7.9	8.6	8.9	8.4	8.4	8.0	8.5	8.9	8.4	8.5	8.2	8.6	9.0	8.6	8.6
Africa	3.8	3.8	4.1	4.1	4.0	4.1	4.1	4.2	4.2	4.1	4.2	4.2	4.3	4.3	4.2	4.4	4.3
Total Non-OECD	45.6	47.2	47.2	48.9	49.1	49.2	48.6	48.8	49.9	49.9	50.6	49.8	50.0	51.1	51.5	52.2	51.2
<b>Total Demand<sup>1</sup></b>	<b>91.7</b>	<b>93.0</b>	<b>93.8</b>	<b>94.4</b>	<b>96.0</b>	<b>95.7</b>	<b>95.0</b>	<b>95.4</b>	<b>95.9</b>	<b>97.1</b>	<b>97.9</b>	<b>96.6</b>	<b>96.7</b>	<b>97.3</b>	<b>98.6</b>	<b>99.2</b>	<b>98.0</b>
<b>OECD SUPPLY</b>																	
Americas <sup>4</sup>	17.2	19.1	20.1	19.7	20.1	20.1	20.0	19.9	19.0	19.3	19.6	19.5	19.6	19.6	19.9	20.0	19.8
Europe	3.3	3.3	3.4	3.5	3.4	3.6	3.5	3.6	3.4	3.3	3.6	3.5	3.6	3.5	3.3	3.5	3.5
Asia Oceania	0.5	0.5	0.4	0.4	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Total OECD	21.0	22.9	23.9	23.6	24.0	24.2	23.9	24.0	22.8	23.1	23.7	23.4	23.6	23.5	23.6	24.0	23.7
<b>NON-OECD SUPPLY</b>																	
FSU	13.8	13.9	14.1	14.0	13.9	14.1	14.0	14.3	14.0	14.0	14.5	14.2	14.4	14.3	14.3	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	4.2	4.3	4.4	4.3	4.3	4.3	4.2	4.1	3.9	3.9	4.0	3.9	3.9	3.8	3.8	3.8
Other Asia <sup>2</sup>	3.5	3.5	3.6	3.6	3.5	3.6	3.6	3.6	3.6	3.5	3.6	3.6	3.5	3.5	3.5	3.5	3.5
Americas <sup>2,4</sup>	4.2	4.4	4.6	4.6	4.6	4.6	4.6	4.4	4.4	4.6	4.6	4.5	4.6	4.6	4.7	4.7	4.7
Middle East	1.4	1.3	1.3	1.3	1.2	1.2	1.3	1.3	1.3	1.3	1.3	1.3	1.2	1.2	1.2	1.2	1.2
Africa <sup>2</sup>	2.0	2.1	2.1	2.1	2.1	2.0	2.1	2.0	1.9	1.9	2.0	1.9	1.9	1.9	1.9	1.9	1.9
Total Non-OECD	29.3	29.6	30.2	30.0	29.8	30.0	30.0	29.8	29.4	29.4	30.0	29.6	29.8	29.5	29.6	29.7	29.6
Processing gains <sup>3</sup>	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
Global Biofuels	2.1	2.2	1.8	2.4	2.6	2.4	2.3	1.9	2.5	2.7	2.3	2.4	2.0	2.5	2.8	2.5	2.4
Total Non-OPEC Supply	54.5	57.0	58.1	58.2	58.6	58.8	58.5	58.0	57.0	57.4	58.3	57.7	57.7	57.8	58.3	58.4	58.1
<b>OPEC</b>																	
Crude	30.6	30.5	30.8	31.8	32.1	32.0	31.7	32.1	32.4	32.8	33.2	32.6					
NGLs	6.1	6.3	6.4	6.5	6.5	6.6	6.5	6.5	6.7	6.8	6.8	6.7	6.7	6.8	6.9	6.9	6.8
Total OPEC	36.7	36.8	37.1	38.2	38.6	38.6	38.1	38.7	39.0	39.5	40.0	39.3					
<b>Total Supply<sup>4</sup></b>	<b>91.2</b>	<b>93.7</b>	<b>95.3</b>	<b>96.4</b>	<b>97.2</b>	<b>97.4</b>	<b>96.6</b>	<b>96.7</b>	<b>96.0</b>	<b>97.0</b>	<b>98.3</b>	<b>97.0</b>					
<b>STOCK CHANGES AND MISCELLANEOUS</b>																	
<b>Reported OECD</b>																	
Industry	-0.2	0.4	0.9	1.0	0.8	0.3	0.8	0.3	0.4	0.1	-0.8	0.0					
Government	0.0	0.0	0.0	0.0	-0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.0					
Total	-0.2	0.4	0.9	1.0	0.8	0.4	0.8	0.4	0.4	0.1	-0.8	0.0					
Floating storage/Oil in transit	0.1	0.0	0.4	0.4	-0.2	0.5	0.3	0.2	0.3	-0.2	0.2	0.1					
Miscellaneous to balance <sup>5</sup>	-0.5	0.4	0.1	0.6	0.6	0.8	0.5	0.6	-0.7	-0.1	1.0	0.2					
<b>Total Stock Ch. &amp; Misc</b>	<b>-0.5</b>	<b>0.7</b>	<b>1.4</b>	<b>2.0</b>	<b>1.3</b>	<b>1.7</b>	<b>1.6</b>	<b>1.2</b>	<b>0.1</b>	<b>-0.1</b>	<b>0.4</b>	<b>0.4</b>					
<b>Memo items:</b>																	
Call on OPEC crude + Stock ch. <sup>6</sup>	31.1	29.7	29.3	29.8	30.8	30.3	30.0	30.9	32.3	32.9	32.9	32.3	32.3	32.7	33.4	33.9	33.1

<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 and Gabon 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)

	2013	2014	1Q15	2Q15	3Q15	4Q15	2015	1Q16	2Q16	3Q16	4Q16	2016	1Q17	2Q17	3Q17	4Q17	2017
<b>OECD DEMAND</b>																	
Americas	-	-	-	-	-	-	-	-	-	-	0.2	0.1	-0.1	-	0.1	0.2	-
Europe	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.1	-
Asia Oceania	-	-	-	-	-	-	-	-	-	-	-	-	-0.1	-0.1	-	-	-0.1
Total OECD	-	-	-	-	-	-	-	-	-	-	0.3	0.1	-0.2	-0.1	-	0.2	-
<b>NON-OECD DEMAND</b>																	
FSU	-	-	-	-	-	-	-	-	-	-	-	-	0.1	-	-	-	-
Europe	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
China	-	-	-	-	-	-	-	-	-	-	-0.1	-	-	-	-	-	-
Other Asia	-	-	-	-	-	-	-	-	-	-	-	-	-0.1	-	0.1	0.1	-
Americas	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Middle East	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Africa	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Non-OECD	-	-	-	-	-	-	-	-	-	-	-0.1	-	-0.1	-	-	0.1	-
<b>Total Demand</b>	-	-	-	-	-	-	-	-	-	-	<b>0.2</b>	-	<b>-0.3</b>	<b>-0.1</b>	<b>0.1</b>	<b>0.3</b>	-
<b>OECD SUPPLY</b>																	
Americas	-	-	-	-	-	-	-	-	-	-	-	-	0.1	0.1	-	-	-
Europe	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Asia Oceania	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total OECD	-	-	-	-	-	-	-	-	-	-	-	-	-	0.1	-	-	-
<b>NON-OECD SUPPLY</b>																	
FSU	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Europe	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
China	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Asia	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Americas	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Middle East	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Africa	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-0.1	-0.1	-
Total Non-OECD	-	-	-	-	-	-	-	-	-	-	-	-	0.1	-	-0.1	-0.1	-
Processing gains	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Global Biofuels	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Non-OPEC Supply	-	-	-	-	-	-	-	-	-	-	-	-	0.1	0.1	-	-0.1	-
<b>OPEC</b>																	
Crude	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NGLs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total OPEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total Supply</b>	-	-	-	-	-	-	-	-	-	-	<b>0.1</b>	-					
<b>STOCK CHANGES AND MISCELLANEOUS</b>																	
<b>REPORTED OECD</b>																	
Industry	-	-	-	-	-	-	-	-	-	-	-0.1	-					
Government	-	-	-	-	-	-	-	-	-	-	-	-					
Total	-	-	-	-	-	-	-	-	-	-	-0.1	-					
Floating storage/Oil in transit	-	-	-	-	-	-	-	-	-	-	-	-					
Miscellaneous to balance	-	-	-	-	-	-	-	-	-	-	-	-					
<b>Total Stock Ch. &amp; Misc</b>	-	-	-	-	-	-	-	-	-	-	<b>-0.1</b>	-					
<b>Memo items:</b>																	
Call on OPEC crude + Stock ch.	-	-	-	-	-	-	-	-	-	-	0.1	-	-0.5	-0.2	0.1	0.4	-

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

	2014	1Q15	2Q15	3Q15	4Q15	2015	1Q16	2Q16	3Q16	4Q16	2016	1Q17	2Q17	3Q17	4Q17	2017
<b>Demand (mb/d)</b>																
Americas	24.20	24.45	24.41	24.98	24.53	24.59	24.49	24.39	25.01	24.83	24.68	24.40	24.53	24.99	24.79	24.68
Europe	13.51	13.45	13.59	14.21	13.75	13.75	13.64	13.94	14.44	14.18	14.05	13.84	14.11	14.42	14.04	14.10
Asia Oceania	8.11	8.68	7.58	7.71	8.18	8.04	8.55	7.64	7.79	8.32	8.07	8.48	7.58	7.70	8.23	7.99
<b>Total OECD</b>	<b>45.82</b>	<b>46.59</b>	<b>45.57</b>	<b>46.90</b>	<b>46.45</b>	<b>46.38</b>	<b>46.68</b>	<b>45.98</b>	<b>47.24</b>	<b>47.32</b>	<b>46.81</b>	<b>46.72</b>	<b>46.22</b>	<b>47.11</b>	<b>47.06</b>	<b>46.78</b>
Asia	22.82	23.63	24.16	23.86	24.48	24.03	24.79	25.19	24.50	25.53	25.00	25.49	25.93	25.72	26.56	25.93
Middle East	8.37	7.88	8.57	8.88	8.40	8.43	8.01	8.54	8.87	8.42	8.46	8.25	8.64	8.97	8.60	8.62
Americas	6.83	6.62	6.77	6.86	6.80	6.76	6.47	6.66	6.79	6.66	6.64	6.46	6.64	6.79	6.79	6.67
FSU	4.67	4.36	4.63	4.80	4.74	4.63	4.65	4.60	4.94	5.01	4.80	4.77	4.81	5.06	5.12	4.94
Africa	3.83	4.09	4.07	3.98	4.12	4.06	4.16	4.22	4.11	4.24	4.18	4.30	4.35	4.23	4.38	4.32
Europe	0.65	0.65	0.67	0.69	0.69	0.68	0.68	0.71	0.70	0.71	0.70	0.70	0.72	0.71	0.72	0.71
<b>Total Non-OECD</b>	<b>47.17</b>	<b>47.24</b>	<b>48.87</b>	<b>49.06</b>	<b>49.22</b>	<b>48.61</b>	<b>48.77</b>	<b>49.93</b>	<b>49.90</b>	<b>50.57</b>	<b>49.79</b>	<b>49.97</b>	<b>51.09</b>	<b>51.49</b>	<b>52.17</b>	<b>51.19</b>
<b>World</b>	<b>92.99</b>	<b>93.83</b>	<b>94.44</b>	<b>95.96</b>	<b>95.68</b>	<b>94.99</b>	<b>95.45</b>	<b>95.91</b>	<b>97.14</b>	<b>97.89</b>	<b>96.60</b>	<b>96.69</b>	<b>97.31</b>	<b>98.60</b>	<b>99.23</b>	<b>97.96</b>
of which: US50	19.11	19.41	19.47	19.83	19.42	19.53	19.45	19.43	19.90	19.75	19.63	19.40	19.59	19.95	19.79	19.68
Europe 5*	8.05	8.03	8.00	8.37	8.12	8.13	8.14	8.19	8.38	8.23	8.24	8.18	8.16	8.33	8.10	8.19
China	10.80	11.33	11.59	11.58	11.67	11.54	11.70	12.07	11.75	12.03	11.89	12.01	12.20	12.24	12.48	12.23
Japan	4.27	4.70	3.80	3.85	4.14	4.12	4.43	3.66	3.75	4.13	3.99	4.31	3.50	3.60	3.98	3.84
India	3.84	3.97	4.04	3.85	4.10	3.99	4.36	4.32	4.02	4.41	4.28	4.41	4.60	4.42	4.72	4.54
Russia	3.52	3.29	3.49	3.63	3.51	3.48	3.57	3.44	3.75	3.76	3.63	3.66	3.61	3.84	3.86	3.74
Brazil	3.24	3.17	3.17	3.22	3.20	3.19	3.02	3.07	3.14	3.07	3.08	3.00	3.03	3.13	3.17	3.08
Saudi Arabia	3.19	2.89	3.48	3.58	3.22	3.29	2.95	3.34	3.46	3.13	3.22	3.02	3.33	3.48	3.11	3.24
Canada	2.41	2.43	2.33	2.45	2.40	2.41	2.39	2.37	2.52	2.46	2.43	2.44	2.38	2.49	2.41	2.43
Korea	2.35	2.46	2.29	2.36	2.52	2.41	2.59	2.48	2.53	2.65	2.57	2.66	2.58	2.60	2.74	2.64
Mexico	2.04	1.94	1.97	2.07	2.05	2.01	1.98	1.94	1.93	1.95	1.95	1.87	1.91	1.90	1.94	1.91
Iran	2.04	1.98	1.98	1.94	2.03	1.98	1.98	1.93	1.92	2.00	1.96	2.01	1.99	2.01	2.11	2.03
<b>Total</b>	<b>64.85</b>	<b>65.59</b>	<b>65.61</b>	<b>66.73</b>	<b>66.38</b>	<b>66.08</b>	<b>66.57</b>	<b>66.24</b>	<b>67.05</b>	<b>67.58</b>	<b>66.86</b>	<b>66.97</b>	<b>66.89</b>	<b>67.97</b>	<b>68.40</b>	<b>67.56</b>
% of World	69.7%	69.9%	69.5%	69.5%	69.4%	69.6%	69.7%	69.1%	69.0%	69.0%	69.2%	69.3%	68.7%	68.9%	68.9%	69.0%
<b>Annual Change (% per annum)</b>																
Americas	0.2	2.1	2.6	2.3	-0.4	1.6	0.1	-0.1	0.1	1.2	0.4	-0.4	0.6	0.0	-0.1	0.0
Europe	-0.7	2.7	0.8	2.0	1.6	1.8	1.4	2.6	1.7	3.1	2.2	1.5	1.2	-0.2	-1.0	0.4
Asia Oceania	-2.8	-2.2	-0.8	0.8	-1.4	-0.9	-1.5	0.9	1.0	1.7	0.5	-0.8	-0.9	-1.2	-1.1	-1.0
<b>Total OECD</b>	<b>-0.6</b>	<b>1.5</b>	<b>1.5</b>	<b>1.9</b>	<b>0.0</b>	<b>1.2</b>	<b>0.2</b>	<b>0.9</b>	<b>0.7</b>	<b>1.9</b>	<b>0.9</b>	<b>0.1</b>	<b>0.5</b>	<b>-0.3</b>	<b>-0.6</b>	<b>-0.1</b>
Asia	3.5	4.1	5.2	6.8	5.2	5.3	4.9	4.3	2.7	4.3	4.0	2.8	2.9	5.0	4.0	3.7
Middle East	4.4	-2.7	0.6	2.1	2.8	0.7	1.6	-0.3	-0.1	0.2	0.3	3.0	1.2	1.2	2.1	1.8
Americas	2.7	0.2	-0.4	-1.4	-1.9	-0.9	-2.3	-1.6	-1.1	-2.1	-1.8	-0.1	-0.3	0.1	1.9	0.4
FSU	4.9	-0.4	0.5	-1.6	-1.5	-0.8	6.6	-0.6	2.9	5.9	3.6	2.6	4.5	2.5	2.1	2.9
Africa	0.2	3.8	4.8	6.8	8.8	6.0	1.8	3.8	3.4	2.8	2.9	3.3	3.0	2.9	3.5	3.2
Europe	-1.5	4.9	4.4	3.5	5.1	4.4	3.4	5.1	2.1	3.0	3.4	3.0	1.7	1.2	2.3	2.0
<b>Total Non-OECD</b>	<b>3.3</b>	<b>1.9</b>	<b>3.0</b>	<b>3.8</b>	<b>3.3</b>	<b>3.0</b>	<b>3.2</b>	<b>2.2</b>	<b>1.7</b>	<b>2.7</b>	<b>2.4</b>	<b>2.5</b>	<b>2.3</b>	<b>3.2</b>	<b>3.2</b>	<b>2.8</b>
<b>World</b>	<b>1.4</b>	<b>1.7</b>	<b>2.3</b>	<b>2.9</b>	<b>1.7</b>	<b>2.1</b>	<b>1.7</b>	<b>1.6</b>	<b>1.2</b>	<b>2.3</b>	<b>1.7</b>	<b>1.3</b>	<b>1.5</b>	<b>1.5</b>	<b>1.4</b>	<b>1.4</b>
<b>Annual Change (mb/d)</b>																
Americas	0.04	0.51	0.63	0.55	-0.10	0.40	0.04	-0.01	0.02	0.30	0.09	-0.09	0.14	-0.01	-0.03	0.00
Europe	-0.10	0.35	0.10	0.27	0.22	0.24	0.19	0.36	0.24	0.43	0.30	0.20	0.16	-0.02	-0.14	0.05
Asia Oceania	-0.23	-0.19	-0.06	0.06	-0.11	-0.07	-0.13	0.06	0.07	0.14	0.04	-0.07	-0.07	-0.09	-0.09	-0.08
<b>Total OECD</b>	<b>-0.29</b>	<b>0.68</b>	<b>0.67</b>	<b>0.89</b>	<b>0.01</b>	<b>0.56</b>	<b>0.10</b>	<b>0.41</b>	<b>0.33</b>	<b>0.87</b>	<b>0.43</b>	<b>0.04</b>	<b>0.24</b>	<b>-0.13</b>	<b>-0.27</b>	<b>-0.03</b>
Asia	0.78	0.93	1.18	1.53	1.20	1.21	1.16	1.04	0.64	1.05	0.97	0.70	0.74	1.22	1.03	0.92
Middle East	0.35	-0.21	0.05	0.18	0.23	0.06	0.13	-0.03	-0.01	0.02	0.03	0.24	0.10	0.11	0.18	0.16
Americas	0.18	0.02	-0.03	-0.10	-0.13	-0.06	-0.15	-0.11	-0.07	-0.14	-0.12	-0.01	-0.02	0.00	0.13	0.03
FSU	0.22	-0.02	0.02	-0.08	-0.07	-0.04	0.29	-0.03	0.14	0.28	0.17	0.12	0.21	0.13	0.10	0.14
Africa	0.01	0.15	0.19	0.25	0.33	0.23	0.07	0.16	0.13	0.11	0.12	0.14	0.13	0.12	0.15	0.13
Europe	-0.01	0.03	0.03	0.02	0.03	0.03	0.02	0.03	0.01	0.02	0.02	0.02	0.01	0.01	0.02	0.01
<b>Total Non-OECD</b>	<b>1.53</b>	<b>0.89</b>	<b>1.45</b>	<b>1.81</b>	<b>1.59</b>	<b>1.43</b>	<b>1.53</b>	<b>1.06</b>	<b>0.84</b>	<b>1.34</b>	<b>1.19</b>	<b>1.20</b>	<b>1.16</b>	<b>1.59</b>	<b>1.60</b>	<b>1.39</b>
<b>World</b>	<b>1.24</b>	<b>1.56</b>	<b>2.12</b>	<b>2.70</b>	<b>1.60</b>	<b>1.99</b>	<b>1.62</b>	<b>1.47</b>	<b>1.18</b>	<b>2.21</b>	<b>1.62</b>	<b>1.24</b>	<b>1.40</b>	<b>1.46</b>	<b>1.34</b>	<b>1.36</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	0.25	0.06	-0.08	-0.02	0.06	0.17	0.03
Europe	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.01	-0.02	-0.02	0.01	0.08	0.01
Asia Oceania	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.05	-0.01	-0.14	-0.05	-0.04	-0.04	-0.07
<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>0.25</b>	<b>0.06</b>	<b>-0.25</b>	<b>-0.10</b>	<b>0.03</b>	<b>0.22</b>	<b>-0.02</b>
Asia	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.06	-0.02	-0.18	0.04	0.06	0.09	0.00
Middle East	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Americas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
FSU	0.01	-0.01	-0.01	-0.01	-0.01	-0.01	0.00	0.00	-0.01	-0.02	-0.01	0.08	-0.01	-0.02	0.01	0.01
Africa	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Europe	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Total Non-OECD</b>	<b>0.01</b>	<b>-0.01</b>	<b>-0.01</b>	<b>-0.01</b>	<b>-0.01</b>	<b>-0.01</b>	<b>0.00</b>	<b>0.00</b>	<b>-0.01</b>	<b>-0.08</b>	<b>-0.02</b>	<b>-0.10</b>	<b>0.03</b>	<b>0.04</b>	<b>0.09</b>	<b>0.02</b>
<b>World</b>	<b>0.01</b>	<b>-0.01</b>	<b>-0.01</b>	<b>-0.01</b>	<b>-0.01</b>	<b>-0.01</b>	<b>0.00</b>	<b>0.00</b>	<b>-0.01</b>	<b>0.17</b>	<b>0.04</b>	<b>-0.35</b>	<b>-0.07</b>	<b>0.07</b>	<b>0.31</b>	<b>-0.01</b>
<b>Revisions to Oil Demand Growth from Last Month's Report (mb/d)</b>																
World	0.01	-0.02	-0.02	-0.02	-0.02	-0.02	0.01	0.01	0.00	0.18	0.05	-0.35	-0.07	0.08	0.14	-0.05

\* France, Germany, Italy, Spain and UK



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

	Latest month vs.									
	2015	2016	1Q16	2Q16	3Q16	4Q16	Oct 16	Nov 16	Dec 16 <sup>2</sup>	Nov 16 Dec 15
<b>Americas</b>										
LPG and ethane	3.29	3.21	3.56	2.93	3.08	3.26	3.14	3.18	3.45	0.27 -0.20
Naphtha	0.34	0.35	0.35	0.35	0.34	0.34	0.32	0.34	0.36	0.02 -0.02
Motor gasoline	10.91	11.13	10.85	11.23	11.40	11.03	10.88	11.04	11.16	0.12 0.27
Jet and kerosene	1.83	1.90	1.78	1.90	1.99	1.92	1.91	1.91	1.95	0.04 0.08
Gasoil/diesel oil	5.21	5.08	5.06	5.02	5.00	5.24	5.22	5.18	5.31	0.12 0.32
Residual fuel oil	0.55	0.64	0.59	0.69	0.64	0.63	0.64	0.64	0.61	-0.04 -0.02
Other products	2.46	2.39	2.30	2.28	2.55	2.41	2.52	2.39	2.32	-0.07 0.04
<b>Total</b>	<b>24.59</b>	<b>24.68</b>	<b>24.49</b>	<b>24.39</b>	<b>25.01</b>	<b>24.83</b>	<b>24.63</b>	<b>24.69</b>	<b>25.16</b>	<b>0.47 0.46</b>
<b>Europe</b>										
LPG and ethane	1.14	1.20	1.21	1.15	1.19	1.23	1.22	1.18	1.29	0.11 0.05
Naphtha	1.12	1.18	1.24	1.13	1.19	1.15	1.08	1.14	1.24	0.10 0.06
Motor gasoline	1.92	1.92	1.79	1.98	2.04	1.89	1.88	1.89	1.89	0.01 -0.03
Jet and kerosene	1.33	1.37	1.24	1.39	1.55	1.33	1.44	1.29	1.25	-0.03 0.00
Gasoil/diesel oil	6.14	6.22	6.11	6.11	6.24	6.44	6.41	6.53	6.40	-0.13 0.09
Residual fuel oil	0.90	0.93	0.96	0.92	0.94	0.91	0.94	0.90	0.89	-0.01 -0.04
Other products	1.20	1.23	1.10	1.27	1.31	1.23	1.34	1.20	1.15	-0.05 0.11
<b>Total</b>	<b>13.75</b>	<b>14.05</b>	<b>13.64</b>	<b>13.94</b>	<b>14.44</b>	<b>14.18</b>	<b>14.31</b>	<b>14.11</b>	<b>14.11</b>	<b>0.00 0.24</b>
<b>Asia Oceania</b>										
LPG and ethane	0.77	0.83	0.83	0.81	0.84	0.86	0.79	0.82	0.96	0.13 0.15
Naphtha	1.96	1.94	2.00	1.85	1.89	2.02	1.90	2.08	2.08	0.00 -0.04
Motor gasoline	1.56	1.56	1.53	1.52	1.64	1.56	1.53	1.57	1.57	0.00 -0.06
Jet and kerosene	0.87	0.91	1.17	0.73	0.70	1.03	0.84	1.02	1.24	0.22 0.08
Gasoil/diesel oil	1.78	1.80	1.83	1.75	1.74	1.88	1.78	1.91	1.95	0.04 0.08
Residual fuel oil	0.64	0.65	0.75	0.60	0.60	0.65	0.58	0.67	0.70	0.03 -0.02
Other products	0.45	0.38	0.44	0.37	0.38	0.32	0.27	0.33	0.35	0.02 -0.10
<b>Total</b>	<b>8.04</b>	<b>8.07</b>	<b>8.55</b>	<b>7.64</b>	<b>7.79</b>	<b>8.32</b>	<b>7.69</b>	<b>8.41</b>	<b>8.85</b>	<b>0.44 0.10</b>
<b>OECD</b>										
LPG and ethane	5.20	5.24	5.61	4.89	5.11	5.35	5.16	5.18	5.70	0.52 0.00
Naphtha	3.41	3.46	3.59	3.32	3.42	3.51	3.29	3.56	3.68	0.12 -0.01
Motor gasoline	14.39	14.61	14.17	14.74	15.07	14.47	14.29	14.50	14.62	0.13 0.18
Jet and kerosene	4.03	4.18	4.18	4.02	4.24	4.28	4.19	4.21	4.44	0.22 0.16
Gasoil/diesel oil	13.13	13.11	13.00	12.88	12.98	13.56	13.41	13.62	13.66	0.03 0.49
Residual fuel oil	2.10	2.22	2.30	2.21	2.18	2.19	2.16	2.21	2.20	-0.01 -0.08
Other products	4.12	3.99	3.83	3.92	4.24	3.96	4.14	3.92	3.83	-0.10 0.06
<b>Total</b>	<b>46.38</b>	<b>46.81</b>	<b>46.68</b>	<b>45.98</b>	<b>47.24</b>	<b>47.32</b>	<b>46.63</b>	<b>47.21</b>	<b>48.13</b>	<b>0.92 0.80</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)

	2015	2016	1Q16	2Q16	3Q16	4Q16	Oct 16	Nov 16	Dec 16 <sup>2</sup>	Latest month vs.	
										Nov 16	Dec 15
<b>United States<sup>3</sup></b>											
LPG and ethane	2.45	2.43	2.69	2.21	2.33	2.48	2.41	2.40	2.63	0.23	-0.12
Naphtha	0.22	0.22	0.22	0.22	0.22	0.22	0.20	0.22	0.23	0.01	-0.02
Motor gasoline	9.18	9.33	9.09	9.44	9.56	9.22	9.10	9.24	9.31	0.07	0.16
Jet and kerosene	1.55	1.61	1.51	1.62	1.69	1.64	1.62	1.63	1.67	0.04	0.07
Gasoil/diesel oil	4.00	3.88	3.90	3.81	3.79	4.02	4.02	3.96	4.06	0.10	0.23
Residual fuel oil	0.26	0.36	0.31	0.41	0.36	0.35	0.35	0.38	0.32	-0.05	0.01
Other products	1.87	1.81	1.72	1.73	1.95	1.84	1.92	1.82	1.76	-0.06	0.06
<b>Total</b>	<b>19.53</b>	<b>19.63</b>	<b>19.45</b>	<b>19.43</b>	<b>19.90</b>	<b>19.75</b>	<b>19.62</b>	<b>19.66</b>	<b>19.98</b>	<b>0.32</b>	<b>0.38</b>
<b>Japan</b>											
LPG and ethane	0.43	0.44	0.47	0.42	0.42	0.44	0.38	0.40	0.53	0.13	0.08
Naphtha	0.78	0.75	0.79	0.72	0.70	0.79	0.71	0.83	0.82	-0.01	-0.06
Motor gasoline	0.91	0.90	0.87	0.88	0.96	0.90	0.89	0.90	0.91	0.01	-0.05
Jet and kerosene	0.50	0.51	0.74	0.37	0.33	0.60	0.44	0.58	0.76	0.18	0.02
Diesel	0.41	0.41	0.41	0.38	0.41	0.43	0.41	0.43	0.44	0.01	0.00
Other gasoil	0.35	0.35	0.40	0.32	0.31	0.37	0.33	0.37	0.42	0.04	0.02
Residual fuel oil	0.36	0.33	0.38	0.30	0.31	0.33	0.29	0.34	0.35	0.01	0.00
Other products	0.37	0.31	0.37	0.27	0.30	0.28	0.27	0.26	0.32	0.06	-0.07
<b>Total</b>	<b>4.12</b>	<b>3.99</b>	<b>4.43</b>	<b>3.66</b>	<b>3.75</b>	<b>4.13</b>	<b>3.74</b>	<b>4.11</b>	<b>4.54</b>	<b>0.43</b>	<b>-0.06</b>
<b>Germany</b>											
LPG and ethane	0.10	0.10	0.10	0.11	0.10	0.09	0.08	0.09	0.10	0.01	0.01
Naphtha	0.40	0.40	0.42	0.36	0.41	0.41	0.40	0.40	0.42	0.02	0.00
Motor gasoline	0.42	0.42	0.40	0.43	0.44	0.42	0.42	0.43	0.41	-0.02	-0.01
Jet and kerosene	0.18	0.20	0.17	0.20	0.23	0.20	0.21	0.19	0.18	-0.01	0.02
Diesel	0.75	0.78	0.72	0.80	0.82	0.78	0.78	0.83	0.72	-0.11	0.02
Other gasoil	0.35	0.34	0.46	0.27	0.26	0.37	0.37	0.37	0.38	0.01	-0.01
Residual fuel oil	0.12	0.13	0.13	0.13	0.12	0.13	0.12	0.13	0.14	0.01	0.01
Other products	0.05	0.05	0.02	0.07	0.07	0.05	0.07	0.07	0.02	-0.05	0.00
<b>Total</b>	<b>2.37</b>	<b>2.42</b>	<b>2.42</b>	<b>2.37</b>	<b>2.44</b>	<b>2.45</b>	<b>2.46</b>	<b>2.51</b>	<b>2.38</b>	<b>-0.13</b>	<b>0.03</b>
<b>Italy</b>											
LPG and ethane	0.11	0.11	0.12	0.10	0.10	0.12	0.11	0.11	0.14	0.03	0.00
Naphtha	0.09	0.11	0.11	0.12	0.11	0.10	0.09	0.09	0.12	0.03	0.02
Motor gasoline	0.21	0.20	0.20	0.21	0.22	0.19	0.19	0.18	0.19	0.01	-0.02
Jet and kerosene	0.10	0.11	0.09	0.11	0.12	0.10	0.10	0.10	0.10	0.00	0.03
Diesel	0.44	0.44	0.42	0.45	0.45	0.43	0.43	0.42	0.44	0.02	-0.02
Other gasoil	0.09	0.09	0.08	0.08	0.10	0.10	0.10	0.09	0.11	0.02	0.01
Residual fuel oil	0.08	0.07	0.07	0.07	0.07	0.06	0.07	0.06	0.07	0.01	-0.02
Other products	0.15	0.15	0.12	0.15	0.15	0.16	0.17	0.18	0.14	-0.04	0.00
<b>Total</b>	<b>1.27</b>	<b>1.27</b>	<b>1.21</b>	<b>1.29</b>	<b>1.31</b>	<b>1.26</b>	<b>1.25</b>	<b>1.22</b>	<b>1.30</b>	<b>0.08</b>	<b>0.00</b>
<b>France</b>											
LPG and ethane	0.13	0.15	0.17	0.14	0.13	0.14	0.13	0.14	0.15	0.02	0.01
Naphtha	0.13	0.12	0.14	0.12	0.13	0.08	0.09	0.07	0.09	0.02	-0.01
Motor gasoline	0.16	0.17	0.15	0.18	0.18	0.16	0.16	0.16	0.17	0.01	0.00
Jet and kerosene	0.15	0.15	0.14	0.15	0.17	0.15	0.16	0.14	0.14	0.00	0.00
Diesel	0.71	0.70	0.67	0.72	0.72	0.71	0.70	0.70	0.72	0.02	-0.03
Other gasoil	0.25	0.24	0.26	0.20	0.23	0.27	0.30	0.23	0.28	0.04	0.00
Residual fuel oil	0.04	0.04	0.04	0.03	0.04	0.04	0.04	0.05	0.04	-0.01	0.00
Other products	0.12	0.12	0.12	0.13	0.14	0.11	0.12	0.10	0.09	-0.01	0.01
<b>Total</b>	<b>1.69</b>	<b>1.69</b>	<b>1.69</b>	<b>1.66</b>	<b>1.74</b>	<b>1.66</b>	<b>1.70</b>	<b>1.60</b>	<b>1.69</b>	<b>0.09</b>	<b>-0.03</b>
<b>United Kingdom</b>											
LPG and ethane	0.14	0.16	0.17	0.16	0.16	0.16	0.17	0.16	0.16	0.01	0.01
Naphtha	0.03	0.03	0.04	0.03	0.03	0.03	0.02	0.03	0.03	0.00	0.00
Motor gasoline	0.29	0.29	0.28	0.30	0.29	0.29	0.28	0.30	0.30	0.00	0.00
Jet and kerosene	0.31	0.31	0.32	0.31	0.32	0.30	0.32	0.30	0.28	-0.02	-0.05
Diesel	0.50	0.51	0.49	0.52	0.51	0.53	0.52	0.55	0.52	-0.03	0.02
Other gasoil	0.13	0.13	0.12	0.13	0.15	0.12	0.14	0.13	0.11	-0.01	0.00
Residual fuel oil	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.00	0.00
Other products	0.12	0.12	0.11	0.12	0.12	0.12	0.12	0.12	0.11	0.00	-0.01
<b>Total</b>	<b>1.55</b>	<b>1.59</b>	<b>1.56</b>	<b>1.61</b>	<b>1.61</b>	<b>1.58</b>	<b>1.60</b>	<b>1.60</b>	<b>1.55</b>	<b>-0.05</b>	<b>-0.02</b>
<b>Canada</b>											
LPG and ethane	0.38	0.40	0.43	0.36	0.40	0.42	0.38	0.42	0.46	0.04	0.04
Naphtha	0.09	0.10	0.11	0.10	0.10	0.10	0.09	0.09	0.10	0.01	-0.01
Motor gasoline	0.82	0.86	0.83	0.86	0.90	0.85	0.84	0.85	0.86	0.01	0.06
Jet and kerosene	0.14	0.15	0.13	0.14	0.16	0.14	0.15	0.14	0.14	0.00	0.00
Diesel	0.31	0.30	0.30	0.31	0.30	0.29	0.29	0.29	0.28	0.00	0.01
Other gasoil	0.26	0.26	0.22	0.25	0.27	0.29	0.27	0.28	0.31	0.03	0.05
Residual fuel oil	0.04	0.03	0.05	0.03	0.03	0.03	0.03	0.03	0.03	0.00	0.00
Other products	0.35	0.33	0.32	0.31	0.36	0.34	0.35	0.34	0.34	0.00	0.01
<b>Total</b>	<b>2.41</b>	<b>2.43</b>	<b>2.39</b>	<b>2.37</b>	<b>2.52</b>	<b>2.46</b>	<b>2.40</b>	<b>2.44</b>	<b>2.53</b>	<b>0.08</b>	<b>0.16</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)

	2015	2016	2017	3Q16	4Q16	1Q17	2Q17	3Q17	Dec 16	Jan 17	Feb 17
<b>OPEC</b>											
Crude Oil											
Saudi Arabia	10.12	10.42		10.61	10.55				10.45	9.80	9.98
Iran	2.85	3.55		3.67	3.81				3.77	3.75	3.82
Iraq	4.00	4.41		4.43	4.62				4.66	4.45	4.40
UAE	2.93	3.03		3.12	3.13				3.14	2.96	2.90
Kuwait	2.75	2.88		2.92	2.86				2.81	2.71	2.71
Neutral Zone	0.07	0.00		0.00	0.00				0.00	0.00	0.00
Qatar	0.65	0.65		0.64	0.64				0.63	0.61	0.61
Angola	1.76	1.71		1.72	1.61				1.64	1.64	1.66
Nigeria	1.77	1.47		1.25	1.46				1.39	1.40	1.43
Libya	0.40	0.39		0.31	0.57				0.62	0.69	0.67
Algeria	1.11	1.11		1.13	1.12				1.12	1.05	1.05
Ecuador	0.54	0.55		0.55	0.54				0.54	0.53	0.53
Venezuela	2.46	2.24		2.19	2.12				2.10	2.05	2.05
Gabon	0.23	0.23		0.23	0.22				0.21	0.20	0.20
Total Crude Oil	31.65	32.63		32.77	33.25				33.08	31.84	32.01
Total NGLs <sup>1</sup>	6.49	6.69	6.83	6.77	6.77	6.74	6.79	6.89	6.77	6.74	6.74
<b>Total OPEC<sup>2</sup></b>	<b>38.14</b>	<b>39.32</b>		<b>39.54</b>	<b>40.02</b>				<b>39.85</b>	<b>38.57</b>	<b>38.74</b>
<b>NON-OPEC<sup>2,3</sup></b>											
<b>OECD</b>											
<b>Americas</b>	19.98	19.46	19.80	19.32	19.65	19.61	19.62	19.91	19.49	19.52	19.60
United States	12.99	12.52	12.91	12.29	12.46	12.63	12.92	12.98	12.39	12.50	12.59
Mexico	2.60	2.46	2.24	2.46	2.37	2.30	2.26	2.22	2.33	2.32	2.31
Canada	4.39	4.46	4.64	4.57	4.81	4.67	4.44	4.71	4.76	4.69	4.70
Chile	0.01	0.01	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00
<b>Europe</b>	3.48	3.52	3.46	3.34	3.64	3.55	3.50	3.27	3.65	3.62	3.60
UK	0.97	1.03	1.00	0.97	1.00	1.03	1.02	0.93	1.07	1.07	1.05
Norway	1.95	1.99	1.96	1.90	2.11	2.00	1.97	1.83	2.07	2.03	2.02
Others	0.56	0.49	0.51	0.47	0.53	0.52	0.51	0.51	0.52	0.51	0.52
<b>Asia Oceania</b>	0.46	0.43	0.42	0.45	0.42	0.43	0.42	0.42	0.43	0.43	0.43
Australia	0.38	0.35	0.35	0.37	0.35	0.36	0.35	0.35	0.36	0.36	0.36
Others	0.08	0.08	0.07	0.08	0.07	0.07	0.07	0.07	0.07	0.07	0.07
<b>Total OECD</b>	<b>23.92</b>	<b>23.40</b>	<b>23.68</b>	<b>23.11</b>	<b>23.71</b>	<b>23.59</b>	<b>23.54</b>	<b>23.60</b>	<b>23.57</b>	<b>23.57</b>	<b>23.62</b>
<b>NON-OECD</b>											
<b>Former USSR</b>	14.03	14.20	14.36	13.99	14.51	14.41	14.26	14.32	14.53	14.43	14.46
Russia	11.09	11.34	11.39	11.27	11.58	11.45	11.30	11.34	11.58	11.48	11.48
Others	2.94	2.86	2.98	2.72	2.93	2.96	2.96	2.98	2.95	2.95	2.98
<b>Asia<sup>2</sup></b>	7.91	7.62	7.33	7.50	7.49	7.43	7.35	7.30	7.56	7.46	7.43
China	4.33	4.03	3.84	3.95	3.93	3.91	3.86	3.82	4.00	3.92	3.91
Malaysia	0.71	0.71	0.72	0.70	0.71	0.72	0.71	0.72	0.73	0.72	0.72
India	0.87	0.85	0.84	0.85	0.84	0.85	0.84	0.84	0.85	0.87	0.85
Indonesia	0.82	0.88	0.87	0.88	0.88	0.87	0.87	0.86	0.88	0.88	0.87
Others	1.18	1.14	1.06	1.12	1.13	1.08	1.07	1.06	1.11	1.08	1.08
<b>Europe</b>	0.14	0.14	0.13	0.14	0.13	0.13	0.13	0.13	0.13	0.13	0.13
<b>Americas<sup>2</sup></b>	4.59	4.49	4.66	4.56	4.61	4.63	4.63	4.70	4.69	4.64	4.64
Brazil	2.53	2.61	2.83	2.73	2.77	2.79	2.80	2.87	2.85	2.80	2.80
Argentina	0.63	0.61	0.60	0.61	0.61	0.60	0.60	0.60	0.61	0.61	0.60
Colombia	1.01	0.89	0.86	0.85	0.85	0.86	0.86	0.86	0.84	0.86	0.85
Others	0.42	0.38	0.37	0.38	0.38	0.38	0.37	0.37	0.39	0.37	0.38
<b>Middle East<sup>2,4</sup></b>	1.27	1.26	1.22	1.27	1.27	1.22	1.21	1.22	1.26	1.23	1.22
Oman	0.99	1.01	0.96	1.02	1.01	0.97	0.96	0.96	1.00	0.97	0.97
Syria	0.03	0.03	0.02	0.03	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Yemen	0.04	0.02	0.03	0.02	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Others	0.21	0.21	0.20	0.21	0.21	0.20	0.20	0.20	0.21	0.20	0.20
<b>Africa</b>	2.07	1.93	1.93	1.94	1.95	1.94	1.94	1.92	1.92	1.92	1.96
Egypt	0.72	0.69	0.65	0.69	0.67	0.66	0.66	0.65	0.66	0.67	0.66
Others	1.35	1.24	1.28	1.25	1.28	1.27	1.28	1.27	1.26	1.25	1.29
<b>Total Non-OECD</b>	<b>30.01</b>	<b>29.65</b>	<b>29.63</b>	<b>29.39</b>	<b>29.97</b>	<b>29.76</b>	<b>29.52</b>	<b>29.59</b>	<b>30.10</b>	<b>29.81</b>	<b>29.84</b>
Processing gains <sup>5</sup>	2.24	2.27	2.29	2.27	2.27	2.29	2.29	2.29	2.27	2.29	2.29
Global Biofuels	2.29	2.35	2.45	2.67	2.32	2.01	2.47	2.82	2.08	2.02	2.02
<b>TOTAL NON-OPEC</b>	<b>58.45</b>	<b>57.66</b>	<b>58.06</b>	<b>57.45</b>	<b>58.27</b>	<b>57.65</b>	<b>57.83</b>	<b>58.30</b>	<b>58.02</b>	<b>57.69</b>	<b>57.78</b>
<b>TOTAL SUPPLY</b>	<b>96.59</b>	<b>96.98</b>		<b>96.99</b>	<b>98.29</b>				<b>97.87</b>	<b>96.26</b>	<b>96.52</b>

<sup>1</sup> Includes condensates reported by OPEC countries, oil from non-conventional sources, e.g. Venezuelan Orimulsion (but not Orinoco extra-heavy oil), and non-oil inputs to Saudi Arabian MTBE.

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

Total Non-OPEC excludes all countries that are current OPEC members.

Total OPEC comprises all countries which are current OPEC members.

<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			
	Sep2016	Oct2016	Nov2016	Dec2016	Jan2017*	Jan2014	Jan2015	Jan2016	1Q2016	2Q2016	3Q2016	4Q2016
<b>OECD Americas</b>												
Crude	621.4	647.2	645.8	645.1	668.3	474.3	544.2	629.5	0.54	-0.09	-0.31	0.26
Motor Gasoline	259.1	256.9	265.0	268.5	289.3	271.3	281.1	291.5	0.05	0.01	-0.15	0.10
Middle Distillate	236.4	229.6	234.3	237.5	242.6	186.0	208.6	238.5	0.05	-0.23	0.18	0.01
Residual Fuel Oil	45.1	45.6	47.4	48.7	48.0	45.8	41.0	50.4	0.01	-0.04	-0.02	0.04
Total Products <sup>3</sup>	800.6	781.9	788.5	776.5	769.5	653.3	724.1	779.7	-0.19	0.17	0.30	-0.26
Total <sup>4</sup>	1617.3	1624.1	1622.9	1599.7	1623.5	1271.4	1435.8	1582.6	0.31	0.21	0.10	-0.19
<b>OECD Europe</b>												
Crude	352.8	346.8	341.1	338.8	351.5	314.3	314.3	356.0	-0.16	0.11	-0.04	-0.15
Motor Gasoline	89.9	92.4	94.0	98.7	103.3	94.3	100.8	102.3	0.09	-0.04	-0.07	0.10
Middle Distillate	314.1	302.3	299.7	294.4	301.6	259.3	258.6	313.5	0.08	0.04	0.01	-0.21
Residual Fuel Oil	67.2	64.9	64.8	66.8	65.5	68.8	70.0	73.1	0.06	-0.07	-0.05	0.00
Total Products <sup>3</sup>	568.2	559.0	560.1	559.4	569.3	517.7	527.1	589.3	0.25	-0.05	-0.14	-0.10
Total <sup>4</sup>	992.4	976.5	973.5	968.1	990.8	901.8	903.8	1013.7	0.13	0.04	-0.14	-0.26
<b>OECD Asia Oceania</b>												
Crude	201.5	202.3	194.6	191.6	188.0	154.9	167.4	191.6	-0.11	0.07	-0.01	-0.11
Motor Gasoline	24.0	24.0	23.0	23.7	25.3	25.4	23.0	25.4	0.03	0.00	-0.03	0.00
Middle Distillate	73.8	71.5	65.7	63.3	68.1	65.8	62.8	64.5	-0.08	0.09	0.07	-0.11
Residual Fuel Oil	19.2	19.1	20.0	17.6	17.9	20.3	19.7	18.9	-0.01	-0.01	0.00	-0.02
Total Products <sup>3</sup>	186.8	181.1	171.9	161.8	165.1	171.1	167.3	167.2	0.00	0.10	0.12	-0.27
Total <sup>4</sup>	450.0	446.7	430.0	414.4	415.7	395.2	398.8	425.2	-0.15	0.19	0.13	-0.39
<b>Total OECD</b>												
Crude	1175.7	1196.3	1181.4	1175.4	1207.8	943.6	1025.9	1177.1	0.27	0.08	-0.36	0.00
Motor Gasoline	373.1	373.2	382.0	390.9	417.9	391.0	404.8	419.2	0.18	-0.03	-0.25	0.19
Middle Distillate	624.2	603.4	599.8	595.2	612.3	511.0	529.9	616.4	0.06	-0.10	0.26	-0.32
Residual Fuel Oil	131.5	129.6	132.2	133.0	131.3	134.8	130.7	142.4	0.06	-0.12	-0.07	0.02
Total Products <sup>3</sup>	1555.6	1522.0	1520.5	1497.7	1504.0	1342.1	1418.5	1536.2	0.06	0.22	0.28	-0.63
Total <sup>4</sup>	3059.8	3047.4	3026.4	2982.1	3030.0	2568.4	2738.4	3021.5	0.29	0.44	0.08	-0.84

**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			
	Sep2016	Oct2016	Nov2016	Dec2016	Jan2017*	Jan2014	Jan2015	Jan2016	1Q2016	2Q2016	3Q2016	4Q2016
<b>OECD Americas</b>												
Crude	695.1	695.1	695.1	695.1	695.1	696.0	691.0	695.1	0.00	0.00	0.00	0.00
Products	2.0	2.0	2.0	2.0	2.0	1.0	2.0	2.0	0.00	0.00	0.00	0.00
<b>OECD Europe</b>												
Crude	206.3	204.9	208.8	205.6	205.6	206.4	208.6	206.8	0.00	-0.01	0.01	-0.01
Products	267.0	266.8	270.6	271.5	272.9	259.8	255.9	264.4	0.05	-0.02	0.03	0.05
<b>OECD Asia Oceania</b>												
Crude	385.4	385.7	385.7	384.1	384.1	386.6	385.0	383.6	0.02	0.01	0.00	-0.01
Products	35.9	36.5	36.7	37.1	37.1	30.6	32.0	34.2	0.01	0.00	0.00	0.01
<b>Total OECD</b>												
Crude	1286.8	1285.7	1289.6	1284.7	1284.8	1288.9	1284.5	1285.5	0.02	0.00	0.01	-0.02
Products	304.9	305.3	309.3	310.6	312.1	291.4	289.9	300.5	0.06	-0.02	0.03	0.06
Total <sup>4</sup>	1593.9	1593.3	1601.2	1598.0	1599.7	1584.4	1578.2	1589.9	0.07	-0.03	0.03	0.04

\* 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')

	End December 2015		End March 2016		End June 2016		End September 2016		End December 2016 <sup>3</sup>	
	Stock	Days Fwd <sup>2</sup>	Stock	Days Fwd	Stock	Days Fwd	Stock	Days Fwd	Stock	Days Fwd
	Level	Demand	Level	Demand	Level	Demand	Level	Demand	Level	Demand
<b>OECD Americas</b>										
Canada	188.4	79	183.6	77	175.2	70	184.8	75	183.4	-
Chile	11.3	33	11.2	32	10.7	31	12.2	35	11.2	-
Mexico	49.7	25	45.9	24	48.8	25	45.7	23	47.3	-
United States <sup>4</sup>	1986.6	102	2023.5	104	2048.9	103	2049.6	104	2032.7	-
Total <sup>4</sup>	2258.0	92	2286.2	94	2305.7	92	2314.4	93	2296.7	94
<b>OECD Asia Oceania</b>										
Australia	33.5	30	37.0	33	38.2	35	36.7	32	33.9	-
Israel	-	-	-	-	-	-	-	-	-	-
Japan	582.0	131	559.8	153	573.5	153	586.6	142	562.4	-
Korea	227.9	88	235.7	95	238.0	94	239.3	90	230.3	-
New Zealand	7.7	45	8.2	51	9.3	57	8.7	50	8.9	-
Total	851.1	100	840.7	110	859.0	110	871.3	105	835.6	98
<b>OECD Europe<sup>5</sup></b>										
Austria	24.1	94	25.4	93	22.5	80	21.6	80	22.8	-
Belgium	50.4	73	52.7	84	52.6	81	50.5	75	47.9	-
Czech Republic	22.1	148	22.8	130	22.8	125	22.9	112	21.9	-
Denmark	31.8	211	32.4	204	30.7	187	29.7	186	30.5	-
Estonia	1.8	66	2.2	89	2.6	89	2.4	86	2.4	-
Finland	44.9	238	46.0	242	45.4	225	44.9	226	42.3	-
France	167.6	99	165.8	100	167.5	96	166.9	100	162.2	-
Germany	285.3	118	288.8	122	288.0	118	284.4	116	284.7	-
Greece	32.4	115	33.4	116	32.6	101	30.8	98	32.9	-
Hungary	22.0	156	21.1	128	22.7	137	23.6	147	24.5	-
Ireland	11.6	75	12.2	82	12.3	84	11.7	75	11.8	-
Italy	117.3	97	119.9	93	120.9	93	127.4	101	124.3	-
Luxembourg	0.7	13	0.7	12	0.8	15	0.7	12	0.7	-
Netherlands	158.8	165	157.7	160	159.6	155	154.2	154	152.4	-
Norway	26.7	127	24.9	117	26.5	119	23.2	99	22.9	-
Poland	69.4	131	67.4	119	65.4	105	68.4	111	67.4	-
Portugal	23.9	108	24.5	100	24.9	99	23.2	100	21.9	-
Slovak Republic	11.6	150	11.9	135	12.4	132	11.3	135	12.1	-
Slovenia	4.5	90	4.6	90	4.7	85	4.4	81	4.5	-
Spain	130.9	104	140.3	112	134.2	104	138.8	108	128.3	-
Sweden	35.2	122	34.9	116	33.3	106	35.7	114	33.3	-
Switzerland	34.4	171	36.1	165	35.8	166	36.5	156	35.2	-
Turkey	74.6	88	75.9	80	78.0	76	76.5	81	79.1	-
United Kingdom	81.3	52	77.2	48	82.4	51	78.1	49	82.0	-
Total	1463.4	107	1478.8	106	1478.6	102	1468.0	104	1447.8	108
<b>Total OECD</b>	<b>4572.5</b>	<b>98</b>	<b>4605.6</b>	<b>100</b>	<b>4643.3</b>	<b>98</b>	<b>4653.7</b>	<b>98</b>	<b>4580.1</b>	<b>99</b>
<b>DAYS OF IEA Net Imports<sup>6</sup> -</b>	<b>195</b>	<b>-</b>	<b>198</b>	<b>-</b>	<b>202</b>	<b>-</b>	<b>202</b>	<b>-</b>	<b>200</b>	<b>-</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 entrepot stocks where known) they include stocks held by industry to meet IEA, EU and national emergency reserves commitments and are subject to government control in emergencies.

<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 2016 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
4Q2013	4144	1584	2559	90	35	56
1Q2014	4164	1585	2579	93	35	57
2Q2014	4229	1580	2649	92	34	58
3Q2014	4297	1578	2718	93	34	59
4Q2014	4285	1580	2704	92	34	58
1Q2015	4372	1583	2789	96	35	61
2Q2015	4463	1585	2878	95	34	61
3Q2015	4533	1579	2954	98	34	64
4Q2015	4573	1587	2986	98	34	64
1Q2016	4606	1593	3012	100	35	66
2Q2016	4643	1591	3052	98	34	65
3Q2016	4654	1594	3060	98	34	65
4Q2016	4580	1598	2982	99	35	65

<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 4Q2016 (when latest forecasts are used).

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

	2014	2015	2016	1Q16	2Q16	3Q16	4Q16	Oct 16	Nov 16	Dec 16	Year Earlier	
											Dec 15	change
<b>Saudi Light &amp; Extra Light</b>												
Americas	0.65	0.63	0.69	0.74	0.72	0.69	0.62	0.62	0.48	0.76	0.83	-0.07
Europe	0.84	0.78	0.79	0.76	0.73	0.78	0.87	0.88	0.84	0.90	0.75	0.15
Asia Oceania	1.17	1.25	1.34	1.40	1.44	1.21	1.33	1.49	1.46	1.03	1.28	-0.25
<b>Saudi Medium</b>												
Americas	0.36	0.37	0.44	0.39	0.44	0.44	0.48	0.55	0.48	0.41	0.37	0.04
Europe	0.03	0.03	0.01	-	0.01	0.03	0.01	0.00	0.03	-	0.02	-
Asia Oceania	0.45	0.44	0.40	0.46	0.43	0.41	0.30	0.37	0.39	0.15	0.46	-0.31
<b>Canada Heavy</b>												
Americas	1.71	1.90	2.04	2.12	1.85	2.12	2.07	1.94	2.11	2.16	2.01	0.15
Europe	0.00	0.01	0.01	0.01	0.01	0.02	0.01	0.02	-	0.02	0.02	0.00
Asia Oceania	0.00	-	-	-	-	-	-	-	-	-	-	-
<b>Iraqi Basrah Light<sup>2</sup></b>												
Americas	0.35	0.17	0.42	0.21	0.44	0.47	0.55	0.61	0.40	0.64	0.31	0.32
Europe	0.50	0.72	0.81	0.90	0.78	0.90	0.67	0.69	0.60	0.73	0.77	-0.04
Asia Oceania	0.24	0.41	0.42	0.47	0.51	0.44	0.26	0.29	0.44	0.07	0.57	-0.51
<b>Kuwait Blend</b>												
Americas	0.27	0.13	0.14	0.13	0.12	0.18	0.14	-	0.17	0.25	-	-
Europe	0.09	0.13	0.19	0.20	0.10	0.22	0.26	0.28	0.27	0.22	0.19	0.03
Asia Oceania	0.62	0.65	0.63	0.71	0.65	0.68	0.46	0.64	0.58	0.18	0.78	-0.60
<b>Iranian Light</b>												
Americas	-	-	-	-	-	-	-	-	-	-	-	-
Europe	0.10	0.09	0.21	0.09	0.18	0.33	0.24	0.22	0.17	0.33	0.10	0.23
Asia Oceania	0.01	0.01	0.01	0.02	0.01	0.01	0.01	0.02	-	-	-	-
<b>Iranian Heavy<sup>3</sup></b>												
Americas	-	-	-	-	-	-	-	-	-	-	-	-
Europe	0.01	0.02	0.21	0.04	0.16	0.27	0.38	0.27	0.40	0.46	0.01	0.44
Asia Oceania	0.28	0.27	0.49	0.44	0.47	0.58	0.45	0.41	0.71	0.25	0.23	0.01
<b>BFOE</b>												
Americas	0.01	0.01	0.02	0.02	0.02	0.02	0.03	0.04	0.02	0.04	0.02	0.02
Europe	0.56	0.49	0.44	0.47	0.37	0.48	0.42	0.26	0.37	0.63	0.52	0.10
Asia Oceania	0.07	0.06	0.04	0.09	0.03	-	0.04	0.05	0.07	-	0.10	-
<b>Kazakhstan</b>												
Americas	0.01	0.00	0.01	-	-	0.02	-	-	-	-	-	-
Europe	0.64	0.64	0.70	0.76	0.72	0.70	0.62	0.54	0.59	0.73	0.86	-0.13
Asia Oceania	0.02	0.06	0.02	0.05	0.00	0.01	0.02	-	-	0.05	0.07	-0.02
<b>Venezuelan 22 API and heavier</b>												
Americas	0.64	0.67	0.63	0.61	0.61	0.65	0.65	0.68	0.70	0.57	0.63	-0.05
Europe	0.08	0.09	0.05	0.06	0.05	0.04	0.05	0.04	0.06	0.06	0.11	-0.05
Asia Oceania	-	-	-	-	-	-	-	-	-	-	-	-
<b>Mexican Maya</b>												
Americas	0.66	0.50	0.53	0.52	0.54	0.52	0.53	0.51	0.56	0.52	0.51	0.01
Europe	0.14	0.15	0.17	0.15	0.16	0.17	0.20	0.17	0.28	0.16	0.10	0.07
Asia Oceania	-	0.01	0.04	0.02	0.04	0.06	0.06	0.06	0.07	0.04	0.01	0.03
<b>Russian Urals</b>												
Americas	-	-	-	-	-	-	-	-	-	-	-	-
Europe	1.58	1.61	1.72	1.58	1.78	1.73	1.77	1.82	1.68	1.82	1.98	-0.16
Asia Oceania	-	-	-	-	-	-	-	-	-	-	-	-
<b>Cabinda and Other Angola</b>												
North America	0.04	0.06	0.02	0.01	-	0.06	-	-	-	-	0.01	-
Europe	0.33	0.42	0.27	0.28	0.21	0.43	0.16	0.21	0.19	0.09	0.38	-0.29
Pacific	0.01	0.02	0.01	-	0.02	-	-	-	-	-	-	-
<b>Nigerian Light<sup>4</sup></b>												
Americas	0.00	0.02	0.07	0.07	0.06	0.08	0.07	-	0.21	-	0.03	-
Europe	0.55	0.57	0.39	0.44	0.46	0.33	0.31	0.33	0.31	0.30	0.58	-0.28
Asia Oceania	0.02	-	0.01	-	0.01	0.01	0.03	0.03	0.03	0.04	-	-
<b>Libya Light and Medium</b>												
Americas	-	-	-	-	-	-	-	-	-	-	-	-
Europe	0.31	0.22	0.20	0.16	0.15	0.17	0.30	0.27	0.32	0.30	0.26	0.05
Asia Oceania	0.02	0.01	0.02	0.02	0.01	0.03	0.01	0.02	-	-	-	-

<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 and Slovenia. 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)

	2013	2014	2015	1Q16	2Q16	3Q16	4Q16	Oct 16	Nov 16	Dec 16	Year Earlier	
											Dec 15	% change
<b>Crude Oil</b>												
Americas	5130	4201	4026	4350	4663	4867	4288	4044	4336	4485	4223	6%
Europe	8926	8679	9503	8963	8829	9647	9540	9509	9817	9305	10056	-7%
Asia Oceania	6537	6371	6572	6802	6647	6617	6688	6143	6618	7301	7218	1%
Total OECD	20592	19251	20101	20115	20139	21131	20516	19696	20770	21090	21496	-2%
<b>LPG</b>												
Americas	17	12	10	29	9	23	18	20	16	17	12	48%
Europe	382	427	413	400	400	449	447	468	395	476	436	9%
Asia Oceania	547	532	518	590	576	546	550	555	584	512	546	-6%
Total OECD	946	971	940	1020	984	1019	1014	1042	995	1006	993	1%
<b>Naphtha</b>												
Americas	17	20	14	11	7	4	18	16	26	13	14	-10%
Europe	332	356	348	362	299	390	350	390	298	359	196	84%
Asia Oceania	920	953	951	948	834	946	894	836	987	861	1010	-15%
Total OECD	1269	1328	1313	1322	1141	1340	1261	1242	1311	1233	1220	1%
<b>Gasoline<sup>3</sup></b>												
Americas	659	665	670	460	873	918	689	815	772	481	513	-6%
Europe	106	131	107	92	57	42	197	165	242	186	138	34%
Asia Oceania	75	76	93	73	84	72	107	124	91	107	104	3%
Total OECD	841	871	870	625	1014	1032	993	1104	1105	774	755	3%
<b>Jet &amp; Kerosene</b>												
Americas	81	100	141	152	154	180	190	208	198	165	137	20%
Europe	445	454	445	461	514	568	471	515	523	377	368	2%
Asia Oceania	73	60	64	79	76	47	90	72	84	114	78	46%
Total OECD	600	614	650	692	744	795	751	795	805	656	583	12%
<b>Gasoil/Diesel</b>												
Americas	58	95	76	57	40	84	84	54	134	66	33	100%
Europe	1121	1097	1217	1411	1459	1265	1270	1315	1205	1289	1195	8%
Asia Oceania	141	159	164	180	225	173	227	192	215	274	193	42%
Total OECD	1319	1352	1457	1649	1724	1522	1582	1562	1554	1629	1421	15%
<b>Heavy Fuel Oil</b>												
Americas	165	132	116	163	126	158	147	116	203	125	98	27%
Europe	552	617	565	530	515	473	403	323	440	448	750	-40%
Asia Oceania	232	203	176	188	150	158	126	105	130	143	180	-20%
Total OECD	949	953	857	881	791	790	677	544	772	716	1028	-30%
<b>Other Products</b>												
Americas	812	671	675	627	713	663	608	695	601	528	506	4%
Europe	791	704	703	759	794	746	792	774	760	840	788	7%
Asia Oceania	426	408	352	384	347	361	330	390	305	294	404	-27%
Total OECD	2029	1784	1730	1770	1854	1770	1730	1860	1666	1661	1699	-2%
<b>Total Products</b>												
Americas	1810	1695	1702	1499	1923	2031	1754	1925	1950	1395	1314	6%
Europe	3729	3786	3799	4016	4038	3934	3930	3951	3862	3974	3872	3%
Asia Oceania	2414	2391	2318	2444	2292	2303	2324	2274	2396	2306	2514	-8%
Total OECD	7953	7872	7819	7959	8253	8268	8009	8150	8208	7675	7700	0%
<b>Total Oil</b>												
Americas	6940	5896	5728	5850	6585	6898	6042	5969	6286	5879	5536	6%
Europe	12655	12465	13302	12978	12867	13580	13470	13460	13679	13279	13928	-5%
Asia Oceania	8951	8762	8890	9246	8939	8921	9012	8416	9013	9607	9732	-1%
Total OECD	28545	27123	27919	28074	28392	29399	28525	27845	28978	28765	29196	-1%

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

For information on the data sources, definitions, technical terms and general approach used in preparing the *Oil Market Report (OMR)*, *Market Report Series Oil 2017* (formerly known as the *Medium-Term Oil Market Report*) and *Annual Statistical Supplement* (current issue of the Statistical Supplement dated 11 August 2016), readers are referred to the *Users' Guide* at [www.oilmarketreport.org/glossary.asp](http://www.oilmarketreport.org/glossary.asp). It should be noted that the spot crude and product price assessments are based on daily Argus prices, converted when appropriate to US\$ per barrel according to the Argus specification of products (Copyright © 2017 Argus Media Limited - all rights reserved).

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