

# Oil Market Report

*13 April 2017*

## HIGHLIGHTS

- **Global demand growth of 1.3 mb/d is forecast for 2017**, a second consecutive annual decline and slightly below our prior forecast following weaker than expected 1Q17 demand. Subdued gains in Russia and India, and weaker momentum in OECD countries, were key factors.
- **World oil supply fell by 755 kb/d in March as OPEC and non-OPEC producers pumped less and improved compliance with the output reduction pact.** Total non-OPEC output is set to rise again, however, with growth of 485 kb/d expected in 2017, recovering from a decline of 790 kb/d last year.
- **OPEC crude output fell by 365 kb/d in March to 31.68 mb/d, led by losses in Nigeria, Libya – both exempt from supply cuts - and Saudi Arabia.** OPEC's 1Q17 output of 31.9 mb/d was 240 kb/d below the 1Q17 "call" on its crude. The call rises to 32.9 mb/d in 2Q17, which implies global stocks will draw further if OPEC maintains solid adherence to its supply cut.
- **OECD industry stocks drew moderately in February** and are forecast to fall further in March. However, due to January's large build, we estimate OECD stocks gained 38.5 mb (425 kb/d) in 1Q17. Marginal stocks held offshore or in smaller facilities drew by an estimated 325 kb/d during the same period.
- **Crude prices fell more than \$3/bbl on average in March, but rose by \$5/bbl in early April.** Money managers cut their net long positions in crude futures by 200 mb in March amid the price fall. Product prices showed few signs of rallying during the refinery maintenance season.
- **After 1Q17's almost flat performance vs 1Q16, refinery throughput in 2Q17 will grow 1.15 mb/d y-o-y.** Refinery crude demand will surge by 3.5 mb/d between March and July, with most of the increase coming from Atlantic Basin refiners and the Middle East.

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## HALF TIME

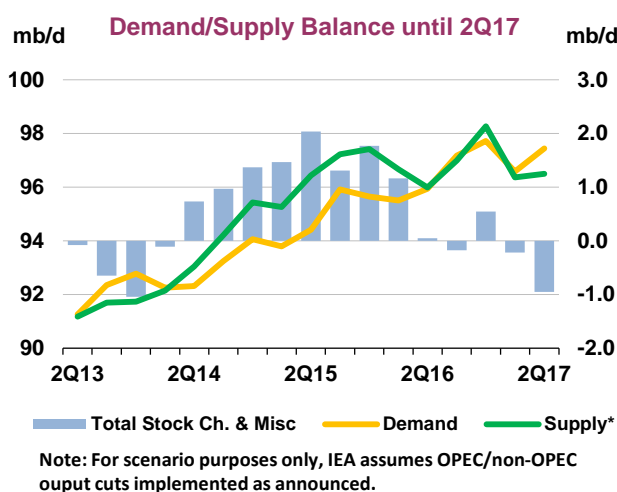
It is now half time for the six-month oil production cuts agreed by OPEC and eleven non-OPEC countries. So far, the game has gone fairly well for producers. Prices have stabilised again recently after falling by about ten percent in early March, with recent unplanned outages and rising political tension in the Middle East playing a role. For OPEC countries, compliance has been impressive from the start while non-OPEC participants are gradually increasing their compliance rate, although in their case it is harder for analysts to verify the data.

Even at this mid-way point, we can consider what comes next. It is of course OPEC's business to decide on its output levels, but a consequence of (hypothetically) extending their output cuts beyond the six-month mark would be bigger implied stock draws. This would provide further support to prices, which in turn would offer further encouragement to the US shale oil sector and other producers.

Indeed, although the oil market will likely tighten throughout the year, overall non-OPEC production, not just in the US, will soon be on the rise again. Even after taking into account production cut pledges from the eleven non-OPEC countries, unplanned outages in Canada as well as in the North Sea, we expect production will grow again on a year-on-year basis by May. For the full year, we see growth of 485 kb/d, compared to a decline of 790 kb/d in 2016. The main impetus comes from the US where monthly data shows that output reached 9.0 mb/d in March, up from a trough of 8.6 mb/d in September 2016. We now expect that US production will be 680 kb/d higher at the end of the year than it was at the end of 2016, an upgrade to our previous forecast.

Another factor that could influence the market balance is revised demand growth. We have cut our growth number for 1Q17 by 0.2 mb/d to 1.1 mb/d. New data shows weaker-than-expected growth in a number of countries including Russia, India, several Middle Eastern countries, Korea and the US, where demand has stalled in recent months. After upgrading demand estimates for 2Q17 and cutting it for the second half of the year, we are left with growth for 2017 at 1.3 mb/d rather than the 1.4 mb/d previously forecast.

Looking at observed stocks versus the implied gap between demand and supply; new OECD stocks data for February shows that, set against the conventional measure of the five-year average, they remain about 330 mb above this level. OECD stocks, particularly products, drew by 0.8 mb/d in 4Q16, but we



estimate that in 1Q17 they increased by 0.4 mb/d, mainly for crude oil and, in turn mainly in Europe and the US. Outside of the OECD, in the Stocks section of this *Report* we show that a group of stock centers, including Saldanha Bay, the Caribbean and floating storage have, provisionally, seen stocks fall by 0.3 mb/d in 1Q17. The net result is that global stocks might have marginally increased in 1Q17 versus an implied draw of about 0.2 mb/d. It can be argued confidently that the market is already very close to balance, and as more data becomes available this will become clearer. We have an interesting second half to come.

# DEMAND

## Summary

- **Growth of 1.3 mb/d is foreseen for 2017**, taking total global demand up to an average 97.9 mb/d. This represents a deceleration from the growth of 1.6 mb/d seen in 2016, chiefly attributable to weaker OECD momentum.
- **For 1Q17, demand data shows** global growth easing back to 1.1 mb/d year-on-year (y-o-y), roughly half the growth rate seen in 4Q16. Slowdowns in the US and OECD Asia Oceania were notable. Non-OECD demand growth remained stable at 1.1 mb/d in 1Q17, although this hides a variety of changes, with many East Asian economies accelerating, and India and Russia slowing abruptly.
- **The latest Chinese data show further accelerations in demand growth.** Having bottomed-out in 3Q16, as transitory factors dampened momentum, y-o-y growth has since recovered steadily, reaching 430 kb/d in 1Q17, its highest level since 2Q16, as industrial activity solidified while closely watched business sentiment indicators hovered near two-and-a-half-year highs. Other Asian economies, such as Hong Kong and Chinese Taipei, have also seen sharp upticks, post 3Q16.
- **The Middle East demand picture has been mixed in recent months, with weakness prevalent in Iran and Saudi Arabia in contrast to relatively robust gains in Kuwait and Iraq.** Supporting growth in the majority of net oil-exporting economies are oil prices typically 40% up on year-earlier levels. In Saudi Arabia, however, cuts in public expenditure remain an important factor in dampening activity.
- **Downgrades to a number of Middle Eastern and African countries resulted in reduced 4Q16 global demand of 97.7 mb/d, 165 kb/d less than previously quoted** but still 2.1 mb/d up on the year earlier.

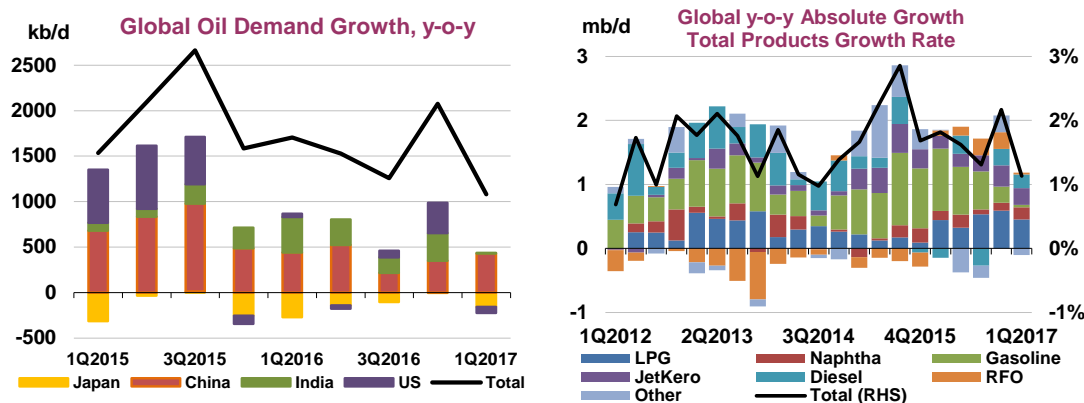
### Global Oil Demand (2015-2017)

|                              | (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         | 4.2         | 4.3         | 4.2         | 4.3         | 4.3         |
| Americas                     | 31.1                       | 31.2        | 31.8        | 31.3        | 31.4        | 31.0        | 31.1        | 31.8        | 31.5        | 31.3        | 30.8        | 31.1        | 31.9        | 31.6        | 31.4        |
| Asia/Pacific                 | 32.3                       | 31.7        | 31.6        | 32.7        | 32.1        | 33.4        | 32.9        | 32.3        | 33.8        | 33.1        | 34.1        | 33.8        | 33.3        | 34.6        | 34.0        |
| Europe                       | 14.1                       | 14.3        | 14.9        | 14.4        | 14.4        | 14.3        | 14.7        | 15.2        | 14.9        | 14.8        | 14.6        | 14.9        | 15.2        | 14.8        | 14.9        |
| FSU                          | 4.3                        | 4.6         | 4.8         | 4.7         | 4.6         | 4.6         | 4.6         | 4.9         | 5.0         | 4.8         | 4.7         | 4.8         | 5.0         | 5.1         | 4.9         |
| Middle East                  | 7.9                        | 8.6         | 8.9         | 8.4         | 8.4         | 8.0         | 8.5         | 8.9         | 8.3         | 8.4         | 8.1         | 8.6         | 8.9         | 8.6         | 8.6         |
| <b>World</b>                 | <b>93.8</b>                | <b>94.4</b> | <b>95.9</b> | <b>95.6</b> | <b>94.9</b> | <b>95.5</b> | <b>95.9</b> | <b>97.2</b> | <b>97.7</b> | <b>96.6</b> | <b>96.6</b> | <b>97.4</b> | <b>98.5</b> | <b>99.1</b> | <b>97.9</b> |
| Annual Chg (%)               | 1.7                        | 2.3         | 2.9         | 1.7         | 2.1         | 1.8         | 1.6         | 1.3         | 2.2         | 1.7         | 1.1         | 1.6         | 1.4         | 1.4         | 1.4         |
| Annual Chg (mb/d)            | 1.5                        | 2.1         | 2.7         | 1.6         | 2.0         | 1.7         | 1.5         | 1.3         | 2.1         | 1.6         | 1.1         | 1.5         | 1.4         | 1.3         | 1.3         |
| Changes from last OMR (mb/d) | 0.0                        | 0.0         | 0.0         | 0.0         | 0.0         | 0.1         | 0.0         | 0.0         | -0.2        | 0.0         | -0.1        | 0.1         | -0.1        | -0.2        | -0.1        |

\* Including biofuels

## Global Overview

Demand growth of 1.3 mb/d is expected in 2017, with demand reaching 97.9 mb/d. Although this will be a second consecutive annual deceleration from the 2015 peak of 2.0 mb/d, the forecast gain of 1.3 mb/d is still above the trend seen before oil prices fell sharply in late 2014. We should warn that our growth forecast of 1.3 mb/d for 2017 could prove optimistic. In 1Q17 demand growth eased back to 1.1 mb/d y-o-y with sizeable slowdowns in the US and OECD Asia Oceania all but eradicating overall OECD growth. In contrast, non-OECD economies maintained their momentum in 1Q17, growing by 1.1 mb/d y-o-y. Within the non-OECD countries there are differing trends. Many east-Asian economies, including China, Hong Kong and Chinese Taipei, saw demand growth build in 1Q17, while India and Russia saw sizeable slowdowns.



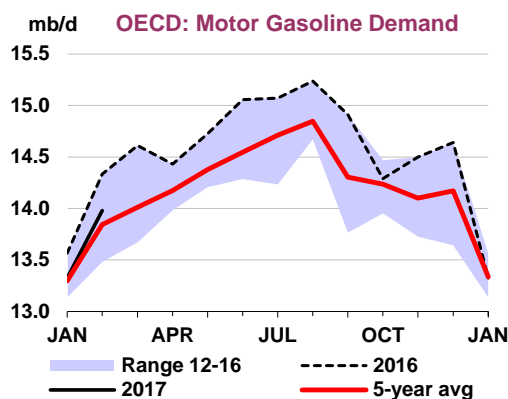
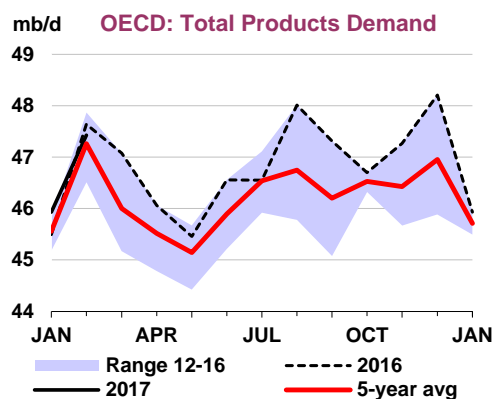
We forecast non-OECD growth picking up somewhat, post-1Q17, as, most importantly, India emerges from its de-monetisation lull (see *Decoding the de-monetisation*), while other countries recently in recession, e.g. Russia and Brazil, return to growth. Supported by this additional non-OECD demand growth, global momentum is forecast to average 1.3 mb/d in 2017, slightly below the 1.4 mb/d we saw in last month's *Report*.

### OECD Demand based on Adjusted Preliminary Submissions - February 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>10.60</b> | <b>-3.2</b> | <b>1.80</b>  | <b>0.0</b> | <b>4.70</b>  | <b>1.6</b> | <b>0.68</b>  | <b>27.7</b> | <b>0.73</b> | <b>64.3</b>  | <b>5.99</b>  | <b>-5.88</b> | <b>24.50</b>   | <b>-0.9</b> |
| US50                           | 8.86         | -3.7        | 1.51         | -0.9       | 3.83         | 2.4        | 0.33         | 49.8        | 0.42        | 112.3        | 4.50         | -6.08        | 19.46          | -1.1        |
| Canada                         | 0.84         | 3.9         | 0.14         | 3.8        | 0.31         | -0.7       | 0.28         | 16.1        | 0.05        | -1.6         | 0.84         | 0.04         | 2.46           | 3.1         |
| Mexico                         | 0.74         | -5.0        | 0.08         | 8.8        | 0.35         | -4.8       | 0.04         | -3.9        | 0.16        | 68.7         | 0.53         | -13.16       | 1.92           | -3.3        |
| <b>OECD Europe</b>             | <b>1.83</b>  | <b>0.1</b>  | <b>1.29</b>  | <b>1.3</b> | <b>4.74</b>  | <b>1.8</b> | <b>1.65</b>  | <b>-1.6</b> | <b>0.95</b> | <b>-2.2</b>  | <b>3.75</b>  | <b>3.51</b>  | <b>14.21</b>   | <b>1.3</b>  |
| Germany                        | 0.41         | 0.8         | 0.18         | 5.7        | 0.77         | 3.5        | 0.41         | -17.0       | 0.11        | -19.0        | 0.56         | 7.27         | 2.44           | -1.4        |
| United Kingdom                 | 0.29         | -1.5        | 0.34         | -1.7       | 0.52         | -2.5       | 0.13         | 7.7         | 0.03        | 2.0          | 0.33         | -0.06        | 1.64           | -0.8        |
| France                         | 0.15         | 2.5         | 0.14         | 1.6        | 0.69         | -1.3       | 0.27         | 5.4         | 0.06        | 26.5         | 0.44         | 1.14         | 1.75           | 1.6         |
| Italy                          | 0.20         | -3.6        | 0.09         | -3.7       | 0.43         | -0.2       | 0.08         | -11.5       | 0.07        | -9.1         | 0.37         | 1.89         | 1.24           | -1.8        |
| Spain                          | 0.11         | -1.8        | 0.11         | 13.4       | 0.46         | 1.5        | 0.20         | 6.7         | 0.14        | -6.5         | 0.33         | 12.33        | 1.35           | 4.5         |
| <b>OECD Asia &amp; Oceania</b> | <b>1.54</b>  | <b>-0.7</b> | <b>1.25</b>  | <b>1.0</b> | <b>1.35</b>  | <b>2.3</b> | <b>0.54</b>  | <b>-6.4</b> | <b>0.66</b> | <b>-12.9</b> | <b>3.38</b>  | <b>-2.22</b> | <b>8.71</b>    | <b>-2.0</b> |
| Japan                          | 0.87         | -1.0        | 0.80         | 0.3        | 0.44         | 2.8        | 0.42         | -3.9        | 0.32        | -16.8        | 1.62         | -4.08        | 4.47           | -3.1        |
| Korea                          | 0.21         | 0.6         | 0.24         | 1.2        | 0.36         | 7.4        | 0.10         | -16.3       | 0.28        | -10.1        | 1.49         | 0.46         | 2.67           | -0.5        |
| Australia                      | 0.33         | -1.5        | 0.16         | 2.6        | 0.45         | -2.0       | 0.00         | 0.0         | 0.04        | 3.3          | 0.18         | -5.40        | 1.15           | -1.6        |
| <b>OECD Total</b>              | <b>13.98</b> | <b>-2.5</b> | <b>4.34</b>  | <b>0.7</b> | <b>10.78</b> | <b>1.7</b> | <b>2.87</b>  | <b>3.0</b>  | <b>2.34</b> | <b>7.7</b>   | <b>13.11</b> | <b>-2.41</b> | <b>47.42</b>   | <b>-0.4</b> |

\* Including US territories



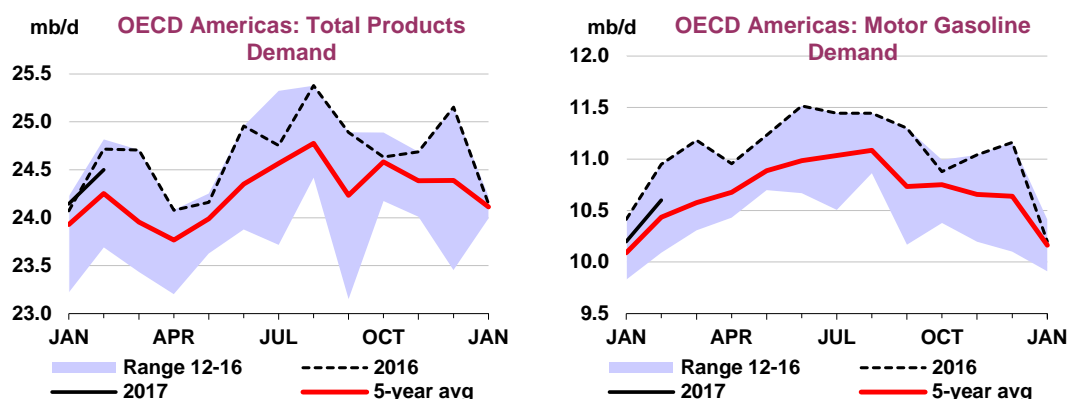


## OECD

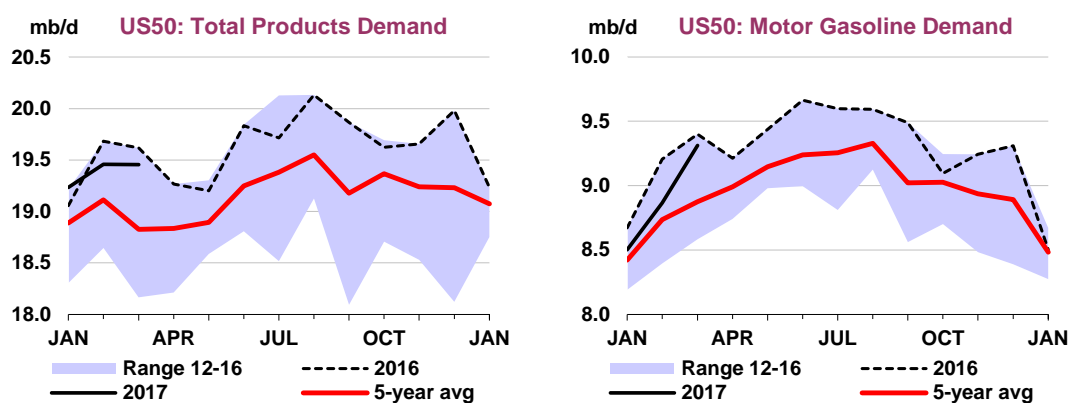
The sharp slowdown in OECD demand growth is the key point in this month's *Report*. Preliminary data show 1Q17 OECD demand growth essentially vanishing, having been as high as 935 kb/d y-o-y in 4Q16. Dramatic slowdowns in the US, Japan and Korea were the key catalysts, although slowdowns were also seen in Germany, the UK and Italy. On a product-specific basis, gasoline demand returned to a declining trend, chiefly in the US. This is the first time OECD gasoline demand has fallen y-o-y since 3Q14.

## Americas

The return of y-o-y declines in the US in 1Q17 pulled the overall OECD American demand estimate sharply down in 1Q17 by 110 kb/d to 24.4 mb/d. This decline is in stark contrast to the 300 kb/d y-o-y gain in 4Q16, and is largely attributable to sharp reversals in gasoline in the OECD Americas, flipping from a 120 kb/d y-o-y gain in 4Q16 to a 210 kb/d decline in 1Q17.



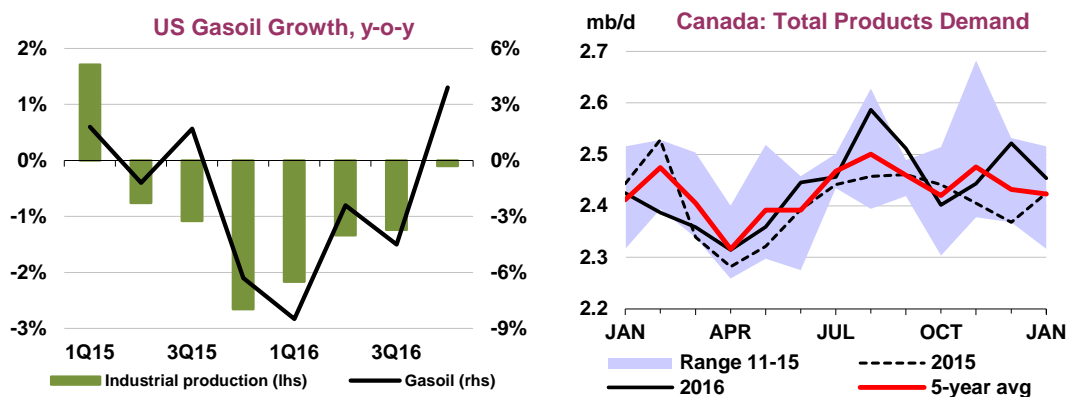
After solid growth in 2016, when **US** oil product demand rose by 105 kb/d to 19.6 mb/d, early indicators for 2017 confirm the slowdown forecast in recent editions of this *Report*. In 1Q17, US demand, at 19.4 mb/d, was down by 65 kb/d y-o-y, or 0.3%, due mainly to a reversal for gasoline.



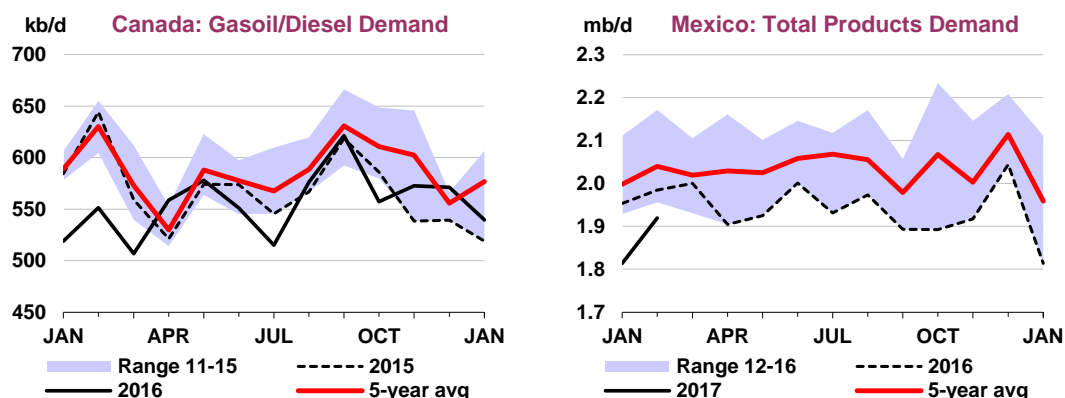
Up by approximately 150 kb/d in 2016, to 9.3 mb/d, following 2015's gain of 255 kb/d, US gasoline demand more than stalled in 1Q17, falling by an average 195 kb/d y-o-y or 2.2%. Higher pump prices were a factor, as was weaker consumer confidence, slowing vehicle sales and, in the background, ongoing efficiency improvements. The Energy Information Administration (EIA) cited the average all-grades retail gasoline price at \$2.47 per gallon in the last week of March/first week of April, roughly 8% up on November 2016. Lower vehicle sales further undermined growth, with the Bureau of Economic Analysis citing new passenger vehicle registrations in January at 441 400, the lowest level in more than five years. Furthermore, the University of Michigan's much-watched consumer confidence indicator dipped to a three-month low of 96.3 in February. Finally, despite reports of still rising vehicle usage (a

2.2% y-o-y increase in miles driven in January, according to the Federal Highways Administration), gasoline demand eased as American vehicles continue to become more fuel-efficient. The EIA's *Annual Energy Outlook* of 2017 stated that the average efficiency of all cars and light trucks on US roads would rise to 22.5 miles per gallon (mpg) in 2017 (this is the total US vehicle stock, not just new sales), from 21.8 mpg in 2015. Indeed, the US fuel-economy standard for new light-truck sales (which drove a lot of the 2015-16 upside) in 2016 was 28.8 mpg, significantly tougher than the corresponding standard for US passenger cars ten years earlier, which was 27.5 mpg.

The recent rebound in US industrial oil use curbed the downward revision to demand growth. Gasoil/diesel demand returned to y-o-y growth in 4Q16, after a year of consistent declines. The path of gasoil demand growth logically matches overall industrial activity (see *US Gasoil Growth, y-o-y* chart), which, if it continues to grow as forecast for 2017, should be enough to support at least modest overall US demand growth in 2017. For the year, total demand growth will be very modest indeed at 45 kb/d to reach 19.7 mb/d.

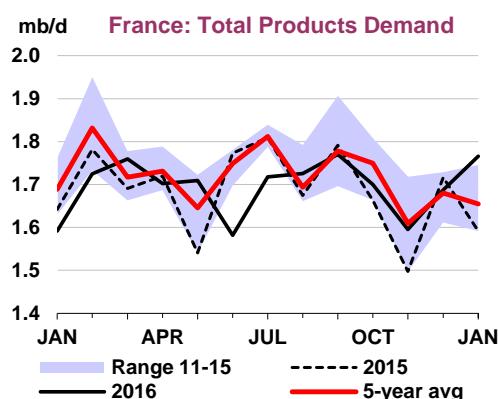
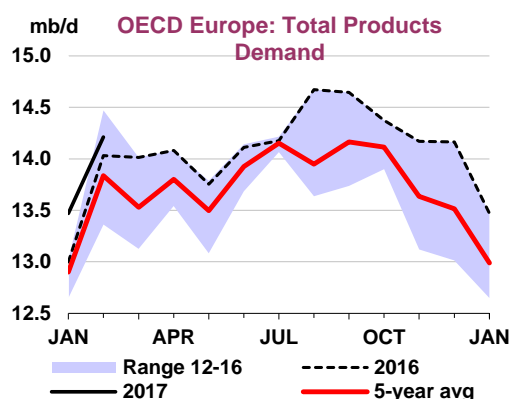


Pulled up by continued strong gains in gasoil, **Canadian** oil product demand grew consistently from March 2016 to January 2017, with only one notable exception in October. Increasing gasoil demand accounted for 72% of January's 30 kb/d y-o-y gain and an average of 64% over the October-January period, up appreciably as underlying industrial activity has rebounded. Statistics Canada reported overall industrial output up 1.7% y-o-y in November after a year-and-a-half of outright declines in 2015 through to 1H16. In contrast to Canada's recent strength, **Mexican** oil product demand has declined y-o-y since March 2016, pulled down by particularly weak LPG and residual fuel oil demand.

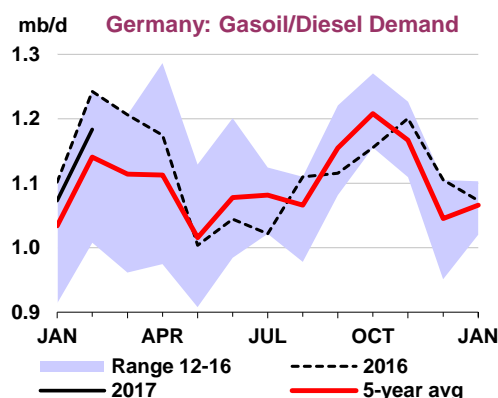
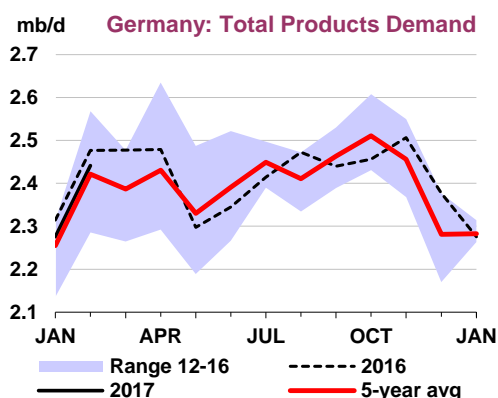


## Europe

Preliminary 1Q17 European demand data shows a slowdown from 4Q16, as higher prices and milder weather dampened growth. The 485 kb/d y-o-y gain seen in 4Q16, eased to 255 kb/d in 1Q17. The scale of the 1Q17 slowdown is less than previously forecast due to notably higher estimates of French and Italian demand. Also, baseline European demand has been raised following official upgrades to historical numbers for Spain and Finland. Accordingly, the 2016 European demand estimate was raised by 45 kb/d to 14.1 mb/d, equivalent to upwardly revised growth of 345 kb/d, spread across the barrel. The **Spanish** 2016 demand estimate of 1.3 mb/d was hiked by 25 kb/d to show average growth of 40 kb/d, largely due to upgrades to LPG and 'other products'. For **Finland**, the demand number for 2016 was raised by 15 kb/d to 210 kb/d, changing the outlook from flat demand to strong growth of 8%. With 1Q17 demand growth slowing, and further easing expected, total European oil demand is forecast to average 14.2 mb/d in 2017, just 70 kb/d up on 2016.

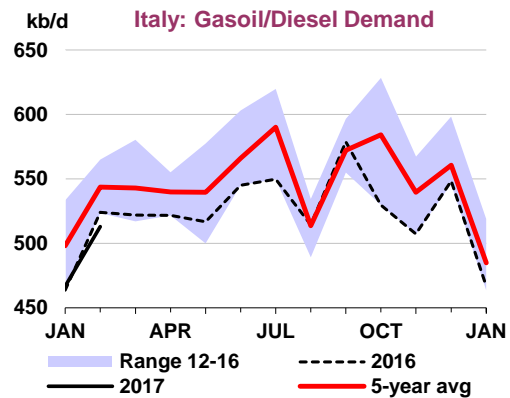
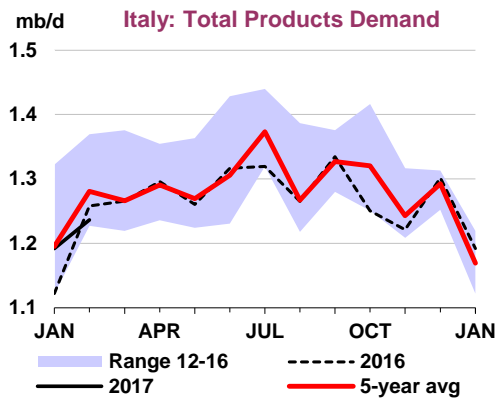


**French** demand data for January showed a 175 kb/d y-o-y increase, although we point out that part of this is due to the French authorities including for the first time in their numbers data for its overseas territories. These include French Guiana, Guadeloupe, Martinique, Mayotte and Reunion. We await clarification as to when/whether this data will be incorporated historically.

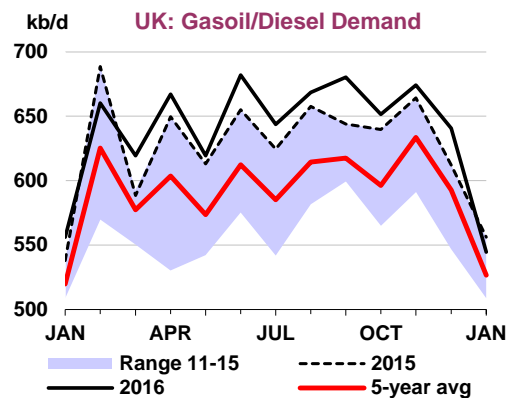
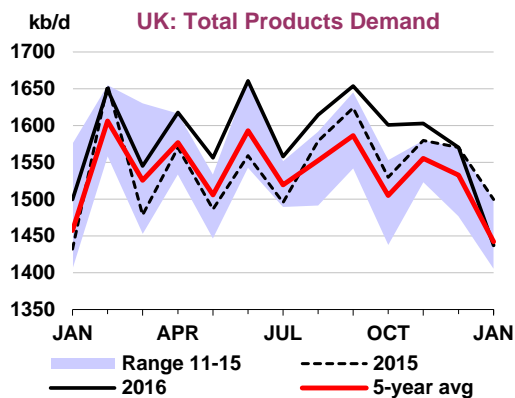


In contrast, the latest **German** data depicts a return to outright y-o-y demand declines, with a fall of 40 kb/d in January followed by a similar dip in February. Industrial oil product demand suffered as industrial growth drew to a standstill at the turn of the year, with the Federal Statistics Office reporting a 0.1% y-o-y decline in industrial activity in December and zero growth in January. This followed growth of 2.3% in November. Similarly, **Italian** demand flipped back into decline in February, down by 20 kb/d having risen by 70 kb/d in January. It was hit by renewed declines in jet/kerosene, gasoil/diesel and lower increases in LPG and naphtha. Despite February's renewed decline, the outlook for Italy in 2017, at 1.3 mb/d, has been modestly changed and now a smaller decline of 10 kb/d is foreseen.



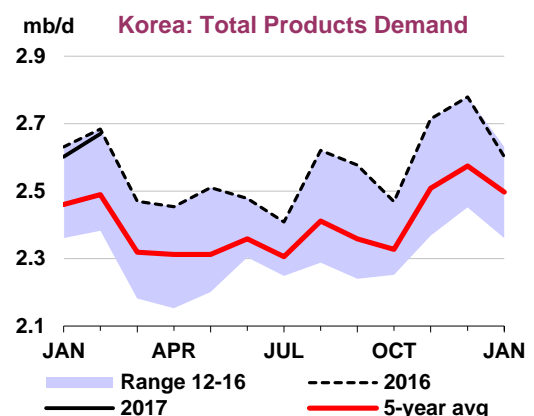


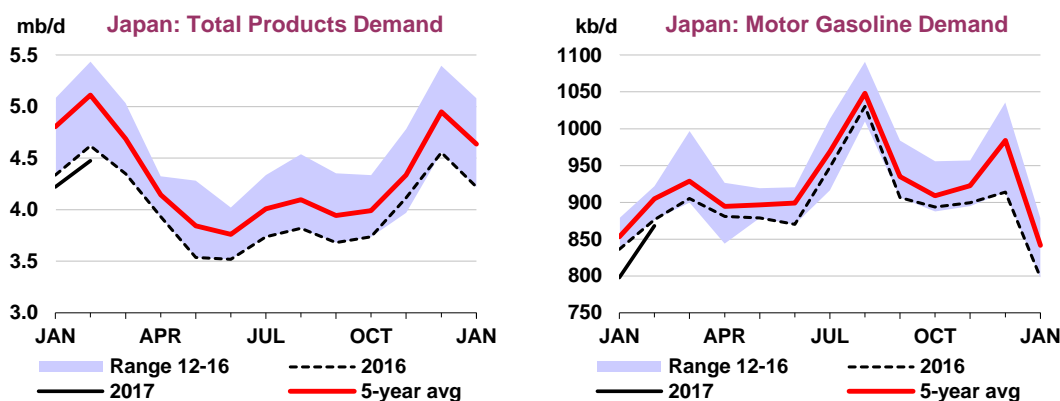
Early-2017 **UK** data surprised to the downside, as demand averaged 1.4 mb/d in January, 60 kb/d (or 4.2%) below year-earlier levels. Sharp reversals in gasoil/diesel and LPG use were key factors. Having risen by 50 kb/d in 2016, UK demand is forecast to flatten in 2017, to average 1.6 mb/d, with declines in gasoil, gasoline and residual fuel oil roughly offsetting modest gains elsewhere.



## Asia Oceania

The largest 1Q17 downside revision for OECD Asia Oceania in this *Report* is in **Korea**, where the decline that began in January continued into February. Having risen y-o-y in every month since July 2015, consecutive declines were seen in the first two months of 2017, respectively falling by 30 kb/d and 15 kb/d. Sharp declines in residual fuel oil use proved the main catalyst, dampened by weak manufacturing activity and curbed bunker sales following problems at Korean shipping giant Hanjin. Weaker middle distillate demand also curbed growth, once again reflecting ailing manufacturing sentiment and the recent spate of product recalls at Samsung. The Nikkei Manufacturing Purchasing Managers' Index (PMI) for Korea eased to a four-month low of 48.4 in March 2017. Last month we were cautious about trimming our Korean demand forecast too dramatically in the face of January's somewhat surprise correction. This month our outlook has been trimmed to show growth for 2017 of 65 kb/d.





Despite tentative signs of a recovery towards the end of 2016, **Japanese** oil product demand returned to its normal recent pattern with y-o-y declines of 115 kb/d and 145 kb/d in January and February respectively. Sharp falls in residual fuel oil, 'other products' and gasoline demand were the main factors. Gasoline demand in January and February contracted y-o-y by 40 kb/d (or 4.6%) and 10 kb/d (or 1%) respectively, with gasoline prices roughly one-fifth higher than the year earlier and the Japanese Ministry of Economy citing y-o-y retail sales growth almost completely vanishing in February to only 0.1%. Impacted by this weak start to the year, the Japanese demand forecast for 2017 is for a decline of 3.8% to 3.8 mb/d, a level not seen since 1970.

## Non-OECD

The non-OECD demand trend has remained reasonably stable recently, with growth of 1.1 mb/d in both 4Q16 and 1Q17. Digging into the data reveals some dramatic differences, however, with sharp slowdowns in India and Russia offset by accelerations in East Asia and slower declines in Iran and Brazil. More rapid non-OECD demand growth is forecast, post-1Q17, as the recent Indian slowdown likely proves transitory while many recent recession-hit economies, e.g. Brazil and Russia, are forecast to recover towards the end of the year.

### Non-OECD: Demand by Region

|                       | (thousand barrels per day) |               |               |                   |              |                |            |
|-----------------------|----------------------------|---------------|---------------|-------------------|--------------|----------------|------------|
|                       | Demand                     |               |               | Annual Chg (kb/d) |              | Annual Chg (%) |            |
|                       | 3Q16                       | 4Q16          | 1Q17          | 4Q16              | 1Q17         | 4Q16           | 1Q17       |
| Africa                | 4,099                      | 4,157         | 4,240         | 37                | 73           | 0.9            | 1.8        |
| Asia                  | 24,529                     | 25,508        | 25,658        | 1,038             | 818          | 4.2            | 3.3        |
| FSU                   | 4,932                      | 4,973         | 4,668         | 253               | 37           | 5.4            | 0.8        |
| Latin America         | 6,771                      | 6,674         | 6,453         | -114              | -6           | -1.7           | -0.1       |
| Middle East           | 8,851                      | 8,325         | 8,135         | -80               | 121          | -1.0           | 1.5        |
| Non-OECD Europe       | 703                        | 697           | 686           | 9                 | 11           | 1.3            | 1.6        |
| <b>Total Products</b> | <b>49,886</b>              | <b>50,334</b> | <b>49,840</b> | <b>1,142</b>      | <b>1,054</b> | <b>2.3</b>     | <b>2.2</b> |

## China

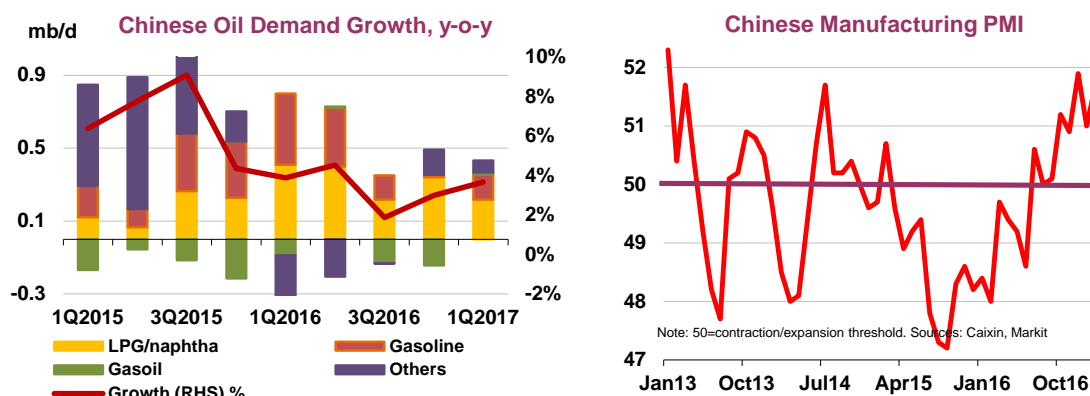
Estimates of 1Q17 Chinese oil demand show a y-o-y gain of approximately 430 b/d, or 3.7%, as underlying macroeconomic momentum shows signs of solidifying. Chinese oil demand averaged 12.2 mb/d in 1Q17, an all-time high pulled up by robust gains in petrochemical feedstock demand and jet/kerosene (see *Growing aviation sector will secure China's jet/kerosene demand growth*). Absolute gains (y-o-y) were in fact seen right across all of the main product categories, the first time this has happened since late 2014.

## 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         | 1,534         | 267               | 156        | 24.0           | 11.3       |
| Naphtha               | 1,002         | 1,076         | 1,105         | 74                | 29         | 7.4            | 2.7        |
| Motor Gasoline        | 2,582         | 2,797         | 3,007         | 215               | 210        | 8.3            | 7.5        |
| Jet Fuel & Kerosene   | 604           | 655           | 702           | 51                | 46         | 8.4            | 7.1        |
| Gas/Diesel Oil        | 3,377         | 3,287         | 3,324         | -90               | 37         | -2.7           | 1.1        |
| Residual Fuel Oil     | 311           | 229           | 173           | -82               | -55        | -26.5          | -24.3      |
| Other Products        | 2,552         | 2,500         | 2,463         | -52               | -36        | -2.0           | -1.5       |
| <b>Total Products</b> | <b>11,541</b> | <b>11,922</b> | <b>12,308</b> | <b>381</b>        | <b>387</b> | <b>3.3</b>     | <b>3.2</b> |

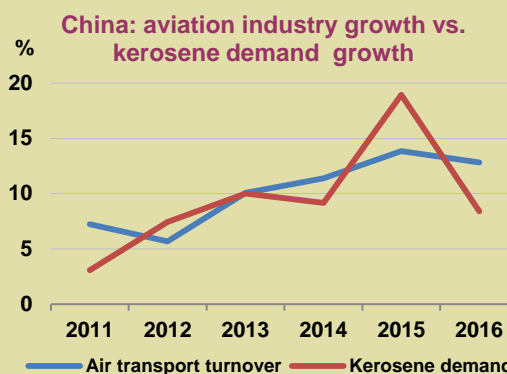
Pulled up by accelerating gains in industrial activity and greater business confidence, significant y-o-y gains were seen in gasoil, residual fuel oil, LPG and naphtha in 1Q17. Growth was also seen for gasoline and jet/kerosene, gains derived from solidifying Chinese consumer sentiment, which proved more than sufficient to offset any downside influence from higher retail prices. The commonly-quoted consumer confidence index of the National Bureau of Statistics (NBS) surged to a near ten-year high of 112.6 in February, while industrial activity rose by 6.3% y-o-y in January-February and Caixin's Manufacturing Purchasing Managers' Index (PMI) remained strong at a near two-and-a-half-year high. Following this stronger than expected start to the year, the Chinese demand outlook for 2017 has been raised to 12.3 mb/d, 385 kb/d up on 2016 and an upward revision of 75 kb/d from last month's *Report*.



### Growing aviation sector will secure China's jet/kerosene demand growth

Accounting for over 5% of its total oil consumption, China's kerosene demand has consistently supported demand growth in recent years. The average growth rate for kerosene demand in the last five years has been close to 11%, and reached a peak of 19% in 2015. In 2016, the rate dropped back to 8%, and will drop further in 2017.

Over 90% of the kerosene used in China is consumed by the aviation industry, which grew very rapidly in the last two decades. Strong GDP growth, the rise of a significant middle class population, the shift from investment-led to consumer-led growth, and policy incentives, all played important roles. China has become the world's second largest aviation market, and the fastest growing. Air transport turnover – an approximation of freight and passenger use – grew by 11% y-o-y on average in the last five years. Total aircraft numbers – both domestic and international – also grew by 11% annually and the number of airports in China with passenger throughput of over



### **Growing aviation sector will secure China's jet/kerosene demand growth (continued)**

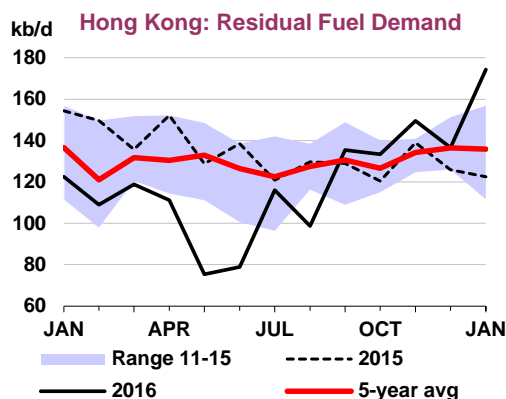
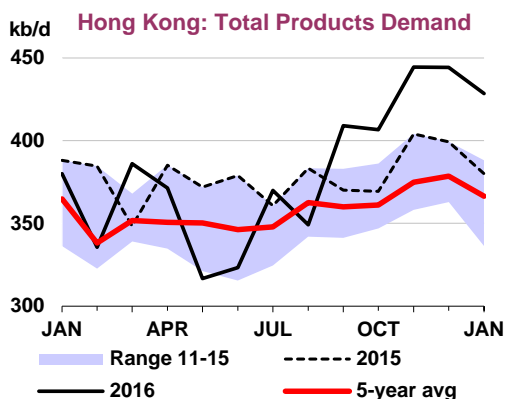
10 million people a year reached 28 million in 2016, nearly twice as many as in 2010. This rapid expansion caused a considerable increase in kerosene demand. The speed of the aviation demand growth reached its peak in 2015, when the government eliminated fuel surcharges for domestic flights for the first time since late 2009, and lower oil prices significantly reduced costs for airlines, which passed on the benefit to passengers, stimulating travel. The airline industry turnover rate reached 13%, a record since 2011, and strongly boosted kerosene demand to 605 kb/d, representing 18.9% y-o-y growth. This momentum weakened in 2016 as oil prices recovered, and the fast development of China's high-speed railway network brought competition to the airline business. Consequently, Chinese jet/kerosene demand growth decelerated to 8.4% in 2016.

In the future, China's aviation industry will expand vigorously. According to the International Air Transport Association (IATA), China is set to overtake the US as the single biggest air traffic market by 2020, with an annual growth target for air traffic turnover at 12.2%, leaving a big space for jet/kerosene demand to grow. However, China also has ambitious strategies for developing its high-speed railways. The objective is to expand the current network by at least 23,000 km by 2020.

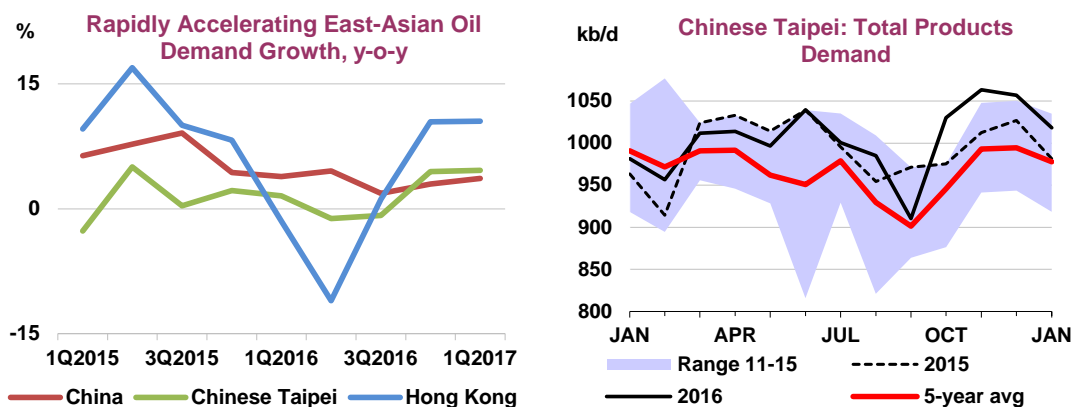
The competition from high-speed rail, together with the enhancement of bio-kerosene production and fuel efficiency, will, to some extent, slow down the growth of kerosene demand. Even so, we estimate that, in the near term, demand in 2017 will reach 700 kb/d, representing y-o-y growth of 7%.

### **Other Non-OECD**

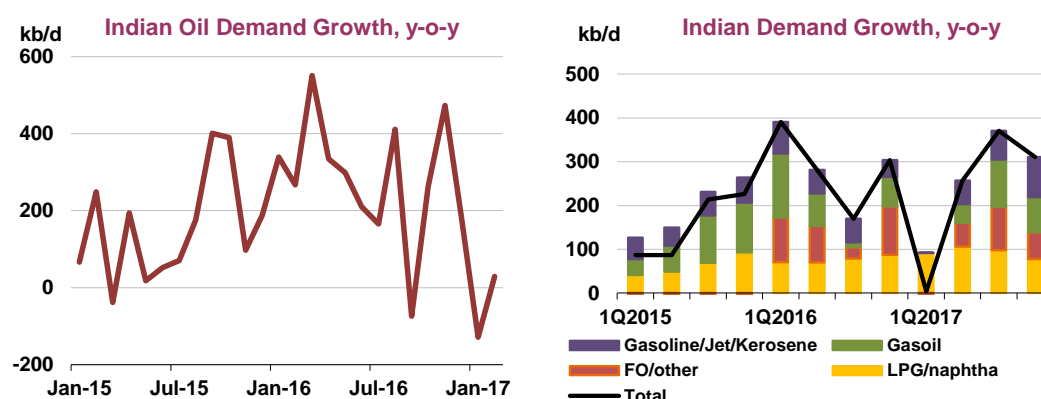
An even more rapid re-acceleration has been seen in **Hong Kong** since August, with double-digit percentage point gains each month due largely to rapid expansion in demand for gasoil/diesel and residual fuel oil. These two products led the upside, garnering support from strong bunker fuel demand, partly offset by weaker industrial demand. Both gasoil and residual fuel oil demand growth averaged 20 kb/d y-o-y, from September to January, together accounting for almost all of the net average 40 kb/d gain.



The latest data for **Chinese Taipei** depict a similarly robust post-September re-acceleration, as y-o-y growth averaged 45 kb/d in September to January versus the prior six-month average y-o-y decline of 10 kb/d. Strengthening dynamics in residual fuel oil and naphtha proved to be the two most significant catalysts, both products benefiting from firmer industrial demand. The Ministry of Economic Affairs showed industrial production 10.6% higher than the year earlier. Following January's strong start to the year, relatively robust growth is foreseen in 2017, with demand growing 20 kb/d to 1.0 mb/d; a notable acceleration on 2016.



The **Indian** demand growth outlook for 2017 has been marginally curtailed, following another month of very weak post-demonetisation demand. The economy has struggled for upside momentum since last year's currency reform (see *Decoding the de-monetisation*). February data showed oil demand barely up at all compared to the year earlier, an improvement on January's near 3% y-o-y decline but still well down on the pre-demonetisation trend. Only very modest growth was seen in February as particularly sharp declines in gasoil/diesel, residual fuel oil, bitumen, lubricants and greases offset persistent growth in LPG, naphtha and gasoline. After enduring an exceptionally weak 1Q17, relatively robust gains are forecast to return over the remainder of the year, supporting growth for 2017 of 235 kb/d. Total Indian demand will average 4.5 mb/d in 2017, up by nearly 1 mb/d in just five years.



### Decoding the de-monetisation

On 8 November the Indian Prime Minister, Narendra Modi, announced the cancellation as legal tender of the high-denomination 500 and 1000 rupees bank notes issued by the Reserve Bank of India (RBI), or 86% of all cash in circulation. As stated by the Bank, the objective of de-monetisation was to tackle the counterfeiting of bank notes, to effectively nullify black market money hoarded in cash and to curb the funding of terrorism. Newly denominated, harder to copy, 500 and 2000 rupee bank notes were issued.

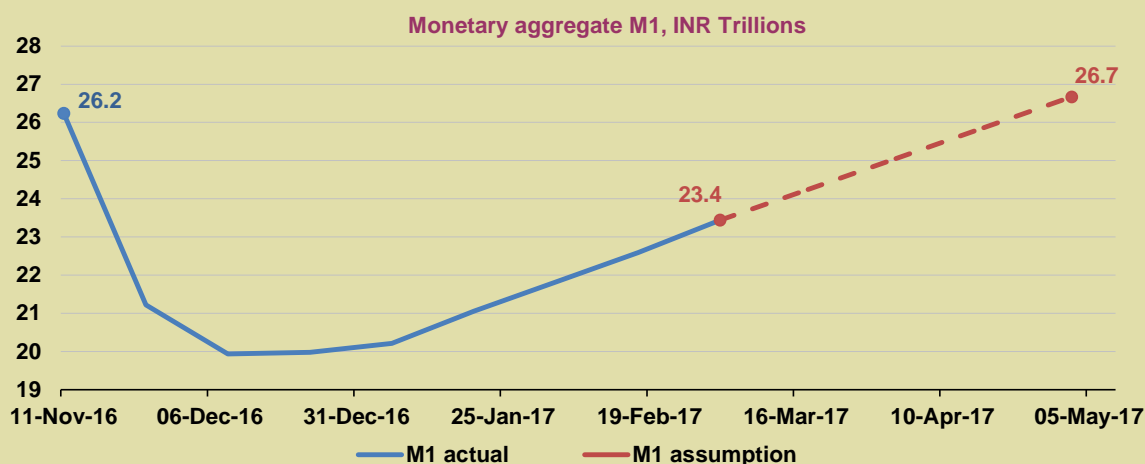
A window during which old notes could either be deposited or exchanged was open from 9 November to 30 December 2016. Private citizens could exchange up to 4000 rupees in cash irrespective of the size of the bank note and any amount above 4000 rupees was receivable by way of a credit to a bank account, which could be opened by giving proof of identity and proof of address. However, if no proof could be given, a "small account" (limited in terms of balance, credits or withdrawal) could still be opened. The Indian government set cash withdrawal limits and restrictions from 9 November 2016 to 8 February 2017 from current and savings accounts as well as ATMs.

Indian monetary aggregate M1, which includes currency with the public, demand deposits with the banking system and other deposits with the RBI, stood at 26.2 Trillion Indian Rupees (INR) three days after de-monetisation was announced.



### Decoding the de-monetisation (continued)

At the beginning of March it stood at 23.4 Trillion INR. As an assumption, if monetary aggregate M1 grows at the same pace seen recently (around 1.6 Trillion INR per month, on average), pre-de-monetisation levels may be reached as early as in the beginning of May, while progressively diminishing the cash shortage. This gradual increase of the re-monetisation pace should have a positive impact on private consumption.



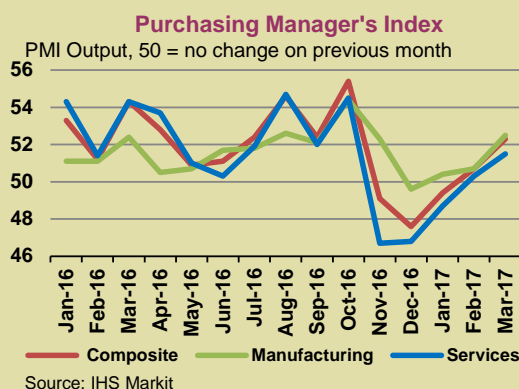
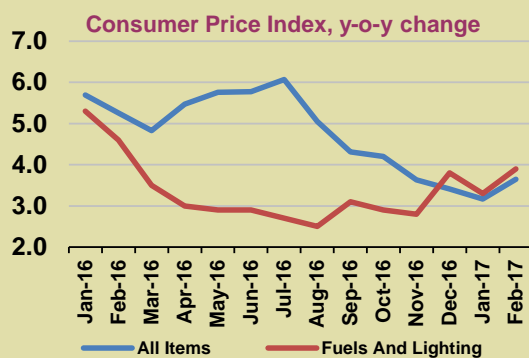
According to official data from Central Statistics Office of India, the de-monetisation had a small negative effect during 4Q16, as real GDP grew by 7.0% over the previous year, compared to 7.4% in 3Q16. Judging from official data, de-monetisation may have had a negative impact on finance, real estate and the professional services sectors, as their combined contribution to the Gross Value Added (GVA) annual 4Q16 increase of 6.6% declined significantly, from 2.0 percentage points in 3Q16 to 0.6 percentage points in 4Q16. Alternatively, the manufacturing and agricultural sectors increased their contribution to GVA growth in 4Q16, from 1.2 percentage points in 3Q16 to 1.4 in 4Q16, despite the fact that these sectors were expected to be particularly affected by de-monetisation due to their cash dependency. During the G20 meeting of finance ministers and central bank governors in March 2017, the International Monetary Fund stated that growth in India is expected to pick up once the effects of cash shortages linked to the currency exchange initiative fade.

As for petroleum products, since the beginning of de-monetisation in November 2016, demand has eased, i.e. month-on-month (m-o-m) growth turned negative while y-o-y growth decelerated and turned negative in January. Post-January, both y-o-y and m-o-m growth returned. As for individual products, diesel and gasoline demand, which jointly account for roughly half of Indian petroleum product demand, reached double-digit percentage point growth in November, respectively as the Indian government allowed for the use of old 500 and 1,000 rupees bank notes at fuel pumps until 2 December. This led to a rush in filling up fuel tanks that potentially may explain the decline in demand in January. Additionally, given that purchases of fuel for cars and two and three wheelers are heavily cash dependent, both diesel and gasoline demand decreased respectively by 8% and 1% in January over the previous year. As the cash shortage was progressively ameliorated in February, gasoline demand growth returned while the respective diesel decline eased.

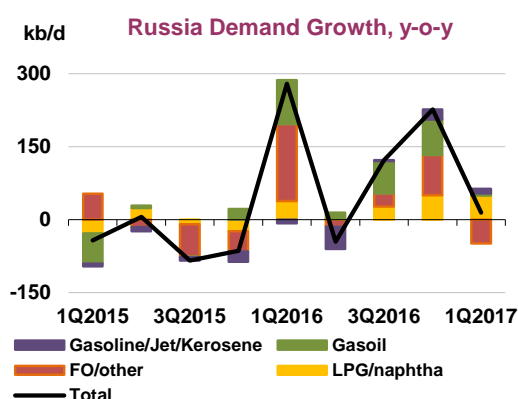
Petroleum coke consumption also decreased in January by 18% y-o-y and has since returned to growth (+0.2% y-o-y in February), while aviation fuel and LPG remained strong since de-monetisation began. Aviation fuel consumption grew by 15% y-o-y from November to February, on average, as air travel in India, which is increasingly affordable to a wider range of the population, is not heavily cash-based.

Similarly, LPG demand has registered positive y-o-y growth rates for the past three and a half years, supported by the promotion of the use of LPG for cooking & lighting.

The recovery in petroleum products demand in February added upward pressure on the Consumer Price Index (CPI). This effect was captured by both the overall CPI and the CPI sub-component "Fuels and Lighting", which increased by 3.7% y-o-y and 3.9%, respectively. Additionally, the increase of global oil prices in February compared to the previous year added pressure to fuel prices.

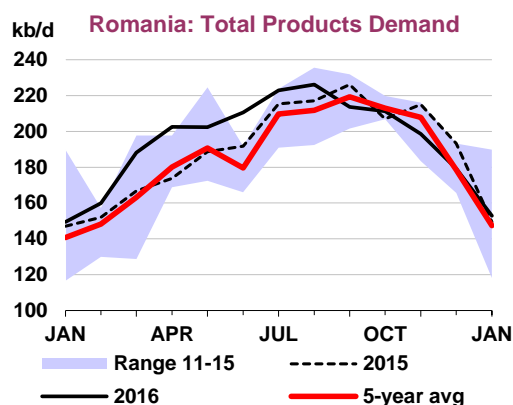
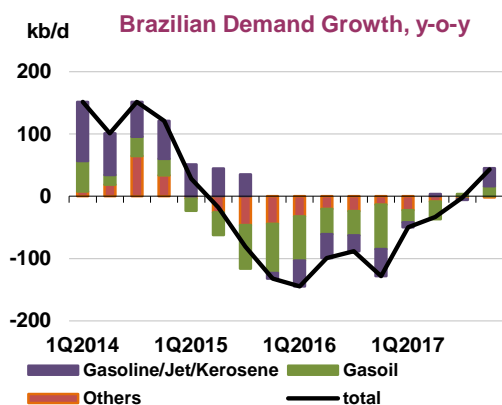
**Decoding the de-monetisation (continued)**

The Composite Purchasing Manager's Index (PMI) rose to a five-month high in March, reaching expansion territory (above 50) for the second time since de-monetisation took place in November. The confidence level in the manufacturing and services sectors also show signs of a gradual recovery. To conclude, the impact upon Indian oil demand growth from de-monetisation is already proving transitory, albeit significant. De-monetisation trims prospective Indian oil demand growth to around 235 kb/d in 2017, down pointedly on 2016's pre-de-monetisation +285 kb/d pace but still notably up on previous years.



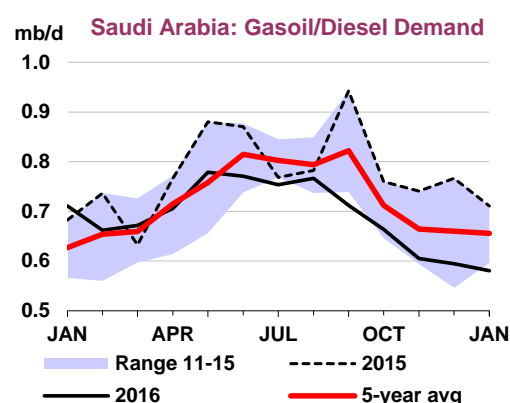
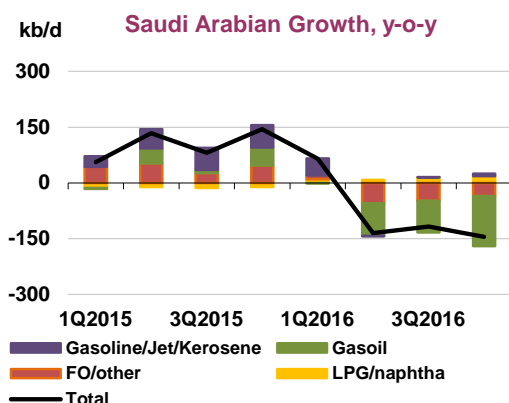
**Russian** demand growth has eased back considerably in recent months, albeit remaining in positive territory, as the appreciation of the ruble has dented manufacturing activity and oil product demand. Having scaled a y-o-y high of 425 kb/d in March 2016, a steady deceleration has since been seen through to y-o-y growth of only 20 kb/d in February; attributable to weaknesses in industrial oil use and road transport. The Federal State Statistics Service reported a 2.7% y-o-y decline in total Russian industrial activity in February, the first such fall since late 2015. The cost-competitiveness of the manufacturing sector has deteriorated sharply as the ruble has appreciated by roughly 20% since the beginning of 2016, to a level not seen since mid-2015. Having experienced robust growth of approximately 145 kb/d in 2016, momentum is forecast to roughly halve in 2017, and potentially by even more depending on further currency adjustments.

Much weaker than previously foreseen 1Q17 demand numbers in **Brazil** pulled down the demand estimate for the year as a whole to 3.1 mb/d. We are now showing a further decline of 10 kb/d in 2017 compared to 2016. The forecast contraction is, however, much reduced compared to the 115 kb/d drop experienced in 2016, as the economic backdrop is considerably less bearish. In 2016, the Brazilian economy contracted by 3.5% but for 2017 the International Monetary Fund foresees a 0.2% increase in activity, as cited in their *World Economic Outlook* of January 2017. Projected to lead renewed growth towards the end of the year will be gasoline and diesel, as demand for both passenger vehicles and freight pick up.

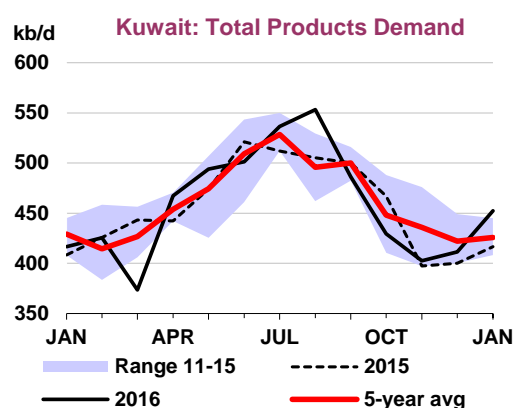
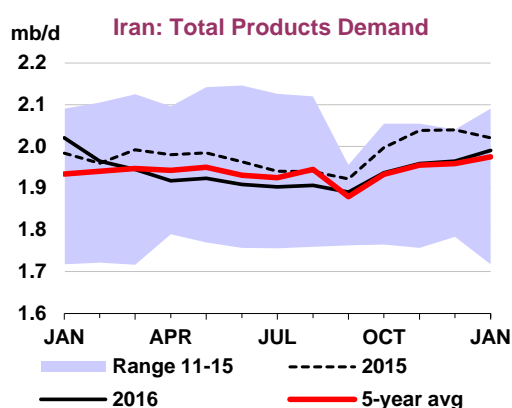


Having seen strong growth through the majority of 2016, oil demand in **Romania** fell heavily November-December, pulled down by sharp decelerations in retail spending growth which impacted both air and road transport demand. With a modest recovery seen in January, the outlook for 2017 as a whole remains one of growth, up by 10 kb/d to an average 205 kb/d.

In **Saudi Arabia**, sharp reductions in government expenditures due to lower oil prices since late 2014 continue to weaken demand, which has been on a declining y-o-y trend since early 2016. The pace of this decline gathered momentum in 4Q16, pulled down by sharp contractions in gasoil, residual fuel oil and the power sector's use of crude oil. The latest data suggest a further sharp, y-o-y, decline of 180 kb/d in January, led by sizeable drops in gasoil, gasoline and 'other products'. This has caused us to switch our 2017 forecast to show a modest 0.6% decline as opposed to the small increase previously predicted.



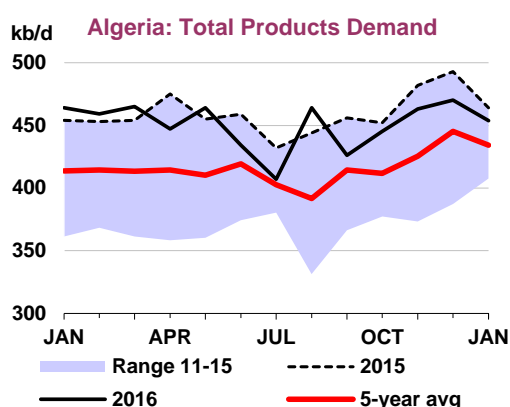
In **Iran**, demand continues to fall as it did through most of 2016. In January, demand fell 30 kb/d y-o-y although the pace of decline has eased and we expect that renewed growth will emerge towards the end of 2017. Thus for the year as a whole, oil demand is forecast to average 2.0 mb/d, 60 kb/d up on 2016, with industrial fuels leading the upside. In sharp contrast to soft Iranian demand has been the strength seen in **Iraq** and **Kuwait**. In Iraq oil demand growth averaged close to 75 kb/d y-o-y in 4Q16 and 100 kb/d in January. Rapid gains in transport fuels and industrial demand were key factors. **Kuwait**, meanwhile, saw demand growth of 35 kb/d y-o-y in January, or 8.6%, supported mainly by robust industrial oil use.



### Non-OECD: Demand by Product

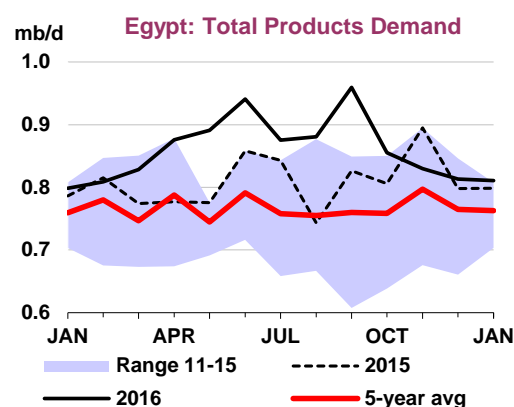
(thousand barrels per day)

|                       | Demand        |               |               | Annual Chg (kb/d) |              | Annual Chg (%) |            |
|-----------------------|---------------|---------------|---------------|-------------------|--------------|----------------|------------|
|                       | 3Q16          | 4Q16          | 1Q17          | 4Q16              | 1Q17         | 4Q16           | 1Q17       |
| LPG & Ethane          | 5,890         | 6,158         | 6,216         | 550               | 404          | 9.8            | 7.0        |
| Naphtha               | 2,613         | 2,697         | 2,743         | 58                | 89           | 2.2            | 3.3        |
| Motor Gasoline        | 11,087        | 11,150        | 11,203        | 165               | 276          | 1.5            | 2.5        |
| Jet Fuel & Kerosene   | 3,237         | 3,210         | 3,266         | 131               | 138          | 4.2            | 4.4        |
| Gas/Diesel Oil        | 14,540        | 14,764        | 14,245        | -133              | 25           | -0.9           | 0.2        |
| Residual Fuel Oil     | 5,365         | 5,381         | 5,334         | 205               | 33           | 4.0            | 0.6        |
| Other Products        | 7,153         | 6,973         | 6,833         | 167               | 88           | 2.4            | 1.3        |
| <b>Total Products</b> | <b>49,886</b> | <b>50,334</b> | <b>49,840</b> | <b>1,142</b>      | <b>1,054</b> | <b>2.3</b>     | <b>2.2</b> |



The recent weakness in **Algerian** demand continued into January 2017, with five consecutive months of falling y-o-y demand seen since September 2016 and an overall decline *in-situ* since 1Q16. Sharp declines in gasoil/diesel and gasoline have been the main factors, with lower gasoil demand accounting for 15 kb/d of the average 20 kb/d September-January and gasoline the rest. Algerian demand came in at around 450 kb/d in 2016, roughly 10 kb/d below 2015. Despite 2017 commencing in declining territory, with a drop in January of 10 kb/d y-o-y, modest growth is foreseen for the year, somewhat dependent upon higher export revenues from the energy sector.

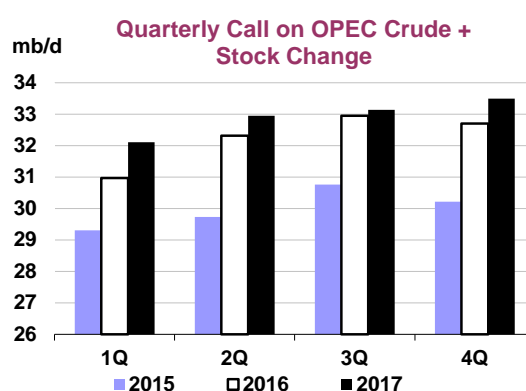
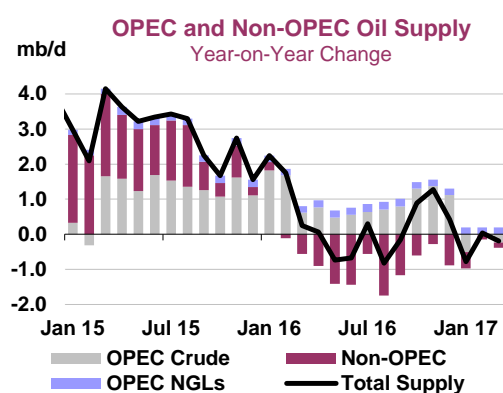
The North African malaise also impacted **Egypt** at the turn of the year, as y-o-y demand growth averaged just 15 kb/d in December and January. Recent gains are down substantially on the average for 2016 as a whole of 55 kb/d. Sharp slowdowns in Egyptian residual fuel oil use proved the main catalyst, as the power sector made greater use of natural gas. GE, for example, completed modernisation work at its Kureimat power plant in Atfieh. Easing oil use in the power sector is a trend that is likely to continue over the short to medium term, keeping the forecast for Egyptian oil demand growth in 2017 below that for recent years.



# SUPPLY

## Summary

- **The world's oil supply fell by 755 kb/d in March as OPEC and non-OPEC producers pumped less and tightened compliance with a global output pact.** At 95.98 mb/d, production stood 195 kb/d below a year ago. Global supply of 96.35 mb/d during 1Q17 was 310 kb/d below the same period in 2016.
- **OPEC crude output fell by 365 kb/d in March to 31.68 mb/d, led by losses in Nigeria, Libya – both exempt from the group's supply cuts - and Saudi Arabia.** Production from most members bound by the six-month output deal edged lower, boosting compliance in March and putting 1Q17 adherence at a robust 99%. Overall March crude supply was 230 kb/d below a year ago.
- **OPEC's 1Q17 crude oil output of 31.9 mb/d was down 1.38 mb/d from the record seen in 4Q16 and came in 240 kb/d below the 1Q17 "call" on its crude.** The requirement for OPEC crude rises to 32.9 mb/d in 2Q17, which implies global stocks will draw further if OPEC maintains solid adherence to its 1.2 mb/d supply cut. The call on OPEC rises through 2H17 and reaches 33.5 mb/d during the final quarter of the year.
- **Non-OPEC oil supplies dropped by 390 kb/d in March** on lower shipments from the North Sea, further output cuts in Russia and as an unscheduled outage curbed production in Canada. At 57.6 mb/d, total output stood 150 kb/d below a year ago, compared with an annual decline of 790 kb/d in 2016.
- **The outlook for US crude oil production has been revised higher by 55 kb/d for 2017** on vigorous drilling activity since the start of the year. US crude production at the end of the year will be 9.5 mb/d, 690 kb/d higher than at the end of 2016. For the year as a whole, growth in US crude supply is expected to average 260 kb/d, while total non-OPEC liquids are forecast to expand by 485 kb/d, to 58.1 mb/d.
- **Compliance from non-OPEC's 11 that pledged to cut output by 558 kb/d from January, is estimated to have improved to 64% in March, from 38% a month earlier.** Russian output dropped by 56 kb/d in March, with government officials maintaining that the 300 kb/d reduction will be met by the end of April. Mexico, Oman and Azerbaijan had likely met their obligation by March, while Kazakhstan's production continued to rise.

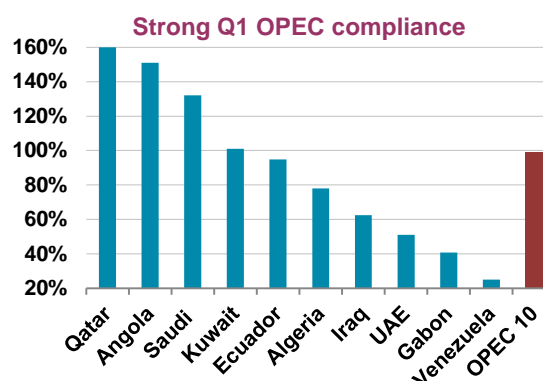
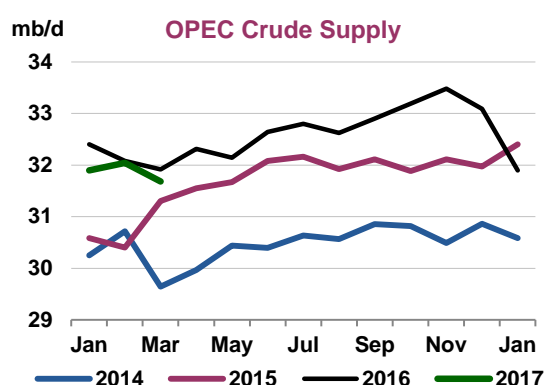


All world oil supply data for March discussed in this report are IEA estimates. Estimates for OPEC countries, Alaska, Azerbaijan and Russia are supported by preliminary March supply data.



## OPEC crude oil supply

Led by losses in Nigeria, Libya – both exempt from supply cuts - and Saudi Arabia, OPEC crude output fell by 365 kb/d in March to 31.68 mb/d. Nigeria posted the biggest decline, 140 kb/d, which was mostly due to planned maintenance at the offshore Bonga field. A recovery in Libya was interrupted by renewed fighting that disrupted production and exports. Its ports and oil field had restarted earlier this month, but a new blockade on 9 April has shut the El Sharara field again. Saudi Arabia, which is shouldering the bulk of OPEC's reduction, pumped less in March, with crude oil flows of 9.93 mb/d running 130 kb/d below its agreed target.



Adherence to OPEC's 1.2 mb/d reduction improved during March after output eased in most member countries. Ongoing maintenance at onshore oilfields in the UAE further trimmed production closer to its supply target. Crude shipments from Iran, granted a slight increase under the OPEC output pact, slowed slightly, and hefty volumes of condensate stored at sea were drawn down. Exports from Iraq, including the Kurdistan Regional Government (KRG), declined in March, but production held up – keeping Baghdad some distance from full compliance. Overall OPEC output for the month was down 230 kb/d year-on-year (y-o-y).

### OPEC Crude Production

(million barrels per day)

|                      | Feb 2017 Supply | Mar 2017 Supply | Supply Baseline <sup>1</sup> | Agreed Cut   | Actual Cut <sup>2</sup> | February Compliance | March Compliance | 2017 Average Compliance |
|----------------------|-----------------|-----------------|------------------------------|--------------|-------------------------|---------------------|------------------|-------------------------|
| Algeria              | 1.05            | 1.05            | 1.09                         | -0.05        | -0.04                   | 78%                 | 78%              | 78%                     |
| Angola               | 1.65            | 1.62            | 1.75                         | -0.08        | -0.13                   | 129%                | 168%             | 151%                    |
| Ecuador              | 0.53            | 0.52            | 0.55                         | -0.03        | -0.03                   | 88%                 | 108%             | 95%                     |
| Gabon                | 0.20            | 0.20            | 0.20                         | -0.01        | -0.01                   | 22%                 | 78%              | 41%                     |
| Iran <sup>3</sup>    | 3.82            | 3.80            | 3.71                         | 0.09         | 0.09                    | NA                  | NA               | NA                      |
| Iraq                 | 4.42            | 4.41            | 4.56                         | -0.21        | -0.15                   | 67%                 | 72%              | 62%                     |
| Kuwait               | 2.71            | 2.70            | 2.84                         | -0.13        | -0.14                   | 98%                 | 106%             | 101%                    |
| Qatar                | 0.59            | 0.60            | 0.65                         | -0.03        | -0.05                   | 193%                | 160%             | 160%                    |
| Saudi Arabia         | 9.98            | 9.93            | 10.54                        | -0.49        | -0.61                   | 116%                | 126%             | 132%                    |
| UAE                  | 2.93            | 2.91            | 3.01                         | -0.14        | -0.11                   | 60%                 | 78%              | 51%                     |
| Venezuela            | 2.05            | 2.03            | 2.07                         | -0.10        | -0.04                   | 18%                 | 39%              | 25%                     |
| <b>Total OPEC 11</b> | <b>29.93</b>    | <b>29.76</b>    | <b>30.97</b>                 | <b>-1.16</b> | <b>-1.21</b>            | <b>90%</b>          | <b>104%</b>      | <b>99%</b>              |
| Libya <sup>4</sup>   | 0.67            | 0.61            |                              |              |                         |                     |                  |                         |
| Nigeria <sup>4</sup> | 1.45            | 1.31            |                              |              |                         |                     |                  |                         |
| <b>Total OPEC</b>    | <b>32.05</b>    | <b>31.68</b>    |                              |              |                         |                     |                  |                         |

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

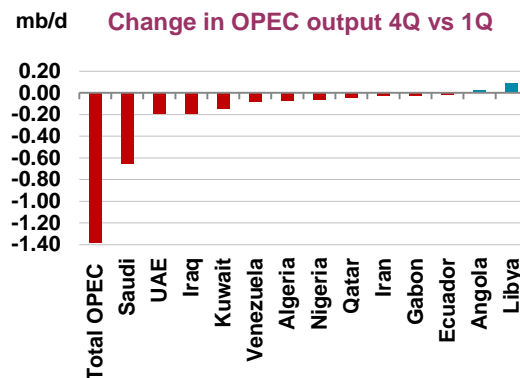
<sup>2</sup> From OPEC supply baseline.

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

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

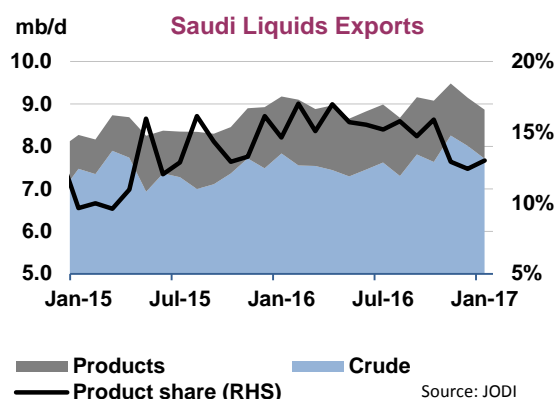
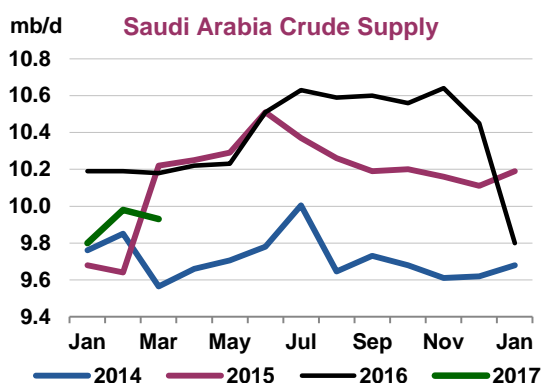
At half time in the six-month deal, OPEC achieved an average 99% of its target after Saudi Arabia – along with Kuwait, Qatar and Angola – cut by more than agreed. First quarter production of 31.9 mb/d was down 1.38 mb/d from the record level seen in 4Q16 and was 260 kb/d below 1Q16. In terms of volume, Saudi Arabia cut the most during the first quarter. The UAE, Iraq and Kuwait also made significant reductions.

The group's 1Q17 output was 240 kb/d below the first quarter call on OPEC. The requirement for OPEC crude rises to 32.9 mb/d in 2Q17, which implies global inventories will draw further if OPEC maintains solid adherence to its 1.2 mb/d supply cut. The call rises through 2H17 and reaches 33.5 mb/d during the final quarter of the year.



Supply from **Saudi Arabia** decreased by 50 kb/d to 9.93 mb/d in March, with flows remaining below the 10.06 mb/d output target for a third month straight. Saudi output in 1Q17 was down 650 kb/d from record rates of 10.55 mb/d in 4Q16.

Saudi crude exports also scaled historic highs during the last quarter of 2016 ahead of the OPEC output deal. The latest official data from the Joint Organisations Data Initiative (JODI) show a sharp cut in production during January but crude exports fell by less due to stocks being drawn down to a five-year low. Official figures show Saudi production declined by 970 kb/d between a November peak and January, while exports fell by only 545 kb/d.



Saudi Aramco cut monthly formula prices for May shipments of light crude to Asia, in line with expectations, but lifted the price for US oil sales. The state company also plans to change the way it prices crude for Europe from July in a bid to make it easier for customers to hedge.

In a landmark decision aimed at bolstering Saudi Aramco's initial public offering planned for 2018, the Kingdom cut taxes on the state oil company. The new tax regime, to be applied retroactively from 1 January 2017, cuts the tax rate on Saudi Aramco to 50% from 85% to align it with international benchmarks.

The **UAE** crept closer to full compliance during March as output fell further due to maintenance at the onshore oil fields that produce benchmark Murban crude. Supply eased 25 kb/d to 2.91 mb/d. The offshore fields that pump Das Blend are scheduled for maintenance from May. Kuwait and Qatar have been at or beyond full compliance since January. **Kuwaiti** supply dipped to 2.7 mb/d during March. Despite OPEC's supply cuts, Kuwait is pressing ahead with plans to boost capacity. A \$1.3 billion contract

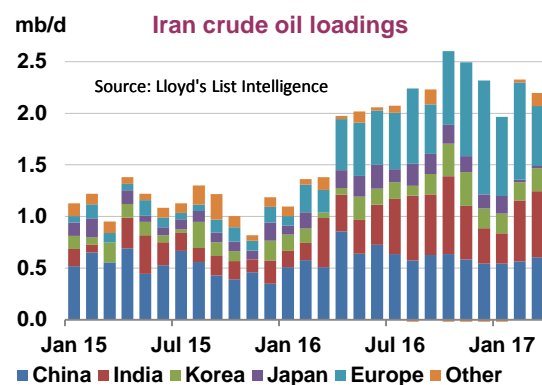
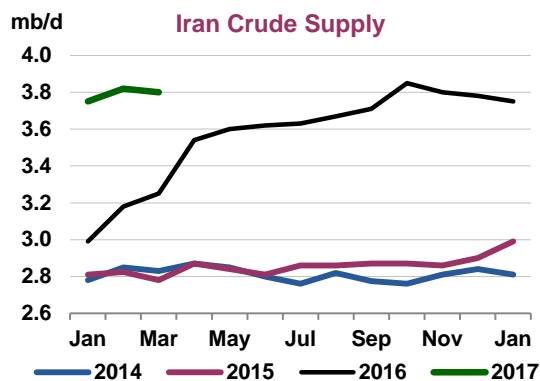
was awarded to Petrofac to build a new 120 kb/d crude oil gathering centre by mid-2020 to maintain production at its giant Burgan oil field. **Qatari** output bumped up to 600 kb/d in March after oil field maintenance cut flows to 590 kb/d the month before.

In a surprise announcement, Qatar Petroleum said in early April that it would lift its 12-year ban on development of the North Field, the world's largest gas field that it shares with Iran, where it is known as South Pars. Production of some 2 billion cubic feet per day of LNG will come from a new project in the southern sector of the North Field. Qatar, the world's largest LNG exporter, imposed the moratorium in 2005 to study the impact of a rise in North Field output from nearly zero in the 1990s to more than 20 billion cubic feet per day. The new project, expected to come online in five to seven years, would boost North Field output by around 10% and add about 400 kboe/d. The North Field accounts for nearly all of Qatar's gas production and roughly 60% of its export revenue. Qatar is expected this year to lose its top exporter position to Australia, where new output is starting up. Iran wants to ramp up supply from South Pars to deal with a chronic domestic gas shortage.

**Iranian** supply in March dipped by 20 kb/d to 3.8 mb/d, up 550 kb/d on a year ago. Under the 30 November OPEC deal, Iran was allowed to lift production to 3.8 mb/d and it pumped just shy of that mark during the first quarter.

Preliminary tanker tracking data show exports of Iranian crude oil eased to 2.2 mb/d during March and nearly all the country's oil stored at sea – most of which was condensate – has been sold off.

Before sanctions were eased in early 2016, Iran stored unsold oil on its tankers. Six months ago, 13 tankers holding around 26 million barrels of condensate from South Pars gas projects were floating off the coast of Iran. By the end of March, only 4 million barrels were still offshore. Most of the volume is believed to have been sold into Asia.



Crude shipments during 1Q17 slowed to about 2.1 mb/d versus nearly 2.4 mb/d in 4Q16. Europe's share of the overall volume has slipped to around 35% from nearly 40% during the last quarter of 2016. During March, customers in Europe lifted only 580 kb/d, a decline of 360 kb/d on the previous month. Preliminary data show a marked slowdown in loadings to Italy and Spain. The National Iranian Oil Co (NIOC) is hoping to fortify its market share by lining up Belarus and Austria as term contract lifters.

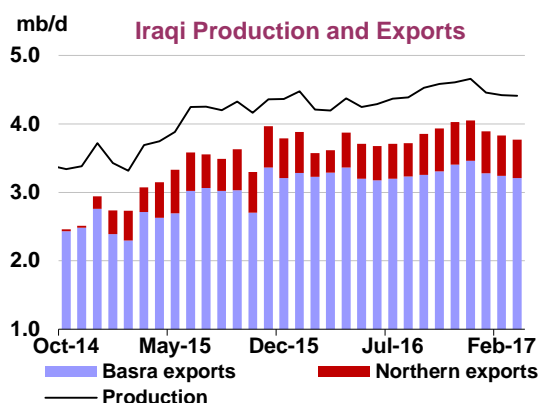
In Asia, India's loadings of 640 kb/d allowed it to overtake China as Iran's top lifter for a second month in March, according to initial tanker data. Hefty purchases from Indian refiners pushed Iranian volumes above 500 kb/d in 1Q17 from 270 kb/d in the first quarter of last year. However, Indian refiners say they will cut supplies from Iran unless NIOC awards the Farzad B upstream gas contract to an Indian consortium. Iran, in response, has reportedly decided to reduce freight discounts to 60% from 80% and narrow the credit period on oil purchases.

Sales to China edged up to 610 kb/d during March. Japan's liftings were subdued for a second month in March as imports from Saudi Arabia rose. Exports to Korea rose by 40 kb/d to 220 kb/d. In a bid to build up its Asian customer base, NIOC is hoping to add Malaysia and Indonesia to its term contract roster.

Iran is meanwhile aiming to launch its new heavy crude, West of Karun, by June having been expected to make its debut last year. Azadegan, Yaran and Yadavaran - the fields that will provide the West of Karun exports - are pumping just under 300 kb/d and a target of 360 kb/d must be met before launching the new grade.

**Iraqi** production, including from the KRG, held broadly steady at 4.41 mb/d in March. Compliance with OPEC's supply cuts was 62% in the first quarter, with production down 190 kb/d on 4Q16. Although shipments of crude to world markets eased by 60 kb/d to 3.77 mb/d, according to tanker data, some quantities of crude moved into storage in the south while domestic consumption in Kurdistan picked up. Exports of Basra crude from Gulf terminals slipped 30 kb/d to 3.21 mb/d in March. Northern exports along the KRG pipeline to Turkey declined to around 560 kb/d.

The Kurdish oil sector was meanwhile dealt another setback when Genel announced a further sharp reserves reduction at its flagship Taq Taq field. Gross proved and probable (2P) reserves at the end of February were 59.1 million barrels, down from 172 million barrels at the end of 2015. Water breakthrough at key producing wells has led to high decline rates and oil output has slumped to 19 kb/d compared to 36 kb/d at the end of 2016 and more than 100 kb/d in 2015.

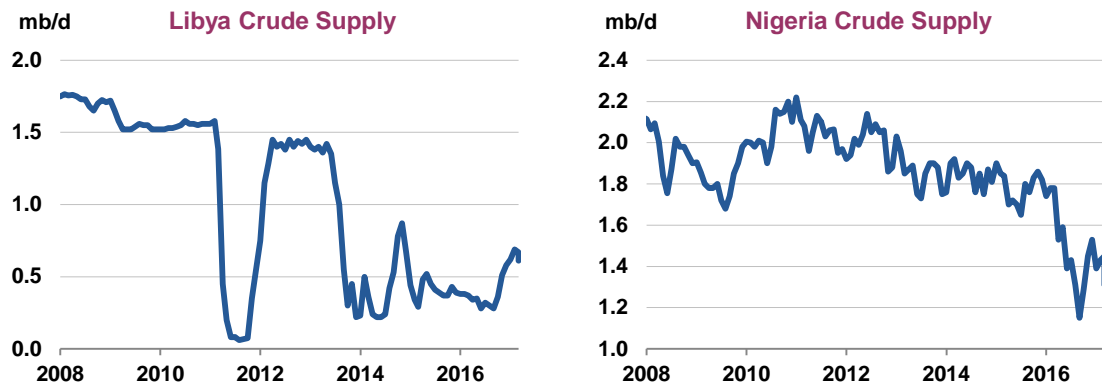


The federal Iraqi government has vowed to boost its production capacity to 5 mb/d this year even as it endeavours to adhere to the OPEC supply deal. To that end, it is reviewing the terms of its technical service contracts in order to bring the interests of the international oil companies (IOCs) and the government more into line. The IOCs have grumbled about their slim margins ever since they began work on the southern mega-projects in 2010. The service contracts, which repay all operating/capital costs plus their \$/bbl remuneration fee do not encourage foreign firms to limit expenses. The lower oil price environment is meanwhile testing Baghdad's ability to meet its revenue requirements.

**Libya's** tentative recovery was dealt a blow in March after protesters forced the temporary closure of the country's biggest oil field and an armed faction briefly took over the eastern terminals of Es Sider and Ras Lanuf from the Libyan National Army (LNA). Output slumped to 610 kb/d, down 60 kb/d from February. Operations at the ports have since resumed, but the El Sharara field – which had briefly restarted – was blocked again on 9 April. Production at the Repsol-operated El-Sharara had climbed back above 200 kb/d before the latest disruption. The new stoppage led the National Oil Corp (NOC) to declare *force majeure* on exports of El Sharara crude from the Zawiya terminal.

Despite the ongoing unrest, NOC continues to target output of 1.1 mb/d by August. Output has more than doubled since last year to reach nearly 700 kb/d before the recent setback. The recovery got underway after three strategic eastern oil terminals reopened in September and El-Sharara resumed production in December following the lifting of a two-year pipeline blockade.

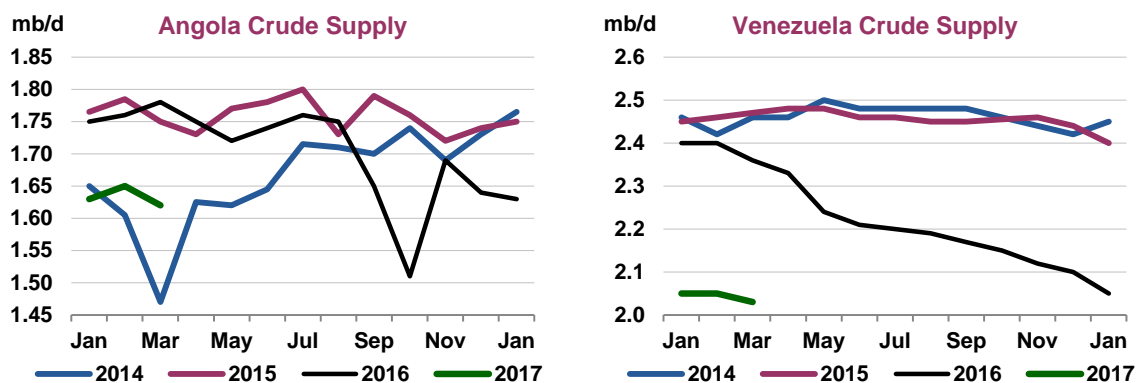
Supply in neighbouring **Algeria** was steady in March at 1.05 mb/d. Sonatrach has appointed its fifth Chief Executive in five years. Abdelmoumen Ould Kaddour has taken over from Amine Mazouzi.



**Nigerian** output fell by 140 kb/d in March to 1.31 mb/d due mostly to scheduled maintenance at the offshore Bonga oil field. Shell, which operates the 225 kb/d capacity field, said in early March that it would be shut for up to five weeks for maintenance and upgrades at the field's floating production, storage and offloading vessel (FPSO). Nigeria's March production level is the lowest since last September and was down 220 kb/d on a year ago when rebels were relentlessly striking core oil pipelines and terminals. Militant attacks have subsided after the government intensified negotiations with Niger Delta leaders who are seeking a greater share of oil revenues.

Output has recovered from 30-year lows of roughly 1.2 mb/d during the summer but 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 by the end of the second quarter.

In **Gabon**, output inched down to 195 kb/d in March. As part of its \$30 billion divestment plan, Royal Dutch Shell has agreed to sell its onshore assets in Gabon for up to \$1 billion to private-equity firm Assala Energy, which is backed by Carlyle Group. The deal, for roughly 40 kb/d of oil output, raises Shell's asset sales to around \$20 billion since it acquired BG Group. Shell's decision to exit Gabon after more than five decades follows a similar move by Total to sell its mature assets and limit its exposure. Production in **Angola** eased in March to 1.62 mb/d.

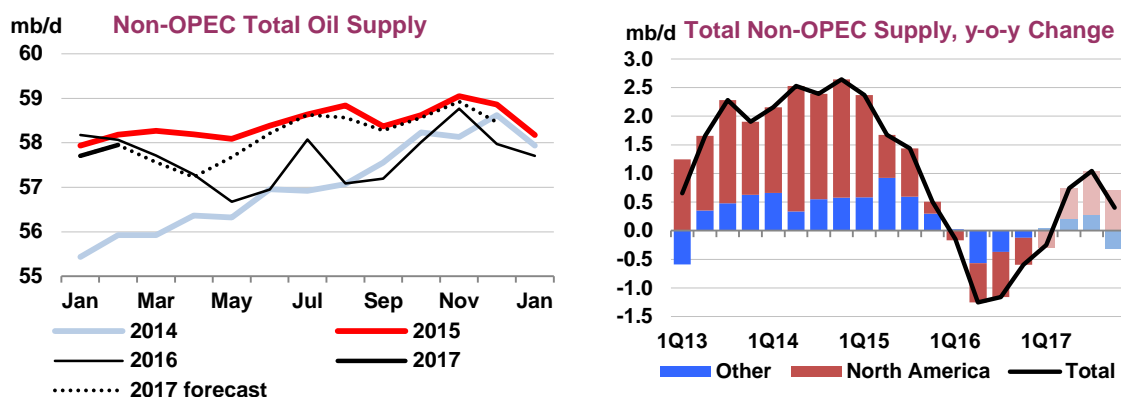


Supply from **Venezuela** slipped to 2.03 mb/d in March, 330 bkd/ below a year ago, after delays at loading terminals reportedly set back operations. Most of Venezuela's foreign currency is earned via crude shipments, but lower oil prices and chronic mismanagement have left Petroleos de Venezuela (PDVSA) short of cash. This has reportedly led PDVSA to offer Rosneft a 10% stake in the Petropiar Orinoco joint venture. PDVSA currently has a 70% share and Chevron holds the remaining stake, which includes a 210 kb/d upgrader and oil field. Production in **Ecuador** inched down to 520 kb/d in March.



## Non-OPEC overview

Non-OPEC oil production declined by 390 kb/d in March on lower supplies from the North Sea, further production cuts in Russia and after a fire at an upgrader curbed output in Canada. Providing a partial offset, US crude supplies rose due to an acceleration in onshore drilling activity. At 57.6 mb/d, total non-OPEC output stood 150 kb/d below a year earlier, compared with a decline of 790 kb/d in 2016. For the year as a whole, it is forecast to increase by 485 kb/d, a 90 kb/d improvement from last month's *Report*.



The outlook for non-OPEC supplies has marginally improved since last month's *Report*, as robust activity in the US is underpinning higher crude oil production later in the year. US crude oil production rose 60 kb/d to 8.84 mb/d in January, the latest month for which consolidated monthly data is available. US crude oil production nevertheless stood nearly 360 kb/d below a year earlier in the first month of the year, though preliminary weekly data suggest year-on-year declines had eroded by early-March, and US operators continue to add rigs. By the end of March, the number of active US oil rigs had risen to 662, an increase of 53 over the past four weeks and 137 more than at the end of 2016. US crude oil production is now seen rising 690 kb/d over the course of 2017, resulting in an average annual increase of 260 kb/d. Total US oil output is forecast to rise by 445 kb/d, to average 13 mb/d in 2017.

### 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        | 19.5        | 20.1        | 20.4        | 19.9        |
| Europe                       | 3.5         | 3.6         | 3.4         | 3.3         | 3.6         | 3.5         | 3.6         | 3.5         | 3.3         | 3.6         | 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>23.4</b> | <b>23.8</b> | <b>24.3</b> | <b>23.8</b> |
| Former USSR                  | 14.0        | 14.3        | 14.1        | 14.0        | 14.5        | 14.2        | 14.4        | 14.3        | 14.3        | 14.3        | 14.3        |
| 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         | 1.9         | 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>29.6</b> | <b>29.6</b> | <b>29.6</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>57.5</b> | <b>58.2</b> | <b>57.7</b> | <b>57.7</b> | <b>57.7</b> | <b>58.5</b> | <b>58.6</b> | <b>58.1</b> |
| Annual Chg (mb/d)            | 1.5         | -0.1        | -1.3        | -1.2        | -0.6        | -0.8        | -0.2        | 0.7         | 1.0         | 0.4         | 0.5         |
| Changes from last OMR (mb/d) | 0.0         | 0.0         | 0.0         | 0.0         | 0.0         | 0.0         | 0.1         | -0.1        | 0.2         | 0.2         | 0.1         |

Further gains this year are set to come from Brazil, Canada and Kazakhstan. While dropping marginally month-on-month (m-o-m), Brazilian oil production posted year-on-year gains of an impressive 380 kb/d in February. Output is still ramping up at three new production units that were commissioned during 2016, and Petrobras is on track to install another four units this year. Maintenance and natural declines

at mature fields are expected to keep output in check, however, so that growth is limited to 215 kb/d for the year as a whole. Scheduled and unscheduled outages will also be key to gains in Canada, but assuming relatively normal levels, production is expected to expand by 190 kb/d. Both countries have the potential to post even larger increases.

Amongst the eleven non-OPEC producers that joined the coordinated supply reduction agreement last November, compliance with the pledged 558 kb/d reduction improved in March. Preliminary data suggest output declines since October, (November for Kazakhstan) amounted to 360 kb/d, implying 64% compliance with agreed cuts. This is a marked improvement from the 38% reduction seen last month and the 47% curb recorded in January.

Crude and condensate output in Russia, which accounts for more than half the promised supply reduction, dropped nearly 60 kb/d in March, so that output stood 175 kb/d below the reference month, or at 58% of promised cuts. Early April data suggest production slipped further, in line with statements from Russian officials that the 300 kb/d production cut would only be reached by the end of April. While it is still too early to know if the output agreement will be extended, the Russian Ministry of Energy has said it expects crude and condensate production to total 548 million tonnes (10.96 mb/d) in 2017, unchanged from 2016 average levels. Consequently, we have slightly lowered our forecast for the second half of this year.

#### Non-OPEC Supply Reduction Commitments

thousand barrels per day (kb/d)

| Country             | IEA Supply Baseline <sup>3</sup> | IEA Jan Oil Output | IEA Feb Oil Output | IEA Mar Oil Output <sup>2</sup> | Agreed Cut  | Actual Cut <sup>3</sup> | January Compliance | February Compliance | March Compliance |
|---------------------|----------------------------------|--------------------|--------------------|---------------------------------|-------------|-------------------------|--------------------|---------------------|------------------|
| Azerbaijan          | 815                              | 803                | 785                | 744                             | -35         | -70                     | 34%                | 83%                 | 201%             |
| Kazakhstan          | 1,778                            | 1,770              | 1,806              | 1,813                           | -20         | 34                      | 42%                | -138%               | -172%            |
| Mexico              | 2,395                            | 2,322              | 2,316              | 2,296                           | -100        | -99                     | 73%                | 79%                 | 99%              |
| Oman                | 1,020                            | 973                | 981                | 974                             | -45         | -45                     | 103%               | 86%                 | 101%             |
| Russia              | 11,597                           | 11,481             | 11,478             | 11,423                          | -300        | -174                    | 39%                | 40%                 | 58%              |
| Others <sup>1</sup> | 1,486                            | 1,478              | 1,509              | 1,481                           | -58         | -5                      | 14%                | -40%                | 8%               |
| <b>Total</b>        | <b>19,090</b>                    | <b>18,827</b>      | <b>18,876</b>      | <b>18,731</b>                   | <b>-558</b> | <b>-359</b>             | <b>47%</b>         | <b>38%</b>          | <b>64%</b>       |

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

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

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

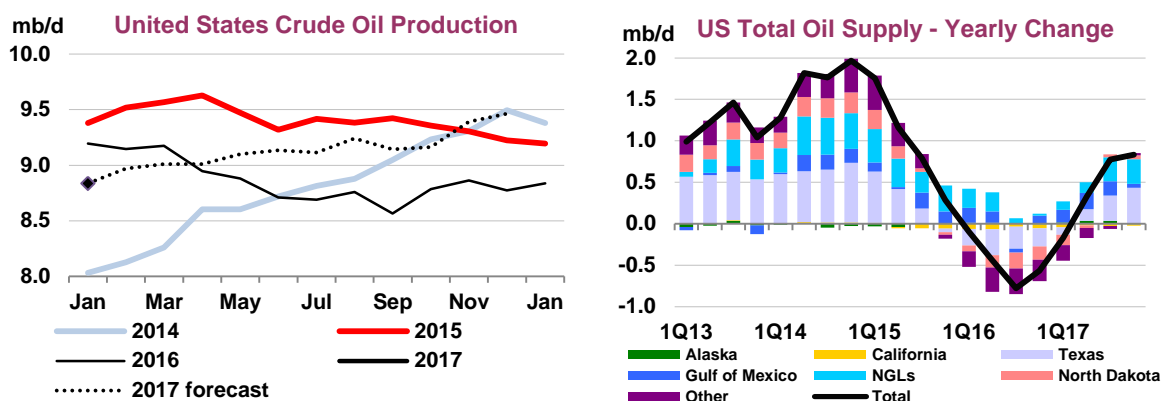
Meanwhile, preliminary estimates suggest Mexico, Oman and Azerbaijan were fully compliant or exceeded their agreed cuts in March. In contrast, Kazakhstan's production continued to climb, as the large Kashagan project ramped up output further. Kazakh total oil production averaged just over 1.8 mb/d in March, an increase of 35 kb/d from November, which is used as the output cut reference. Kazakhstan's energy minister said in late March, that the country "could only increase oil output". While little solid production data are available for the smaller producers that are party to the agreement, preliminary estimates suggest combined production in March was roughly unchanged from October.

## OECD

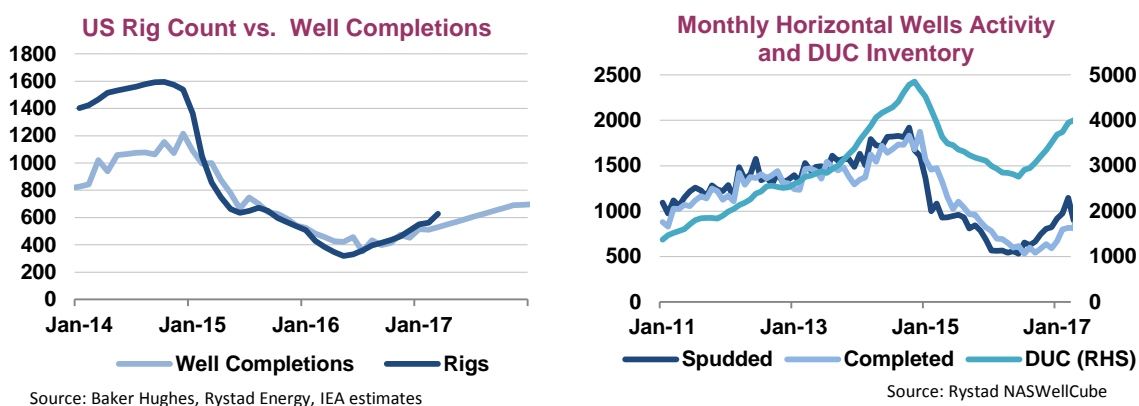
### North America

**US – January actual, Alaska March actual:** Despite increases in both crude and NGLs output, total US oil output declined by 60 kb/d in January, as other hydrocarbon supplies (including additives, oxygenates and hydrogen) dropped sharply from a month earlier according to monthly oil statistics submitted to the IEA. At 12.3 mb/d, total oil output was 360 kb/d lower than a year prior, its smallest y-o-y decline since last March.

US crude production increased by 60 kb/d in January, to 8.84 mb/d, following notable gains onshore Texas and in the Gulf of Mexico. Higher Permian Basin production underpinned a 40 kb/d increase in Texas, while the start-up of BP's Thunder Horse Extension project and further increases from the newly commissioned Julia and Stones fields supported a 20 kb/d increase in the Gulf of Mexico. Output also recovered in North Dakota (+20 kb/d), after freezing temperatures had forced the shut-in of wells a month earlier.



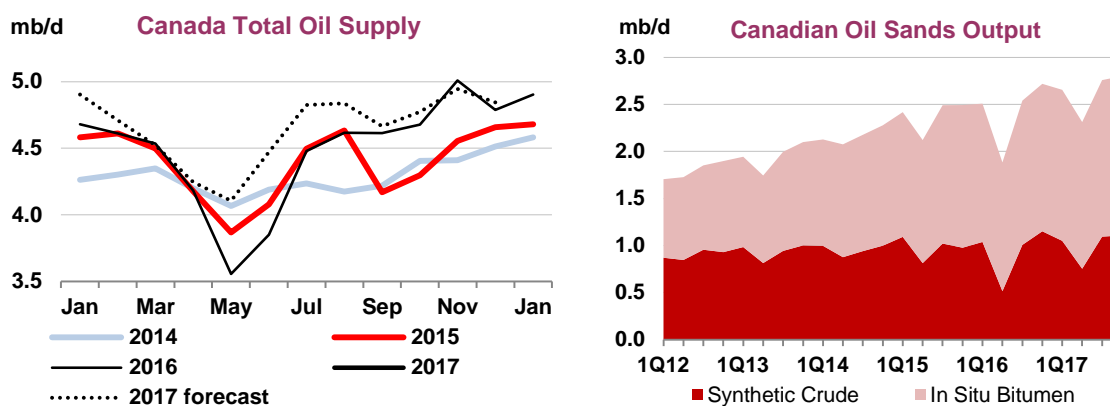
Despite the latest increase, US crude oil production nevertheless stood nearly 360 kb/d below a year earlier in the first month of the year. While often subject to sharp revisions, preliminary weekly data suggest US crude output continued to increase through February and March and that year-on-year declines had eroded by early-March. Moreover, new rig additions continues at a rapid pace. By the end of March, the number of active oil rigs had risen to 662, an increase of 53 over the past four weeks and 137 more than at the end of 2016. Completion activity failed to keep pace with the rapid increase in drilling activity and the inventory of drilled but uncompleted wells (DUCs) reached its highest level in two years. We forecast that completion rates will accelerate to around 700 per month by December 2017, compared with a low of just 350 in mid-2016. US crude oil production is now seen rising by 690 kb/d by the end of 2017, with an annual increase of 260 kb/d, to average 9.1 mb/d.



US NGLs production, meanwhile, rose by 20 kb/d to 3.37 mb/d in January, 60 kb/d above a year earlier. Following robust growth of an average 240 kb/d per annum over the 2010-2015 period, NGLs output growth has slowed dramatically in recent months, to almost zero since August of last year. Renewed drilling activity and the start-up of a number of new export and petrochemical facilities should underpin stronger growth of both ethane and LPG output later in coming months and years. Our forecast is for US NGL production to increase by 205 kb/d this year, to just under 3.7 mb/d. Total US oil output is forecast to rise by 445 kb/d, to average 13 mb/d.

**Canada – December actual, January preliminary:** Total Canadian oil supplies dropped 220 kb/d in December, the latest month for which consolidated monthly data from Statistics Canada is available. Preliminary data from Alberta suggest that output bounced back in January, rising more than 110 kb/d to 4.9 mb/d, with bitumen output accounting for most of the gain. Production from offshore Newfoundland also rose some 20 kb/d to 250 kb/d before dropping again in February by an equal amount.

A fire at Syncrude's Mildred Lake Upgrader in mid-March forced the shutdown of the 350 kb/d facility. Mining and extraction operations at both the company's Mildred Lake and Aurora facilities were curbed to balance bitumen demand, while ConocoPhillips and Nexen Energy announced the outage was also affecting production at their Surmont and Long Lake sites, respectively. Synthetic crude is used to dilute bitumen so that it can be exported by pipeline. Syncrude said damage to the upgrader forced the company to bring forward planned maintenance but that the plant is expected to restart at reduced rates by early May. Total Canadian oil supplies are forecast to expand by 190 kb/d this year, to 4.65 mb/d, largely unchanged from last month's *Report*.



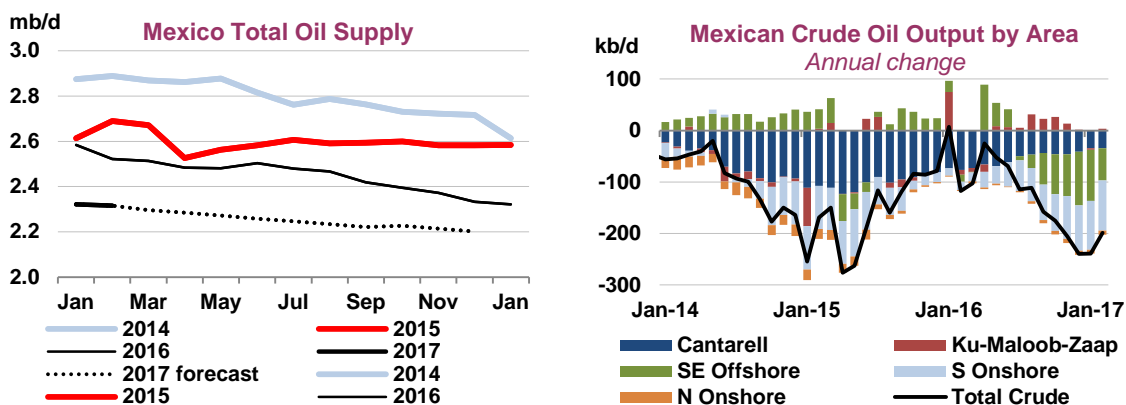
### Majors continue retreat out of oil sands

In a surprise move, ConocoPhillips announced in late March that it had signed a multi-billion dollar deal with Cenovus to sell its 50% non-operating interest in the Foster Creek and Christina Lake oil sands partnership, along with most of its western Canada Deep Basin gas assets. Conoco will retain its 50% interest in the Surmont oil sands joint venture as well as its Blueberry-Montney unconventional acreage. Cenovus said in a statement the total C\$17.7 (US\$13.3) billion transaction includes assets expected to produce about 298 kboe/d this year.

Several non-Canadian companies, including Shell, Statoil and Total, have been dialling down their exposure to the oil sands in recent years amid concerns about their economic viability at lower oil prices, their heavy carbon footprint and in order to reduce debt. However, sellers have found willing buyers among Canadian companies such as Suncor, Canadian Natural Resources and Cenovus.

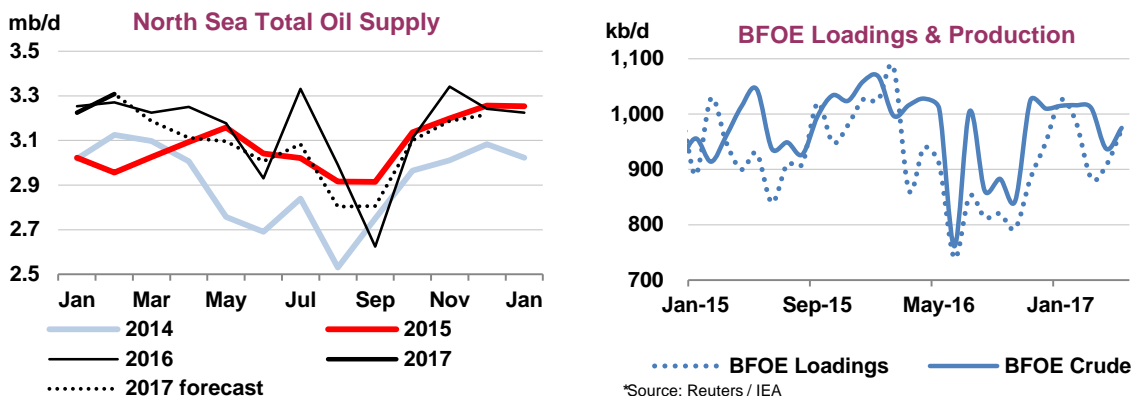
Shell has set a target to dispose of assets worth \$30 billion over the 2016-2018 period and only last month it announced its exit from the majority of its Canadian oil sands operations after agreeing to sell its interest in the Athabasca Oil Sands Project to Canadian Natural Resources for US\$7.25 billion. Shell will sell all its *in situ* and undeveloped oil sands leases in western Canada, the Scotford Upgrader and the Quest carbon capture and storage project, though has an option to swap its purchased interest of Marathon Oil Canada Operations for a 20% interest in assets of the Scotford upgrader and the Quest CCS project. It will also dispose of its 60% stake in AOSP, or Shell Albion Sands, which comprises both the Jackpine and Muskeg River mines along with the Cliffdale heavy oil field and the Peace River complex *in situ* assets, including Carmon Creek. Despite pulling back from the oil sands, the company will retain assets in the Duvernay and Montney shale plays and its interests in the Scotford refinery and nearby chemicals facilities. Shell is also evaluating plans to build a major liquefied natural gas export facility in British Columbia.

**Mexico - February actual:** Mexican crude and condensate production held largely steady in February, at just over 2 mb/d. Including natural gas liquids, supplies averaged 2.3 mb/d, roughly 200 kb/d less than a year earlier. Compared with the October reference month, total output was 79 kb/d lower, compared with a 100 kb/d reduction pledged with OPEC and other non-OPEC producers. Preliminary estimates suggest output dropped further in March, and that Mexico was fully compliant with its agreed output cut. Mexican production declined by an average 135 kb/d in 2016, though the pace accelerated towards the end of the year and into early 2017, to more than 200 kb/d.



## North Sea

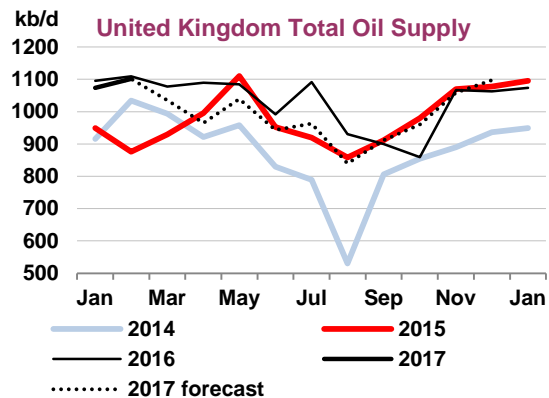
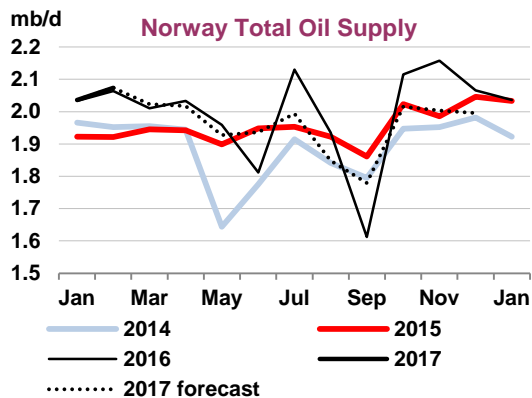
After several months of robust output, North Sea oil supplies eased in March. Loading schedules, tracked by Reuters, show scheduled crude shipments dropping nearly 200 kb/d in March to 1.95 mb/d from 2.15 mb/d a month earlier. Loadings of the four grades that underpin the Brent benchmark: Brent, Forties, Oseberg and Ekofisk (BFOE), were 100 kb/d lower than a month earlier. North Sea crude oil production is expected to rise over April and May, due to increasing output from Norwegian streams such as Oseberg, Grane and Asgard. UK production is expected to see continued declines, in large part due to an unscheduled outage at Buzzard, which feeds into the Forties stream, in early April.



**Norway – January actual, February provisional:** Norwegian oil production rose by 45 kb/d in February, to 2.08 mb/d, including 1.7 mb/d of crude and condensates and 370 kb/d of NGLs. Production was 20 kb/d higher than a year earlier. In January, crude oil output had fallen by 60 kb/d on the month – though partly offset by a 30 kb/d increase in condensates and NGLs – as production at Goliat was completely shuttered from 29 December to 3 February due to a fault in its offloading equipment. The field, which has a capacity to produce 100 kb/d, was shut again for several days during February. In March, Eni announced that it will drill two wells in the nearby Snadd discovery during 2017, raising Goliat field reserves by 7.5 mb. The Snadd discovery lies between the two reservoirs that currently make up Goliat's production.



In March, Statoil announced that it would proceed with phase 2 of the Johan Sverdrup development, awarding FEED contracts to Aker Solutions, Kvaerner and Siemens. Capital expenditure for phase 2 is estimated at between NOK 40-55 billion (\$4.73-6.51 billion), halving the estimates since the plan for development and operation was submitted for the first phase of the project. The break-even price for the full-field development, which will have a capacity to produce 660 kb/d, is now less than \$25/bbl according to the company. The second phase of the project is expected to come online in 2022, three years after the first phase is scheduled to be completed.

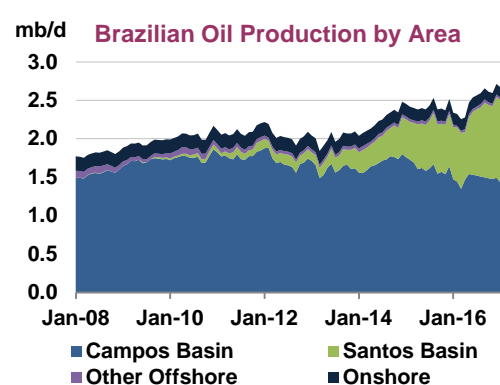
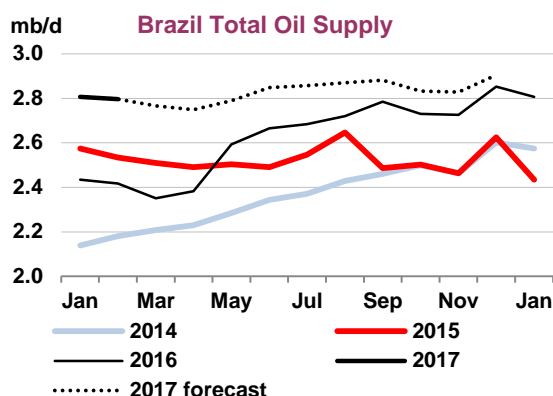


**UK – January actual, February Preliminary:** Total UK oil output nudged up 10 kb/d in January, to 1.07 mb/d. Preliminary data show production increasing another 30 kb/d in February to stand just shy of year-earlier levels. A sharp drop in North Sea loadings in March suggest production fell off recent highs and an unscheduled outage of UK's largest field, the Nexen-operated Buzzard field in early April likely kept supplies in check for a second month. BP is nearing completion of its \$3.7 billion Schiehallion and Loyal oil fields west of the Shetlands Islands, with the 130 kb/d capacity project scheduled to start up during 2Q17.

## Non-OECD

### Latin America

**Brazil – February actual:** Brazilian crude and condensate production fell marginally in February as maintenance offset increased output from new production systems. At 2.8 mb/d, total oil production was 10 kb/d lower than a month earlier, but 380 kb/d above the previous year. According to Petrobras, production was affected by the shutdown of the Cidade de Paraty floating production, storage and offloading vessel (FPSO), deployed at the Lula Nordeste field in the Santos Basin pre-salt, and as an early production system at the Búzios field ended. In March, the Peregrino field was shut for nearly three weeks.

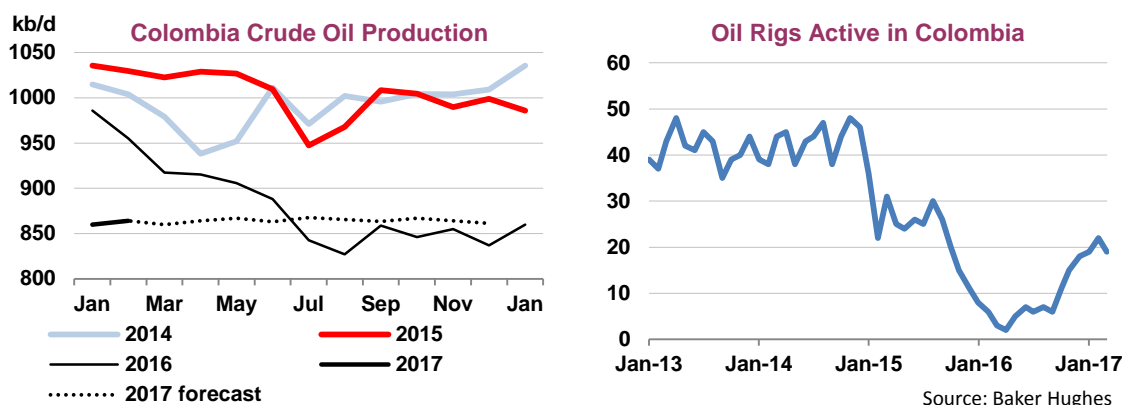


Sub-salt output is expected to continue growing in 2017, with the ramp up of three FPSOs installed last year. Petrobras commissioned the Cidade de Marica and Cidade de Saquarema FPSOs at the Lula field and the Cidade de Caraguatatuba FPSO at the Lapa field in 2016. In 2017, the company plans to install three more units. The P-66 and P-67 FPSOs will be deployed at the Lula Sul and Lula Norte pre-salt fields, respectively, while another FPSO will be dispatched to the Campos Basin's Tartaruga Verde e Mestica field. Petrobras expects that the Extended Well Test at the giant Libra pre-salt field will produce first oil by July.

Despite the new start-ups, Petrobras expects its own 2017 production to decline 3.5%, to 2.07 mb/d, due to natural declines at its ageing Campos Basin fields and as the company continues to divest upstream assets. As part of its \$21 billion divestment plans for 2017-2018, Petrobras sold a 35% operating stake at its newly commissioned Lapa field to Total late last year, retaining only a 10% minority share.

Brazilian independent Queiroz Galvao E&P (QGEP), meanwhile, has delayed first oil from its Atlanta field in the Santos basin to early 2018, due to delays in upgrading the FPSO to handle the field's viscous crude. The 30 kb/d PetroJar I FPSO was originally planned to be delivered in early 2016.

**Colombia** produced an average 865 kb/d of crude oil in February, a marginal increase from January but still 90 kb/d less than a year earlier. After massive spending cuts over 2015 and 2016 led to a precipitous fall in supplies during the first half of 2016, output has largely stabilised since August of last year. Drilling activity has picked up, with the number of active rigs rising to around 20 by March, from only two last April.



## Middle East

**Oman – February actual:** Oman's total oil production increased marginally in February, to 980 kb/d. Compared with October's output levels, total oil output was 39 kb/d lower, indicating an 86% compliance with its pledged output reduction of 45 kb/d. Data from the National Centre for Statistics and Information show that crude oil production fell for a third consecutive month in February, to a 20-month low of 883 kb/d. While no official data for March was available at the time of writing, output is estimated to have fallen further in line with agreed output levels.

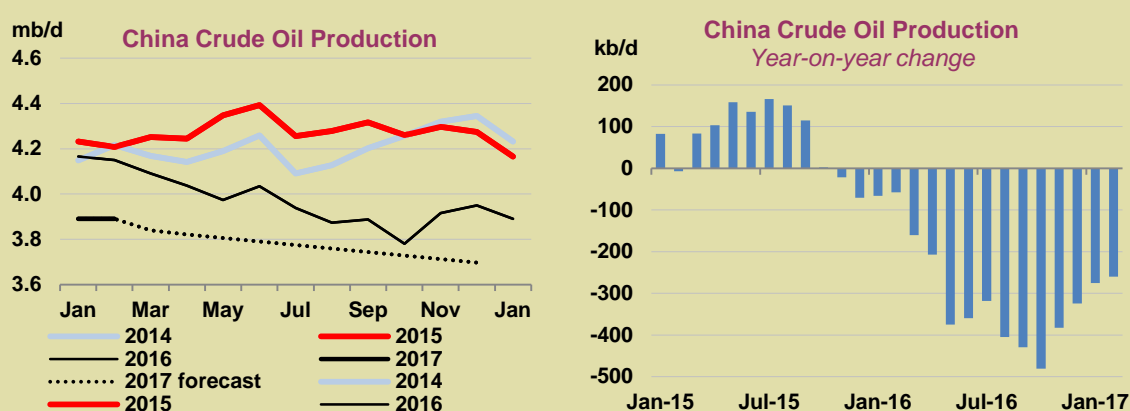
While the output cuts seem set to break a nine-year streak of rising oil output and thwart the plan to hold output steady at around 1 mb/d this year, government officials claim that the reduction in production will not lead to any slowdown in oil sector activity. Instead, companies have reportedly advanced maintenance and turnarounds at some fields which will allow production to ramp up more steeply later. Oman is aiming to raise capex and opex to around \$12.6 billion this year, from \$11.4 billion in 2016. State-controlled operator PDO, which produced 680 kb/d of liquids last year, says it will invest \$6 billion, of which \$4 billion will be spent on oil projects.

## Asia

### Chinese majors gear up investments

Following two years of sharp spending curbs, Chinese state-controlled oil companies are again raising capital expenditures. While the NOC's strategy seem to be increasingly focused on domestic activities rather than overseas projects, investments are to a large extent geared towards gas developments, and are not expected to be enough to return Chinese oil production to growth just yet.

Over 2015 and 2016, China's three largest producers, PetroChina, CNOOC and Sinopec cut upstream oil and gas investments by a combined 40% and 28%, respectively, to \$32 billion last year. In an attempt to stem financial losses resulting from the drop in oil prices, a number of fields were shut in and drilling activities slowed. As a result, Chinese crude production fell precipitously over the course of 2016 to a low of less than 3.8 mb/d in October, representing a massive 480 kb/d drop from a year earlier. Output has since partially recovered so that for the year as a whole, production was 300 kb/d lower than in 2015, at 4.0 mb/d.



In the first two months of 2017, China's crude oil production slipped another 60 kb/d from end-2016 levels, to an average 3.9 mb/d - or 265 kb/d less than the same period a year earlier. As crude imports continue to rise, the government has ordered oil companies to produce 4 mb/d of crude this year, but the target looks elusive. The three largest producers have, along with the new spending plans, laid out production plans suggesting their domestic oil output will fall by a further 200 kb/d this year.

Encouraged by higher and more stable oil prices, China's largest oil producer, PetroChina, is planning to increase capex this year to \$22.8 billion from \$19.8 billion in 2016. This first increase since 2013, will not, however, be enough to stem sliding production. Despite spending more, PetroChina expects its domestic crude oil production to fall for the second year in a row, to 2.0 mb/d, from 2.09 mb/d in 2016.

### China's Big Three

| Company       | Capex (\$ bn) |             |             | Domestic Oil Production (kb/d) |             |             |
|---------------|---------------|-------------|-------------|--------------------------------|-------------|-------------|
|               | 2015          | 2016        | 2017*       | 2015                           | 2016        | 2017*       |
| PetroChina ** | 25.3          | 19.8        | 22.8        | 2209                           | 2087        | 1998        |
| CNOOC         | 10.6          | 7.6         | 9.3         | 761                            | 847         | 798         |
| Sinopec       | 8.8           | 4.9         | 7.3         | 810                            | 692         | 630         |
| <b>Total</b>  | <b>44.7</b>   | <b>32.3</b> | <b>39.4</b> | <b>3780</b>                    | <b>3626</b> | <b>3426</b> |

\* Guidance

\*\* PetroChina 2017 output target estimated based on overall output guidance

### Chinese majors gear up investments (continued)

State-run CNOOC plans to increase its upstream capex from \$7.6 billion in 2016 to \$9.3 billion this year, of which exploration, development and production will account for around 18%, 66% and 15% respectively. Despite the higher spending plan CNOOC has cut its domestic 2017 oil and gas output target by roughly 50 kb/d.

Sinopec, meanwhile, is planning to raise E&P spending by 57% this year, to Yuan 50.5 billion (\$7.3 billion). It has already restarted almost 70 wells at the Xiaoying, Yihezhuang, Tao'erhe and Qiaozhuang fields, as well as fields in Xinjiang province, and may consider reopening additional wells at Shengli. The company plans to reopen a further 14 wells at the Northwest field this year as costs there have reportedly come down from \$56/bbl to \$50/bbl. Like its peers, Sinopec expects its crude output to fall this year, by 60 kb/d, as most of the increased spending will be used to boost natural gas supplies. In its latest annual report, Sinopec highlighted that a large part of its upstream spending would be allocated to the Phase II of the Fuling shale gas development, the Tianjin LNG project, gas storage projects as well as overseas oil and gas project development.

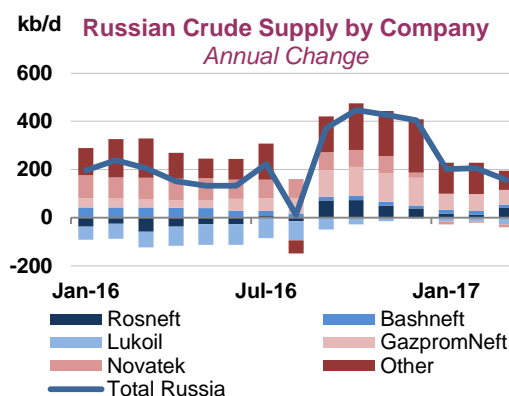
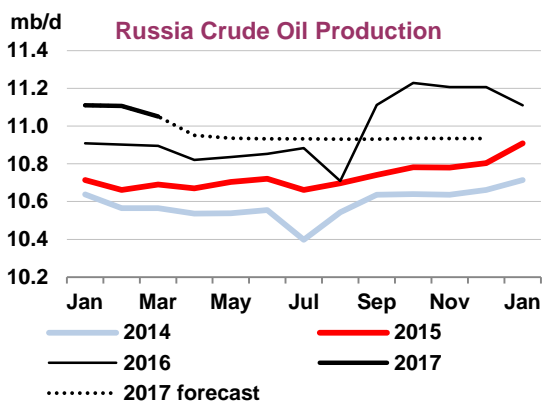
While the increased spending will surely slow declines, natural depletion cannot be reversed rapidly at the country's mostly mature fields. Our forecast is for production to fall another 185 kb/d this year, unchanged from last month's *Report*.

### Former Soviet Union

**Russia – February actual, March provisional:** After holding production steady in February, preliminary ministry data show Russian crude and condensate output declined by 56 kb/d in March to 11.05 mb/d. Including NGLs; production stood at 11.42 mb/d, 174 kb/d lower than in October, which is used as a reference point to calculate compliance with the coordinated output cuts. According to daily production rates, crude output fell below 11 mb/d by the end of March. Russian officials maintain that the 300 kb/d reduction will be achieved by the end of April.

The output drop was led by small and independent producers, which were 17 kb/d lower m-o-m. While Rosneft (excluding Bashneft) held output largely steady m-o-m in March, it was nearly 70 kb/d lower than in October, making up nearly 40% of Russia's total output decline so far. Lukoil's output dropped another 14 kb/d last month, to stand 31 kb/d below October levels, as lower production at its Western Siberian fields was partly offset by continued gains at its Caspian and Pyakyakhinskoye fields.

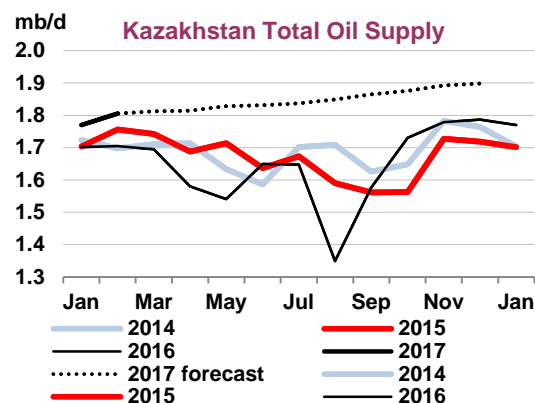
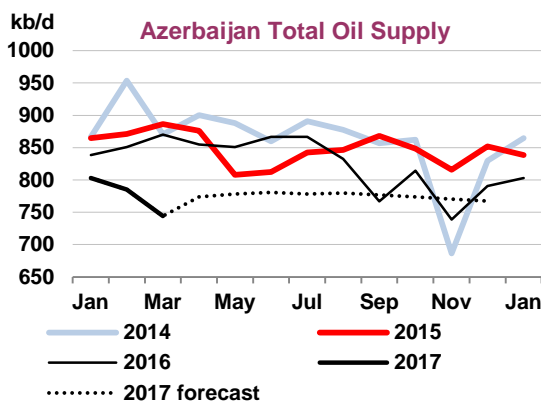
Despite the latest output reductions, Russian supplies were 155 kb/d higher than a year earlier. Increases stem from Gazprom Neft, which continues to post high y-o-y growth on the back of greenfield projects. In March, its Novoport project stood nearly 70 kb/d above a year earlier, while its Prirazlomnoye field doubled output to 70 kb/d.



According to Sberbank Research, the share of idle wells in the development well stock rose to 13.1% in February from 12.5% in January. The idle well count recorded a 5.6% y-o-y increase over the first two months of the year, with Tatneft, Bashneft and Rosneft increasing the number of idle wells by 22%, 8% and 7%, respectively. Sberbank also said that development drilling has slowed to a 0.2% y-o-y increase over the first two months of the year, with Bashneft, Gazprom Neft and Slavneft all reporting annual drilling activity declines of more than 30%. After posting spectacular growth over 2014-2016, Rosneft (excluding Bashneft) increased drilling by a negligible 1% in January and February. The slowdown is mostly attributable to a 14% y-o-y decline at its Yuganskneftegaz subsidiary. Lukoil, meanwhile, reported a 64% increase in drilling at its Western Siberia oil fields.

While there is still little clarity whether Russia will take part in any eventual extension of the production cuts, the Russian Energy Ministry has said it expects Russia's crude and condensate production to total 548 million tonnes in 2017, roughly 10.96 mb/d, and unchanged from 2016 average levels. As such, we have slightly lowered our Russian forecast for the second half of the year. The ministry said it expected output to increase by 100 kb/d in 2018.

**Azerbaijan – February actual, March preliminary:** Following a 17 kb/d decline in February, preliminary data from the Ministry of Energy show Azeri oil production dropped by another 40 kb/d in March. Assuming a conversion factor of 7.4 barrels/tonne, crude and condensate production stood at 743 kb/d in the latest month, 70 kb/d below the October reference. Azerbaijan had pledged to cut output by 35 kb/d from October's levels.

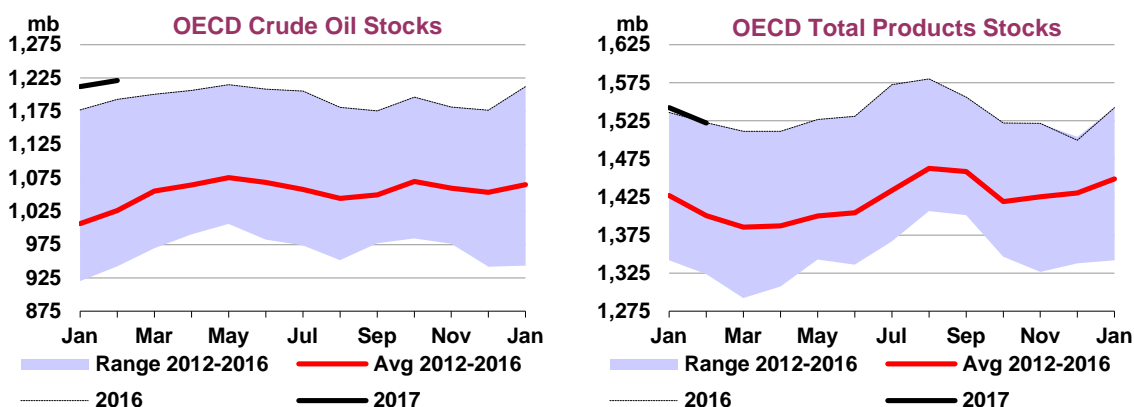


**Kazakhstan – February actual, March preliminary:** In Kazakhstan, meanwhile, production continues to increase as Kashagan ramps up. Crude and condensate output stood at 1.72 mb/d in February, 36 kb/d higher than a month earlier, and 28 kb/d above November, which is used as Kazakhstan's output cut reference month. Kashagan flowed at around 130 kb/d in February, five months after its restart. Preliminary estimates suggest crude and condensate production rising further in March. Kazakhstan pledged to cut production by 20 kb/d from November, but is instead estimated to have increased output by 35 kb/d. Recently, energy minister Kanat Bozumbayev said that Kazakhstan had cut output by more than the agreed 20 kb/d, and when asked if Kazakhstan was prepared to extend the production cuts he said "we can only increase oil output".

# STOCKS

## Summary

- After a sizeable build in January, **OECD industry stocks fell in February by 8.1 mb. Crude inventories increased due to a seasonal drop in refinery runs** but were more than offset by falling product stocks.
- **Crude stocks built to record levels in the US in February and March, although they fell in Europe and Japan.** OECD oil product stocks are estimated to have fallen in February-March.
- Preliminary data show oil stocks in the OECD drawing by 17.2 mb in March. **Given January's strong build, this implies a total stock increase of 38.5 mb (425 kb/d) in 1Q17.**
- **Known non-OECD stocks are estimated to have drawn 325 kb/d over 1Q17**, implying that marginal stocks held offshore or in smaller facilities are starting to fall partly in reaction to OPEC's output cuts.



## Global Overview

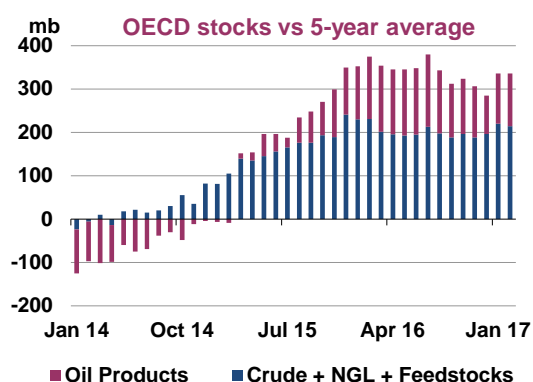
OECD inventories resumed their draws in February after the significant build seen in January. The draw was 8.1 mb and total stocks were 3 055 mb at end-month. Crude stocks continued to build in the US thanks to higher light, tight, oil production and steady imports. However, slowing refinery runs due to seasonal maintenance works in the northern hemisphere led to a large draw in stocks of oil products. The early indications are that this trend – higher crude stocks in the US and lower oil product stocks everywhere – continued into March as the refinery maintenance season intensified. Given January's build, and taking into account data released for February and March, we estimate that OECD stocks built by 38.5 mb (425 kb/d) in 1Q17, adjusting for improved data coverage in Sweden. This might be surprising as it comes after the implementation of OPEC output cuts at the beginning of the year, but we should bear in mind the 75.5 mb overall stock draw in 4Q16 and higher exports from OPEC countries to the OECD at the end of last year. Our analysis this month also shows how some less visible stocks – volumes held in non-OECD countries or stored offshore – drew by 29.2 mb (325 kb/d) over 1Q17, thanks to the unwinding of floating storage plays and higher demand from Asian refiners for oil held in tanks situated in the Atlantic Basin, e.g. Saldanha Bay in South Africa and various locations in the Caribbean. The indications are that the more marginal stored volumes carrying higher operational costs are drawing.

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

OECD industry stocks in February fell by 8.1 mb to 3 055 mb, as falling product stocks more than offset continuing builds in US crude inventories. The OECD Americas region saw by far the most changes month-on-month (m-o-m) with a sizeable 16.8 mb build in crude driven by rising production, lower



refinery runs and high imports, and a 24.5 mb draw in oil products. Inventories were more stable in other OECD regions as they rose by a modest 5.8 mb in Europe and fell 9.2 mb in Asia Pacific. In contrast to the US, crude stocks drew both in Europe and Asia. Overall OECD stocks remained 336 mb above the five-year average at the end of February.



Preliminary data for March show oil inventories dropping by a further 10.7 mb in the US. Reduced runs at refineries brought oil product stocks down by 22.6 mb, compensating for a third straight month of crude gains (+11.8 mb). In Japan, crude and oil product stocks likely fell by a combined 7.1 mb due to lower crude imports and strong winter demand for kerosene, which brought stocks of the product to record-low levels. Finally, in Europe there was a small 0.6 mb build in products. Assuming these figures are replicated across the OECD for March – the US, Japan and Europe typically account for 86% of all OECD oil stocks – and taking into account

known figures for January and February, commercial oil stocks are likely to have built by 38.5 mb (425 kb/d) overall in 1Q17. Crude accounted for the vast majority of the build, whereas oil product stocks drew moderately during the quarter. Europe and North America were the key regions showing crude builds, due to refinery maintenance, higher imports and higher production at LTO fields in the US.

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

|                         | February 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>16.8</b>                 | <b>-1.8</b> | <b>-5.8</b> | <b>9.2</b>   | <b>0.60</b>               | <b>-0.06</b> | <b>-0.21</b> | <b>0.33</b>  |
| Gasoline                | -4.5                        | 2.5         | 0.3         | -1.7         | -0.16                     | 0.09         | 0.01         | -0.06        |
| Middle Distillates      | -3.5                        | 3.4         | -3.2        | -3.3         | -0.13                     | 0.12         | -0.11        | -0.12        |
| Residual Fuel Oil       | -3.4                        | -0.7        | 0.0         | -4.1         | -0.12                     | -0.02        | 0.00         | -0.15        |
| Other Products          | -13.0                       | 1.8         | 0.1         | -11.2        | -0.47                     | 0.06         | 0.00         | -0.40        |
| <b>Total Products</b>   | <b>-24.5</b>                | <b>7.0</b>  | <b>-2.7</b> | <b>-20.3</b> | <b>-0.88</b>              | <b>0.25</b>  | <b>-0.10</b> | <b>-0.72</b> |
| Other Oils <sup>1</sup> | 3.0                         | 0.7         | -0.6        | 3.1          | 0.11                      | 0.02         | -0.02        | 0.11         |
| <b>Total Oil</b>        | <b>-4.7</b>                 | <b>5.8</b>  | <b>-9.2</b> | <b>-8.1</b>  | <b>-0.17</b>              | <b>0.21</b>  | <b>-0.33</b> | <b>-0.29</b> |

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

Revised data shows that OECD inventories were 33.5 mb higher for January and 2.7 mb higher for December than previously reported. For January, European middle distillates inventories were raised by 17.6 mb following changes to countries including Italy, Sweden and the UK. Swedish oil data, in particular, was revised up substantially with improved coverage of companies, resulting in a data break between December 2016 and January 2017. For December, OECD oil product stocks were moved up 2 mb and crude up by 1.2 mb.

#### Revisions versus March 2017 Oil Market Report

|                         | (million barrels) |             |            |             |              |            |            |             |
|-------------------------|-------------------|-------------|------------|-------------|--------------|------------|------------|-------------|
|                         | Americas          |             | Europe     |             | Asia Oceania |            | OECD       |             |
|                         | Dec-16            | Jan-17      | Dec-16     | Jan-17      | Dec-16       | Jan-17     | Dec-16     | Jan-17      |
| <b>Crude Oil</b>        | <b>0.6</b>        | <b>-3.5</b> | <b>0.5</b> | <b>3.2</b>  | <b>0.0</b>   | <b>4.7</b> | <b>1.2</b> | <b>4.4</b>  |
| Gasoline                | 0.1               | 3.3         | -0.1       | 0.6         | 0.3          | 0.1        | 0.3        | 3.9         |
| Middle Distillates      | 0.0               | -1.3        | 1.8        | 17.6        | 0.0          | 0.4        | 1.8        | 16.7        |
| Residual Fuel Oil       | -0.4              | -0.8        | 0.9        | 2.6         | 0.0          | 0.5        | 0.5        | 2.3         |
| Other Products          | -0.2              | 9.3         | -0.3       | 6.2         | -0.2         | 0.2        | -0.6       | 15.7        |
| <b>Total Products</b>   | <b>-0.5</b>       | <b>10.4</b> | <b>2.3</b> | <b>27.0</b> | <b>0.1</b>   | <b>1.2</b> | <b>2.0</b> | <b>38.6</b> |
| Other Oils <sup>1</sup> | -0.3              | -9.1        | -0.1       | 0.2         | 0.0          | -0.6       | -0.4       | -9.5        |
| <b>Total Oil</b>        | <b>-0.1</b>       | <b>-2.1</b> | <b>2.7</b> | <b>30.4</b> | <b>0.1</b>   | <b>5.2</b> | <b>2.7</b> | <b>33.5</b> |

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

### 'Less visible' stocks draw in some places

The latest IEA balances show global oil demand outpacing supplies by 200 kb/d in 1Q17. However, OECD inventory data, including preliminary figures for March from the US *Energy Information Administration*, the *Petroleum Association of Japan* and *Euroilstock*, imply a 425 kb/d stock build for OECD countries during the same period.

There are several possible explanations for the discrepancy, e.g., demand is overstated or supply understated in our estimates. Another potential explanation lies with "less visible" stocks, including stocks held at sea (either in transit or for speculative reasons) and on land in countries outside the OECD. Indeed, a look at data from various sources shows stocks drawing in some non-OECD countries over 1Q17. Non-OECD stocks are thought to be roughly equal in size to OECD volumes, but there is far less data available about them.

The largest contribution to non-OECD stock draws in 1Q17 was likely made by the unwinding of Iranian condensate held at sea since sanctions were imposed in 2012. Iran used those volumes to maintain steady export flows over the last few months, but they now look like to have been largely discharged. Iranian offshore stocks came down from 28 mb when sanctions were lifted at the start of 2016 to 4 mb in March, according to shipbroker *EA Gibson*. Globally, volumes of oil held offshore – the most expensive form of storage – fell from 82.6 mb at end-2016 to 58.4 mb at end-March, at a rate of approximately 270 kb/d.

| 1Q17 versus 4Q16 Stock Estimate  |              |             |
|--|--------------|-------------|
|  | mb           | mb/d        |
| US (EIA)   | 13.6         | 0.2         |
| Japan (PAJ)  | -15.7        | -0.2        |
| Europe (Euroilstock)*  | 40.6         | 0.5         |
| <b>OECD Mar 2017 v Dec 2016 Estimate</b>   | <b>38.5</b>  | <b>0.4</b>  |
| Short Term Floating Storage (EA Gibson)  | -24.2        | -0.3        |
| Saldanha Bay**   | -6.0         | -0.1        |
| Caribbean**  | -12.2        | -0.1        |
| Fujairah (FEDCom/S&P Global Platts)***   | 3.9          | 0.0         |
| Singapore (International Enterprise)   | 8.8          | 0.1         |
| Chinese Commercial Stocks (China OGP)****  | 0.4          | 0.0         |
| <b>Non-OECD Stock Movements</b>  | <b>-29.2</b> | <b>-0.3</b> |
| *An upward revision to Swedish oil stocks made in January was not taken into account |              |             |
| **IEA estimate based on tanker tracking and other sources                            |              |             |
| ***IEA estimate based on data for 16 January 2017 (first publication)                |              |             |
| ****Based on data from China OGP for end-February 2017                               |              |             |

Strong Asian demand for crude over the last few months combined with a narrow price spread between European and Middle Eastern crudes also incentivised traders to draw crude in commercial facilities situated in the Atlantic Basin, but far away from major demand centres, such as Saldanha Bay, in South Africa, or the Caribbean. We estimate that tank farms situated in both regions drew by a combined 18.2 mb over 1Q17 (or approximately 200 kb/d), based on tanker tracking information and various media reports. There have also been market spot offers for cargoes loading in April from Saldanha Bay, suggesting further draws over the coming weeks. Commercial oil stocks in China, Fujairah (UAE) and Singapore built moderately during 1Q17, other data showed.

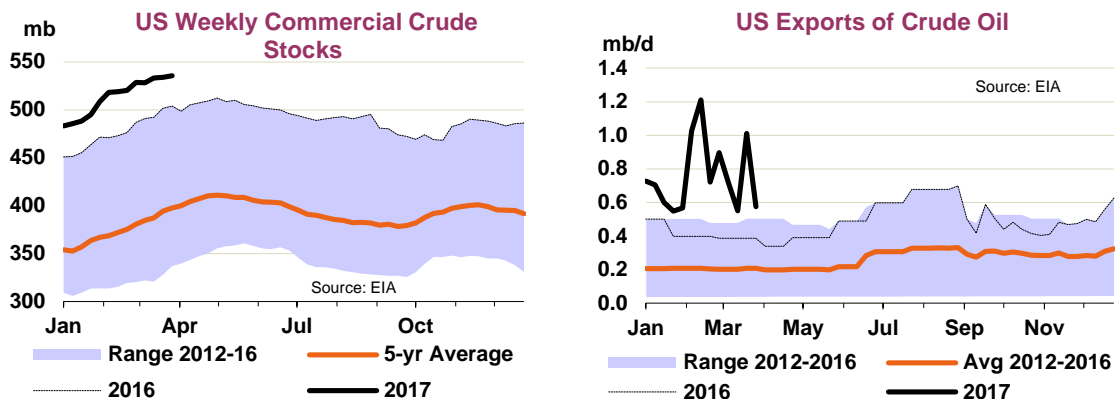
We estimate that known stocks in non-OECD countries or held offshore drew by a net 29.2 mb (325 kb/d) over 1Q17. While this still leaves a gap between our implied balances and global stock movements – which can be explained by other phenomenon such as oil in transit and incomplete data – the indications are that the more marginal stock volumes with higher operational costs are drawing.

## Recent OECD industry stock changes

### OECD Americas

After a sizeable 21.9 mb build in January, commercial stocks in the OECD Americas fell seasonally by 4.7 mb to 1 617 mb in February. As is usually the case at this time of year, when refineries enter seasonal maintenance there was a big discrepancy between changes in crude and oil products stocks. Crude stockpiles continued to build relentlessly as they reached 682 mb during the month, helped by steady cargo imports into the US Gulf Coast and higher production from LTO basins. At the same time, US crude exports remained high, even reaching a weekly historical record in mid-February as the discount of US crudes to international benchmarks widened.

Falls in oil product inventories more than made up for the rise in crude, drawing by a combined 24.5 mb to 755 mb at the end of February. All the main product categories fell, but 'other' (largely US propane) contributed the most. It drew 13 mb on the month to 186 mb and was below last year's stock levels for the second month in a row. While US demand for LPG was not particularly high due to relatively mild temperatures over the winter, lower NGLs output and higher exports were the main factors behind draws. Exports of propane and propylene reached 1.0 mb/d on average in February, a historical record. Gasoline stocks in the OECD Americas drew by 4.5 mb in February after they had risen the previous month, on refinery maintenance, higher demand and falling imports to the US East Coast. Middle distillate stocks fell 3.5 mb and fuel oil drew 3.4 mb. Oil product stocks covered 31.3 days of forward demand at the end of February, down 0.9 days on the month.



Preliminary data from the *Energy Information Administration (EIA)* suggest US crude stocks built for a third straight month in March, albeit less than seen in January and February. Stocks were 11.8 mb higher by end-month at 536 mb, marking a new historical record. While imports began to ease – the result of lower US crude prices in the previous weeks – lower refinery runs and higher crude production from LTO fields contributed to the overall rise. US crude stocks typically build between January and April. Oil product stocks drew by a steep 22.6 mb in March due to the impact of lower refinery production and as gasoline imports to the US East Coast fell. Strong diesel outflows also played a part. Finally, after seeing five straight months of falls, 'other' stocks built in March by 8 mb on lower seasonal demand and as exports to international markets eased.

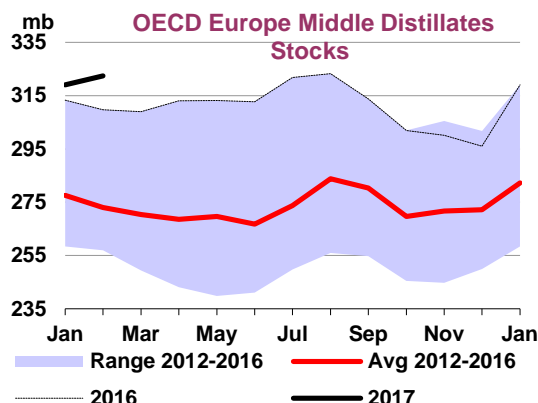
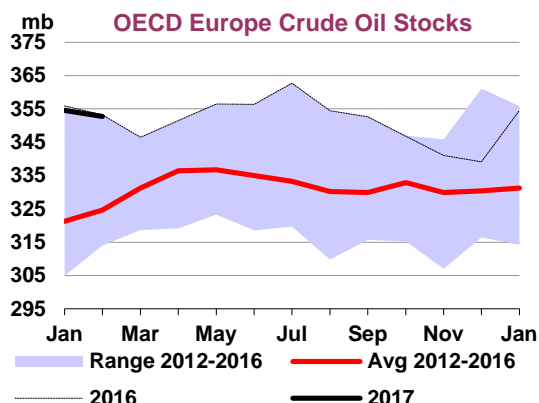
Overall, in 1Q17, US commercial crude stocks built by an extraordinary 56 mb (620 kb/d) and oil products fell 42 mb (465 kb/d), with noteworthy draws in middle distillates and propane in particular. Finally, the Strategic Petroleum Reserve (SPR) also fell 3 mb to 692 mb in March as the Department of Energy sold barrels to pay for refurbishment of the tanks and for medical research.

## OECD Europe

European industry inventories built by 5.8 mb in February to 1 027 mb, their highest in seven years. Unlike in the OECD Americas, crude stocks drew and oil products gained on the month. Crude stockpiles fell by 1.8 mb to reach 353 mb at end-month, the result of lower imports as Asian refiners swept up increased volumes due to the narrowing of the Brent-Dubai price spread. This came despite lower runs at European refineries. There were crude draws in all major European consuming countries, including France, Germany, Italy, the Netherlands and the UK.

Middle distillate stocks built counter-seasonally by 3.4 mb month-on-month to 323 mb, their highest level since August 2016, on increased imports from Russia and the Middle East, while the arbitrage from the US Gulf Coast to Northwest Europe stayed shut for most of the month. Gasoline inventories also built on the month by 2.5 mb to 106 mb on lower exports to the US, while fuel oil stocks fell 0.7 mb as Asian bunkering hubs such as Singapore continued to sweep up supplies. Overall, commercial oil product

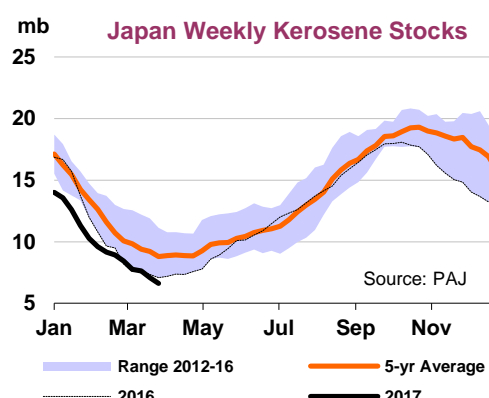
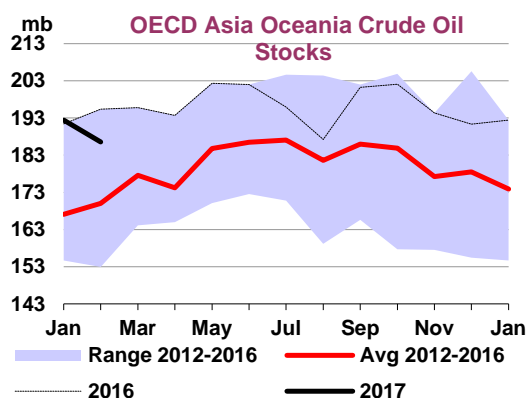
stocks covered a comfortable 44.5 days of forward demand at end-February, up 0.8 days on the month and 4.1 days higher than the five-year average.



Preliminary data from Euroilstock for 16 European countries showed oil stocks were almost unchanged in March. Gasoline stocks eased 0.9 mb and fuel oil fell 0.3 mb, whereas middle distillates and naphtha both grew relative to February. Crude stocks were unchanged. Reports concerning oil products held in independent storage in Northwest Europe showed stocks building strongly in March, especially for gasoil and fuel oil, whereas naphtha increased moderately and gasoline and jet fuel stocks drew.

### OECD Asia Oceania

Commercial stocks in OECD Asia Oceania fell seasonally in February across crude and oil products. They were 412 mb at end-month, down 9.2 mb from January and at their lowest level since April 2015. In February, crude inventories drew 5.9 mb to 187 mb on lower imports. Oil product stocks fell by 2.7 mb to 164 mb. Middle distillates (-3.2 mb) contributed the most, whereas other product stockpiles were little changed. Kerosene demand stayed seasonally high and the arbitrage to ship diesel and jet fuel West of Suez stayed firmly shut during the month, possibly contributing to a build at export terminals in South Korea. Meanwhile, run rates at refineries in the region were stable across January-February. Oil product stocks, in particular middle distillates, usually draw over the January-April period in this region due to the impact of winter temperatures on demand. Product stocks covered 21.2 days of forward demand by end-February, up 0.9 days from January.

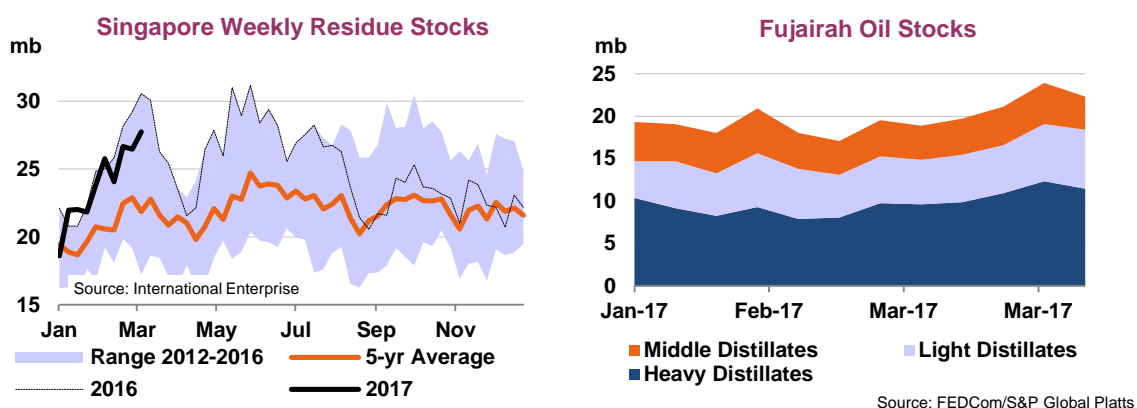


Preliminary weekly data from the *Petroleum Association of Japan (PAJ)* suggest that Japanese oil stocks fell for a sixth straight month in March, by 7.1 mb. This was due to a further fall in crude stocks on lower crude imports, and came despite lower runs at refineries undergoing maintenance. Kerosene inventories also dropped 2 mb to reach 6.7 mb, their lowest ever, due to the impact of seasonally colder

temperatures and the associated increase in demand for heating. Japan's oil stocks fell by a combined 15.7 mb (175 kb/d) over 1Q17, with almost equal drops in crude and oil product stockpiles and lower refinery runs.

## Recent developments in East of Suez stocks

Data from *China, Oil, Gas and Petrochemicals (China OGP)* indicate that Chinese commercial crude stocks decreased 3 mb in February, while gasoline stocks gained 1.3 mb, gasoil rose 23.2 mb and kerosene fell 0.3 mb. On a year-on-year basis, crude stocks were down 15.3 mb, gasoil down 7.1 mb, kerosene down 1.6 mb and gasoline up 5.6 mb. Total Chinese crude stocks (both commercial and government) were likely to have risen 42.7 mb (725 kb/d) over January-February as supplies – Chinese crude production plus net imports – outpaced reported refinery runs.

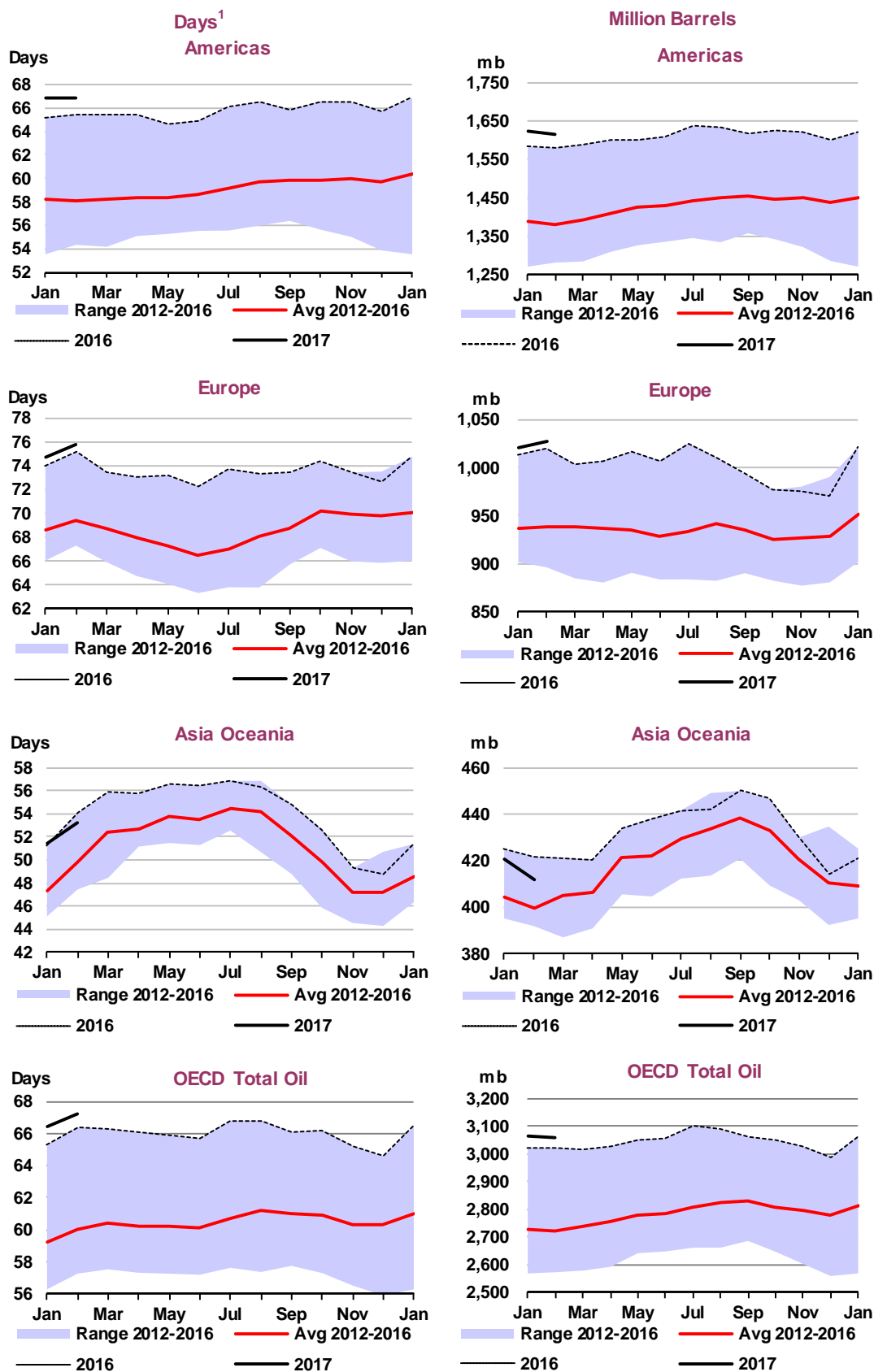


Oil inventories in the UAE's Fujairah rose by 3.8 mb in March to 23.2 mb, according to data released by *FEDCom* and *S&P Global Platts*. Rising fuel oil and bunker stocks (+2.2 mb) largely contributed, followed by light distillates (+1.3 mb) and middle distillates (+0.2 mb). Total stocks fell in early April, the same data showed.

Singaporean bunker and fuel oil inventories fell 1.6 mb in March to reach 25 mb at end-month on higher bunker fuel demand and a temporary fall in imports from Russia, Europe and the Middle East, according to weekly data from *International Enterprise*. This triggered a recovery in fuel oil differentials. Light distillate stocks gained 1.5 mb to 14 mb and middle distillate inventories fell 0.2 mb to 13 mb.

## Regional OECD End-of-Month Industry Stocks

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



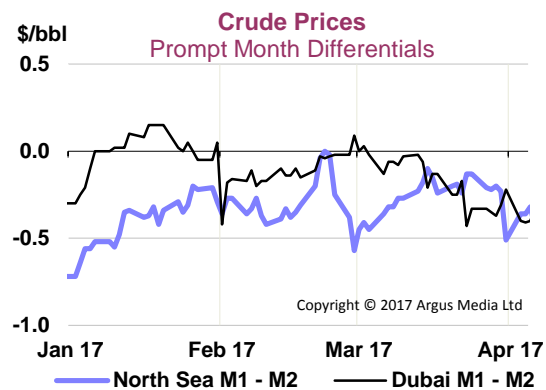
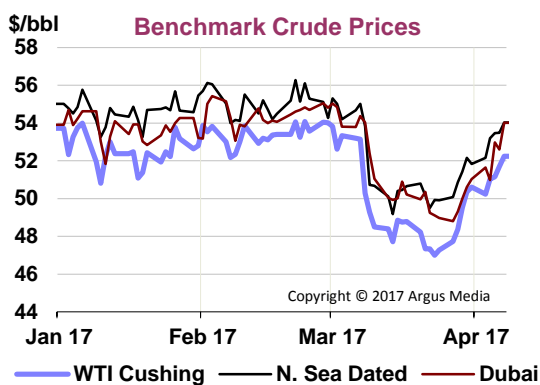
1 Days of forward demand are based on average demand over the next three months



# PRICES

## Summary

- **Benchmark crude prices fell more than \$3/bbl on average in March** as visible crude stocks in OECD member countries failed to draw substantially. Prices had risen by \$5/bbl at the time of writing.
- **Money managers cut their net long positions in crude futures by a combined 200 mb in March** amid the price fall, but remain optimistic overall about the price outlook.
- **Physical crude differentials eased as the spring refinery maintenance season intensified**, reducing demand for crude from refiners. US crude prices went up following an outage in Canada.
- **Oil product prices came down, reflecting improved supplies.** Diesel and fuel oil prices fell less than other products, while gasoline in the US Gulf Coast was a notable strong performer.



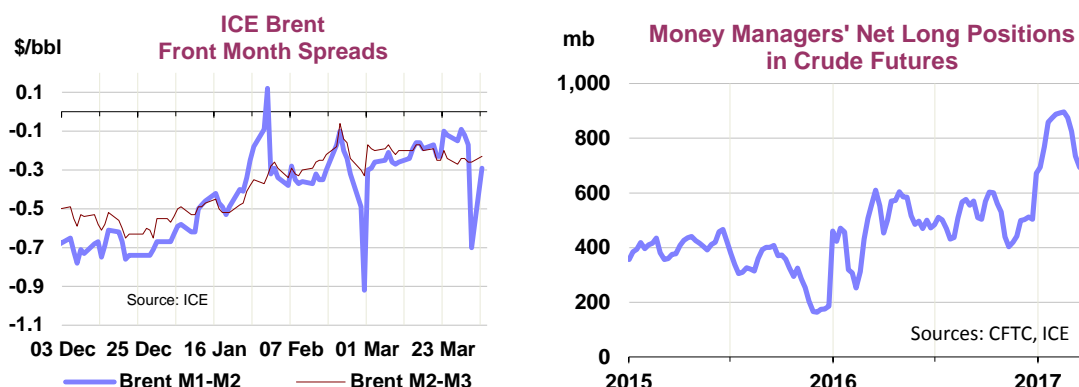
## Market overview

Benchmark crude prices were volatile in March as doubts emerged about renewed OPEC output cuts in June and as visible crude stocks in OECD member countries failed to draw substantially, and even built in the US. The unwinding of record long positions held in the main crude futures contracts by money managers may have also played a part. By early April, market sentiment was on a firmer footing with oil product stock draws in the northern hemisphere and a 200 mb fall in overall net long futures positions. Prices were up around \$5/bbl at the time of writing from the lows recorded in March. In physical markets, differentials to Brent, WTI and Dubai benchmarks fell as the spring refinery maintenance season intensified. US crude prices went up following an outage at a production facility in Canada and as the Brent-WTI futures spread widened on the month. Finally, improved supplies brought oil product prices down. Diesel and fuel oil prices fell less than other products, while gasoline in the US Gulf Coast was a notable strong performer due to high export demand.

## Futures markets

Front-month ICE Brent crude futures showed more price volatility in March than in the weeks following the OPEC output deal last November. It fell more than \$4/bbl early in the month after Saudi oil minister Khalid Al-Falih appeared to question the possibility of a deal to renew production cuts at the end of June, and with strong builds in US crude stocks seen in the EIA data published every week. Prices then gained \$2/bbl towards the end of the month and a further \$3/bbl in early April as it became clear draws in US oil product inventories had largely offset builds in crude and with renewed expectations about future OPEC production quotas. Figures from ICE and the US Commodity Futures Trading Commission (CFTC) showed money managers cut their long positions in ICE Brent, ICE WTI and NYMEX WTI futures by a combined

200 mb in March amid the price fall. Net long positions had risen to as high as 900 mb in the weeks following the OPEC output deal. Money managers are still overwhelmingly long futures overall, meaning they expect prices to rise. Besides, net long positions started growing once again in early April.



Just as the outright Brent futures price was falling, the Month 1-Month 2 spread narrowed, highlighting tighter fundamentals in the spot North Sea market. The Brent curve is still in contango, but it is now too shallow to justify substantial stock builds onland. There have been draws in parts of the world with higher storage operating costs or situated further away from demand centers, such as Saldanha Bay, South Africa, or the Caribbean (See *Stocks Section*). In early April, the Month 1-Month 2 Brent spread widened a touch as refinery maintenance reduced demand. Spreads further out on the curve also widened a little during the month, but remain narrower than before the OPEC output deal.

WTI futures weakened in relation to Brent and Dubai throughout the month, a sign of growing US production and as stocks built in the logistical hub of Cushing, OK, where the contract is based. Refinery maintenance and strong imports in 1Q17 no doubt also played a part. The Brent-WTI futures spread widened to as much as \$3.62/bbl just before the expiry of the April contract, encouraging US crude exports to international markets. In oil products, the contango in ICE gasoil futures narrowed substantially through March, a sign of tighter supplies amid refinery maintenance. Month 1 was trading at a \$0.07/bbl discount to Month 2 at the time of writing, up from a larger \$0.47/bbl discount in early February. European gasoil spreads look narrower versus a year ago.

#### Prompt Month Oil Futures Prices

(monthly and weekly averages, \$/bbl)

|                                     | Jan   | Feb   | Mar   | Mar-Feb | %    | Week Commencing: |        |        |        |        |
|-------------------------------------|-------|-------|-------|---------|------|------------------|--------|--------|--------|--------|
|                                     |       |       |       | Avg Chg | Chg  | 06 Mar           | 13 Mar | 20 Mar | 27 Mar | 03 Apr |
| <b>NYMEX</b>                        |       |       |       |         |      |                  |        |        |        |        |
| Light Sweet Crude Oil               | 52.61 | 53.46 | 49.67 | -3.79   | -7.1 | 50.88            | 48.50  | 47.85  | 49.31  | 51.27  |
| RBOB                                | 66.13 | 64.44 | 68.41 | 3.97    | 6.2  | 69.12            | 66.70  | 67.31  | 69.78  | 72.29  |
| ULSD                                | 69.04 | 68.93 | 64.49 | -4.44   | -6.4 | 65.59            | 63.15  | 63.02  | 64.63  | 67.20  |
| ULSD (\$/mmbtu)                     | 12.18 | 12.16 | 11.37 | -0.78   | -6.4 | 11.57            | 11.14  | 11.11  | 11.40  | 11.85  |
| Henry Hub Natural Gas (\$/mmbtu)    | 3.29  | 2.91  | 2.99  | 0.09    | 2.9  | 2.92             | 2.96   | 3.05   | 3.14   | 3.26   |
| <b>ICE</b>                          |       |       |       |         |      |                  |        |        |        |        |
| Brent                               | 55.51 | 56.00 | 52.54 | -3.46   | -6.2 | 53.72            | 51.52  | 50.92  | 52.06  | 54.36  |
| Gasoil                              | 65.44 | 66.32 | 62.35 | -3.97   | -6.0 | 63.79            | 60.94  | 60.62  | 62.13  | 64.44  |
| <b>Prompt Month Differentials</b>   |       |       |       |         |      |                  |        |        |        |        |
| NYMEX WTI - ICE Brent               | -2.90 | -2.54 | -2.87 | -0.33   |      | -2.84            | -3.02  | -3.07  | -2.75  | -3.09  |
| NYMEX ULSD - WTI                    | 16.43 | 15.47 | 14.82 | -0.65   |      | 14.71            | 14.65  | 15.17  | 15.32  | 15.93  |
| NYMEX RBOB - WTI                    | 13.52 | 10.98 | 18.74 | 7.76    |      | 18.24            | 18.20  | 19.46  | 20.47  | 21.02  |
| NYMEX 3-2-1 Crack (RBOB)            | 14.49 | 12.48 | 17.44 | 4.96    |      | 17.07            | 17.02  | 18.03  | 18.75  | 19.33  |
| NYMEX ULSD - Natural Gas (\$/mmbtu) | 8.88  | 9.25  | 8.38  | -0.87   |      | 8.65             | 8.18   | 8.06   | 8.26   | 8.60   |
| ICE Gasoil - ICE Brent              | 9.93  | 10.32 | 9.81  | -0.51   |      | 10.07            | 9.42   | 9.70   | 10.07  | 10.08  |

Source: ICE, NYMEX.

## Spot crude oil prices

Global physical crude oil prices fell in March in line with a broad sell-off in the ICE Brent and NYMEX WTI crude futures and as the spring refinery maintenance season intensified, reducing demand. Urals differentials fell with higher exports from Russia. US crude prices went up following an outage at a production facility in Canada and as the Brent-WTI futures spread widened on the month.

### Spot Crude Oil Prices and Differentials

(monthly and weekly averages, \$/bbl)

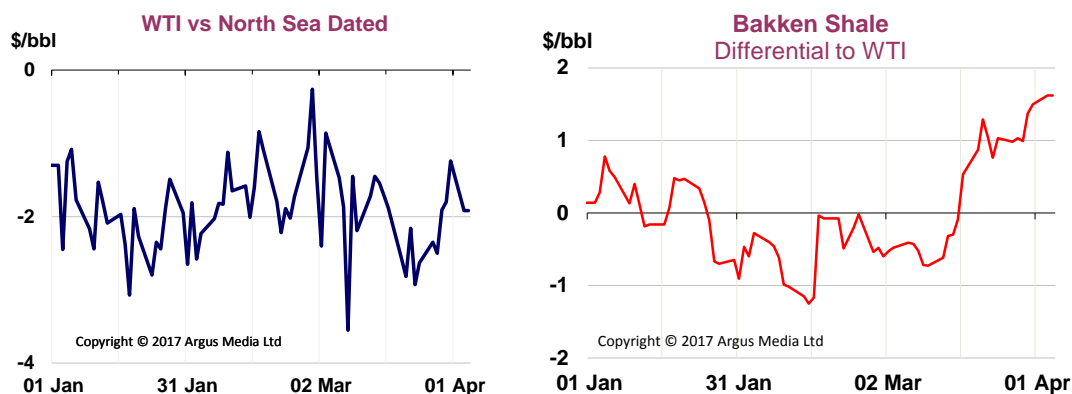
|  | Jan   | Feb   | Mar   | Mar-Feb |      | Week Commencing: |        |        |        |        |
|--|-------|-------|-------|---------|------|------------------|--------|--------|--------|--------|
|  |       |       |       | Avg Chg | %    | 06 Mar           | 13 Mar | 20 Mar | 27 Mar | 03 Apr |
| <b>Crudes</b>                          |       |       |       |         |      |                  |        |        |        |        |
| North Sea Dated                        | 54.58 | 55.06 | 51.60 | -3.46   | -6.3 | 52.98            | 50.16  | 50.06  | 51.27  | 53.27  |
| Brent (Asia) Mth 1                     | 55.31 | 55.92 | 52.60 | -3.33   | -5.9 | 54.37            | 51.60  | 51.04  | 51.58  | 53.89  |
| WTI (Cushing) Mth 1                    | 52.51 | 53.40 | 49.58 | -3.82   | -7.2 | 50.88            | 48.50  | 47.44  | 49.31  | 51.27  |
| Urals (Mediterranean)                  | 53.42 | 53.67 | 49.94 | -3.73   | -6.9 | 51.58            | 48.53  | 48.16  | 49.37  | 52.02  |
| Dubai                                  | 53.68 | 54.41 | 51.21 | -3.20   | -5.9 | 53.13            | 50.22  | 49.53  | 49.95  | 52.44  |
| Tapis (Dated)                          | 55.42 | 56.00 | 52.46 | -3.54   | -6.3 | 53.98            | 51.01  | 50.81  | 52.02  | 54.02  |
| <b>Differential to North Sea Dated</b> |       |       |       |         |      |                  |        |        |        |        |
| WTI (Cushing)                          | -2.08 | -1.66 | -2.02 | -0.36   |      | -2.11            | -1.66  | -2.62  | -1.96  | -2.00  |
| Urals (Mediterranean)                  | -1.16 | -1.39 | -1.66 | -0.27   |      | -1.40            | -1.63  | -1.90  | -1.90  | -1.25  |
| Dubai                                  | -0.90 | -0.65 | -0.39 | 0.26    |      | 0.14             | 0.06   | -0.53  | -1.32  | -0.82  |
| Tapis (Dated)                          | 0.84  | 0.94  | 0.86  | -0.08   |      | 1.00             | 0.85   | 0.75   | 0.75   | 0.75   |
| <b>Prompt Month Differential</b>       |       |       |       |         |      |                  |        |        |        |        |
| Forward Cash Brent Mth1-Mth2           | -0.39 | -0.29 | -0.26 | 0.03    |      | -0.31            | -0.18  | -0.18  | -0.27  | -0.38  |
| Forward WTI Cushing Mth1-Mth2          | -0.77 | -0.48 | -0.56 | -0.08   |      | -0.53            | -0.54  | -0.74  | -0.50  | -0.45  |
| Forward Dubai Mth1-Mth2                | 0.02  | -0.12 | -0.17 | -0.05   |      | -0.07            | -0.11  | -0.29  | -0.32  | -0.38  |

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North Sea Dated prices dropped \$3.46/bbl on an outright basis in March to \$51.60/bbl. After softening through to mid-March on lower demand from refiners in maintenance, Forties and Ekofisk differentials rebounded in the second half of the month with the restart of the Grangemouth refinery, a major buyer of North Sea crude, and a still open arbitrage to Asia. Physical North Sea premiums remained broadly stable in 1Q17, supported by a narrow price differential between Brent and Dubai crudes and low freight rates for Very Large Crude Carriers. By the end of March, Ekofisk flows to Asia had topped 7 mb, equal to the same volume as the whole of 2016, while Forties exports were closer to 14 mb. Asian demand for Forties blend – the basis for the North Sea Dated benchmark – fell a touch during March as three Very Large Crude Carriers loaded and then stayed in Northwest Europe due to unfavourable economics. In early April, differentials rose strongly following the outage of an onshore processing plant and the unplanned outage at Buzzard, the UK's largest oil field, and as export flows to Asia appeared set to climb substantially over April. Three trading companies bought large positions in April paper contracts linked to the physical North Sea Dated assessment.

Urals for delivery in Northwest Europe averaged \$49.28/bbl, down \$3.66/bbl from February. Prices were boosted by OPEC's output cuts and Russia's decision to reduce its production, as well as an open arbitrage for Brent-linked crudes to Asia. A total of 13 mb of Urals and CPC Blend was exported to Asia in March, a record amount. Russia and Belarus solved their dispute over natural gas prices in early April and this will likely lead to lower seaborne Urals exports and help to support differentials. However, refinery maintenance in Russia – which freed up more Urals for export – temporarily overwhelmed these factors in March. In the Mediterranean, prices came under pressure on plentiful supplies of light sweet crude. This was due to steady exports of CPC Blend following the ramp up of Kashagan late last year, higher exports from the US, despite disruptions to Libyan supply during the month. Azeri Light was assessed at a \$1.50/bbl premium to North Sea Dated in early April, down \$0.40/bbl on the month, while Saharan Blend was \$0.70/bbl below North Sea Dated, down from minus \$0.20/bbl in early March.

Sour benchmark Dubai fell less than other crudes in March, a sign of continuing tight supplies from OPEC countries. It averaged \$51.21/bbl, down \$3.20/bbl month-on-month, but gained in relation to North Sea Dated, West Texas Intermediate and Urals. By late March, Dubai started falling in relation to Brent as Asian refiners reduced their crude purchases in preparation for the refinery maintenance season. The Month 1 Brent-Dubai spread was \$1.29/bbl at the time of writing, down from \$1.48/bbl at the start of March and well below the levels seen a year ago as the impact of OPEC's output cuts and higher imports from Asian refiners was felt.



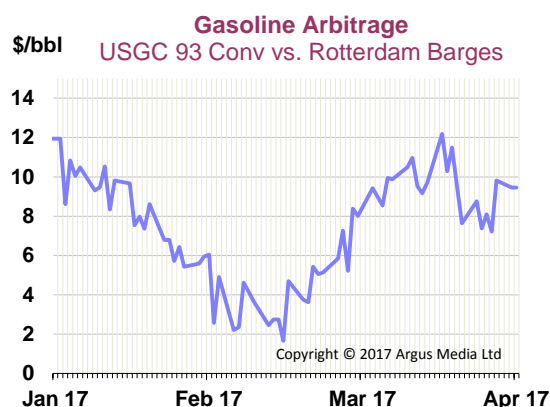
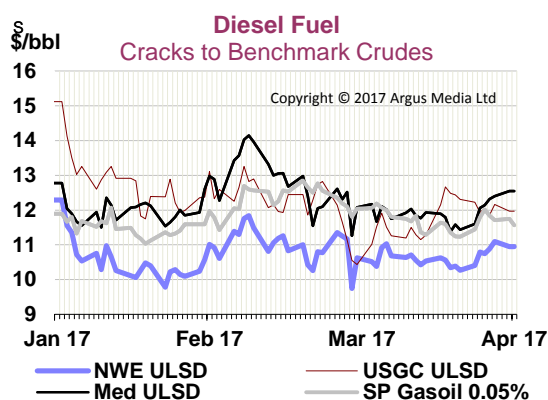
West African crude prices fell in line with other crudes and due to lower demand from refiners, while higher US exports provided competition in Asia, traditionally a significant importer of African crude. An expected rise in Nigerian loadings over May also weighed. Nigeria's Qua Iboe fell \$3.63/bbl in March to \$52.26/bbl, and Angola's Cabinda was down \$3.62/bbl to \$51.33/bbl. Most West African crude differentials were also down on the month relative to North Sea Dated.

In the US, the major driver was the increase in production and subsequent widening of the Brent-WTI futures spread for most of March, which boosted the price of crude grades such as Mars and Poseidon relative to WTI, and encouraged higher exports. Medium sour grade Mars was trading \$1.65/bbl below WTI in early April, up from minus \$2.12/bbl at the end of February. The outage at Syncrude Canada's northern Alberta facility reduced the flow of Canadian crude into the US, also helping to support US crude differentials. Bakken crude shot up after the outage as well as news that the Dakota Access Pipeline was being filled with crude. It rose from a discount to WTI of \$0.72/bbl on 15 March to a premium of \$1.62/bbl at the time of writing.

## Spot product prices

Global oil product prices fell across the board in March, reflecting lower headline oil prices as well as an oversupply situation. Diesel and fuel oil prices fell less than other products, while gasoline in the US Gulf Coast was a notable strong performer due to high export demand.

Middle distillate prices were some of the strongest performers across the barrel in March thanks to a combination of lower output from refiners and higher seasonal demand. Rotterdam diesel barge prices averaged \$62.21/bbl during the month, down \$3.91/bbl from February, while Singapore 500 ppm cargoes fell \$3.81/bbl to \$62.94/bbl. European diesel premiums rose more strongly in the second half of March after cargo exports from the Middle East and India were sent to Asia, and as refineries entered maintenance, resulting in a shortage of material. The price difference between Europe and Asia remained narrow at the time of writing, rendering the arbitrage unworkable. Refiners in the US Gulf Coast stepped up exports to Latin America with ongoing refinery issues in the region, and higher demand. Uncertainty around a potential deal between Saudi Arabia and Egypt for high sulphur gasoil supply weighed on premiums in the Mediterranean basin. In Singapore, jet fuel prices fell more heavily than gasoil, sending the regrade – the difference between the two products – into negative territory and incentivising traders to blend jet fuel with gasoil.



Lower demand and plentiful imports meant Singapore high sulphur fuel oil premiums fell further in March. The price of 180 centistoke cargoes averaged \$47.24/bbl during the month, down \$3.57/bbl on February. Fresh stock draws and a drop in cargo arrivals sent prices back up in late March. Singapore fuel oil stocks ended the month of March at 24.9 mb, down 1.6 mb from February, and imports also fell during the month. Rotterdam 3.5% fuel oil barges fell \$3.29/bbl to \$41.16/bbl. A closed arbitrage window to Asia for most of the month kept prices suppressed.

### Spot Product Prices

(monthly and weekly averages, \$/bbl)

|                                   | Jan   | Feb   | Mar   | Mar-Feb<br>Chg | %     | 06 Mar                  | 13 Mar | 20 Mar | 27 Mar | 03 Apr | Jan                                | Feb    | Mar    |
|-----------------------------------|-------|-------|-------|----------------|-------|-------------------------|--------|--------|--------|--------|------------------------------------|--------|--------|
| <b>Rotterdam, Barges FOB</b>      |       |       |       |                |       | <b>Week Commencing:</b> |        |        |        |        | <b>Differential to Dated Brent</b> |        |        |
| Premium Unl 10 ppm                | 64.20 | 66.04 | 60.60 | -5.43          | -8.2  | 61.54                   | 57.94  | 58.04  | 63.60  | 66.55  | 9.61                               | 10.98  | 9.00   |
| Naphtha                           | 55.68 | 55.44 | 51.27 | -4.17          | -7.5  | 52.38                   | 50.19  | 49.72  | 51.57  | 53.74  | 1.10                               | 0.38   | -0.34  |
| Jet/Kerosene                      | 64.76 | 65.80 | 61.49 | -4.31          | -6.5  | 62.95                   | 59.98  | 59.63  | 61.35  | 63.82  | 10.17                              | 10.74  | 9.89   |
| ULSD 10ppm                        | 65.05 | 66.13 | 62.21 | -3.91          | -5.9  | 63.69                   | 60.73  | 60.50  | 62.06  | 64.40  | 10.46                              | 11.07  | 10.61  |
| Gasoil 0.1%                       | 63.94 | 65.20 | 61.09 | -4.11          | -6.3  | 62.44                   | 59.53  | 59.53  | 60.99  | 63.06  | 9.36                               | 10.14  | 9.48   |
| LSFO 1%                           | 50.55 | 48.97 | 45.12 | -3.86          | -7.9  | 46.83                   | 43.94  | 43.45  | 44.60  | 47.48  | -4.03                              | -6.08  | -6.49  |
| HSFO 3.5%                         | 44.35 | 44.45 | 41.16 | -3.29          | -7.4  | 42.73                   | 39.86  | 39.53  | 40.62  | 43.27  | -10.24                             | -10.61 | -10.44 |
| <b>Mediterranean, FOB Cargoes</b> |       |       |       |                |       | <b>Week Commencing:</b> |        |        |        |        | <b>Differential to Urals</b>       |        |        |
| Premium Unl 10 ppm                | 65.85 | 67.37 | 61.37 | -6.00          | -8.9  | 61.73                   | 59.35  | 59.42  | 63.68  | 67.12  | 12.42                              | 13.70  | 11.43  |
| Naphtha                           | 54.21 | 54.46 | 49.55 | -4.91          | -9.0  | 51.13                   | 48.80  | 47.49  | 49.28  | 52.06  | 0.78                               | 0.79   | -0.39  |
| Jet Aviation fuel                 | 63.81 | 65.12 | 60.34 | -4.78          | -7.3  | 62.24                   | 59.03  | 57.87  | 59.95  | 63.21  | 10.39                              | 11.45  | 10.39  |
| ULSD 10ppm                        | 65.37 | 66.59 | 61.84 | -4.75          | -7.1  | 63.52                   | 60.43  | 59.78  | 61.48  | 64.36  | 11.94                              | 12.92  | 11.90  |
| Gasoil 0.1%                       | 64.48 | 65.56 | 60.77 | -4.79          | -7.3  | 62.50                   | 59.45  | 58.62  | 60.32  | 62.98  | 11.06                              | 11.89  | 10.82  |
| LSFO 1%                           | 52.63 | 50.83 | 46.63 | -4.20          | -8.3  | 48.43                   | 45.40  | 44.86  | 46.09  | 48.88  | -0.79                              | -2.84  | -3.31  |
| HSFO 3.5%                         | 46.85 | 46.82 | 43.34 | -3.48          | -7.4  | 44.99                   | 42.00  | 41.59  | 42.76  | 45.36  | -6.58                              | -6.85  | -6.61  |
| <b>US Gulf, FOB Pipeline</b>      |       |       |       |                |       | <b>Week Commencing:</b> |        |        |        |        | <b>Differential to LLS</b>         |        |        |
| Super Unleaded                    | 72.23 | 70.10 | 69.76 | -0.34          | -0.5  | 70.89                   | 67.91  | 68.27  | 71.85  | 77.36  | 18.18                              | 14.95  | 18.39  |
| Unleaded                          | 66.52 | 65.04 | 63.91 | -1.13          | -1.7  | 63.01                   | 62.61  | 63.65  | 66.95  | 70.55  | 12.46                              | 9.89   | 12.54  |
| Jet/Kerosene                      | 63.70 | 65.58 | 60.75 | -4.82          | -7.4  | 61.52                   | 59.67  | 59.23  | 60.86  | 63.55  | 9.64                               | 10.43  | 9.39   |
| ULSD 10ppm                        | 66.74 | 67.57 | 63.02 | -4.55          | -6.7  | 64.03                   | 61.57  | 61.62  | 63.22  | 65.63  | 12.68                              | 12.42  | 11.65  |
| Heating Oil                       | 61.97 | 62.67 | 57.84 | -4.83          | -7.7  | 59.35                   | 56.69  | 55.96  | 57.33  | 59.69  | 7.91                               | 7.52   | 6.47   |
| No. 6 3%*                         | 45.76 | 45.94 | 42.42 | -3.51          | -7.6  | 43.82                   | 41.47  | 40.58  | 41.80  | 43.79  | -8.30                              | -9.21  | -8.94  |
| <b>Singapore, FOB Cargoes</b>     |       |       |       |                |       | <b>Week Commencing:</b> |        |        |        |        | <b>Differential to Dubai</b>       |        |        |
| Premium Unleaded                  | 69.47 | 69.90 | 64.28 | -5.62          | -8.0  | 65.64                   | 62.87  | 63.13  | 64.66  | 67.92  | 15.79                              | 15.49  | 13.07  |
| Naphtha                           | 55.71 | 56.58 | 50.82 | -5.76          | -10.2 | 52.00                   | 50.16  | 49.47  | 50.19  | 52.62  | 2.03                               | 2.17   | -0.39  |
| Jet/Kerosene                      | 65.17 | 66.26 | 61.93 | -4.33          | -6.5  | 63.88                   | 60.52  | 60.13  | 61.14  | 63.61  | 11.49                              | 11.85  | 10.72  |
| Gasoil 0.05%                      | 65.15 | 66.76 | 62.94 | -3.81          | -5.7  | 65.15                   | 61.80  | 60.94  | 61.71  | 64.10  | 11.47                              | 12.35  | 11.73  |
| LSWR Cracked                      | 58.46 | 53.14 | 49.74 | -3.39          | -6.4  | 51.32                   | 48.60  | 48.29  | 49.26  | 51.50  | 4.78                               | -1.27  | -1.47  |
| HSFO 180 CST                      | 52.01 | 50.82 | 47.24 | -3.57          | -7.0  | 49.34                   | 46.27  | 45.58  | 45.98  | 48.79  | -1.67                              | -3.59  | -3.97  |
| HSFO 380 CST 4%                   | 51.28 | 49.87 | 46.38 | -3.49          | -7.0  | 48.45                   | 45.32  | 44.62  | 45.09  | 48.05  | -2.40                              | -4.54  | -4.83  |

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\* Waterborne

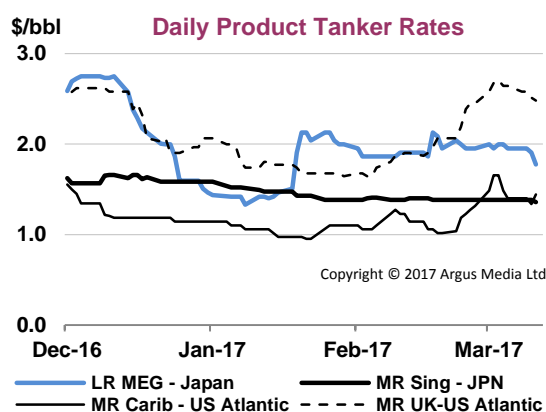
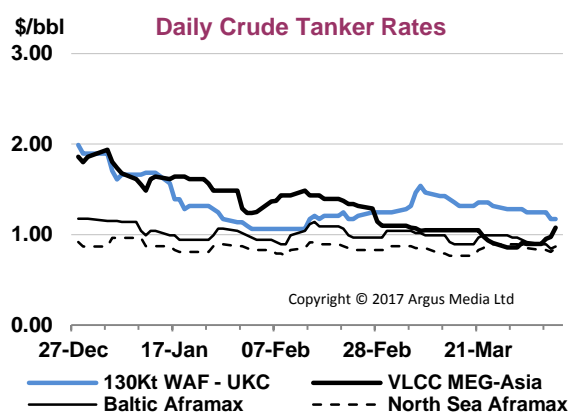
Gasoline prices failed to maintain the momentum gained the previous month, falling across all regions in March. The US Gulf Coast was the exception as, even if prices dropped on the month, losses were limited by strong demand from Latin America and the switch to the more expensive summer specification. US

Gulf unleaded pipeline prices decreased \$1.13/bbl on average to \$63.91/bbl. The crack was up strongly. Prices in Asia were kept in check by higher exports from China. The Singapore premium unleaded gasoline cargo assessment dropped \$5.62/bbl on the month to \$64.28/bbl. High stocks in the US limited the demand for European gasoline on the East Coast, but that appeared to change in early April as importers sought to replenish stocks of summer grade fuel. Up to 5 mb of Eurobob gasoline left Europe's shores in the space of a few days after several cargoes had been stuck for several weeks offshore Amsterdam-Rotterdam-Antwerp. West Africa proved a steady outlet for European gasoline with strong demand and around 16 mb of exports registered in four weeks, according to market reports.

Naphtha prices mostly followed gasoline on the way down in March. Supply was said to be more plentiful after Asian refiners stepped up their light sweet crude intake, which tends to yield more light products. The widening spread with LPG prices after the end of winter also helped to ensure petrochemical crackers maximised LPG imports. However, with strong demand from Asian crackers and low arrivals scheduled over May, prices started going up towards the end of March.

## Freight

Freight rates for **Very Large Crude Carriers (VLCCs)** continued to fall in March due to lower loadings from OPEC countries and as new builds commissioned earlier in the year kept the supply of ships high. Refinery maintenance in the northern hemisphere also reduced tanker flows. The rate on the Middle East Gulf (MEG) to Asia route was \$1.01/bbl on average, down from \$1.36/bbl in February and at the lowest level since September 2016.



**Suezmaxes** on the West Africa to Northwest Europe route rose in the first half of March, before falling back to the levels seen at the end of February. Higher loadings from West Africa and shipping delays in the Mediterranean helped provide a temporary boost to prices. Suezmaxes were chartered for \$1.34/bbl, up from \$1.14/bbl during February.

Higher chartering activity pushed up Northwest European **Aframax** rates early in March, but like for Suezmaxes, prices fell back to previous levels later on. Baltic Aframax rates averaged \$0.98/bbl during the month, down from \$1.00/bbl in February.

Clean product rates **West of Suez** rose in March, supported by higher demand in West Africa and Latin America, and shipping delays in the Mediterranean. Freight on the UK Continent-US Atlantic Coast route firmed \$0.40/bbl to \$2.13/bbl in March, despite closed arbitrage opportunities to ship gasoline to the US East Coast for most of the month. **East of Suez**, the benchmark LR MEG-Japan rate rose to \$1.95/bbl, up from \$1.76/bbl in February, with higher demand for naphtha imports towards the end of the month.



# REFINING

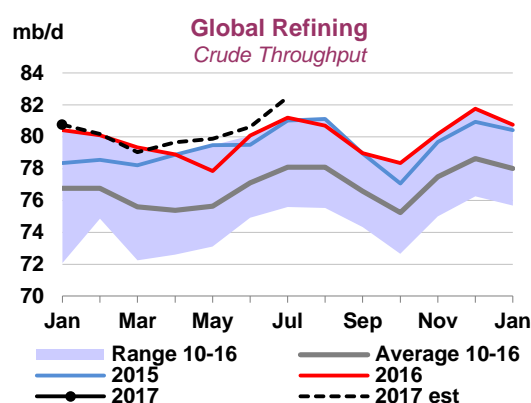
## Summary

- **Global refinery throughput in January registered a modest 340 kb/d year-on-year (y-o-y) increase**, although it was 1 mb/d lower than December's historical record of 81.7mb/d.
- **Throughput in 1Q17 is estimated almost flat y-o-y (+50 kb/d)**, as spring maintenance this year is weighted towards February/March.
- **In 2Q17, throughput is expected to grow 1.15 mb/d y-o-y**, the fastest rate since 1Q16. Runs ramp up throughout the quarter and reach above 82 mb/d in July, some 3.5 mb/d higher than in March.

## Global refinery overview

Starting in this month's *Report*, we include OPEC condensate splitters in our global refinery intake statistics. This has raised the global baseline by between 400-500 kb/d, and is mostly reflected in throughput values in the Middle East.

With December data now largely finalised for non-OECD countries, global refinery throughput reached a historical high at 81.7 mb/d, 870 kb/d higher y-o-y. With finalised OECD data for January and the first reports of non-OECD activity for the month, global runs are estimated at 80.65 mb/d, a more modest 340 kb/d growth y-o-y. The 1Q17 forecast is expected to be finalised at a relatively flat y-o-y level, with throughput in March dipping 270 kb/d below the year earlier.



Throughput in 2Q17 is forecast at almost 80 mb/d, with runs up 1.15 mb/d y-o-y. After dropping by 2.8 mb/d between December and March, global throughput is forecast to increase every month, reaching a record 82.4 mb/d in July, implying some 3.5 mb/d growth between March and July.

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

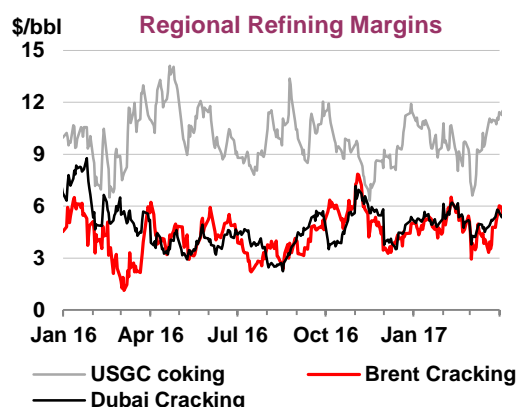
(million barrels per day)

|                            | 4Q2016      | 2016        | Jan 17      | Feb 17      | Mar 17      | 1Q2017      | Apr 17      | May 17      | Jun 17      | 2Q2017      | Jul 17      |
|----------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Americas                   | 18.6        | 18.9        | 19.0        | 18.4        | 18.7        | 18.7        | 19.1        | 19.3        | 19.5        | 19.3        | 19.7        |
| Europe                     | 12.3        | 11.9        | 12.3        | 12.0        | 11.7        | 12.0        | 11.7        | 11.6        | 11.8        | 11.7        | 12.4        |
| Asia Oceania               | 6.9         | 6.9         | 7.4         | 7.4         | 6.9         | 7.2         | 6.6         | 6.6         | 6.5         | 6.6         | 6.9         |
| <b>Total OECD</b>          | <b>37.8</b> | <b>37.7</b> | <b>38.7</b> | <b>37.8</b> | <b>37.3</b> | <b>37.9</b> | <b>37.4</b> | <b>37.5</b> | <b>37.8</b> | <b>37.6</b> | <b>39.0</b> |
| FSU                        | 6.9         | 6.8         | 6.9         | 6.9         | 6.7         | 6.8         | 6.4         | 6.7         | 6.8         | 6.6         | 6.9         |
| Non-OECD Europe            | 0.6         | 0.5         | 0.5         | 0.5         | 0.4         | 0.5         | 0.5         | 0.6         | 0.5         | 0.5         | 0.5         |
| China                      | 11.2        | 10.8        | 11.3        | 11.2        | 11.1        | 11.2        | 11.2        | 11.1        | 11.3        | 11.2        | 11.2        |
| Other Asia                 | 10.5        | 10.4        | 10.6        | 10.4        | 10.3        | 10.4        | 10.5        | 10.4        | 10.5        | 10.5        | 10.7        |
| Latin America              | 4.0         | 4.2         | 3.9         | 4.0         | 4.2         | 4.1         | 4.3         | 4.3         | 4.4         | 4.3         | 4.4         |
| Middle East                | 7.0         | 7.2         | 6.8         | 7.2         | 7.0         | 7.0         | 7.1         | 7.1         | 7.3         | 7.2         | 7.5         |
| Africa                     | 2.0         | 2.0         | 2.1         | 2.0         | 2.1         | 2.1         | 2.1         | 2.0         | 2.0         | 2.0         | 2.1         |
| <b>Total Non-OECD</b>      | <b>42.2</b> | <b>42.0</b> | <b>41.9</b> | <b>42.3</b> | <b>41.7</b> | <b>41.9</b> | <b>42.2</b> | <b>42.2</b> | <b>42.7</b> | <b>42.4</b> | <b>43.4</b> |
| <b>Total</b>               | <b>80.0</b> | <b>79.7</b> | <b>80.7</b> | <b>80.1</b> | <b>78.9</b> | <b>79.9</b> | <b>79.6</b> | <b>79.8</b> | <b>80.5</b> | <b>79.9</b> | <b>82.4</b> |
| <i>Year-on-year change</i> | <i>0.9</i>  | <i>0.5</i>  | <i>0.3</i>  | <i>0.1</i>  | <i>-0.3</i> | <i>0.0</i>  | <i>0.8</i>  | <i>2.0</i>  | <i>0.5</i>  | <i>1.1</i>  | <i>1.3</i>  |

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

## Margins

Margins moved rather counterintuitively in March. In Europe and Singapore, as crude prices dropped month-on-month (m-o-m), and the maintenance season started in earnest, product cracks actually declined across the board. Somewhat narrower Brent-Dubai differentials offered a partial explanation for lower product cracks in Singapore. In both these regions the biggest losses were in the light ends (gasoline and naphtha), as the impending specification changes in April must have put pressure on gasoline inventory holders. In other product categories as well, while data are not finalised, inventory drawdown may be the suspect in the unexpectedly weaker cracks. In the US, on the contrary, while runs were ramping up after February's very low levels, refinery margins were supported by strong gasoline cracks. Weekly data showed an especially strong draw in gasoline inventories.



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

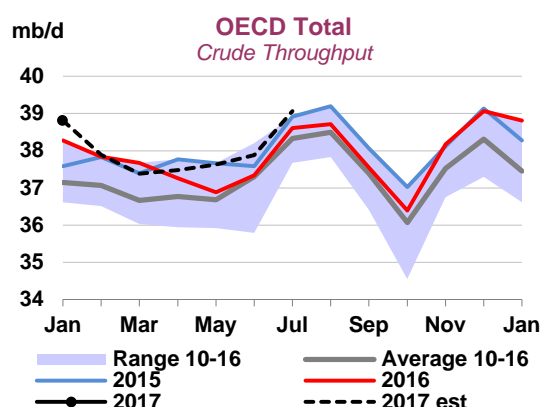
|                             | Monthly Average |        |        |        | Change        | Average for week ending: |        |        |        |        |  |
|-----------------------------|-----------------|--------|--------|--------|---------------|--------------------------|--------|--------|--------|--------|--|
|                             | Dec 16          | Jan 17 | Feb 17 | Mar 17 | Mar 17-Feb 17 | 03 Mar                   | 10 Mar | 17 Mar | 24 Mar | 31 Mar |  |
| <b>NW Europe</b>            |                 |        |        |        |               |                          |        |        |        |        |  |
| Brent (Cracking)            | 4.02            | 4.85   | 5.44   | 4.32   | ↓ -1.12       | 4.36                     | 4.21   | 4.11   | 3.87   | 5.42   |  |
| Urals (Cracking)            | 5.44            | 5.69   | 6.46   | 5.74   | ↓ -0.72       | 5.70                     | 5.41   | 5.43   | 5.55   | 6.93   |  |
| Brent (Hydroskimming)       | 0.82            | 1.66   | 1.56   | 0.75   | ↓ -0.81       | 0.76                     | 0.74   | 0.75   | 0.45   | 1.36   |  |
| Urals (Hydroskimming)       | 1.02            | 0.97   | 1.41   | 1.12   | ↓ -0.28       | 1.15                     | 0.87   | 0.99   | 1.09   | 1.81   |  |
| <b>Mediterranean</b>        |                 |        |        |        |               |                          |        |        |        |        |  |
| Es Sider (Cracking)         | 6.36            | 6.98   | 7.68   | 6.40   | ↓ -1.28       | 6.54                     | 6.20   | 6.41   | 6.24   | 7.00   |  |
| Urals (Cracking)            | 5.71            | 6.20   | 6.90   | 6.22   | ↓ -0.67       | 5.94                     | 5.81   | 6.22   | 6.30   | 6.95   |  |
| Es Sider (Hydroskimming)    | 3.38            | 4.37   | 4.44   | 3.29   | ↓ -1.15       | 3.39                     | 3.21   | 3.36   | 3.14   | 3.72   |  |
| Urals (Hydroskimming)       | 1.10            | 1.67   | 2.07   | 1.70   | ↓ -0.37       | 1.47                     | 1.40   | 1.75   | 1.78   | 2.21   |  |
| <b>US Gulf Coast</b>        |                 |        |        |        |               |                          |        |        |        |        |  |
| 50/50 HLS/LLS (Cracking)    | 7.73            | 8.47   | 7.57   | 7.70   | ↑ 0.13        | 6.28                     | 6.80   | 7.66   | 8.79   | 8.91   |  |
| Mars (Cracking)             | 5.91            | 6.28   | 4.96   | 4.90   | ↓ -0.05       | 3.82                     | 4.30   | 4.92   | 5.81   | 5.71   |  |
| ASCI (Cracking)             | 5.74            | 5.92   | 4.52   | 4.61   | ↑ 0.10        | 3.49                     | 4.03   | 4.57   | 5.62   | 5.38   |  |
| 50/50 HLS/LLS (Coking)      | 9.34            | 9.94   | 8.92   | 9.36   | ↑ 0.44        | 7.69                     | 8.35   | 9.31   | 10.56  | 10.77  |  |
| 50/50 Maya/Mars (Coking)    | 9.56            | 10.13  | 9.51   | 9.65   | ↑ 0.14        | 7.86                     | 8.53   | 9.69   | 10.92  | 11.04  |  |
| ASCI (Coking)               | 10.31           | 10.36  | 9.02   | 9.08   | ↑ 0.05        | 7.45                     | 8.21   | 8.97   | 10.35  | 10.25  |  |
| <b>US Midcon</b>            |                 |        |        |        |               |                          |        |        |        |        |  |
| WTI (Cracking)              | 8.22            | 8.20   | 6.89   | 10.19  | ↑ 3.30        | 8.23                     | 10.20  | 9.10   | 9.92   | 12.85  |  |
| 30/70 WCS/Bakken (Cracking) | 8.76            | 8.16   | 7.43   | 9.75   | ↑ 2.32        | 8.70                     | 10.64  | 9.38   | 8.64   | 11.09  |  |
| Bakken (Cracking)           | 8.99            | 8.84   | 8.14   | 10.71  | ↑ 2.57        | 9.42                     | 11.52  | 9.97   | 9.65   | 12.58  |  |
| WTI (Coking)                | 9.75            | 9.57   | 8.10   | 11.97  | ↑ 3.87        | 9.75                     | 11.98  | 10.76  | 11.69  | 14.90  |  |
| 30/70 WCS/Bakken (Coking)   | 11.10           | 10.43  | 9.63   | 12.53  | ↑ 2.89        | 11.10                    | 13.42  | 11.96  | 11.49  | 14.18  |  |
| Bakken (Coking)             | 9.57            | 9.34   | 8.54   | 11.43  | ↑ 2.89        | 9.99                     | 12.24  | 10.64  | 10.38  | 13.44  |  |
| <b>Singapore</b>            |                 |        |        |        |               |                          |        |        |        |        |  |
| Dubai (Hydroskimming)       | 0.84            | 1.37   | 1.05   | 0.65   | ↓ -0.41       | 0.53                     | 0.48   | 0.52   | 0.73   | 1.16   |  |
| Tapis (Hydroskimming)       | 3.96            | 4.45   | 3.75   | 3.02   | ↓ -0.72       | 3.07                     | 3.30   | 3.30   | 3.03   | 2.81   |  |
| Dubai (Hydrocracking)       | 4.28            | 5.17   | 5.59   | 4.90   | ↓ -0.69       | 4.57                     | 4.63   | 4.73   | 5.03   | 5.63   |  |
| Tapis (Hydrocracking)       | 5.09            | 6.29   | 7.03   | 6.04   | ↓ -1.00       | 6.07                     | 6.31   | 6.30   | 6.04   | 5.87   |  |

<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

Preliminary February data for the OECD indicate a stronger than expected performance, despite a seasonal slowdown, especially in Europe, but maintenance assumptions for March led to a downward revision. After a strong 530 kb/d y-o-y growth in January, February throughput was flat y-o-y, while March is expected to drop 300 kb/d below year earlier. Overall, 1Q17's 100 kb/d y-o-y growth is very modest, but it is the first uptrend in four quarters. In 2Q17, throughput gradually ramps up, but the 505 kb/d y-o-y growth is simply reversing 2Q16's 515 kb/d y-o-y decline, which was largely due to French strikes and Canadian wildfires. In July, OECD runs are forecast to hold on to the annual gains of 2Q17, this time implying a rebound effect in Mexico where throughput is expected to regain some of the losses seen in 2016.



### Refinery Crude Throughput and Utilisation in OECD Countries

(million barrels per day)

|                                  | Sep 16       | Oct 16       | Nov 16       | Dec 16       | Jan 17       | Feb 17       | Change from  |              | Utilisation rate <sup>1</sup> |             |
|----------------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|-------------------------------|-------------|
|                                  |              |              |              |              |              |              | Jan 17       | Feb 16       | Feb 17                        | Feb 16      |
| US <sup>2</sup>                  | 16.36        | 15.45        | 16.22        | 16.51        | 16.13        | 15.50        | -0.63        | -0.38        | 0.85                          | 0.88        |
| Canada                           | 1.54         | 1.39         | 1.62         | 1.65         | 1.80         | 1.78         | -0.01        | 0.11         | 0.92                          | 0.87        |
| Chile                            | 0.18         | 0.17         | 0.16         | 0.19         | 0.20         | 0.18         | -0.01        | 0.01         | 0.81                          | 0.77        |
| Mexico                           | 0.75         | 0.80         | 0.77         | 0.77         | 0.86         | 0.98         | 0.12         | -0.06        | 0.59                          | 0.63        |
| <b>OECD Americas<sup>3</sup></b> | <b>18.83</b> | <b>17.81</b> | <b>18.77</b> | <b>19.12</b> | <b>18.98</b> | <b>18.44</b> | <b>-0.54</b> | <b>-0.33</b> | <b>0.84</b>                   | <b>0.86</b> |
| France                           | 1.20         | 1.23         | 1.32         | 1.22         | 1.14         | 1.08         | -0.06        | -0.09        | 0.87                          | 0.83        |
| Germany                          | 1.99         | 1.95         | 1.94         | 1.98         | 1.92         | 1.87         | -0.05        | -0.04        | 0.92                          | 0.94        |
| Italy                            | 1.39         | 1.23         | 1.38         | 1.40         | 1.40         | 1.34         | -0.06        | 0.20         | 0.77                          | 0.65        |
| Netherlands                      | 1.13         | 1.10         | 1.16         | 1.11         | 1.11         | 1.11         | 0.00         | 0.03         | 0.86                          | 0.84        |
| Spain                            | 1.31         | 1.42         | 1.42         | 1.37         | 1.29         | 1.21         | -0.08        | -0.05        | 0.85                          | 0.88        |
| United Kingdom                   | 1.13         | 1.11         | 1.14         | 1.15         | 1.09         | 1.03         | -0.07        | 0.03         | 0.81                          | 0.73        |
| Other OECD Europe                | 3.92         | 4.06         | 4.03         | 4.27         | 4.35         | 4.32         | -0.03        | 0.15         | 0.89                          | 0.86        |
| <b>OECD Europe</b>               | <b>12.06</b> | <b>12.10</b> | <b>12.38</b> | <b>12.50</b> | <b>12.31</b> | <b>11.96</b> | <b>-0.35</b> | <b>0.22</b>  | <b>0.86</b>                   | <b>0.83</b> |
| Japan                            | 3.00         | 2.77         | 3.18         | 3.46         | 3.44         | 3.47         | 0.03         | 0.16         | 1.00                          | 0.87        |
| South Korea                      | 2.83         | 2.87         | 2.99         | 3.10         | 3.19         | 3.16         | -0.03        | 0.02         | 1.00                          | 1.02        |
| Other Asia Oceania               | 0.74         | 0.74         | 0.76         | 0.79         | 0.79         | 0.76         | -0.03        | -0.02        | 0.88                          | 0.89        |
| <b>OECD Asia Oceania</b>         | <b>6.57</b>  | <b>6.38</b>  | <b>6.93</b>  | <b>7.35</b>  | <b>7.42</b>  | <b>7.39</b>  | <b>-0.03</b> | <b>0.16</b>  | <b>0.99</b>                   | <b>0.93</b> |
| <b>OECD Total</b>                | <b>37.45</b> | <b>36.29</b> | <b>38.07</b> | <b>38.96</b> | <b>38.71</b> | <b>37.80</b> | <b>-0.91</b> | <b>0.05</b>  | <b>0.87</b>                   | <b>0.86</b> |

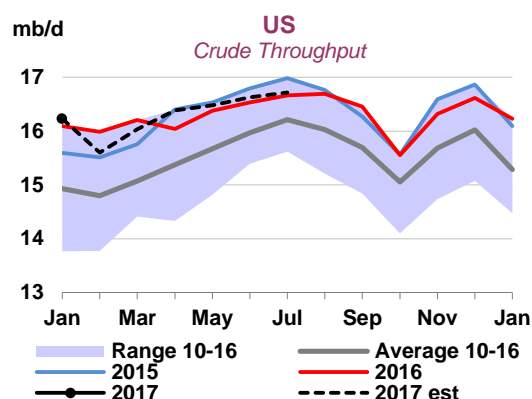
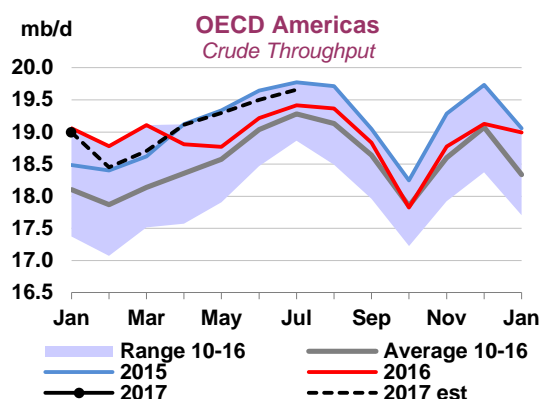
<sup>1</sup> Expressed as a percentage, based on crude throughput and current operable refining capacity

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

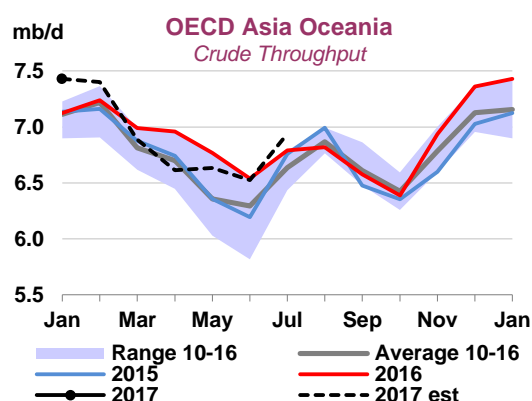
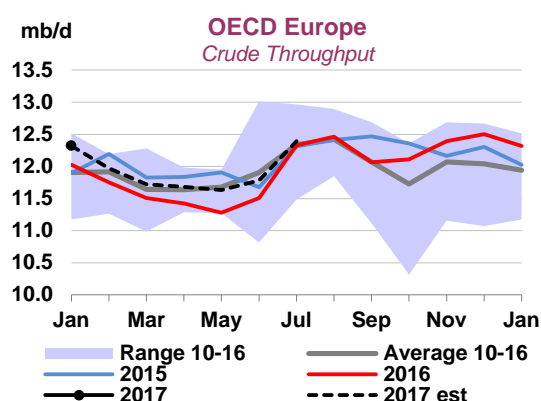
<sup>3</sup> OECD Americas includes Chile and OECD Asia Oceania includes Israel. OECD Europe includes Slovenia and Estonia, though neither country has a refinery

In the **OECD Americas**, preliminary February data and US and Canadian weekly data for March showed a full year of consecutive annual declines in monthly throughput, with the trend expected to reverse from April. US throughput was particularly low in February, down by 1 mb/d since December. March throughput had recovered somewhat, according to the preliminary weekly data, gaining 435 kb/d m-o-m to 15.94 mb/d. In 2Q17 US runs are forecast to grow 180 kb/d y-o-y, the first growth in five quarters. Mexican refinery activity is showing tentative signs of recovery with runs in February almost reaching 1 mb/d for the first time since June 2016. In 2Q17, throughput is forecast to reach 1.1 mb/d from 4Q16's

low level of 0.8 mb/d. Canadian throughput will be higher by 180 kb/d y-o-y in 2Q17 due to the rebound effect from last year's wildfires.



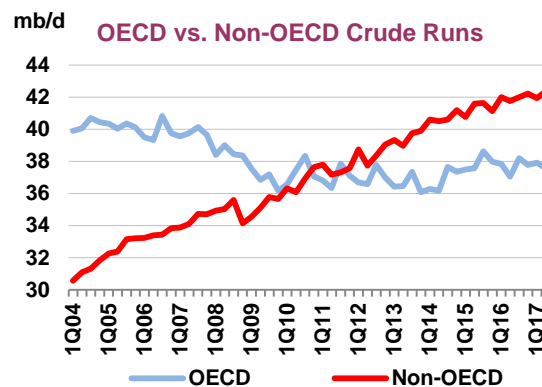
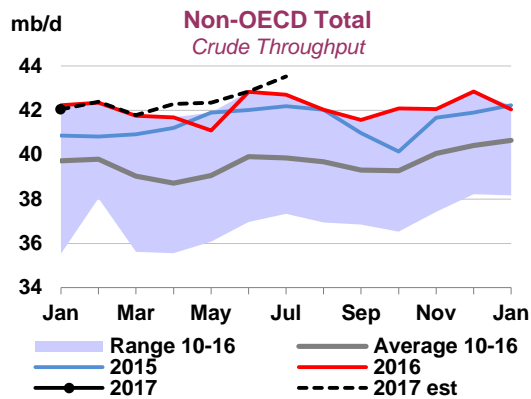
In Europe, runs stayed strong in February, continuing at the robust pace of over 200 kb/d y-o-y growth that refiners first saw in November, supported by lower activity on the other side of the Atlantic. Throughput declines into 2Q17 though, as the maintenance that started in March accelerates. Even so, runs are up y-o-y as French throughput in May-June rebounds from last year's strikes.



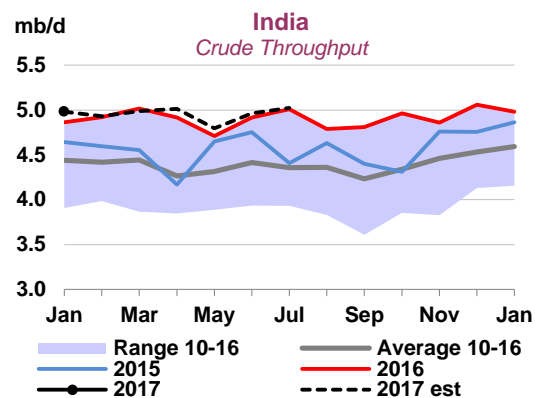
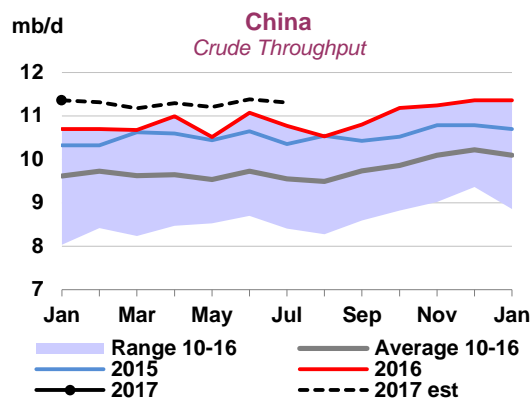
In OECD Asia, runs were higher y-o-y in February, with 1Q17 throughput expected to show growth of 120 kb/d y-o-y. However, as Korea's refinery intake growth plateaus, 2Q17 throughput declines 160 kb/d y-o-y, and seasonally by 600 kb/d from 1Q17. Japanese refiners officially wrote off 350 kb/d of capacity by end-March to comply with the Ministry of Economy, Trade and Industry's Phase II Ordinance on refinery capacity optimisation.

## Non-OECD refinery throughput

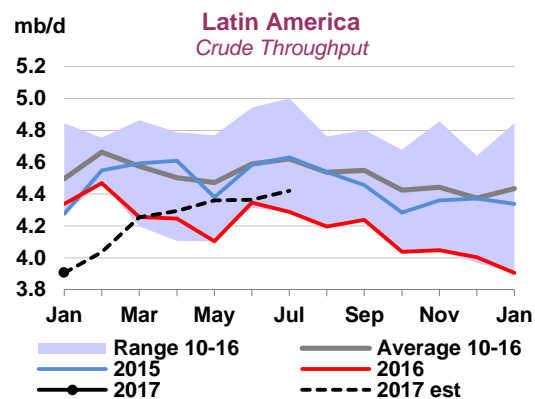
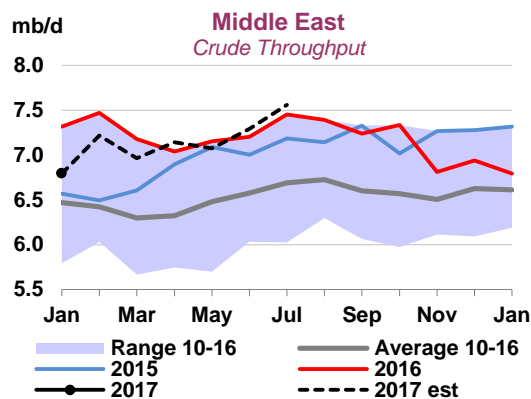
Non-OECD runs in January were 0.8 mb/d lower than in December, and at 41.9 mb/d, registered the first annual decline since May, falling by 200 kb/d y-o-y. Lower Middle Eastern levels were mostly responsible for this, alongside ongoing Latin American problems. With the inclusion of OPEC's previously excluded condensate splitter intake into our statistics for the Middle East, our global throughput numbers now provide full coverage of crude and condensate refining activity. This raised the baseline non-OECD throughput by between 400-500 kb/d, underlining yet again the growing concentration of crude demand in non-OECD countries. The latter overtook OECD throughput in 2011, and since then the gap has grown to reach 4.5 mb/d. At the same time, data availability for non-OECD countries has not improved much, with refinery intake data missing for long periods even for relatively large refining countries such as Indonesia, the UAE and South Africa.



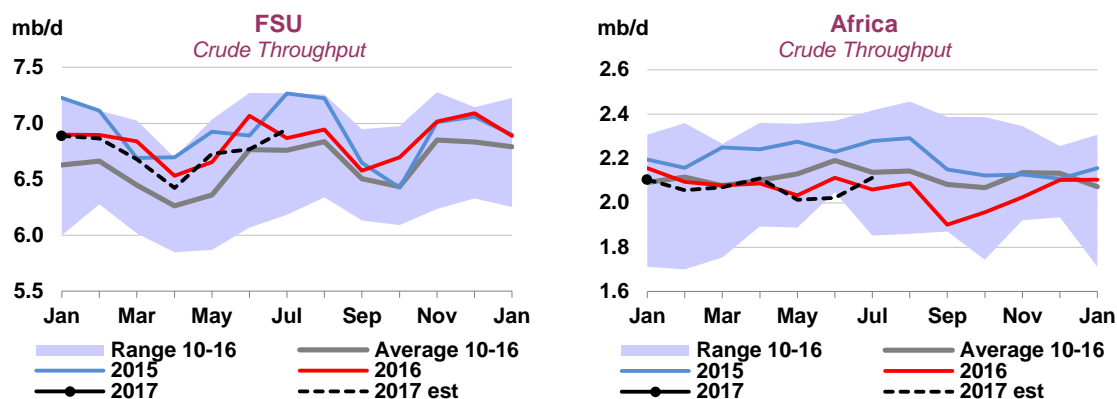
Due to the extended New Year holiday, the Chinese refinery activity report for March was not available at the time of writing, but we expect throughput lower m-o-m with maintenance scheduled at several major refineries, moderating the growth rate of 640 kb/d y-o-y seen in January-February. In 2Q17 throughput is expected to be on par with 1Q17, close to 11.2 mb/d, up 440 kb/d y-o-y. As previously discussed, we suspect that broader coverage of independent refiners, starting in 4Q16, partly explains the somewhat elevated levels of annual growth of 500 kb/d compared to the previous 250 kb/d average growth rates. Indian refinery activity in March was marginally lower y-o-y, but is expected to show modest growth for 2Q17 and in July.



January throughput levels in the **Middle East** were dragged down by maintenance work in Saudi Arabia where refinery intake was just 2.1 mb/d, down 340 kb/d y-o-y. With the shutdown of the Shuaiba refinery in Kuwait, throughput will be lower starting from 2Q17. Overall, Middle Eastern runs are expected to remain relatively subdued in 2Q17 and in July. **Latin American** refiners had their worst month since at least 2004, when our records began, but activity is expected to rebound in Brazil and Venezuela, supporting higher runs into 2Q17, up by 270 kb/d from 1Q17, but only 110 kb/d higher y-o-y.



In the **FSU**, Russian refinery throughput in March showed a more modest y-o-y growth of 50 kb/d, slower than the pace we have seen in recent months. Runs are expected to fall m-o-m in April as the maintenance season peak and to recover by June. Belarus and Russia seem to have reached an agreement over a dispute concerning gas transit fees that triggered drop in crude oil volumes supplied by Russia to Belarus refineries. With Russia agreeing to restore the supplies to normal volumes, runs should to pick up in 2Q17. However, as Kazakhstan embarks on major maintenance work, overall FSU intake in 2Q17 is about 170 kb/d lower than in 1Q17.



While in 2016 **African** throughput is estimated to have decreased 145kb/d y-o-y, and data for January shows the decline trend continuing. Morocco's Samir refinery, that was shut in August 2015, has not started up yet. In March, several bids were reportedly received for this asset, and a decision is expected in the near future. The Nigerian refining ramp up has not been as smooth as it was originally planned, judging by fluctuations in the monthly throughput submitted to JODI database. Nigerian authorities consider legalising so-called bush refineries – primitive illegal installations that distil small volumes of crude mostly syphoned off pipelines. This measure, however, seems more to do with social considerations (supporting employment for those involved in these activities) than with refined product supply.



**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        | 24.4        | 25.0        | 24.9        | 24.7        |
| Europe                                      | 13.6        | 13.5        | 13.5        | 13.6        | 14.2        | 13.7        | 13.7        | 13.7        | 14.0        | 14.5        | 14.2        | 14.1        | 13.9        | 14.1        | 14.5        | 14.1        | 14.2        |
| 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         | 8.4         | 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        | 47.3        | 47.4        | 46.9        | 46.7        | 46.2        | 47.2        | 47.2        | 46.8        |
| <b>NON-OECD DEMAND</b>                      |             |             |             |             |             |             |             |             |             |             |             |             |             |             |             |             |             |
| FSU   | 4.5         | 4.7         | 4.3         | 4.6         | 4.8         | 4.7         | 4.6         | 4.6         | 4.6         | 4.9         | 5.0         | 4.8         | 4.7         | 4.8         | 5.0         | 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        | 11.8        | 12.1        | 11.8        | 12.0        | 11.9        | 12.2        | 12.5        | 12.2        | 12.3        | 12.3        |
| Other Asia                                  | 11.7        | 12.0        | 12.3        | 12.6        | 12.3        | 12.8        | 12.5        | 13.1        | 13.1        | 12.7        | 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         | 6.7         | 6.8         | 6.7         | 6.7         |
| Middle East                                 | 8.0         | 8.4         | 7.9         | 8.6         | 8.9         | 8.4         | 8.4         | 8.0         | 8.5         | 8.9         | 8.3         | 8.4         | 8.1         | 8.6         | 8.9         | 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         | 4.2         | 4.3         | 4.2         | 4.3         | 4.3         |
| Total Non-OECD                              | 45.6        | 47.2        | 47.2        | 48.8        | 49.0        | 49.2        | 48.6        | 48.8        | 49.9        | 49.9        | 50.3        | 49.7        | 49.8        | 51.3        | 51.3        | 51.9        | 51.1        |
| <b>Total Demand<sup>1</sup></b>             | <b>91.7</b> | <b>93.0</b> | <b>93.8</b> | <b>94.4</b> | <b>95.9</b> | <b>95.6</b> | <b>94.9</b> | <b>95.5</b> | <b>95.9</b> | <b>97.2</b> | <b>97.7</b> | <b>96.6</b> | <b>96.6</b> | <b>97.4</b> | <b>98.5</b> | <b>99.1</b> | <b>97.9</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        | 19.5        | 20.1        | 20.4        | 19.9        |
| 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         | 3.6         | 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        | 23.4        | 23.8        | 24.3        | 23.8        |
| <b>NON-OECD SUPPLY</b>                      |             |             |             |             |             |             |             |             |             |             |             |             |             |             |             |             |             |
| FSU   | 13.8        | 13.9        | 14.1        | 14.0        | 13.9        | 14.1        | 14.0        | 14.3        | 14.1        | 14.0        | 14.5        | 14.2        | 14.4        | 14.3        | 14.3        | 14.3        | 14.3        |
| 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         | 1.9         | 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        | 29.6        | 29.6        | 29.6        | 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        | 57.5        | 58.2        | 57.7        | 57.7        | 57.7        | 58.5        | 58.6        | 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        | 33.3        | 32.6        | 31.9        |             |             |             |             |
| 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        | 38.6        |             |             |             |             |
| <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>96.3</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         | 0.7         | 0.9         | 0.6         | 0.6         | -0.7        | -0.1        | 1.1         | 0.2         |             |             |             |             |             |
| <b>Total Stock Ch. &amp; Misc</b>           | <b>-0.5</b> | <b>0.7</b>  | <b>1.5</b>  | <b>2.0</b>  | <b>1.3</b>  | <b>1.8</b>  | <b>1.6</b>  | <b>1.2</b>  | <b>0.1</b>  | <b>-0.2</b> | <b>0.5</b>  | <b>0.4</b>  | <b>-0.2</b> |             |             |             |             |
| <b>Memo items:</b>                          |             |             |             |             |             |             |             |             |             |             |             |             |             |             |             |             |             |
| Call on OPEC crude + Stock ch. <sup>6</sup> | 31.1        | 29.7        | 29.3        | 29.7        | 30.8        | 30.2        | 30.0        | 31.0        | 32.3        | 32.9        | 32.7        | 32.2        | 32.1        | 32.9        | 33.1        | 33.5        | 32.9        |

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

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

Table 2  
SUMMARY OF GLOBAL OIL DEMAND

|   | 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        | 24.82        | 24.68        | 24.38        | 24.44        | 25.04        | 24.86        | 24.68        |
| Europe  | 13.51        | 13.45        | 13.59        | 14.21        | 13.75        | 13.75        | 13.67        | 13.98        | 14.50        | 14.23        | 14.10        | 13.93        | 14.13        | 14.49        | 14.11        | 14.17        |
| Asia Oceania  | 8.11         | 8.68         | 7.58         | 7.71         | 8.18         | 8.04         | 8.55         | 7.64         | 7.79         | 8.33         | 8.08         | 8.43         | 7.59         | 7.71         | 8.21         | 7.98         |
| <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>46.71</b> | <b>46.02</b> | <b>47.29</b> | <b>47.39</b> | <b>46.85</b> | <b>46.74</b> | <b>46.16</b> | <b>47.23</b> | <b>47.18</b> | <b>46.83</b> |
| Asia  | 22.82        | 23.62        | 24.15        | 23.84        | 24.47        | 24.02        | 24.84        | 25.21        | 24.53        | 25.51        | 25.02        | 25.66        | 26.24        | 25.62        | 26.44        | 25.99        |
| Middle East   | 8.37         | 7.88         | 8.57         | 8.87         | 8.41         | 8.43         | 8.01         | 8.53         | 8.85         | 8.32         | 8.43         | 8.13         | 8.59         | 8.94         | 8.56         | 8.56         |
| Americas  | 6.83         | 6.62         | 6.77         | 6.86         | 6.79         | 6.76         | 6.46         | 6.66         | 6.77         | 6.67         | 6.64         | 6.45         | 6.66         | 6.81         | 6.75         | 6.67         |
| FSU   | 4.66         | 4.34         | 4.62         | 4.78         | 4.72         | 4.62         | 4.63         | 4.60         | 4.93         | 4.97         | 4.78         | 4.67         | 4.76         | 5.01         | 5.07         | 4.88         |
| Africa  | 3.83         | 4.08         | 4.06         | 3.97         | 4.12         | 4.06         | 4.17         | 4.22         | 4.10         | 4.16         | 4.16         | 4.24         | 4.31         | 4.19         | 4.34         | 4.27         |
| Europe  | 0.65         | 0.65         | 0.67         | 0.69         | 0.69         | 0.68         | 0.68         | 0.71         | 0.70         | 0.70         | 0.70         | 0.69         | 0.72         | 0.72         | 0.73         | 0.71         |
| <b>Total Non-OECD</b>   | <b>47.16</b> | <b>47.21</b> | <b>48.84</b> | <b>49.01</b> | <b>49.19</b> | <b>48.57</b> | <b>48.79</b> | <b>49.92</b> | <b>49.89</b> | <b>50.33</b> | <b>49.73</b> | <b>49.84</b> | <b>51.29</b> | <b>51.29</b> | <b>51.87</b> | <b>51.08</b> |
| <b>World</b>  | <b>92.98</b> | <b>93.79</b> | <b>94.41</b> | <b>95.92</b> | <b>95.65</b> | <b>94.95</b> | <b>95.50</b> | <b>95.94</b> | <b>97.17</b> | <b>97.72</b> | <b>96.59</b> | <b>96.58</b> | <b>97.45</b> | <b>98.53</b> | <b>99.05</b> | <b>97.91</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        | 19.38        | 19.49        | 19.99        | 19.85        | 19.68        |
| Europe 5*   | 8.05         | 8.03         | 8.00         | 8.37         | 8.12         | 8.13         | 8.16         | 8.21         | 8.42         | 8.27         | 8.27         | 8.22         | 8.18         | 8.39         | 8.17         | 8.24         |
| China   | 10.80        | 11.33        | 11.59        | 11.58        | 11.67        | 11.54        | 11.77        | 12.11        | 11.79        | 12.02        | 11.92        | 12.20        | 12.52        | 12.16        | 12.35        | 12.31        |
| Japan   | 4.27         | 4.70         | 3.80         | 3.85         | 4.14         | 4.12         | 4.43         | 3.66         | 3.75         | 4.13         | 3.99         | 4.27         | 3.52         | 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         | 4.36         | 4.58         | 4.39         | 4.72         | 4.51         |
| Russia  | 3.51         | 3.27         | 3.48         | 3.62         | 3.49         | 3.47         | 3.55         | 3.43         | 3.74         | 3.72         | 3.61         | 3.56         | 3.56         | 3.78         | 3.81         | 3.68         |
| Brazil  | 3.24         | 3.17         | 3.17         | 3.22         | 3.20         | 3.19         | 3.02         | 3.07         | 3.14         | 3.07         | 3.08         | 2.97         | 3.04         | 3.13         | 3.12         | 3.07         |
| Saudi Arabia  | 3.19         | 2.89         | 3.48         | 3.59         | 3.22         | 3.29         | 2.95         | 3.34         | 3.47         | 3.08         | 3.21         | 2.89         | 3.29         | 3.47         | 3.11         | 3.19         |
| 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         | 2.63         | 2.57         | 2.59         | 2.72         | 2.63         |
| 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         | 1.93         | 2.02         | 1.98         | 1.98         | 1.92         | 1.90         | 1.96         | 1.94         | 1.98         | 1.97         | 1.98         | 2.07         | 2.00         |
| <b>Total</b>  | <b>64.84</b> | <b>65.57</b> | <b>65.59</b> | <b>66.71</b> | <b>66.36</b> | <b>66.06</b> | <b>66.63</b> | <b>66.29</b> | <b>67.11</b> | <b>67.48</b> | <b>66.88</b> | <b>66.80</b> | <b>67.01</b> | <b>67.88</b> | <b>68.23</b> | <b>67.49</b> |
| % of World  | 69.7%        | 69.9%        | 69.5%        | 69.6%        | 69.4%        | 69.6%        | 69.8%        | 69.1%        | 69.1%        | 69.1%        | 69.2%        | 69.2%        | 68.8%        | 68.9%        | 68.9%        | 68.9%        |
| <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          | -0.5         | 0.2          | 0.1          | 0.1          | 0.0          |
| Europe  | -0.7         | 2.7          | 0.8          | 2.0          | 1.6          | 1.8          | 1.7          | 2.9          | 2.0          | 3.5          | 2.5          | 1.9          | 1.1          | 0.0          | -0.9         | 0.5          |
| Asia Oceania  | -2.8         | -2.2         | -0.8         | 0.8          | -1.4         | -0.9         | -1.5         | 0.9          | 1.0          | 1.8          | 0.5          | -1.4         | -0.7         | -1.1         | -1.5         | -1.2         |
| <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>0.3</b>   | <b>1.0</b>   | <b>0.8</b>   | <b>2.0</b>   | <b>1.0</b>   | <b>0.1</b>   | <b>0.3</b>   | <b>-0.1</b>  | <b>-0.4</b>  | <b>-0.1</b>  |
| Asia  | 3.5          | 4.0          | 5.1          | 6.7          | 5.1          | 5.3          | 5.2          | 4.4          | 2.9          | 4.2          | 4.2          | 3.3          | 4.1          | 4.5          | 3.6          | 3.9          |
| Middle East   | 4.4          | -2.6         | 0.6          | 2.0          | 2.8          | 0.7          | 1.7          | -0.4         | -0.2         | -1.0         | 0.0          | 1.5          | 0.7          | 1.1          | 2.8          | 1.5          |
| Americas  | 2.7          | 0.2          | -0.4         | -1.4         | -2.1         | -0.9         | -2.5         | -1.7         | -1.3         | -1.7         | -1.8         | -0.1         | 0.1          | 0.6          | 1.1          | 0.4          |
| FSU   | 4.7          | -0.7         | 0.3          | -1.7         | -1.6         | -1.0         | 6.6          | -0.4         | 3.1          | 5.4          | 3.6          | 0.8          | 3.6          | 1.5          | 1.9          | 1.9          |
| Africa  | 0.1          | 3.5          | 4.7          | 6.7          | 9.0          | 6.0          | 2.0          | 4.0          | 3.3          | 0.9          | 2.5          | 1.8          | 2.1          | 2.2          | 4.4          | 2.6          |
| Europe  | -1.5         | 4.9          | 4.4          | 3.5          | 5.1          | 4.4          | 3.4          | 5.1          | 2.1          | 1.3          | 2.9          | 1.6          | 2.3          | 1.9          | 4.2          | 2.5          |
| <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>3.3</b>   | <b>2.2</b>   | <b>1.8</b>   | <b>2.3</b>   | <b>2.4</b>   | <b>2.2</b>   | <b>2.7</b>   | <b>2.8</b>   | <b>3.1</b>   | <b>2.7</b>   |
| <b>World</b>  | <b>1.3</b>   | <b>1.7</b>   | <b>2.3</b>   | <b>2.9</b>   | <b>1.7</b>   | <b>2.1</b>   | <b>1.8</b>   | <b>1.6</b>   | <b>1.3</b>   | <b>2.2</b>   | <b>1.7</b>   | <b>1.1</b>   | <b>1.6</b>   | <b>1.4</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         | -0.11        | 0.04         | 0.03         | 0.03         | 0.00         |
| Europe  | -0.10        | 0.35         | 0.10         | 0.27         | 0.22         | 0.24         | 0.22         | 0.39         | 0.29         | 0.49         | 0.35         | 0.26         | 0.15         | -0.01        | -0.12        | 0.07         |
| Asia Oceania  | -0.23        | -0.19        | -0.06        | 0.06         | -0.11        | -0.07        | -0.13        | 0.06         | 0.07         | 0.15         | 0.04         | -0.12        | -0.06        | -0.08        | -0.12        | -0.10        |
| <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>0.13</b>  | <b>0.44</b>  | <b>0.39</b>  | <b>0.93</b>  | <b>0.47</b>  | <b>0.03</b>  | <b>0.14</b>  | <b>-0.06</b> | <b>-0.21</b> | <b>-0.02</b> |
| Asia  | 0.78         | 0.91         | 1.18         | 1.51         | 1.19         | 1.20         | 1.22         | 1.06         | 0.69         | 1.04         | 1.00         | 0.82         | 1.04         | 1.09         | 0.93         | 0.97         |
| Middle East   | 0.35         | -0.21        | 0.05         | 0.17         | 0.23         | 0.06         | 0.13         | -0.03        | -0.02        | -0.08        | 0.00         | 0.12         | 0.06         | 0.09         | 0.23         | 0.13         |
| Americas  | 0.18         | 0.02         | -0.03        | -0.10        | -0.15        | -0.06        | -0.16        | -0.11        | -0.09        | -0.11        | -0.12        | -0.01        | 0.01         | 0.04         | 0.07         | 0.03         |
| FSU   | 0.21         | -0.03        | 0.01         | -0.09        | -0.08        | -0.04        | 0.29         | -0.02        | 0.15         | 0.25         | 0.17         | 0.04         | 0.16         | 0.08         | 0.10         | 0.09         |
| Africa  | 0.00         | 0.14         | 0.18         | 0.25         | 0.34         | 0.23         | 0.08         | 0.16         | 0.13         | 0.04         | 0.10         | 0.07         | 0.09         | 0.09         | 0.18         | 0.11         |
| Europe  | -0.01        | 0.03         | 0.03         | 0.02         | 0.03         | 0.03         | 0.02         | 0.03         | 0.01         | 0.01         | 0.02         | 0.01         | 0.02         | 0.01         | 0.03         | 0.02         |
| <b>Total Non-OECD</b>   | <b>1.52</b>  | <b>0.86</b>  | <b>1.42</b>  | <b>1.77</b>  | <b>1.57</b>  | <b>1.41</b>  | <b>1.58</b>  | <b>1.09</b>  | <b>0.87</b>  | <b>1.14</b>  | <b>1.16</b>  | <b>1.05</b>  | <b>1.37</b>  | <b>1.41</b>  | <b>1.54</b>  | <b>1.35</b>  |
| <b>World</b>  | <b>1.23</b>  | <b>1.54</b>  | <b>2.09</b>  | <b>2.66</b>  | <b>1.58</b>  | <b>1.97</b>  | <b>1.71</b>  | <b>1.53</b>  | <b>1.26</b>  | <b>2.08</b>  | <b>1.64</b>  | <b>1.08</b>  | <b>1.51</b>  | <b>1.35</b>  | <b>1.33</b>  | <b>1.32</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         | 0.00         | 0.00         | -0.02        | -0.10        | 0.04         | 0.06         | 0.00         |
| Europe  | 0.00         | 0.00         | 0.00         | 0.00         | 0.00         | 0.00         | 0.03         | 0.03         | 0.05         | 0.06         | 0.04         | 0.09         | 0.03         | 0.07         | 0.07         | 0.06         |
| Asia Oceania  | 0.00         | 0.00         | 0.00         | 0.00         | 0.00         | 0.00         | 0.00         | 0.00         | 0.00         | 0.01         | 0.00         | -0.05        | 0.01         | 0.01         | -0.02        | -0.01        |
| <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>0.03</b>  | <b>0.03</b>  | <b>0.05</b>  | <b>0.07</b>  | <b>0.05</b>  | <b>0.02</b>  | <b>-0.06</b> | <b>0.12</b>  | <b>0.12</b>  | <b>0.05</b>  |
| Asia  | 0.00         | -0.01        | -0.01        | -0.02        | -0.01        | -0.01        | 0.05         | 0.01         | 0.03         | -0.02        | 0.02         | 0.16         | 0.31         | -0.10        | -0.12        | 0.06         |
| Middle East   | 0.00         | 0.00         | 0.00         | 0.00         | 0.00         | 0.00         | 0.00         | -0.01        | -0.02        | -0.10        | -0.03        | -0.11        | -0.05        | -0.03        | -0.04        | -0.06        |
| Americas  | 0.00         | 0.00         | 0.00         | 0.00         | -0.01        | 0.00         | -0.01        | 0.00         | -0.02        | 0.02         | 0.00         | -0.01        | 0.02         | 0.02         | -0.04        | 0.00         |
| FSU   | -0.01        | -0.02        | -0.02        | -0.02        | -0.02        | -0.02        | -0.02        | -0.01        | -0.01        | -0.04        | -0.02        | -0.10        | -0.05        | -0.06        | -0.05        | -0.06        |
| Africa  | 0.00         | -0.01        | -0.01        | -0.01        | 0.00         | -0.01        | 0.00         | 0.00         | -0.01        | -0.08        | -0.02        | -0.06        | -0.04        | -0.04        | -0.04        | -0.05        |
| Europe  | 0.00         | 0.00         | 0.00         | 0.00         | 0.00         | 0.00         | 0.00         | 0.00         | 0.00         | -0.01        | 0.00         | -0.01        | 0.00         | 0.01         | 0.00         | 0.00         |
| <b>Total Non-OECD</b>   | <b>-0.01</b> | <b>-0.04</b> | <b>-0.03</b> | <b>-0.05</b> | <b>-0.03</b> | <b>-0.04</b> | <b>0.02</b>  | <b>-0.01</b> | <b>-0.02</b> | <b>-0.23</b> | <b>-0.06</b> | <b>-0.13</b> | <b>0.20</b>  | <b>-0.20</b> | <b>-0.29</b> | <b>-0.11</b> |
| <b>World</b>  | <b>-0.01</b> | <b>-0.04</b> | <b>-0.03</b> | <b>-0.05</b> | <b>-0.03</b> | <b>-0.04</b> | <b>0.05</b>  | <b>0.03</b>  | <b>0.03</b>  | <b>-0.17</b> | <b>-0.01</b> | <b>-0.11</b> | <b>0.14</b>  | <b>-0.08</b> | <b>-0.17</b> | <b>-0.06</b> |
| <b>Revisions to Oil Demand Growth from Last Month's Report (mb/d)</b> |              |              |              |              |              |              |              |              |              |              |              |              |              |              |              |              |
| World   | -0.01        | -0.03        | -0.02        | -0.03        | -0.02        | -0.02        | 0.09         | 0.06         | 0.08         | -0.13        | 0.02         | -0.16        | 0.11         | -0.11        | -0.01        | -0.04        |

\* 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         | Nov 16       | Dec 16       | Jan 17 <sup>2</sup> | Dec 16           | Jan 16       |
| <b>Americas</b>     |              |              |              |              |              |              |              |              |                     |                  |              |
| LPG and ethane      | 3.29         | 3.21         | 3.56         | 2.93         | 3.08         | 3.26         | 3.18         | 3.47         | 3.74                | 0.27             | -0.07        |
| Naphtha             | 0.34         | 0.35         | 0.35         | 0.35         | 0.34         | 0.34         | 0.34         | 0.36         | 0.33                | -0.03            | -0.03        |
| Motor gasoline      | 10.91        | 11.13        | 10.85        | 11.23        | 11.40        | 11.03        | 11.04        | 11.16        | 10.20               | -0.96            | -0.21        |
| Jet and kerosene    | 1.83         | 1.90         | 1.78         | 1.90         | 1.99         | 1.92         | 1.91         | 1.95         | 1.89                | -0.05            | 0.18         |
| Gasoil/diesel oil   | 5.21         | 5.08         | 5.06         | 5.02         | 5.00         | 5.23         | 5.18         | 5.28         | 4.92                | -0.36            | -0.02        |
| Residual fuel oil   | 0.55         | 0.64         | 0.59         | 0.69         | 0.64         | 0.63         | 0.64         | 0.61         | 0.74                | 0.13             | 0.16         |
| Other products      | 2.46         | 2.39         | 2.30         | 2.28         | 2.55         | 2.41         | 2.39         | 2.33         | 2.31                | -0.02            | 0.08         |
| <b>Total</b>        | <b>24.59</b> | <b>24.68</b> | <b>24.49</b> | <b>24.39</b> | <b>25.01</b> | <b>24.82</b> | <b>24.69</b> | <b>25.15</b> | <b>24.14</b>        | <b>-1.01</b>     | <b>0.07</b>  |
| <b>Europe</b>       |              |              |              |              |              |              |              |              |                     |                  |              |
| LPG and ethane      | 1.14         | 1.21         | 1.23         | 1.17         | 1.20         | 1.24         | 1.19         | 1.30         | 1.27                | -0.03            | 0.02         |
| Naphtha             | 1.12         | 1.18         | 1.24         | 1.13         | 1.19         | 1.15         | 1.14         | 1.24         | 1.27                | 0.03             | 0.03         |
| Motor gasoline      | 1.92         | 1.92         | 1.79         | 1.98         | 2.04         | 1.88         | 1.89         | 1.88         | 1.70                | -0.18            | 0.02         |
| Jet and kerosene    | 1.33         | 1.38         | 1.24         | 1.39         | 1.55         | 1.33         | 1.29         | 1.28         | 1.26                | -0.02            | 0.07         |
| Gasoil/diesel oil   | 6.14         | 6.23         | 6.11         | 6.12         | 6.24         | 6.45         | 6.53         | 6.41         | 5.98                | -0.43            | 0.31         |
| Residual fuel oil   | 0.90         | 0.94         | 0.96         | 0.92         | 0.95         | 0.92         | 0.91         | 0.90         | 0.93                | 0.03             | -0.02        |
| Other products      | 1.20         | 1.24         | 1.10         | 1.28         | 1.34         | 1.25         | 1.23         | 1.15         | 1.06                | -0.09            | 0.04         |
| <b>Total</b>        | <b>13.75</b> | <b>14.10</b> | <b>13.67</b> | <b>13.98</b> | <b>14.50</b> | <b>14.23</b> | <b>14.17</b> | <b>14.16</b> | <b>13.47</b>        | <b>-0.69</b>     | <b>0.47</b>  |
| <b>Asia Oceania</b> |              |              |              |              |              |              |              |              |                     |                  |              |
| LPG and ethane      | 0.77         | 0.83         | 0.83         | 0.81         | 0.84         | 0.86         | 0.82         | 0.96         | 0.91                | -0.04            | 0.16         |
| Naphtha             | 1.96         | 1.94         | 2.00         | 1.85         | 1.89         | 2.02         | 2.08         | 2.08         | 2.12                | 0.04             | 0.06         |
| Motor gasoline      | 1.56         | 1.57         | 1.53         | 1.52         | 1.64         | 1.57         | 1.57         | 1.60         | 1.42                | -0.17            | -0.05        |
| Jet and kerosene    | 0.87         | 0.91         | 1.17         | 0.73         | 0.70         | 1.03         | 1.02         | 1.23         | 1.19                | -0.04            | -0.03        |
| Gasoil/diesel oil   | 1.78         | 1.80         | 1.83         | 1.75         | 1.74         | 1.88         | 1.91         | 1.96         | 1.70                | -0.26            | -0.01        |
| Residual fuel oil   | 0.64         | 0.65         | 0.75         | 0.60         | 0.60         | 0.65         | 0.67         | 0.70         | 0.68                | -0.03            | -0.06        |
| Other products      | 0.45         | 0.38         | 0.44         | 0.37         | 0.38         | 0.32         | 0.33         | 0.36         | 0.29                | -0.07            | -0.18        |
| <b>Total</b>        | <b>8.04</b>  | <b>8.08</b>  | <b>8.55</b>  | <b>7.64</b>  | <b>7.79</b>  | <b>8.33</b>  | <b>8.41</b>  | <b>8.89</b>  | <b>8.31</b>         | <b>-0.58</b>     | <b>-0.11</b> |
| <b>OECD</b>         |              |              |              |              |              |              |              |              |                     |                  |              |
| LPG and ethane      | 5.20         | 5.26         | 5.62         | 4.91         | 5.12         | 5.37         | 5.19         | 5.73         | 5.93                | 0.20             | 0.10         |
| Naphtha             | 3.41         | 3.46         | 3.59         | 3.32         | 3.42         | 3.51         | 3.56         | 3.69         | 3.73                | 0.04             | 0.06         |
| Motor gasoline      | 14.39        | 14.61        | 14.17        | 14.74        | 15.07        | 14.47        | 14.50        | 14.64        | 13.32               | -1.32            | -0.24        |
| Jet and kerosene    | 4.03         | 4.18         | 4.18         | 4.02         | 4.24         | 4.29         | 4.21         | 4.46         | 4.34                | -0.12            | 0.22         |
| Gasoil/diesel oil   | 13.13        | 13.11        | 13.00        | 12.89        | 12.98        | 13.56        | 13.62        | 13.64        | 12.60               | -1.04            | 0.28         |
| Residual fuel oil   | 2.10         | 2.23         | 2.30         | 2.21         | 2.19         | 2.20         | 2.22         | 2.21         | 2.35                | 0.13             | 0.08         |
| Other products      | 4.12         | 4.01         | 3.84         | 3.93         | 4.27         | 3.98         | 3.95         | 3.84         | 3.66                | -0.17            | -0.06        |
| <b>Total</b>        | <b>46.38</b> | <b>46.85</b> | <b>46.71</b> | <b>46.02</b> | <b>47.29</b> | <b>47.39</b> | <b>47.26</b> | <b>48.20</b> | <b>45.93</b>        | <b>-2.28</b>     | <b>0.44</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         | Nov 16       | Dec 16       | Jan 17 <sup>2</sup> | Latest month vs. |              |
|----------------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|---------------------|------------------|--------------|
|                                  |              |              |              |              |              |              |              |              |                     | Dec 16           | Jan 16       |
| <b>United States<sup>3</sup></b> |              |              |              |              |              |              |              |              |                     |                  |              |
| LPG and ethane                   | 2.45         | 2.43         | 2.69         | 2.21         | 2.33         | 2.48         | 2.40         | 2.63         | 2.94                | 0.31             | 0.04         |
| Naphtha                          | 0.22         | 0.22         | 0.22         | 0.22         | 0.22         | 0.22         | 0.22         | 0.23         | 0.22                | -0.01            | 0.00         |
| Motor gasoline                   | 9.18         | 9.33         | 9.09         | 9.44         | 9.56         | 9.22         | 9.24         | 9.31         | 8.50                | -0.81            | -0.17        |
| Jet and kerosene                 | 1.55         | 1.61         | 1.51         | 1.62         | 1.69         | 1.64         | 1.63         | 1.67         | 1.61                | -0.06            | 0.16         |
| Gasoil/diesel oil                | 4.00         | 3.88         | 3.90         | 3.81         | 3.79         | 4.02         | 3.96         | 4.06         | 3.78                | -0.28            | -0.04        |
| Residual fuel oil                | 0.26         | 0.36         | 0.31         | 0.41         | 0.36         | 0.35         | 0.38         | 0.32         | 0.46                | 0.14             | 0.12         |
| Other products                   | 1.87         | 1.81         | 1.72         | 1.73         | 1.95         | 1.84         | 1.82         | 1.76         | 1.72                | -0.04            | 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>19.66</b> | <b>19.98</b> | <b>19.23</b>        | <b>-0.75</b>     | <b>0.18</b>  |
| <b>Japan</b>                     |              |              |              |              |              |              |              |              |                     |                  |              |
| LPG and ethane                   | 0.43         | 0.44         | 0.47         | 0.42         | 0.42         | 0.44         | 0.40         | 0.53         | 0.49                | -0.05            | 0.07         |
| Naphtha                          | 0.78         | 0.75         | 0.79         | 0.72         | 0.70         | 0.79         | 0.83         | 0.82         | 0.84                | 0.02             | -0.01        |
| Motor gasoline                   | 0.91         | 0.90         | 0.87         | 0.88         | 0.96         | 0.90         | 0.90         | 0.91         | 0.80                | -0.12            | -0.04        |
| Jet and kerosene                 | 0.50         | 0.51         | 0.74         | 0.37         | 0.33         | 0.60         | 0.58         | 0.76         | 0.75                | -0.01            | -0.01        |
| Diesel                           | 0.41         | 0.41         | 0.41         | 0.38         | 0.41         | 0.43         | 0.43         | 0.44         | 0.37                | -0.07            | 0.01         |
| Other gasoil                     | 0.35         | 0.35         | 0.40         | 0.32         | 0.31         | 0.37         | 0.37         | 0.42         | 0.37                | -0.05            | 0.00         |
| Residual fuel oil                | 0.36         | 0.33         | 0.38         | 0.30         | 0.31         | 0.33         | 0.34         | 0.35         | 0.34                | 0.00             | -0.02        |
| Other products                   | 0.37         | 0.31         | 0.37         | 0.27         | 0.30         | 0.29         | 0.26         | 0.33         | 0.27                | -0.06            | -0.12        |
| <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>4.11</b>  | <b>4.55</b>  | <b>4.22</b>         | <b>-0.33</b>     | <b>-0.12</b> |
| <b>Germany</b>                   |              |              |              |              |              |              |              |              |                     |                  |              |
| LPG and ethane                   | 0.10         | 0.10         | 0.10         | 0.11         | 0.10         | 0.09         | 0.09         | 0.10         | 0.08                | -0.02            | 0.00         |
| Naphtha                          | 0.40         | 0.40         | 0.42         | 0.36         | 0.41         | 0.41         | 0.40         | 0.42         | 0.38                | -0.04            | -0.07        |
| Motor gasoline                   | 0.42         | 0.42         | 0.40         | 0.43         | 0.44         | 0.42         | 0.43         | 0.41         | 0.38                | -0.03            | 0.02         |
| Jet and kerosene                 | 0.18         | 0.20         | 0.17         | 0.20         | 0.23         | 0.20         | 0.19         | 0.18         | 0.19                | 0.01             | 0.03         |
| Diesel                           | 0.75         | 0.78         | 0.72         | 0.80         | 0.82         | 0.78         | 0.83         | 0.72         | 0.69                | -0.03            | 0.04         |
| Other gasoil                     | 0.35         | 0.34         | 0.46         | 0.27         | 0.26         | 0.37         | 0.37         | 0.38         | 0.38                | 0.00             | -0.07        |
| Residual fuel oil                | 0.12         | 0.13         | 0.13         | 0.13         | 0.12         | 0.13         | 0.13         | 0.14         | 0.11                | -0.02            | -0.01        |
| Other products                   | 0.05         | 0.05         | 0.02         | 0.07         | 0.07         | 0.05         | 0.07         | 0.02         | 0.05                | 0.03             | 0.03         |
| <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>2.51</b>  | <b>2.38</b>  | <b>2.28</b>         | <b>-0.10</b>     | <b>-0.04</b> |
| <b>Italy</b>                     |              |              |              |              |              |              |              |              |                     |                  |              |
| LPG and ethane                   | 0.11         | 0.11         | 0.12         | 0.10         | 0.10         | 0.12         | 0.11         | 0.14         | 0.15                | 0.01             | 0.03         |
| Naphtha                          | 0.09         | 0.11         | 0.11         | 0.12         | 0.11         | 0.10         | 0.09         | 0.12         | 0.14                | 0.02             | 0.04         |
| Motor gasoline                   | 0.21         | 0.20         | 0.20         | 0.21         | 0.22         | 0.19         | 0.18         | 0.19         | 0.17                | -0.02            | -0.02        |
| Jet and kerosene                 | 0.10         | 0.11         | 0.09         | 0.11         | 0.12         | 0.10         | 0.10         | 0.10         | 0.09                | -0.01            | 0.01         |
| Diesel                           | 0.44         | 0.44         | 0.42         | 0.45         | 0.45         | 0.43         | 0.42         | 0.44         | 0.39                | -0.05            | 0.00         |
| Other gasoil                     | 0.09         | 0.09         | 0.08         | 0.08         | 0.10         | 0.10         | 0.09         | 0.11         | 0.08                | -0.03            | 0.00         |
| Residual fuel oil                | 0.08         | 0.07         | 0.07         | 0.07         | 0.07         | 0.06         | 0.06         | 0.07         | 0.07                | 0.00             | 0.00         |
| Other products                   | 0.15         | 0.15         | 0.12         | 0.15         | 0.15         | 0.16         | 0.18         | 0.14         | 0.11                | -0.03            | 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>1.22</b>  | <b>1.30</b>  | <b>1.19</b>         | <b>-0.11</b>     | <b>0.07</b>  |
| <b>France</b>                    |              |              |              |              |              |              |              |              |                     |                  |              |
| LPG and ethane                   | 0.13         | 0.15         | 0.17         | 0.14         | 0.13         | 0.14         | 0.14         | 0.15         | 0.19                | 0.03             | 0.02         |
| Naphtha                          | 0.13         | 0.12         | 0.14         | 0.12         | 0.13         | 0.08         | 0.07         | 0.09         | 0.13                | 0.04             | -0.02        |
| Motor gasoline                   | 0.16         | 0.17         | 0.15         | 0.18         | 0.18         | 0.16         | 0.16         | 0.17         | 0.15                | -0.02            | 0.02         |
| Jet and kerosene                 | 0.15         | 0.15         | 0.14         | 0.15         | 0.17         | 0.15         | 0.14         | 0.14         | 0.15                | 0.01             | 0.01         |
| Diesel                           | 0.71         | 0.70         | 0.67         | 0.72         | 0.72         | 0.71         | 0.70         | 0.72         | 0.67                | -0.05            | 0.06         |
| Other gasoil                     | 0.25         | 0.24         | 0.26         | 0.20         | 0.23         | 0.27         | 0.23         | 0.28         | 0.32                | 0.04             | 0.07         |
| Residual fuel oil                | 0.04         | 0.04         | 0.04         | 0.03         | 0.04         | 0.04         | 0.05         | 0.04         | 0.07                | 0.03             | 0.02         |
| Other products                   | 0.12         | 0.12         | 0.12         | 0.13         | 0.14         | 0.11         | 0.10         | 0.09         | 0.09                | 0.00             | -0.02        |
| <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>1.60</b>  | <b>1.69</b>  | <b>1.77</b>         | <b>0.08</b>      | <b>0.17</b>  |
| <b>United Kingdom</b>            |              |              |              |              |              |              |              |              |                     |                  |              |
| LPG and ethane                   | 0.14         | 0.16         | 0.17         | 0.16         | 0.16         | 0.16         | 0.16         | 0.16         | 0.15                | -0.02            | -0.03        |
| Naphtha                          | 0.03         | 0.03         | 0.04         | 0.03         | 0.03         | 0.03         | 0.03         | 0.03         | 0.03                | 0.00             | -0.01        |
| Motor gasoline                   | 0.29         | 0.29         | 0.28         | 0.30         | 0.29         | 0.29         | 0.30         | 0.29         | 0.27                | -0.02            | -0.01        |
| Jet and kerosene                 | 0.31         | 0.32         | 0.32         | 0.31         | 0.32         | 0.31         | 0.30         | 0.31         | 0.31                | 0.01             | 0.00         |
| Diesel                           | 0.50         | 0.52         | 0.49         | 0.52         | 0.51         | 0.53         | 0.55         | 0.53         | 0.44                | -0.09            | -0.01        |
| Other gasoil                     | 0.13         | 0.13         | 0.12         | 0.13         | 0.15         | 0.12         | 0.13         | 0.11         | 0.10                | -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         | 0.11         | 0.11                | 0.00             | 0.00         |
| <b>Total</b>                     | <b>1.55</b>  | <b>1.59</b>  | <b>1.56</b>  | <b>1.61</b>  | <b>1.61</b>  | <b>1.59</b>  | <b>1.60</b>  | <b>1.57</b>  | <b>1.44</b>         | <b>-0.13</b>     | <b>-0.06</b> |
| <b>Canada</b>                    |              |              |              |              |              |              |              |              |                     |                  |              |
| LPG and ethane                   | 0.38         | 0.40         | 0.43         | 0.36         | 0.40         | 0.43         | 0.42         | 0.48         | 0.44                | -0.04            | 0.00         |
| Naphtha                          | 0.09         | 0.10         | 0.11         | 0.10         | 0.10         | 0.10         | 0.09         | 0.10         | 0.10                | 0.00             | -0.01        |
| Motor gasoline                   | 0.82         | 0.86         | 0.83         | 0.86         | 0.90         | 0.85         | 0.85         | 0.86         | 0.83                | -0.03            | -0.03        |
| Jet and kerosene                 | 0.14         | 0.15         | 0.13         | 0.14         | 0.16         | 0.14         | 0.14         | 0.14         | 0.14                | 0.00             | 0.00         |
| Diesel                           | 0.31         | 0.30         | 0.30         | 0.31         | 0.30         | 0.29         | 0.29         | 0.28         | 0.29                | 0.01             | -0.01        |
| Other gasoil                     | 0.26         | 0.26         | 0.22         | 0.25         | 0.27         | 0.28         | 0.28         | 0.29         | 0.25                | -0.04            | 0.03         |
| Residual fuel oil                | 0.04         | 0.03         | 0.05         | 0.03         | 0.03         | 0.03         | 0.03         | 0.03         | 0.05                | 0.01             | 0.00         |
| Other products                   | 0.35         | 0.33         | 0.32         | 0.31         | 0.36         | 0.34         | 0.34         | 0.34         | 0.36                | 0.02             | 0.05         |
| <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>2.44</b>  | <b>2.52</b>  | <b>2.45</b>         | <b>-0.07</b>     | <b>0.03</b>  |

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

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

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

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

(million barrels per day)

|                                  | 2015         | 2016         | 2017         | 4Q16         | 1Q17         | 2Q17         | 3Q17         | 4Q17         | Jan 17       | Feb 17       | Mar 17       |
|----------------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| <b>OPEC</b>                      |              |              |              |              |              |              |              |              |              |              |              |
| Crude Oil                        |              |              |              |              |              |              |              |              |              |              |              |
| Saudi Arabia                     | 10.12        | 10.42        |              | 10.55        | 9.90         |              |              |              | 9.80         | 9.98         | 9.93         |
| Iran                             | 2.85         | 3.55         |              | 3.81         | 3.79         |              |              |              | 3.75         | 3.82         | 3.80         |
| Iraq                             | 4.00         | 4.41         |              | 4.62         | 4.43         |              |              |              | 4.46         | 4.42         | 4.41         |
| UAE                              | 2.93         | 3.03         |              | 3.13         | 2.94         |              |              |              | 2.99         | 2.93         | 2.91         |
| Kuwait                           | 2.75         | 2.88         |              | 2.86         | 2.71         |              |              |              | 2.71         | 2.71         | 2.70         |
| Neutral Zone                     | 0.07         | 0.00         |              | 0.00         | 0.00         |              |              |              | 0.00         | 0.00         | 0.00         |
| Qatar                            | 0.65         | 0.65         |              | 0.64         | 0.60         |              |              |              | 0.61         | 0.59         | 0.60         |
| Angola                           | 1.76         | 1.71         |              | 1.61         | 1.63         |              |              |              | 1.63         | 1.65         | 1.62         |
| Nigeria                          | 1.77         | 1.47         |              | 1.46         | 1.39         |              |              |              | 1.43         | 1.45         | 1.31         |
| Libya                            | 0.40         | 0.39         |              | 0.57         | 0.66         |              |              |              | 0.69         | 0.67         | 0.61         |
| Algeria                          | 1.11         | 1.11         |              | 1.12         | 1.05         |              |              |              | 1.05         | 1.05         | 1.05         |
| Ecuador                          | 0.54         | 0.55         |              | 0.54         | 0.52         |              |              |              | 0.53         | 0.53         | 0.52         |
| Venezuela                        | 2.46         | 2.24         |              | 2.12         | 2.04         |              |              |              | 2.05         | 2.05         | 2.03         |
| Gabon                            | 0.23         | 0.23         |              | 0.22         | 0.20         |              |              |              | 0.20         | 0.20         | 0.20         |
| Total Crude Oil                  | 31.65        | 32.63        |              | 33.25        | 31.87        |              |              |              | 31.90        | 32.05        | 31.68        |
| Total NGLs <sup>1</sup>          | 6.49         | 6.69         | 6.83         | 6.77         | 6.74         | 6.79         | 6.89         | 6.90         | 6.74         | 6.74         | 6.74         |
| <b>Total OPEC<sup>2</sup></b>    | <b>38.14</b> | <b>39.32</b> |              | <b>40.02</b> | <b>38.60</b> |              |              |              | <b>38.63</b> | <b>38.78</b> | <b>38.42</b> |
| <b>NON-OPEC<sup>2,3</sup></b>    |              |              |              |              |              |              |              |              |              |              |              |
| <b>OECD</b>                      |              |              |              |              |              |              |              |              |              |              |              |
| <b>Americas</b>                  | 19.98        | 19.46        | 19.88        | 19.65        | 19.59        | 19.49        | 20.09        | 20.35        | 19.53        | 19.61        | 19.62        |
| United States                    | 12.99        | 12.52        | 12.97        | 12.45        | 12.56        | 12.94        | 13.07        | 13.28        | 12.30        | 12.58        | 12.80        |
| Mexico                           | 2.60         | 2.46         | 2.26         | 2.37         | 2.31         | 2.27         | 2.23         | 2.21         | 2.32         | 2.32         | 2.30         |
| Canada                           | 4.39         | 4.47         | 4.65         | 4.82         | 4.71         | 4.27         | 4.78         | 4.85         | 4.90         | 4.71         | 4.52         |
| Chile                            | 0.01         | 0.01         | 0.00         | 0.01         | 0.00         | 0.00         | 0.00         | 0.00         | 0.00         | 0.00         | 0.00         |
| <b>Europe</b>                    | 3.48         | 3.52         | 3.48         | 3.64         | 3.63         | 3.46         | 3.29         | 3.55         | 3.62         | 3.71         | 3.58         |
| UK                               | 0.97         | 1.03         | 1.00         | 1.00         | 1.07         | 0.98         | 0.90         | 1.04         | 1.07         | 1.10         | 1.04         |
| Norway                           | 1.95         | 1.99         | 1.98         | 2.11         | 2.05         | 1.97         | 1.88         | 2.01         | 2.04         | 2.08         | 2.03         |
| Others                           | 0.56         | 0.49         | 0.51         | 0.53         | 0.52         | 0.51         | 0.50         | 0.50         | 0.51         | 0.53         | 0.51         |
| <b>Asia Oceania</b>              | 0.46         | 0.43         | 0.41         | 0.41         | 0.41         | 0.41         | 0.41         | 0.41         | 0.39         | 0.41         | 0.41         |
| Australia                        | 0.38         | 0.35         | 0.34         | 0.34         | 0.34         | 0.34         | 0.34         | 0.35         | 0.32         | 0.35         | 0.34         |
| Others                           | 0.08         | 0.08         | 0.07         | 0.07         | 0.07         | 0.06         | 0.07         | 0.06         | 0.07         | 0.07         | 0.07         |
| <b>Total OECD</b>                | <b>23.92</b> | <b>23.40</b> | <b>23.77</b> | <b>23.70</b> | <b>23.63</b> | <b>23.36</b> | <b>23.78</b> | <b>24.32</b> | <b>23.55</b> | <b>23.73</b> | <b>23.61</b> |
| <b>NON-OECD</b>                  |              |              |              |              |              |              |              |              |              |              |              |
| <b>Former USSR</b>               | 14.03        | 14.21        | 14.35        | 14.52        | 14.42        | 14.30        | 14.32        | 14.35        | 14.44        | 14.46        | 14.37        |
| Russia                           | 11.09        | 11.34        | 11.34        | 11.58        | 11.46        | 11.31        | 11.30        | 11.31        | 11.48        | 11.48        | 11.42        |
| Others                           | 2.94         | 2.87         | 3.00         | 2.93         | 2.96         | 2.99         | 3.01         | 3.04         | 2.95         | 2.98         | 2.94         |
| <b>Asia<sup>2</sup></b>          | 7.91         | 7.62         | 7.35         | 7.49         | 7.46         | 7.36         | 7.32         | 7.27         | 7.50         | 7.49         | 7.40         |
| China                            | 4.33         | 4.03         | 3.85         | 3.93         | 3.93         | 3.86         | 3.82         | 3.78         | 3.94         | 3.94         | 3.89         |
| Malaysia                         | 0.71         | 0.71         | 0.72         | 0.71         | 0.72         | 0.71         | 0.72         | 0.73         | 0.72         | 0.72         | 0.71         |
| India                            | 0.87         | 0.85         | 0.85         | 0.84         | 0.86         | 0.84         | 0.85         | 0.84         | 0.87         | 0.87         | 0.84         |
| Indonesia                        | 0.82         | 0.88         | 0.87         | 0.88         | 0.87         | 0.87         | 0.86         | 0.86         | 0.88         | 0.87         | 0.87         |
| Others                           | 1.18         | 1.14         | 1.07         | 1.13         | 1.09         | 1.08         | 1.07         | 1.06         | 1.09         | 1.09         | 1.08         |
| <b>Europe</b>                    | 0.14         | 0.14         | 0.13         | 0.13         | 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         | 4.60         | 4.63         | 4.63         | 4.70         | 4.68         | 4.64         | 4.64         | 4.60         |
| Brazil                           | 2.53         | 2.61         | 2.83         | 2.77         | 2.79         | 2.80         | 2.87         | 2.86         | 2.81         | 2.80         | 2.77         |
| Argentina                        | 0.63         | 0.61         | 0.59         | 0.60         | 0.59         | 0.59         | 0.59         | 0.59         | 0.60         | 0.59         | 0.59         |
| Colombia                         | 1.01         | 0.89         | 0.87         | 0.85         | 0.87         | 0.87         | 0.87         | 0.87         | 0.86         | 0.87         | 0.86         |
| Others                           | 0.42         | 0.38         | 0.37         | 0.38         | 0.38         | 0.38         | 0.37         | 0.37         | 0.37         | 0.38         | 0.38         |
| <b>Middle East<sup>2,4</sup></b> | 1.27         | 1.26         | 1.22         | 1.27         | 1.23         | 1.22         | 1.21         | 1.21         | 1.23         | 1.23         | 1.23         |
| Oman                             | 0.99         | 1.01         | 0.97         | 1.01         | 0.98         | 0.97         | 0.96         | 0.95         | 0.97         | 0.98         | 0.97         |
| Syria                            | 0.03         | 0.03         | 0.02         | 0.02         | 0.02         | 0.02         | 0.02         | 0.02         | 0.02         | 0.02         | 0.02         |
| Yemen                            | 0.04         | 0.02         | 0.03         | 0.03         | 0.03         | 0.03         | 0.03         | 0.03         | 0.03         | 0.03         | 0.03         |
| Others                           | 0.21         | 0.21         | 0.20         | 0.21         | 0.20         | 0.20         | 0.20         | 0.20         | 0.20         | 0.20         | 0.20         |
| <b>Africa</b>                    | 2.07         | 1.93         | 1.92         | 1.95         | 1.93         | 1.93         | 1.92         | 1.92         | 1.91         | 1.95         | 1.93         |
| Egypt                            | 0.72         | 0.69         | 0.65         | 0.67         | 0.66         | 0.65         | 0.65         | 0.64         | 0.66         | 0.66         | 0.66         |
| Others                           | 1.35         | 1.24         | 1.27         | 1.28         | 1.27         | 1.28         | 1.27         | 1.28         | 1.25         | 1.29         | 1.27         |
| <b>Total Non-OECD</b>            | <b>30.01</b> | <b>29.65</b> | <b>29.63</b> | <b>29.96</b> | <b>29.79</b> | <b>29.58</b> | <b>29.60</b> | <b>29.56</b> | <b>29.84</b> | <b>29.90</b> | <b>29.65</b> |
| Processing gains <sup>5</sup>    | 2.24         | 2.27         | 2.29         | 2.27         | 2.29         | 2.29         | 2.29         | 2.29         | 2.29         | 2.29         | 2.29         |
| Global Biofuels                  | 2.29         | 2.35         | 2.45         | 2.33         | 2.02         | 2.47         | 2.82         | 2.48         | 2.03         | 2.02         | 2.00         |
| <b>TOTAL NON-OPEC</b>            | <b>58.45</b> | <b>57.66</b> | <b>58.15</b> | <b>58.25</b> | <b>57.73</b> | <b>57.71</b> | <b>58.50</b> | <b>58.65</b> | <b>57.71</b> | <b>57.95</b> | <b>57.56</b> |
| <b>TOTAL SUPPLY</b>              | <b>96.59</b> | <b>96.98</b> |              | <b>98.27</b> | <b>96.34</b> |              |              |              | <b>96.34</b> | <b>96.73</b> | <b>95.98</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       |        |        |        |
|                             | Oct2016                            | Nov2016 | Dec2016 | Jan2017 | Feb2017* | Feb2014                          | Feb2015 | Feb2016 | 1Q2016        | 2Q2016 | 3Q2016 | 4Q2016 |
| <b>OECD Americas</b>        |                                    |         |         |         |          |                                  |         |         |               |        |        |        |
| Crude                       | 647.2                              | 645.8   | 645.8   | 664.8   | 681.6    | 485.9                            | 567.9   | 644.2   | 0.54          | -0.09  | -0.31  | 0.26   |
| Motor Gasoline              | 256.9                              | 265.0   | 268.6   | 292.5   | 288.0    | 269.1                            | 278.5   | 285.3   | 0.05          | 0.01   | -0.15  | 0.10   |
| Middle Distillate           | 229.6                              | 234.3   | 237.5   | 241.3   | 237.8    | 187.6                            | 196.7   | 240.7   | 0.05          | -0.23  | 0.18   | 0.01   |
| Residual Fuel Oil           | 45.6                               | 47.4    | 48.3    | 47.2    | 43.8     | 43.8                             | 43.7    | 52.2    | 0.01          | -0.04  | -0.02  | 0.03   |
| Total Products <sup>3</sup> | 781.9                              | 788.5   | 776.0   | 780.0   | 755.4    | 648.5                            | 697.1   | 765.4   | -0.19         | 0.17   | 0.30   | -0.27  |
| Total <sup>4</sup>          | 1624.1                             | 1622.9  | 1599.5  | 1621.4  | 1616.7   | 1282.1                           | 1427.1  | 1579.5  | 0.31          | 0.21   | 0.10   | -0.19  |
| <b>OECD Europe</b>          |                                    |         |         |         |          |                                  |         |         |               |        |        |        |
| Crude                       | 346.9                              | 341.1   | 339.3   | 354.7   | 352.9    | 316.4                            | 322.0   | 353.4   | -0.16         | 0.11   | -0.04  | -0.15  |
| Motor Gasoline              | 92.4                               | 94.0    | 98.6    | 104.0   | 106.5    | 94.9                             | 106.5   | 108.2   | 0.09          | -0.04  | -0.07  | 0.09   |
| Middle Distillate           | 302.1                              | 300.3   | 296.2   | 319.2   | 322.5    | 259.0                            | 257.1   | 309.8   | 0.08          | 0.04   | 0.01   | -0.19  |
| Residual Fuel Oil           | 65.0                               | 64.8    | 67.7    | 68.1    | 67.4     | 63.8                             | 67.7    | 76.9    | 0.06          | -0.07  | -0.05  | 0.00   |
| Total Products <sup>3</sup> | 559.4                              | 561.4   | 561.7   | 596.3   | 603.3    | 511.9                            | 528.0   | 594.3   | 0.27          | -0.06  | -0.15  | -0.08  |
| Total <sup>4</sup>          | 976.9                              | 974.7   | 970.8   | 1021.2  | 1027.0   | 896.4                            | 916.2   | 1020.4  | 0.15          | 0.04   | -0.15  | -0.24  |
| <b>OECD Asia Oceania</b>    |                                    |         |         |         |          |                                  |         |         |               |        |        |        |
| Crude                       | 202.3                              | 194.6   | 191.6   | 192.7   | 186.8    | 162.2                            | 173.1   | 195.6   | -0.11         | 0.07   | -0.01  | -0.11  |
| Motor Gasoline              | 24.0                               | 23.0    | 24.0    | 25.3    | 25.7     | 26.5                             | 23.7    | 24.6    | 0.03          | 0.00   | -0.03  | 0.00   |
| Middle Distillate           | 71.5                               | 65.7    | 63.3    | 68.5    | 65.4     | 60.9                             | 59.2    | 59.4    | -0.08         | 0.09   | 0.07   | -0.11  |
| Residual Fuel Oil           | 19.1                               | 20.0    | 17.6    | 18.3    | 18.4     | 18.8                             | 18.4    | 18.7    | -0.01         | -0.01  | 0.00   | -0.02  |
| Total Products <sup>3</sup> | 181.1                              | 171.9   | 161.9   | 166.3   | 163.6    | 163.5                            | 158.2   | 163.1   | 0.00          | 0.10   | 0.12   | -0.27  |
| Total <sup>4</sup>          | 446.7                              | 430.0   | 414.5   | 420.9   | 411.7    | 394.4                            | 391.9   | 421.7   | -0.15         | 0.19   | 0.13   | -0.39  |
| <b>Total OECD</b>           |                                    |         |         |         |          |                                  |         |         |               |        |        |        |
| Crude                       | 1196.4                             | 1181.5  | 1176.6  | 1212.2  | 1221.4   | 964.5                            | 1063.0  | 1193.2  | 0.27          | 0.08   | -0.36  | 0.01   |
| Motor Gasoline              | 373.2                              | 382.0   | 391.2   | 421.8   | 420.1    | 390.5                            | 408.7   | 418.2   | 0.18          | -0.03  | -0.25  | 0.20   |
| Middle Distillate           | 603.2                              | 600.4   | 597.0   | 629.0   | 625.7    | 507.4                            | 513.0   | 609.9   | 0.06          | -0.10  | 0.26   | -0.29  |
| Residual Fuel Oil           | 129.7                              | 132.2   | 133.5   | 133.6   | 129.5    | 126.4                            | 129.8   | 147.9   | 0.06          | -0.12  | -0.07  | 0.02   |
| Total Products <sup>3</sup> | 1522.4                             | 1521.8  | 1499.6  | 1542.6  | 1522.3   | 1324.0                           | 1383.2  | 1522.8  | 0.08          | 0.22   | 0.27   | -0.61  |
| Total <sup>4</sup>          | 3047.7                             | 3027.6  | 2984.8  | 3063.5  | 3055.4   | 2572.8                           | 2735.3  | 3021.6  | 0.31          | 0.44   | 0.07   | -0.82  |

**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       |        |        |        |
|                          | Oct2016                            | Nov2016 | Dec2016 | Jan2017 | Feb2017* | Feb2014                          | Feb2015 | Feb2016 | 1Q2016        | 2Q2016 | 3Q2016 | 4Q2016 |
| <b>OECD Americas</b>     |                                    |         |         |         |          |                                  |         |         |               |        |        |        |
| Crude                    | 695.1                              | 695.1   | 695.1   | 695.1   | 694.9    | 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                    | 204.9                              | 208.8   | 205.6   | 205.8   | 206.0    | 204.2                            | 208.9   | 206.3   | 0.00          | -0.01  | 0.01   | -0.01  |
| Products                 | 266.8                              | 270.6   | 271.5   | 273.1   | 273.9    | 261.9                            | 255.8   | 265.0   | 0.05          | -0.02  | 0.03   | 0.05   |
| <b>OECD Asia Oceania</b> |                                    |         |         |         |          |                                  |         |         |               |        |        |        |
| Crude                    | 385.7                              | 385.7   | 384.1   | 384.1   | 384.1    | 387.8                            | 386.2   | 384.2   | 0.02          | 0.01   | 0.00   | -0.01  |
| Products                 | 36.5                               | 36.7    | 37.1    | 37.4    | 37.4     | 30.5                             | 32.0    | 34.4    | 0.01          | 0.00   | 0.00   | 0.01   |
| <b>Total OECD</b>        |                                    |         |         |         |          |                                  |         |         |               |        |        |        |
| Crude                    | 1285.7                             | 1289.6  | 1284.7  | 1285.0  | 1285.0   | 1288.0                           | 1286.1  | 1285.6  | 0.02          | 0.00   | 0.01   | -0.02  |
| Products                 | 305.3                              | 309.3   | 310.7   | 312.5   | 313.3    | 293.4                            | 289.8   | 301.4   | 0.06          | -0.02  | 0.03   | 0.06   |
| Total <sup>4</sup>       | 1593.3                             | 1601.2  | 1598.0  | 1600.4  | 1601.4   | 1585.4                           | 1579.5  | 1590.7  | 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         | 183.3                          | -          |
| 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                         | -          |
| <b>Total<sup>4</sup></b>                     | <b>2258.0</b>     | <b>92</b>             | <b>2286.2</b>  | <b>94</b>  | <b>2305.7</b> | <b>92</b>  | <b>2314.4</b>      | <b>93</b>  | <b>2296.6</b>                  | <b>94</b>  |
| <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        | 562.5                          | -          |
| 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         | 9.0                            | -          |
| <b>Total</b>                                 | <b>851.1</b>      | <b>100</b>            | <b>840.7</b>   | <b>110</b> | <b>859.0</b>  | <b>110</b> | <b>871.3</b>       | <b>105</b> | <b>835.7</b>                   | <b>98</b>  |
| <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         | 52.4          | 81         | 50.5               | 74         | 47.4                           | -          |
| 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              | 223                   | 46.0           | 226        | 45.4          | 211        | 44.9               | 211        | 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        | 285.4                          | -          |
| Greece                                       | 32.4              | 115                   | 33.4           | 116        | 32.6          | 101        | 30.8               | 98         | 33.9                           | -          |
| 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               | 74         | 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              | 155        | 152.6                          | -          |
| 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             | 103                   | 142.1          | 112        | 135.9         | 102        | 139.4              | 106        | 129.0                          | -          |
| Sweden                                       | 35.2              | 122                   | 34.9           | 116        | 33.3          | 106        | 35.7               | 114        | 33.5                           | -          |
| 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         | 82.3                           | -          |
| <b>Total</b>                                 | <b>1463.4</b>     | <b>107</b>            | <b>1480.6</b>  | <b>106</b> | <b>1480.0</b> | <b>102</b> | <b>1468.5</b>      | <b>103</b> | <b>1450.5</b>                  | <b>108</b> |
| <b>Total OECD</b>                            | <b>4572.5</b>     | <b>98</b>             | <b>4607.4</b>  | <b>100</b> | <b>4644.6</b> | <b>98</b>  | <b>4654.2</b>      | <b>98</b>  | <b>4582.8</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><br>controlled<br>Millions of Barrels | Industry | Total | Government <sup>1</sup><br>controlled<br>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         | 4607  | 1593   | 3014     | 100   | 35  | 66       |
| 2Q2016         | 4645  | 1591   | 3054     | 98    | 34  | 65       |
| 3Q2016         | 4654  | 1594   | 3060     | 98    | 34  | 65       |
| 4Q2016         | 4583  | 1598   | 2985     | 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 | Nov 16 | Dec 16 | Jan 17 | Year Earlier |        |
|---------------------------------------|------|------|------|------|------|------|------|--------|--------|--------|--------------|--------|
|                                       |      |      |      |      |      |      |      |        |        |        | Jan 16       | change |
| <b>Saudi Light &amp; Extra Light</b>  |      |      |      |      |      |      |      |        |        |        |              |        |
| Americas                              | 0.65 | 0.63 | 0.69 | 0.74 | 0.72 | 0.69 | 0.62 | 0.48   | 0.76   | 0.54   | 0.80         | -0.26  |
| Europe                                | 0.84 | 0.78 | 0.79 | 0.76 | 0.73 | 0.78 | 0.87 | 0.84   | 0.90   | 0.64   | 0.85         | -0.20  |
| Asia Oceania                          | 1.17 | 1.25 | 1.40 | 1.40 | 1.44 | 1.22 | 1.56 | 1.46   | 1.73   | 1.60   | 1.31         | 0.28   |
| <b>Saudi Medium</b>                   |      |      |      |      |      |      |      |        |        |        |              |        |
| Americas                              | 0.36 | 0.37 | 0.44 | 0.39 | 0.44 | 0.44 | 0.48 | 0.48   | 0.41   | 0.41   | 0.33         | 0.08   |
| Europe                                | 0.03 | 0.03 | 0.01 | -    | 0.01 | 0.03 | 0.01 | 0.03   | -      | -      | -            | -      |
| Asia Oceania                          | 0.45 | 0.44 | 0.41 | 0.46 | 0.43 | 0.42 | 0.34 | 0.39   | 0.25   | 0.25   | 0.42         | -0.17  |
| <b>Canada Heavy</b>                   |      |      |      |      |      |      |      |        |        |        |              |        |
| Americas                              | 1.71 | 1.90 | 2.04 | 2.12 | 1.85 | 2.12 | 2.07 | 2.11   | 2.16   | 2.29   | 2.15         | 0.14   |
| 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 | 0.40   | 0.64   | 0.43   | 0.13         | 0.30   |
| Europe                                | 0.50 | 0.72 | 0.81 | 0.90 | 0.78 | 0.90 | 0.67 | 0.60   | 0.73   | 0.78   | 0.98         | -0.20  |
| Asia Oceania                          | 0.24 | 0.41 | 0.46 | 0.47 | 0.51 | 0.44 | 0.41 | 0.44   | 0.50   | 0.44   | 0.36         | 0.08   |
| <b>Kuwait Blend</b>                   |      |      |      |      |      |      |      |        |        |        |              |        |
| Americas                              | 0.27 | 0.13 | 0.14 | 0.13 | 0.12 | 0.18 | 0.14 | 0.17   | 0.25   | 0.16   | -            | -      |
| Europe                                | 0.09 | 0.13 | 0.19 | 0.20 | 0.10 | 0.22 | 0.26 | 0.27   | 0.22   | 0.22   | 0.19         | 0.03   |
| Asia Oceania                          | 0.62 | 0.65 | 0.66 | 0.71 | 0.65 | 0.68 | 0.60 | 0.58   | 0.59   | 0.67   | 0.63         | 0.04   |
| <b>Iranian Light</b>                  |      |      |      |      |      |      |      |        |        |        |              |        |
| Americas                              | -    | -    | -    | -    | -    | -    | -    | -      | -      | -      | -            | -      |
| Europe                                | 0.10 | 0.09 | 0.21 | 0.09 | 0.18 | 0.33 | 0.24 | 0.17   | 0.33   | 0.34   | 0.04         | 0.31   |
| Asia Oceania                          | 0.01 | 0.01 | 0.01 | 0.02 | 0.01 | 0.01 | 0.01 | -      | -      | 0.02   | 0.01         | 0.01   |
| <b>Iranian Heavy<sup>3</sup></b>      |      |      |      |      |      |      |      |        |        |        |              |        |
| Americas                              | -    | -    | -    | -    | -    | -    | -    | -      | -      | -      | -            | -      |
| Europe                                | 0.01 | 0.02 | 0.21 | 0.04 | 0.16 | 0.27 | 0.38 | 0.40   | 0.46   | 0.31   | 0.06         | 0.25   |
| Asia Oceania                          | 0.28 | 0.27 | 0.52 | 0.44 | 0.47 | 0.58 | 0.59 | 0.71   | 0.66   | 0.67   | 0.39         | 0.27   |
| <b>BFOE</b>                           |      |      |      |      |      |      |      |        |        |        |              |        |
| Americas                              | 0.01 | 0.01 | 0.02 | 0.02 | 0.02 | 0.02 | 0.03 | 0.02   | 0.04   | 0.02   | -            | -      |
| Europe                                | 0.56 | 0.49 | 0.44 | 0.47 | 0.37 | 0.48 | 0.42 | 0.37   | 0.63   | 0.30   | 0.38         | -0.09  |
| Asia Oceania                          | 0.07 | 0.06 | 0.05 | 0.09 | 0.03 | -    | 0.08 | 0.07   | 0.13   | 0.09   | 0.07         | 0.03   |
| <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 | 0.59   | 0.73   | 0.80   | 0.75         | 0.06   |
| Asia Oceania                          | 0.02 | 0.06 | 0.03 | 0.05 | 0.00 | 0.01 | 0.04 | -      | 0.12   | 0.07   | 0.04         | 0.03   |
| <b>Venezuelan 22 API and heavier</b>  |      |      |      |      |      |      |      |        |        |        |              |        |
| Americas                              | 0.64 | 0.67 | 0.63 | 0.61 | 0.61 | 0.65 | 0.65 | 0.70   | 0.57   | 0.48   | 0.49         | -0.02  |
| Europe                                | 0.08 | 0.09 | 0.05 | 0.06 | 0.05 | 0.04 | 0.05 | 0.06   | 0.06   | 0.12   | 0.08         | 0.04   |
| Asia Oceania                          | -    | -    | -    | -    | -    | -    | -    | -      | -      | -      | -            | -      |
| <b>Mexican Maya</b>                   |      |      |      |      |      |      |      |        |        |        |              |        |
| Americas                              | 0.66 | 0.50 | 0.53 | 0.52 | 0.54 | 0.52 | 0.53 | 0.56   | 0.52   | 0.62   | 0.55         | 0.07   |
| Europe                                | 0.14 | 0.15 | 0.17 | 0.15 | 0.16 | 0.17 | 0.20 | 0.28   | 0.16   | 0.19   | 0.11         | 0.08   |
| Asia Oceania                          | -    | 0.01 | 0.05 | 0.02 | 0.04 | 0.06 | 0.07 | 0.07   | 0.07   | 0.09   | 0.03         | 0.06   |
| <b>Russian Urals</b>                  |      |      |      |      |      |      |      |        |        |        |              |        |
| Americas                              | -    | -    | -    | -    | -    | -    | -    | -      | -      | -      | -            | -      |
| Europe                                | 1.58 | 1.61 | 1.72 | 1.58 | 1.78 | 1.73 | 1.77 | 1.68   | 1.82   | 1.89   | 1.48         | 0.41   |
| Asia Oceania                          | -    | -    | -    | -    | -    | -    | -    | -      | -      | -      | -            | -      |
| <b>Cabinda and Other Angola</b>       |      |      |      |      |      |      |      |        |        |        |              |        |
| North America                         | 0.04 | 0.06 | 0.02 | 0.01 | -    | 0.06 | -    | -      | -      | -      | 0.03         | -      |
| Europe                                | 0.33 | 0.42 | 0.27 | 0.28 | 0.21 | 0.43 | 0.16 | 0.19   | 0.09   | 0.13   | 0.25         | -0.13  |
| 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   | -      | -      | -            | -      |
| Europe                                | 0.55 | 0.57 | 0.39 | 0.44 | 0.46 | 0.33 | 0.31 | 0.31   | 0.30   | 0.41   | 0.49         | -0.08  |
| Asia Oceania                          | 0.02 | -    | 0.01 | -    | 0.01 | 0.01 | 0.03 | 0.03   | 0.04   | 0.01   | -            | -      |
| <b>Libya Light and Medium</b>         |      |      |      |      |      |      |      |        |        |        |              |        |
| Americas                              | -    | -    | -    | -    | -    | -    | -    | -      | -      | -      | -            | -      |
| Europe                                | 0.31 | 0.22 | 0.20 | 0.16 | 0.15 | 0.17 | 0.30 | 0.32   | 0.30   | 0.41   | 0.09         | 0.32   |
| Asia Oceania                          | 0.02 | 0.01 | 0.02 | 0.02 | 0.01 | 0.03 | 0.01 | -      | 0.02   | 0.07   | 0.02         | 0.04   |

<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)

|                             | 2014  | 2015  | 2016  | 1Q16  | 2Q16  | 3Q16  | 4Q16  | Nov 16 | Dec 16 | Jan 17 | Year Earlier |          |
|-----------------------------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------------|----------|
|                             |       |       |       |       |       |       |       |        |        |        | Jan 16       | % change |
| <b>Crude Oil</b>            |       |       |       |       |       |       |       |        |        |        |              |          |
| Americas                    | 4201  | 4026  | 4542  | 4350  | 4663  | 4867  | 4288  | 4336   | 4485   | 4772   | 4097         | 16%      |
| Europe                      | 8679  | 9503  | 9253  | 8963  | 8829  | 9647  | 9566  | 9817   | 9380   | 9945   | 8963         | 11%      |
| Asia Oceania                | 6371  | 6572  | 6688  | 6802  | 6647  | 6617  | 6688  | 6618   | 7300   | 7157   | 6421         | 11%      |
| Total OECD                  | 19251 | 20101 | 20483 | 20115 | 20139 | 21131 | 20541 | 20770  | 21165  | 21873  | 19482        | 12%      |
| <b>LPG</b>                  |       |       |       |       |       |       |       |        |        |        |              |          |
| Americas                    | 12    | 10    | 20    | 29    | 9     | 23    | 18    | 16     | 17     | 27     | 31           | -12%     |
| Europe                      | 427   | 413   | 438   | 415   | 412   | 462   | 463   | 412    | 492    | 500    | 434          | 15%      |
| Asia Oceania                | 532   | 518   | 566   | 590   | 576   | 546   | 550   | 584    | 512    | 549    | 532          | 3%       |
| Total OECD                  | 971   | 940   | 1024  | 1035  | 997   | 1032  | 1031  | 1012   | 1021   | 1076   | 997          | 8%       |
| <b>Naphtha</b>              |       |       |       |       |       |       |       |        |        |        |              |          |
| Americas                    | 20    | 14    | 10    | 11    | 7     | 4     | 18    | 26     | 13     | 6      | 14           | -58%     |
| Europe                      | 356   | 348   | 353   | 362   | 299   | 393   | 357   | 298    | 381    | 345    | 303          | 14%      |
| Asia Oceania                | 953   | 951   | 906   | 948   | 834   | 946   | 894   | 987    | 861    | 940    | 1075         | -13%     |
| Total OECD                  | 1328  | 1313  | 1269  | 1322  | 1141  | 1344  | 1269  | 1311   | 1255   | 1291   | 1393         | -7%      |
| <b>Gasoline<sup>3</sup></b> |       |       |       |       |       |       |       |        |        |        |              |          |
| Americas                    | 665   | 670   | 735   | 460   | 873   | 918   | 689   | 772    | 481    | 676    | 487          | 39%      |
| Europe                      | 131   | 107   | 99    | 92    | 57    | 42    | 206   | 242    | 210    | 212    | 194          | 9%       |
| Asia Oceania                | 76    | 93    | 84    | 73    | 84    | 72    | 107   | 91     | 107    | 71     | 74           | -4%      |
| Total OECD                  | 871   | 870   | 919   | 625   | 1014  | 1032  | 1001  | 1105   | 798    | 959    | 754          | 27%      |
| <b>Jet &amp; Kerosene</b>   |       |       |       |       |       |       |       |        |        |        |              |          |
| Americas                    | 100   | 141   | 169   | 152   | 154   | 180   | 190   | 198    | 165    | 157    | 170          | -7%      |
| Europe                      | 454   | 445   | 504   | 461   | 514   | 568   | 470   | 523    | 375    | 474    | 359          | 32%      |
| Asia Oceania                | 60    | 64    | 73    | 79    | 76    | 47    | 88    | 84     | 109    | 93     | 103          | -9%      |
| Total OECD                  | 614   | 650   | 745   | 692   | 744   | 795   | 749   | 805    | 649    | 724    | 631          | 15%      |
| <b>Gasoil/Diesel</b>        |       |       |       |       |       |       |       |        |        |        |              |          |
| Americas                    | 95    | 76    | 67    | 57    | 40    | 84    | 84    | 134    | 66     | 70     | 21           | 227%     |
| Europe                      | 1097  | 1217  | 1349  | 1411  | 1459  | 1265  | 1263  | 1205   | 1267   | 1243   | 1284         | -3%      |
| Asia Oceania                | 159   | 164   | 201   | 180   | 225   | 173   | 225   | 215    | 268    | 180    | 167          | 8%       |
| Total OECD                  | 1352  | 1457  | 1617  | 1649  | 1724  | 1522  | 1573  | 1554   | 1602   | 1493   | 1473         | 1%       |
| <b>Heavy Fuel Oil</b>       |       |       |       |       |       |       |       |        |        |        |              |          |
| Americas                    | 132   | 116   | 149   | 163   | 126   | 158   | 147   | 203    | 125    | 110    | 180          | -39%     |
| Europe                      | 617   | 565   | 483   | 531   | 514   | 473   | 416   | 442    | 495    | 387    | 523          | -26%     |
| Asia Oceania                | 203   | 176   | 155   | 188   | 150   | 158   | 126   | 130    | 143    | 158    | 153          | 3%       |
| Total OECD                  | 953   | 857   | 788   | 881   | 791   | 790   | 689   | 775    | 762    | 655    | 857          | -24%     |
| <b>Other Products</b>       |       |       |       |       |       |       |       |        |        |        |              |          |
| Americas                    | 671   | 675   | 652   | 627   | 713   | 663   | 605   | 601    | 519    | 711    | 599          | 19%      |
| Europe                      | 704   | 703   | 771   | 770   | 793   | 745   | 777   | 763    | 778    | 1007   | 723          | 39%      |
| Asia Oceania                | 408   | 352   | 356   | 384   | 347   | 361   | 330   | 305    | 294    | 323    | 360          | -10%     |
| Total OECD                  | 1784  | 1730  | 1779  | 1781  | 1854  | 1769  | 1712  | 1670   | 1591   | 2041   | 1682         | 21%      |
| <b>Total Products</b>       |       |       |       |       |       |       |       |        |        |        |              |          |
| Americas                    | 1695  | 1702  | 1802  | 1499  | 1923  | 2031  | 1751  | 1950   | 1386   | 1757   | 1502         | 17%      |
| Europe                      | 3786  | 3799  | 3998  | 4042  | 4050  | 3949  | 3952  | 3885   | 3997   | 4167   | 3821         | 9%       |
| Asia Oceania                | 2391  | 2318  | 2340  | 2444  | 2292  | 2303  | 2320  | 2396   | 2294   | 2315   | 2464         | -6%      |
| Total OECD                  | 7872  | 7819  | 8139  | 7985  | 8265  | 8283  | 8023  | 8231   | 7677   | 8239   | 7786         | 6%       |
| <b>Total Oil</b>            |       |       |       |       |       |       |       |        |        |        |              |          |
| Americas                    | 5896  | 5728  | 6344  | 5850  | 6585  | 6898  | 6039  | 6286   | 5870   | 6529   | 5599         | 17%      |
| Europe                      | 12465 | 13302 | 13251 | 13004 | 12879 | 13595 | 13517 | 13702  | 13378  | 14112  | 12784        | 10%      |
| Asia Oceania                | 8762  | 8890  | 9028  | 9246  | 8939  | 8921  | 9008  | 9013   | 9595   | 9471   | 8885         | 7%       |
| Total OECD                  | 27123 | 27919 | 28623 | 28100 | 28403 | 29414 | 28565 | 29001  | 28842  | 30112  | 27268        | 10%      |

<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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