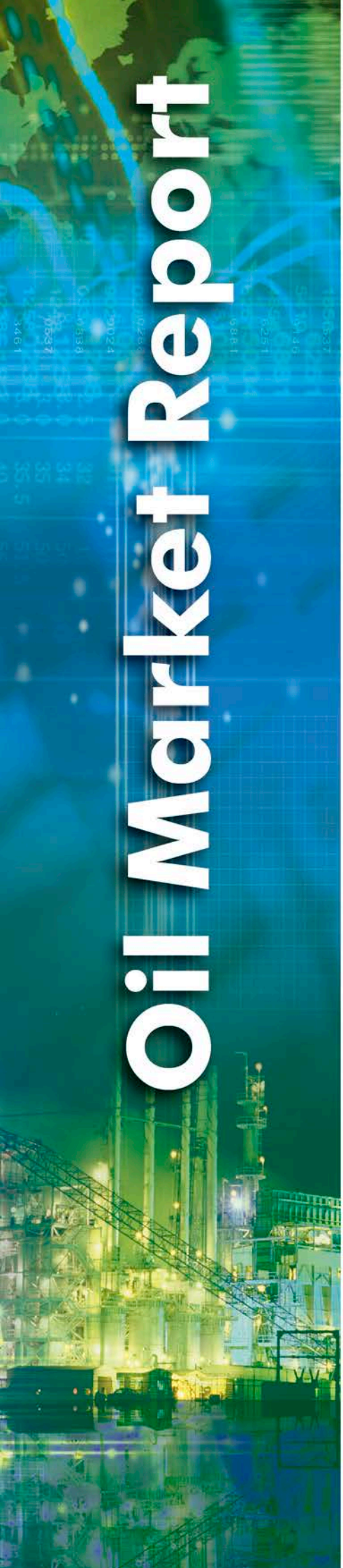

International Energy Agency
Secure Sustainable Together

19 January 2017

HIGHLIGHTS

- **The global demand outlook for 2016 has been raised following the release of robust preliminary 4Q16 numbers.** Colder weather in northern Europe provided impetus as did rapid industrially-driven Asian growth. Global oil demand growth for 2016 is now expected to be 1.5 mb/d, slowing to 1.3 mb/d in 2017 as product prices potentially rise.

- **Global oil supplies fell by more than 0.6 mb/d in December, to 97.6 mb/d** on lower OPEC and non-OPEC output. For 2016, world supply was up 0.3 mb/d from the previous year as record OPEC output more than offset a 0.9 mb/d decline in non-OPEC.

- **OPEC crude production, now excluding Indonesia, fell 320 kb/d from record rates to 33.09 mb/d in December** after lower Saudi output and disruptions in Nigeria curbed supply. Early indications suggest a deeper OPEC reduction may be under way for January, as Saudi Arabia and its neighbours enforce supply cuts.

- **Non-OPEC supplies are forecast to grow by 385 kb/d in 2017,** as higher prices in the wake of an anticipated coordinated supply cut stimulate increased investment in the US. Recovering LTO production underpins a 320 kb/d gain in total US output this year.

- **OECD industry stocks fell across crude and oil products in November, marking a fourth consecutive monthly decline.** Taking into account preliminary data for December, stocks are 82 mb below July's historical peak, even if for now they remain above the symbolic 3 000 mb level.

- **Oil prices rose in early December and stayed within a $53-57/bbl range thereafter.** Dubai, after weakening initially, gained versus other benchmarks due to lower expected OPEC output, opening the arbitrage to Asia for Brent and WTI-linked crudes. Fuel oil was a strong performer due to supply shortages.

- **Higher estimates for 4Q16 global refinery crude throughput - up by 160 kb/d - were partly responsible for a 260 kb/d downward revision for 1Q17.** Our analysis of refined product stocks movements shows a 4Q16 build in the OECD, with the overhang in non-OECD implied refined product inventories persisting.

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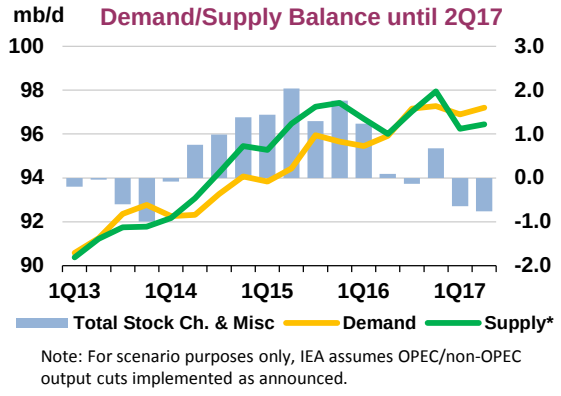
A SIX-MONTH PROBATION?

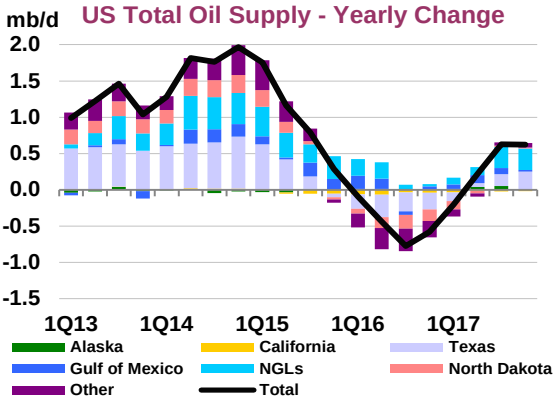
The output cuts announced by OPEC and eleven non-OPEC producers have entered their probation period and it is far too soon to see what level of compliance has been achieved. The coming weeks will provide more clarity and in the meantime developments elsewhere in the oil supply/demand balance are very intriguing. Once again we have revised upwards our estimate for global oil demand growth in 2016: we now see growth at 1.5 mb/d, with most of the revision contributed by stronger European demand, mainly in LPG and diesel. Europe has seen two years of year-on-year growth following nine straight years of flat or declining demand.

In 2017, however, we still expect the rate of growth for global demand to fall back to 1.3 mb/d, albeit this is slightly above the average rate seen in this century of 1.2 mb/d. The prospect of higher product prices - assuming that the cost of crude oil rises in 2017 - plus the possibility of a stronger US dollar are factors behind our reduced demand growth outlook for this year.

In non-OPEC countries, the stabilisation since mid-December of Brent crude oil prices around the $55/bbl level, and the assumption that lower output from the parties to the output agreement will probably see prices rise, is offering encouragement to higher cost producers. Attention is inevitably focused on the US shale oil patch where data shows the rig count increasing for six straight months to November after reaching its nadir in May 2016; provisional data for December shows the highest number of new rigs added since the heady days of April 2014. Not only is the rig count rising, but recent reports tell us that the productivity of shale activity has improved in leaps and bounds. Whether it be shorter drilling times or larger amounts of oil produced per well, there is no doubt that US shale industry has emerged from the $30/bbl oil world we lived in a year ago much leaner and fitter. The IEA has anticipated for some time that LTO production will increase in 2017, but we are now expecting an even larger increase of 170 kb/d, following a decline of nearly 300 kb/d last year.



Note: For scenario purposes only, IEA assumes OPEC/non-OPEC output cuts implemented as announced.



Non-OPEC production is not all about the US, however. Elsewhere, long-planned projects are coming on stream in Brazil and Canada and their combined production will rise by 415 kb/d this year. In China and Colombia, the sharp declines in production seen in 2016 will be reduced. For the non-OPEC countries as a whole, net production growth will be 380 kb/d – after taking into account the output reduction commitments by eleven countries – and this increase could be supplemented by higher production from Libya and Nigeria, both of which are exempt from the production cuts.

We were reminded on Jan. 16th by Saudi Arabia's oil minister that the output deal might not be extended beyond its six month expiry date. By saying that an extension was "unlikely" he has issued a powerful reminder that if stocks are drawn in the first half of 2017 by the approximately 0.7 mb/d implied by OPEC producing close to its target with support from other producers, the market will have tightened and prices stabilised but not at a sufficiently high level to allow another bonanza for high cost producers. In the meantime, the market awaits the outcome of the output deal.

DEMAND

Summary

- **Strong 4Q16 demand numbers pulled the overall 2016 global growth estimate up to 1.5 mb/d,** 0.1 mb/d above our previous growth estimate but below the revised five-year growth peak of 2.0 mb/d seen in 2015. Potentially higher product prices in 2017 will trim back momentum to around 1.3 mb/d, closer to the five-year trend seen in 2011-15.

- **Surprisingly robust gains across much of northern Europe, Russia and Asia triggered renewed demand vigour in 4Q16.** Having eased to a two-year low of +1.2 mb/d in 3Q16, year-on-year (y-o-y) demand growth rebounded to +1.6 mb/d in 4Q16, pulled higher by a combination of resurgent industrial activity and colder winter weather conditions.

- **Ending a one-year hiatus, Japanese demand growth returned in November** with strong gains in gasoil, residual fuel, LPG and naphtha as resurgent underlying industrial activity – which increased to a two-and-a-half year high – raised demand.

- **Upgrades to estimates of Middle Eastern demand added approximately 0.1 mb/d to the 2015-16 baseline numbers.** 'Other products' accounted for the majority of this reassessment following revisions to official data from the Joint Oil Data Initiative (JODI).

- **The uptick in Chinese demand growth seen in November roughly matched the recovery forecast in last month's *Report.*** Strong petrochemical-led gains in LPG led November's near 4% y-o-y increase, as did the sharp easing in gasoil's downside momentum.

Global Oil Demand (2015-2017)

(million barrels per day)*

	1Q15	2Q15	3Q15	4Q15	2015	1Q16	2Q16	3Q16	4Q16	2016	1Q17	2Q17	3Q17	4Q17	2017
Africa	4.1	4.1	4.0	4.1	4.1	4.2	4.2	4.1	4.2	4.2	4.3	4.3	4.2	4.4	4.3
Americas	31.1	31.2	31.8	31.3	31.4	31.0	31.1	31.8	31.0	31.2	30.9	31.1	31.6	31.3	31.2
Asia/Pacific	32.3	31.7	31.6	32.7	32.1	33.3	32.8	32.3	33.9	33.1	34.3	33.5	33.4	34.6	34.0
Europe	14.1	14.2	14.9	14.4	14.4	14.3	14.6	15.1	14.6	14.7	14.5	14.8	15.1	14.5	14.7
FSU	4.4	4.6	4.8	4.7	4.6	4.7	4.6	5.0	5.0	4.8	4.7	4.8	5.1	5.0	4.9
Middle East	7.9	8.6	8.9	8.4	8.4	8.0	8.5	8.9	8.4	8.5	8.2	8.6	9.0	8.6	8.6
World	**93.8**	**94.4**	**95.9**	**95.7**	**95.0**	**95.4**	**95.9**	**97.2**	**97.3**	**96.5**	**96.9**	**97.2**	**98.4**	**98.5**	**97.8**
Annual Chg (%)	1.7	2.3	2.9	1.7	2.1	1.7	1.6	1.3	1.7	1.6	1.5	1.3	1.3	1.2	1.3
Annual Chg (mb/d)	1.6	2.1	2.7	1.6	2.0	1.6	1.5	1.2	1.6	1.5	1.4	1.3	1.3	1.2	1.3
Changes from last OMR (mb/d)	0.1	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.3	0.2	0.1	0.1	0.1	0.2	0.1

* Including biofuels

Global Overview

Global oil demand growth of 1.5 mb/d is envisaged for 2016, down from the five-year high of 2.0 mb/d seen in 2015 when oil prices fell dramatically. Even so, 2016's growth is still well above the five-year average of 1.3 mb/d seen in 2011-15. Furthermore, pulled higher by some surprisingly robust 4Q16 demand numbers across much of northern Europe, Russia and Asia, the 2016 growth estimate is now 0.1 mb/d higher than cited in last month's *Report*. The prospect of higher product prices likely triggers a deceleration in 2017.

Resurgent 4Q16 demand growth surprised only with its magnitude, as we have long anticipated a 4Q16 rally. Colder winter temperatures, compared to the year earlier, had been expected to trigger an uptick in 4Q16 (see *Colder winter weather may spur northern hemisphere demand,* in the *Report* dated

13 *September 2016*), and this is borne out by the latest data. For example, both Germany and the UK saw near 50% increases in the number of heating degree days – i.e. the number of degrees per day that the daily average temperature is deemed to be below the level required for space heating – in 4Q16 versus 4Q15, while the increase was nearer one-third for France and one-tenth for the US. Japan and Canada's conditions were roughly the same as last year, while Korea and much of the Mediterranean have been warmer. Although generally colder northern hemisphere winter weather conditions were important contributors to re-accelerating 4Q16 global demand growth, there was support from resurgent industrial demand seen in many of the previously more economically-challenged countries, such as Japan and Russia.

Early Winter Chills

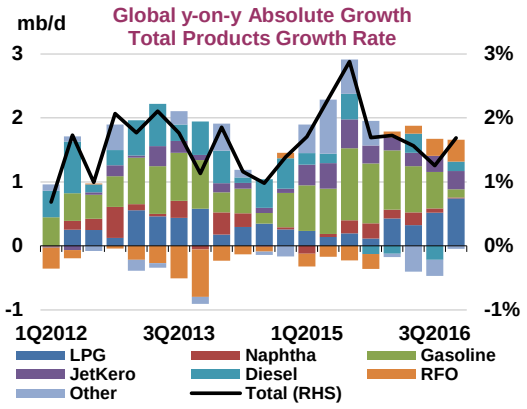
(heating degree days)

	Heating degree days			Annual Chg (hdd's)		Annual Chg (%)	
	October	November	December	November	December	November	December
US	165	411	772	-26	202	-6.0	35.4
Canada	279	399	527	9	32	2.2	6.4
Germany	282	397	614	123	307	44.8	100.0
France	183	285	437	75	172	35.6	53.2
UK	214	345	466	114	236	49.2	103.0
Japan	30	189	179	70	-91	58.7	-33.7
Korea	83	329	372	62	-128	23.3	-25.5

As with Japan and Russia, strong industrial activity fuelled the strong gains seen in European oil demand. The main industrial fuels underpinned November's y-o-y growth of 355 kb/d, or +2.6%; European gasoil/diesel demand surged by 4.4% as colder weather coincided with Eurozone industrial activity rising by a ten-month high of 3.2% in November, according to the latest data from Eurostat.

One of the main changes encompassed in this *Report* are the surprisingly robust October demand numbers for non-OECD Asia. At an estimated 25.6 mb/d in 4Q16, the upwardly revised non-OECD Asian demand estimate not just shows growth of 1.1 mb/d compared to the year earlier but is also 95 kb/d above the estimate cited in last month's *Report*. Notable upgrades this month include the Philippines, Hong Kong and Chinese Taipei, all countries that in October rebounded having previously endured a number of weak months. Recent weakness in the demand data for a number of Middle Eastern countries, meanwhile, provided at least a partial offset, with particularly anaemic October demand figures seen for Iran, Iraq and Kuwait.

The industrially driven gains that affected much of northern Europe, Russia and Asia, coupled with ebbing gasoline demand in China and the US saw the makeup of global oil demand growth significantly change in 4Q16. Whereas previously gasoline dominated global growth, accounting for just over half in 1Q16-3Q16, gasoline's growth contribution fell to 7.7% in 4Q16, with industrially important fuels like gasoil/diesel, LPG and residual fuel oil making up for lost gasoline demand growth. Resurgent gasoil, for example, saw its share of growth surge from essentially a net negative contribution in 1Q16-3Q16 to one in every ten extra barrels consumed worldwide; LPG saw an even more dramatic jump, from one-in-three to just shy of one-in-two; while residual fuel oil's share of global growth surged from one-in-ten to one-in-five. Jet/kerosene demand also notably picked up momentum in 4Q16, as recovering economic activity in many countries boosted flight numbers.

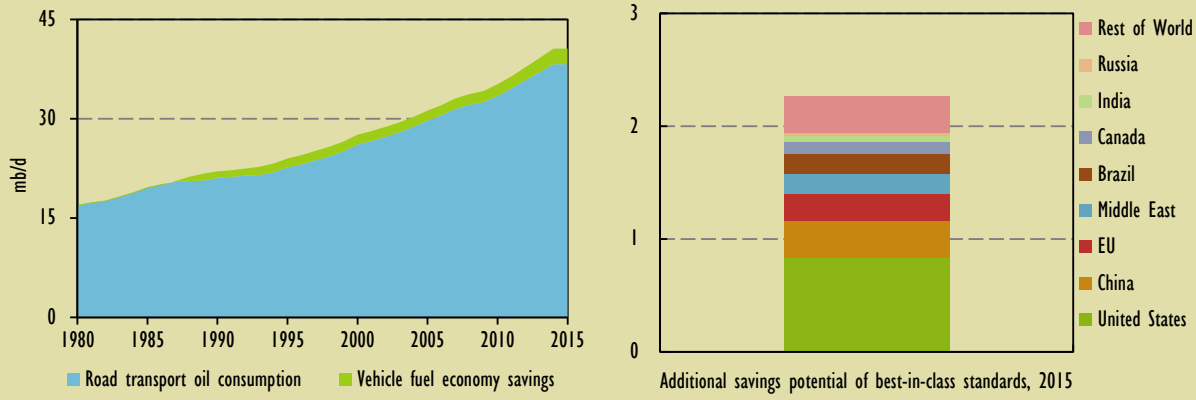


Energy efficiency policies are limiting the growth in oil demand

Mandatory fuel economy standards now cover more than 74% of global passenger vehicle sales and are having a significant impact on oil consumption. Without these standards, global oil demand would have been 2.3 mb/d higher in 2014 (see IEA's *Energy Efficiency Market Report 2016*). The strong link between efficiency policy and outcomes can be seen in the US, where corporate average fuel economy (CAFE) standards improved fuel economy by 39% as far back as between 1975 and 1985 (see chart below). The twenty-year period between 1985 and 2005 was one of policy inactivity in the US and the fuel economy of passenger vehicles worsened, as bigger and more powerful vehicles increased their market share. Standards for light-duty trucks were updated in 2005 and in 2012 the US government implemented a comprehensive new standards regime that will run to 2025; it aims to improve fuel economy by a further 45% between 2016 and 2025. Preliminary estimates for 2016 suggest that modest fuel economy gains continue to be made under the CAFE standards, despite lower gasoline prices, albeit with an inevitable slowdown as SUV sales thrived. Oil consumption savings from CAFE standards were the equivalent of one-third of US tight oil production in 2015.

Both the global coverage and strength of passenger vehicle standards are expanding. In 2015 just over a half (52%) of all energy used in passenger vehicles was consumed by cars and light-duty trucks covered by standards, up from 38% in 2000. Major vehicle markets are expanding and tightening their vehicle fuel economy standards. China transitioned its vehicle standards to a corporate average approach in 2012. The effect the new standard has had is profound. The efficiency of the Chinese fleet improved by an annual average of 2.3% from 2013-15, a marked increase over the 0.3% average annual improvement between 2005 and 2013. Meanwhile, Japan led the way in tightening its standards, improving the average efficiency of its new passenger vehicle fleet by 33% since 2000. If every major vehicle market had set this target over the same period, oil demand would have been a further 2.3 mb/d lower in 2014 (Figure 1).

Figure 1: Global oil consumption and savings from vehicle fuel economy standards (left) and the additional savings potential of best in class standards in 2015 (right)



There is also growing recognition of the importance of achieving efficiency improvements for heavy-duty vehicles. The IEA estimates that only 13% of global freight energy use is currently subject to efficiency standards as opposed to 53% for passenger vehicles. Globally, freight vehicles make up half of oil consumption in road vehicles and their share is growing. Only four countries (China, the US, Japan, and Canada), representing 47% of heavy-duty vehicle sales, have enacted efficiency standards. Heavy duty efficiency standards have only recently been implemented, beginning in 2014, and have not had time to fully impact on national markets.

OECD

Despite reports from many OECD member countries of colder winter weather conditions, 4Q16 OECD demand growth decelerated sharply compared to 3Q16, chiefly due to deteriorating conditions in the OECD Americas and the US in particular. US oil demand growth weakened as gasoline demand growth turned negative, ending a four-year period of very strong gains.

OECD Demand based on Adjusted Preliminary Submissions - November 2016

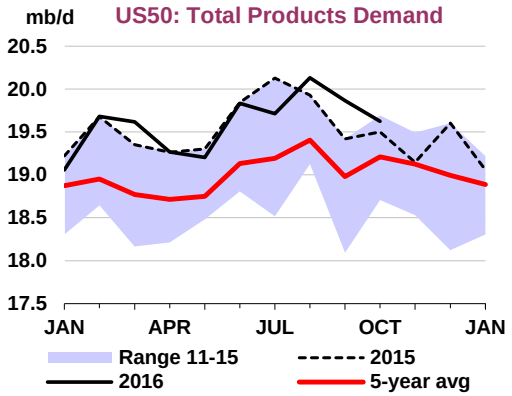
(million barrels per day)

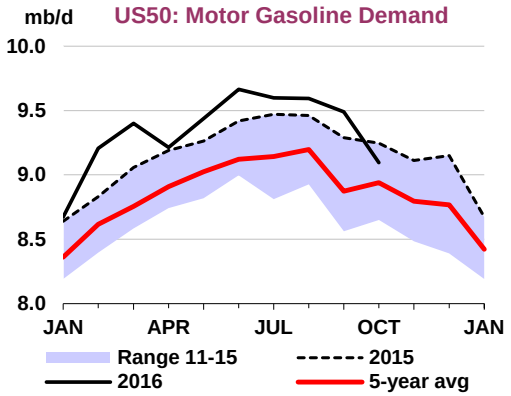
	Gasoline		Jet/Kerosene		Diesel		Other Gasoil		RFO		Other		Total Products	
	mb/d	% pa	mb/d	% pa	mb/d	% pa	mb/d	% pa	mb/d	% pa	mb/d	% pa	mb/d	% pa
OECD Americas*	**10.79**	**-0.4**	**1.85**	**3.5**	**4.51**	**3.0**	**0.53**	**0.3**	**0.64**	**5.8**	**5.87**	**-3.07**	**24.19**	**0.0**
US50	9.01	-1.2	1.56	2.4	3.63	2.6	0.21	3.1	0.38	25.8	4.42	-1.11	19.20	0.3
Canada	0.84	2.7	0.15	15.0	0.30	4.8	0.24	-2.0	0.03	-7.2	0.85	-5.30	2.41	0.0
Mexico	0.80	5.2	0.08	9.4	0.37	5.4	0.05	-1.4	0.13	-22.3	0.49	-14.49	1.92	-2.8
OECD Europe	**1.88**	**1.7**	**1.27**	**5.2**	**4.89**	**2.3**	**1.51**	**11.8**	**0.93**	**1.8**	**3.33**	**-0.79**	**13.81**	**2.6**
Germany	0.42	1.9	0.17	-2.1	0.83	0.8	0.36	15.7	0.11	-4.6	0.48	-14.42	2.37	-1.1
United Kingdom	0.30	0.5	0.32	5.9	0.54	-0.5	0.14	7.2	0.03	3.4	0.29	-0.11	1.61	1.7
France	0.16	6.4	0.14	0.9	0.70	2.9	0.23	25.2	0.05	15.3	0.31	5.08	1.60	6.7
Italy	0.20	-3.6	0.08	0.0	0.45	2.9	0.10	5.8	0.07	-3.6	0.34	-6.12	1.24	-1.1
Spain	0.11	3.4	0.11	7.5	0.46	5.8	0.18	6.6	0.16	2.9	0.26	-9.24	1.28	2.1
OECD Asia & Oceania	**1.56**	**0.6**	**1.05**	**13.9**	**1.38**	**4.3**	**0.50**	**2.9**	**0.67**	**5.1**	**3.26**	**4.43**	**8.43**	**4.7**
Japan	0.90	0.5	0.62	18.3	0.43	6.7	0.38	8.3	0.34	12.2	1.52	1.13	4.18	5.3
Korea	0.22	2.9	0.22	13.7	0.40	11.8	0.10	-11.4	0.28	-1.2	1.49	9.85	2.71	7.6
Australia	0.32	-0.8	0.15	2.1	0.46	-2.3	0.00	330.0	0.03	0.9	0.18	-5.41	1.14	-1.7
OECD Total	**14.24**	**0.0**	**4.17**	**6.5**	**10.78**	**2.8**	**2.54**	**7.4**	**2.24**	**3.9**	**12.46**	**-0.59**	**46.43**	**1.6**

* Including US territories

Americas

The relatively flat OECD Americas demand conditions of recent months turned downwards in 4Q16, pulled back by its previous main support – US gasoline demand – as total oil product demand in the region fell by 140 kb/d compared to the year earlier. US gasoline demand falling by 110 kb/d accounted for the majority of the correction. Having risen strongly in September, demand growth in the OECD Americas fell in October (-85 kb/d y-o-y, from +345 kb/d in September), as **US** oil demand growth decelerated from 445 kb/d to 120 kb/d over this same period. US gasoline demand growth flipped from a 200 kb/d y-o-y gain in September to a 150 kb/d y-o-y decline in October.



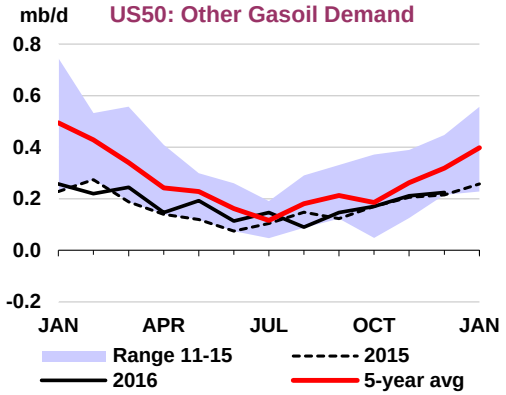


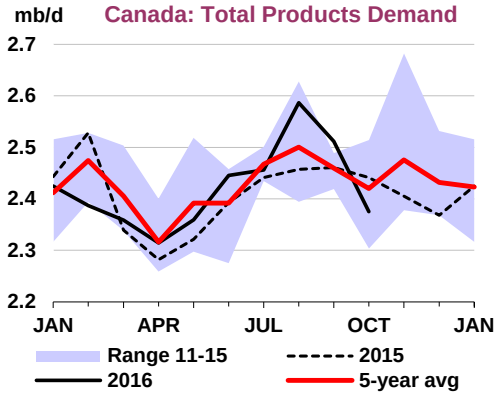
Predictions for November and December, based on weekly data from the US Energy Information Administration (EIA), imply the persistent absence of any meaningful y-o-y growth in these months. Total US oil product demand is thus expected to average 19.4 mb/d over 4Q16, essentially unchanged compared to the year earlier. This flat picture is roughly the same for the year as a whole for which demand grew by a meagre 20 kb/d to 19.5 mb/d. Further weakness in road transport fuels is envisaged in 2017, particularly if early retail price indicators are anything to go by: EIA data show average regular grade gasoline prices up 2.9% in the final week of 2016 to $2.38/gallon.

Cold weather conditions kept heating oil demand modestly above year earlier levels: the average number of heating degree days in the US in the final week of 2016 was 6.5% higher than a year earlier but 21.2% down on the seasonal norm. Hence, US 4Q16 heating oil demand modestly exceeds 4Q15 but

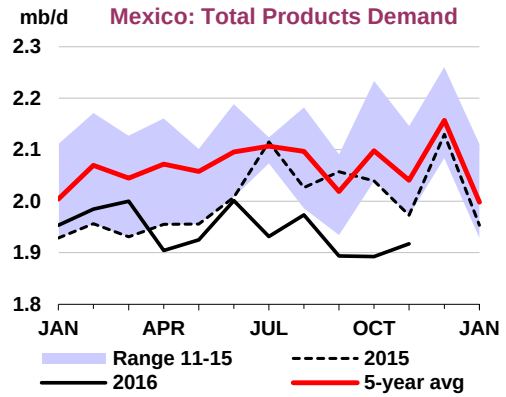
is significantly less than would have been seen had normal conditions prevailed. Meanwhile, recent weather conditions in the US have turned milder, potentially reducing 1Q17 demand.

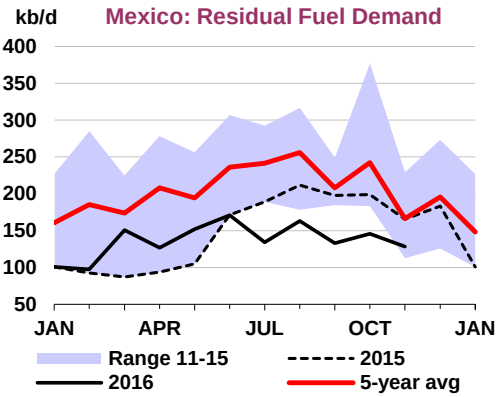
With weaker than previously foreseen 4Q16 US gasoline demand numbers, total US oil demand growth is all but absent in 4Q16, pulling back the net increase for 2016 as a whole to 20 kb/d, compared to the 55 kb/d estimate cited in last month's *Report*. A further deceleration is foreseen in 2017 assuming potentially higher product prices further choke gasoline demand growth.





The **Canadian** demand profile has moderated recently, as industrial oil use has stuttered and roughly unchanged winter weather conditions (see *Global Overview*) had only a marginal impact on the y-o-y heating requirement. The latest official numbers for October show Canadian oil product demand down by approximately 65 kb/d compared to the year earlier, pulled down by particularly sharp declines in gasoil, LPG, residual fuel oil and 'other products'. October's drop came after seven consecutive months of y-o-y growth. Canadian oil product demand is forecast to average 2.4 mb/d in 2016 as a whole, roughly 10 kb/d up on the year earlier, growth that is chiefly attributable to the strong gains seen through the middle of the year. Flat conditions are then foreseen for 2017, as underlying economic conditions tentatively improve while the assumption is also made of a return to more 'normal' winter temperatures at the end of the year.

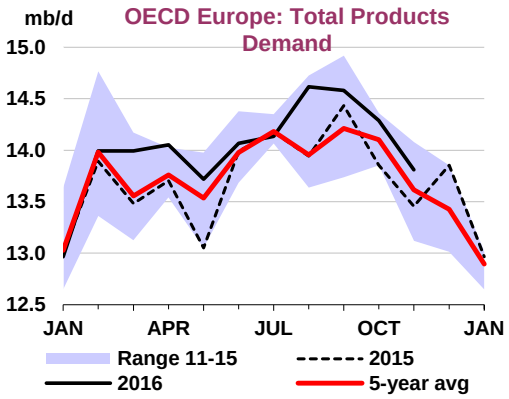


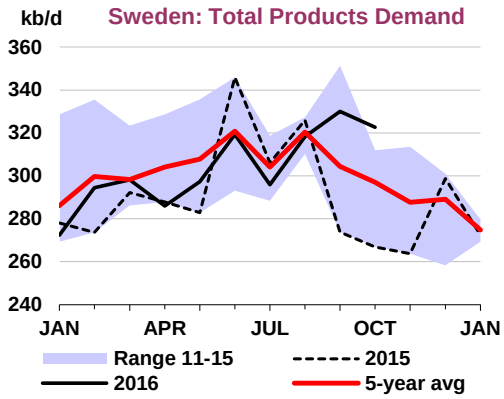


Having fallen relatively sharply in 2016 (-60 kb/d to 1.9 mb/d), a further decline in **Mexican** demand of around 25 kb/d is foreseen in 2017, pulled down by higher retail prices. As part of the government's efforts to liberalise road transport prices, the cost of gasoline rose by between 14%-to-20% and diesel by 16% effective from the start of 2017, with further potential adjustments to come. With higher prices likely to weigh heavily on Mexican road transport fuel demand, the net forecast decline for 2017 has been magnified since last month's *Report*. The forecast decline would have been even larger were it not for the fact that the already steep declines experienced in Mexican power sector oil use has left little scope for a similar fall in 2017. The latest monthly data show a decline of 55 kb/d y-o-y in November to 1.9 mb/d, not far above October's near 20-year low.

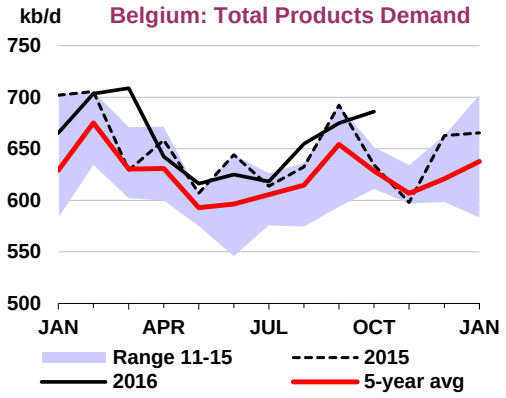
Europe

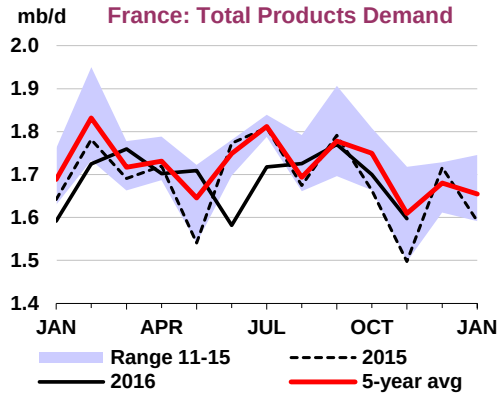
A combination of strong industrial demand and cold northern European temperatures supported continued European oil demand growth in 4Q16, although in absolute terms 4Q16 demand is less than 3Q16 as road transport demand in Europe traditionally eases towards the end of the year. Demand averaged 13.9 mb/d in 4Q16, up 210 kb/d on the year earlier but 510 kb/d below the 3Q16 level.





Robust October demand data for most of Europe – notably the UK, Belgium, France, Germany, Turkey, the Netherlands, Sweden and the Czech Republic – raised the overall 4Q16 European demand estimate, although conflicting weakness in a number of countries, specifically Hungary, Italy, Greece and Ireland, trimmed the scale of the overall adjustment. Similarly hearty preliminary November numbers for France, Spain, Finland, Czech Republic, Switzerland, Germany and Denmark further contributed to the raised 4Q16 European demand estimate. **Belgian** demand rose by 50 kb/d y-o-y in October, a seven month high, pulled up by sharp increases in naphtha and residual fuel oil demand.



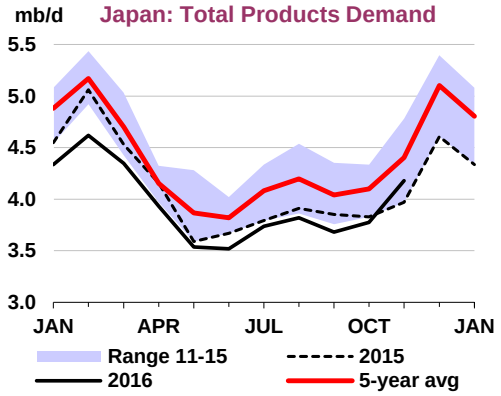


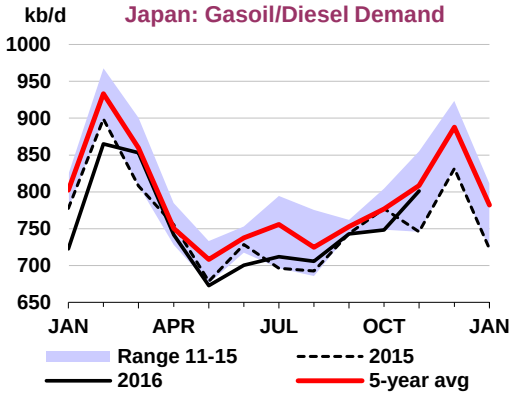
Up by 100 kb/d in November, versus the year earlier, **French** oil demand growth surged to a fresh six-month high due to rapid gains in diesel, LPG and gasoline. With approximately seventy-five more heating degree days, a gain of just over one-third, the colder weather played an important role, as did rebounding industrial activity (+1.8% y-o-y, a seven-month high).

Asia Oceania

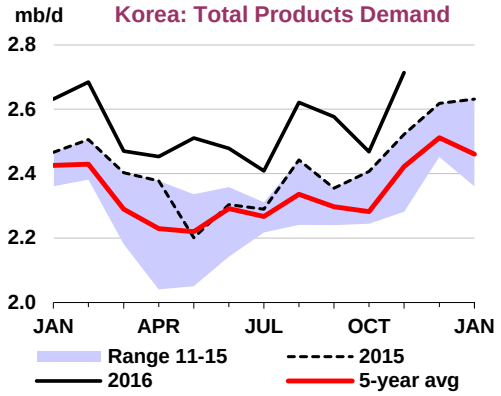
Along with Europe the biggest upside surprise in the latest oil demand data has been for the OECD Asia Oceania region, as y-o-y growth accelerated to 160 kb/d, a four-year high, pulled up by a combination of rare growth in Japan and strong gains in Korea. Preliminary indicators of **Japanese** oil product demand showed a near 210 kb/d y-o-y gain in November, as the surprise uptick in underlying industrial activity – up in November by 4.6% y-o-y, a two and a half year high – triggered resurgent gains in gasoil, LPG,

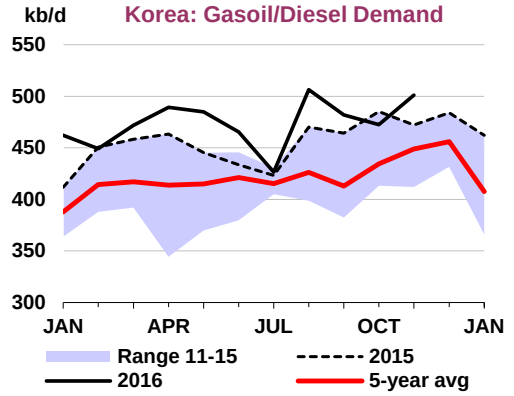
naphtha and residual fuel oil. Kerosene demand also rose sharply, as colder y-o-y weather conditions impacted demand, a factor that reversed in December.





Despite November's surprise resurgence, the 1Q17 Japanese demand forecast has been modestly curtailed compared to last month's *Report*, reflecting the Japan Meteorological Agency's latest projections outlining a 40% probability of above-normal 1Q17 temperatures for Kanto, Tokai, Hokkaido and Tohoku. Potentially more subdued 1Q17 winter weather, coupled with ongoing retail price rises and relatively weak economic growth, should see Japanese demand ease back by around 105 kb/d in 2017 to approximately 3.9 mb/d.





Resurgent industrial activity also underpinned accelerating **Korean** oil product demand growth, which came in at 190 kb/d y-o-y in November. Strong gains were seen across the barrel, with the notable exception of modestly falling residual fuel oil demand. Statistics Korea reported industrial activity up 4.8% y-o-y in November – a near four-year high – while car registrations rose for a third consecutive month, to 133 330 in November, according to the Ministry of Land, Transport and Maritime Affairs. Likely to average around 2.6 mb/d in 2016, 160 kb/d up on 2015, growth will be maintained in 2017 but at a slower pace of around 95 kb/d as potentially higher retail prices dampen momentum.

Non-OECD

Although the global demand rally seen in 4Q16 was heavily influenced by cold weather in Europe and robust industrial activity in Europe, Japan and Korea, non-OECD nations provided the majority of the actual growth, with 1.4 mb/d of a global 1.6 mb/d y-o-y gain. Rising to an estimated 50.6 mb/d in 4Q16, non-OECD oil demand accounted for 52% of the global total. Within the 1.4 mb/d, or 2.8%, 4Q16 non-OECD oil demand growth, LPG occupied the largest share, at 0.6 mb/d, due to rapid upticks from the Chinese petrochemical sector and Indian residential demand. Incorporating these 4Q16 demand numbers, non-OECD oil product deliveries are forecast to average 49.8 mb/d in 2016, up by 1.2 mb/d or

2.5%. Non-OECD oil demand growth is conservatively forecast to accelerate to 1.3 mb/d in 2017 as macroeconomic conditions improve in two of the previously most beleaguered non-OECD nations, Brazil and Russia, although potentially higher product prices could slow the upside.

Non-OECD: Demand by Product

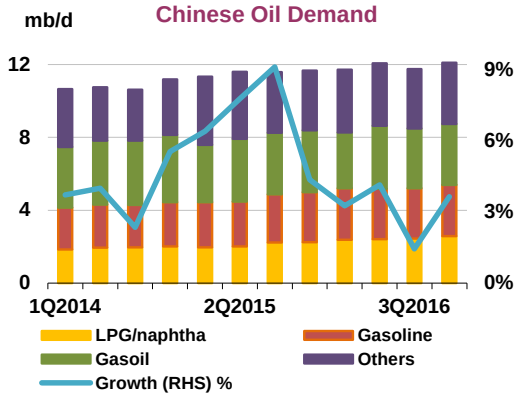
(thousand barrels per day)

	Demand			Annual Chg (kb/d)		Annual Chg (%)	
	2Q16	3Q16	4Q16	3Q16	4Q16	3Q16	4Q16
LPG & Ethane	5,786	5,915	6,200	374	573	6.8	10.2
Naphtha	2,670	2,617	2,684	3	32	0.1	1.2
Motor Gasoline	10,975	11,061	11,198	327	210	3.0	1.9
Jet Fuel & Kerosene	3,131	3,239	3,210	99	129	3.2	4.2
Gas/Diesel Oil	14,966	14,560	14,847	-30	16	-0.2	0.1
Residual Fuel Oil	5,255	5,362	5,490	156	335	3.0	6.5
Other Products	7,151	7,164	6,985	-81	88	-1.1	1.3
Total Products	**49,934**	**49,918**	**50,613**	**848**	**1,383**	**1.7**	**2.8**

China

Chinese demand rallied by a resurgent 460 kb/d y-o-y in November, up to an estimated 11.9 mb/d, pulled higher by continued strong gains from the petrochemical sector and improvements for gasoil/diesel. This second consecutive month of Chinese demand growth (y-o-y) is built on the back of improved economic conditions. The National Bureau of Statistics (NBS) cited strong y-o-y gains in both retail sales (+10.8%, an 11-month high) and industrial activity (+6.2%) in November, while alternative measures of tracking economic activity such as Chinese power demand also returned to positive territory (+7% y-o-y).

Although still declining in y-o-y terms, higher industrial activity sharply trimmed the pace at which Chinese gasoil demand declined. This trend should continue in 2017 as business sentiment indicators, such as Caixin's manufacturing Purchasing Managers' Index (PMI) – which rose to a near four-year high of 51.9 in December – improve. Gasoil demand was aided by the need to transport coal following a series of emergency government measures to boost coal supplies this winter.



LPG accounted for the majority of Chinese oil demand growth in November, helped by a combination of propane dehydrogenation plants (PDH) running harder and a number of new additions starting up. Growth was approximately 430 kb/d compared to the year earlier. *Platts* recently reported that the seven major Chinese PDH plants it tracks ran at 77% of capacity in November, versus 67% in October. Meanwhile, two new PDH plants commenced operations in October and November, Oriental Energy's Ningbo Fuji Petrochemical and Hebei Haiwei.

China: Demand by Product

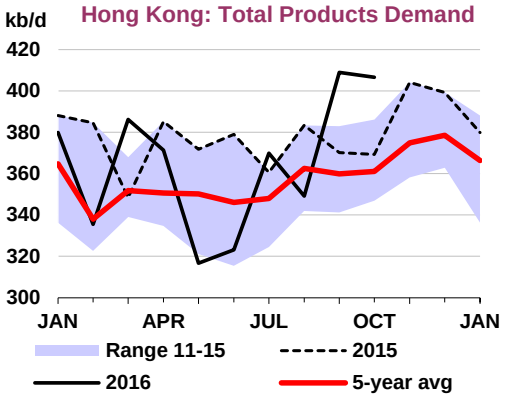
(thousand barrels per day)

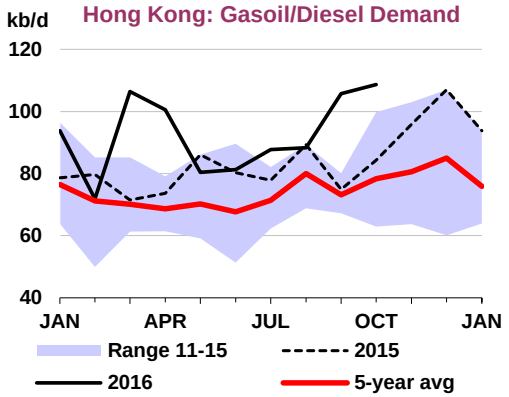
	Demand			Annual Chg (kb/d)		Annual Chg (%)	
	2015	2016	2017	2016	2017	2016	2017
LPG & Ethane	1,112	1,379	1,532	267	152	24.0	11.1
Naphtha	1,002	1,076	1,101	74	26	7.4	2.4
Motor Gasoline	2,582	2,788	2,990	206	202	8.0	7.2
Jet Fuel & Kerosene	606	652	693	45	42	7.5	6.4
Gas/Diesel Oil	3,342	3,290	3,328	-51	38	-1.5	1.1
Residual Fuel Oil	293	217	165	-76	-52	-26.1	-23.9
Other Products	2,606	2,501	2,428	-104	-73	-4.0	-2.9
Total Products	**11,543**	**11,903**	**12,237**	**360**	**334**	**3.1**	**2.8**

Even if Chinese demand growth is assumed to have decelerated in December, 4Q16 oil demand – both in absolute and growth terms – will be sharply up on 3Q16, when growth all but vanished due to heavy flooding and factory closures ahead of September's G20 meeting in Hangzhou. Growth of approximately 425 kb/d y-o-y is forecast for 4Q16, to 12.1 mb/d, led by particularly sharp gains in gasoline, jet fuel and LPG demand. Thus for the year as a whole, Chinese oil product demand averages 11.9 mb/d, up by an average of 360 kb/d versus 2015. Growth is expected to decelerate modestly in 2017 to 335 kb/d as the underlying macroeconomic backdrop is less supportive and China likely deals with higher product prices.

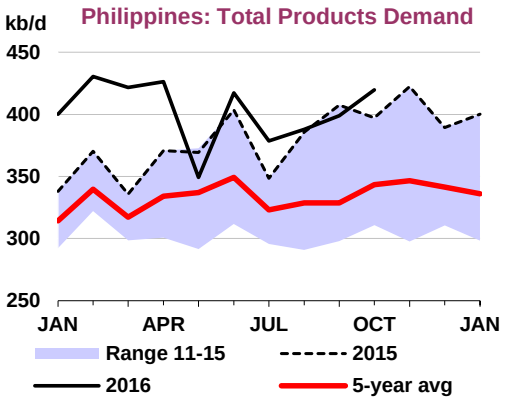
Other Non-OECD

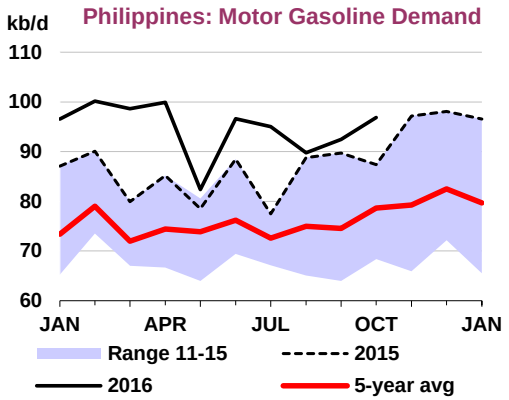
Having endured four months of relatively static y-o-y gasoil/diesel demand growth, May-through-August, the latest demand data for **Hong Kong** showed gasoil demand growth rebounding in both September (30 kb/d) and October (25 kb/d) as the economy, tentatively at least, appears to be exiting its recent industrially-led weakness. The Census and Statistics Department of Hong Kong reported a 0.4% y-o-y decline in total industrial activity in 2Q16, a period when Markit's Manufacturing PMI was also negative, averaging 46.0 with below 50 signifying pessimism. Markit's number has since risen to 49.5 in November. Assuming this uptick in Hong Kong gasoil demand growth continues, a modest net-gain of 15 kb/d is forecast for gasoil demand in Hong Kong in 2016 as a whole.



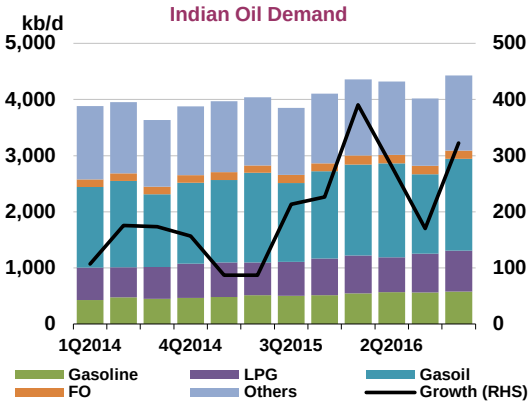


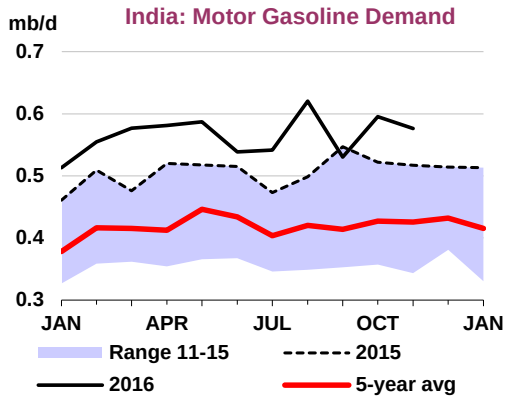
The latest demand estimate for the **Philippines** also shows resurgent growth, after an extremely testing couple of months, with robust gasoline demand growth leading the whole complex higher. Up by an estimated 25 kb/d y-o-y in October, the Philippines saw overall oil product demand growth attain its most rapid clip since July, with strong gains seen in both gasoline and gasoil/diesel. For the year as a whole, total oil product demand is forecast to average 405 kb/d, 30 kb/d up on the year earlier, chiefly due to strong gains in road transport fuel demand, with a similarly paced expansion forecast for 2017.





Rapid **Indian** demand growth returned in November, just two months after the first y-o-y contraction in over one-and-a-half years; although drawing too many conclusions from the latest monthly Indian demand data is problematic considering the fallout from the major currency reform implemented in November. The big concern is that economic activity is negatively impacted by the currency reform, which saw the withdrawal of notes representing 86% of all cash in the Indian economy. November demand numbers, based upon a release from the Petroleum Planning and Analysis Cell, depict y-o-y growth of around 475 kb/d, led by particularly sharp gains in road transport fuels. Much lower gains are likely in December, as part of November's rally was due to panic buying. For 4Q16 as a whole demand is expected to average 4.4 mb/d, 325 kb/d up on the year earlier, with the growth for 2016 as a whole at 290 kb/d. A modest deceleration is anticipated in 2017, as currency concerns interact with potential product price rises, choking off some of the most rapid Indian demand gains.





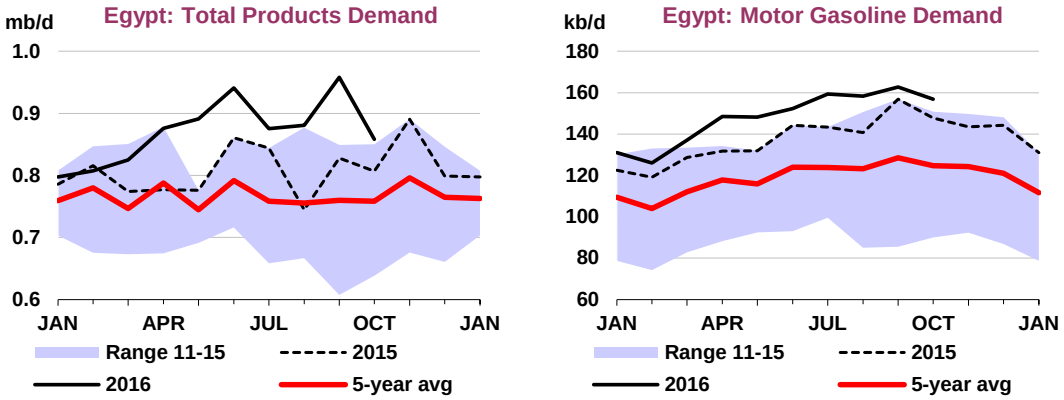
Non-OECD: Demand by Region

(thousand barrels per day)

	Demand			Annual Chg (kb/d)		Annual Chg (%)	
	2Q16	3Q16	4Q16	3Q16	4Q16	3Q16	4Q16
Africa	4,222	4,111	4,236	133	115	3.4	2.8
Asia	25,194	24,497	25,609	636	1,132	2.7	4.6
FSU	4,610	4,952	4,982	146	240	3.0	5.1
Latin America	6,661	6,788	6,657	-74	-144	-1.1	-2.1
Middle East	8,541	8,867	8,421	-8	20	-0.1	0.2
Non-OECD Europe	706	703	709	15	20	2.2	3.0
Total Products	**49,934**	**49,918**	**50,613**	**848**	**1,383**	**1.7**	**2.8**

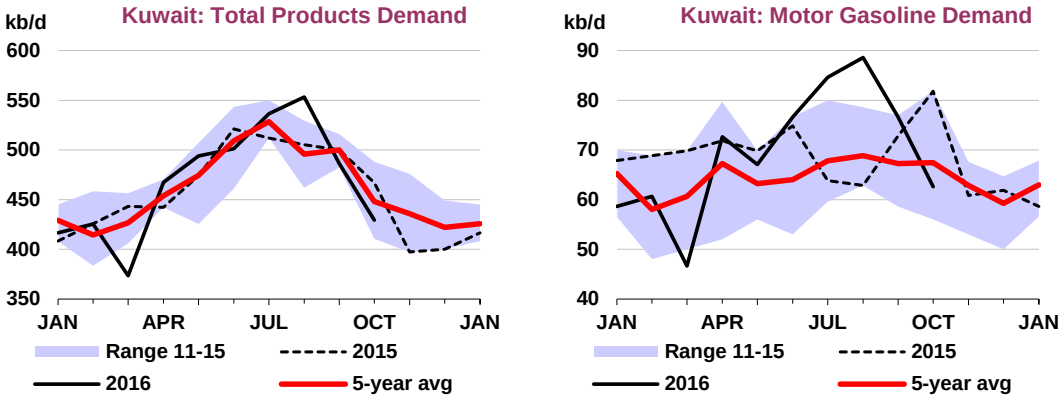
The latest data for **Egyptian** oil product demand showed the strong gains that have been seen in recent months subsiding in October, although growth was still strong at 50 kb/d or 6.3%. In April-September demand gained approximately 100 kb/d y-o-y, but October's lower number remains well above the five-

year average y-o-y increase of 15 kb/d. Easing momentum in gasoline, jet/kerosene, residual fuel oil and 'other products' acted as the main decelerating influences. Stuttering industrial activity was confirmed by data from the Egyptian Ministry of Planning citing a heavy 11.7% y-o-y decline in industrial production in September, this particularly impacted demand for residual fuel oil and 'other products'.

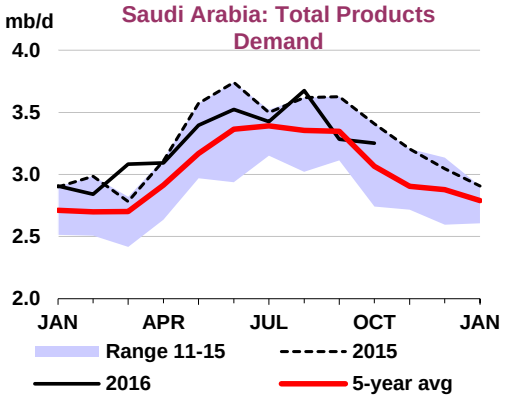


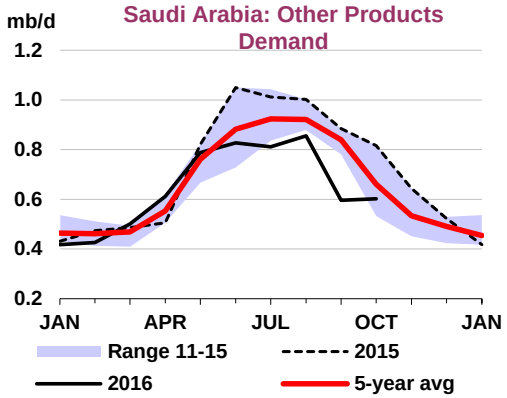
Pulled down by sharp declines in gasoil/diesel demand from 2Q16 to early 4Q16, **Iranian** oil product demand came out heavily below the year earlier level, likely keeping average 2016 demand below year ago levels despite anecdotal reports that the economy is recovering. We see Iranian oil product demand growth resurfacing in 2017, adding approximately 70 kb/d, as oil revenues potentially edge higher boosting the domestic spending possibilities after an austere couple of years.

Down in y-o-y terms for a second consecutive month in October, **Kuwaiti** oil product demand posted its sharpest decline in seven months. Approximately 40 kb/d below year earlier levels, October demand averaged just 430 kb/d, a near 8% drop largely due to sharp contractions in transport fuel demand, both road and air transport. Likely to average approximately 470 kb/d in 2016, Kuwaiti oil demand growth equates to approximately 10 kb/d in 2016, with a similarly sized addition forecast for 2017.



Saudi Arabian oil product demand in October saw its seventh y-o-y contraction so far this year. This latest contraction, coupled with a cautiously flat forecast for the remainder of the year, implies that demand averaged 3.2 mb/d in 2016 as a whole, 75 kb/d down on the year earlier. The decline is based on sizeable reductions in industrial and power-sector oil use, the latter largely due to a combination of efficiency measures and the ramp up of activity at the 2.5 billion cubic feet per day Wasit gas facility. The weak Saudi Arabian domestic demand backdrop should, however, stabilise somewhat as 2017 progresses as, depending upon the evolution of oil prices, the underlying macroeconomic situation is tentatively forecast to improve.





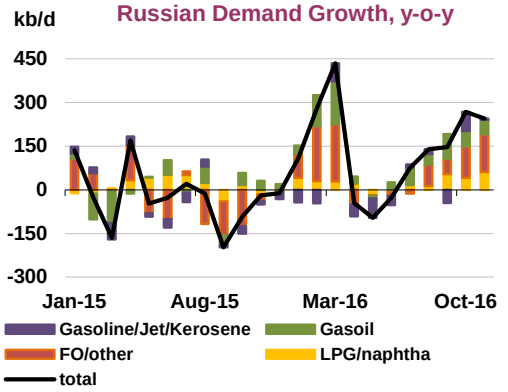
Upwardly revised baseline demand estimates for the **UAE** added approximately 0.1 mb/d to the demand assessments, post-2015. The majority of these upgrades applied to the 'other product' demand category, which now carries a more rapid 25 kb/d growth rate for 2015, whereas previously a modest decline was foreseen. With October demand data yet to be published, the focus remains very much on 3Q16 where demand averaged 885 kb/d, 80 kb/d up on the year earlier.

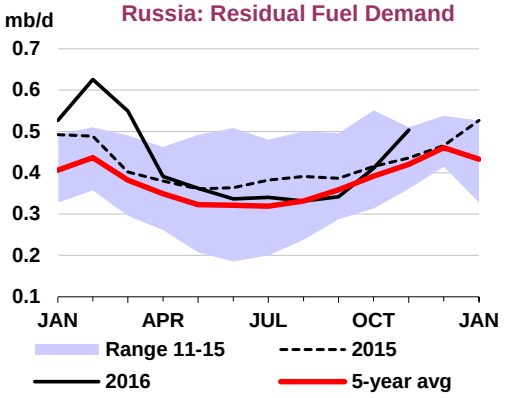
Middle East: Demand by Product

(thousand barrels per day)

	Demand			Annual Chg (kb/d)		Annual Chg (%)	
	2015	2016	2017	2016	2017	2016	2017
LPG & Ethane	1,263	1,287	1,323	24	36	1.9	2.8
Naphtha	109	111	117	2	7	1.7	6.0
Motor Gasoline	1,601	1,628	1,675	27	48	1.7	2.9
Jet Fuel & Kerosene	511	554	578	43	24	8.4	4.3
Gas/Diesel Oil	2,238	2,168	2,210	-70	42	-3.1	1.9
Residual Fuel Oil	1,528	1,636	1,677	109	41	7.1	2.5
Other Products	1,186	1,078	1,035	-108	-42	-9.1	-3.9
Total Products	**8,434**	**8,461**	**8,616**	**27**	**155**	**0.3**	**1.8**

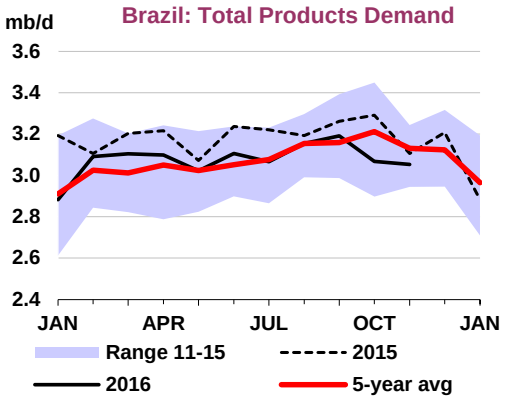
Includes Israel

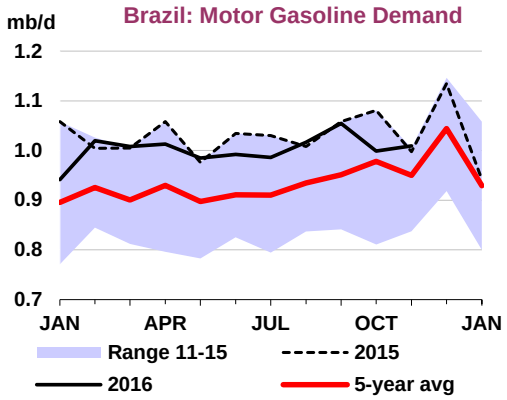




The recent speed with which **Russian** oil product demand growth has taken off continues to exceed expectations. Rising by approximately 245 kb/d compared to the year earlier, Russian oil product demand averaged 3.7 mb/d in November. The majority of this growth stemmed from residual fuel oil, gasoil and LPG; all products that benefited from the recent growth in industrial activity, with the Federal State Statistics Service citing 2.7% y-o-y growth in industrial production in November. The rapid, near 7% y-o-y, gains in Russian oil product demand were the fifth consecutive month of y-o-y growth since June. For the year as a whole demand is forecast to average 3.6 mb/d in 2016, 140 kb/d up on 2015, with growth forecast to decelerate to 85 kb/d in 2017.

The declining y-o-y **Brazilian** oil demand trend continued into November, albeit at a slower pace, with demand falling by approximately 55 kb/d, after declines of 220 kb/d in October and 70 kb/d in September. Sharply declining industrial oil use – gasoil and residual fuel oil – lies at the heart of November's decline, while renewed gasoline demand growth was an offsetting factor. Although only up modestly, and far too early to conclude any major change in the trend, renewed gasoline demand growth in November could be a signal of returning Brazilian consumer demand. This is reflected in the latest car registration data, from Anfavea, which showed consecutive gains in both November and December. Bottoming-out at 159 000 in October, Brazilian new vehicle registrations surged to 178 000 in November and 204 000 in December, a one-year high. Haven fallen by, on average, 115 kb/d in 2016, the sharp declines in Brazilian oil product demand are forecast to, at least, cease in 2017, as economic weakness likely abates.





Brazil: Demand by Product

(thousand barrels per day)

	Demand			Annual Chg (kb/d)		Annual Chg (%)	
	2015	2016	2017	2016	2017	2016	2017
LPG & Ethane	232	234	237	2	3	1.0	1.4
Naphtha	158	155	157	-3	1	-1.7	0.9
Motor Gasoline	1,038	1,008	1,020	-29	12	-2.8	1.2
Jet Fuel & Kerosene	128	118	116	-11	-2	-8.3	-1.5
Gas/Diesel Oil	1,026	971	971	-54	0	-5.3	0.0
Residual Fuel Oil	172	145	135	-27	-9	-15.8	-6.3
Other Products	440	444	443	5	-1	1.1	-0.2
Total Products	**3,192**	**3,076**	**3,080**	**-117**	**5**	**-3.7**	**0.2**

SUPPLY

Summary

- **Global oil supplies fell by more than 0.6 mb/d in December due to lower OPEC and non-OPEC output.** At 97.6 mb/d, global liquids production was nevertheless 0.2 mb/d higher than a year ago, as rampant OPEC production more than offset a 1.1 mb/d decline in non-OPEC supplies.

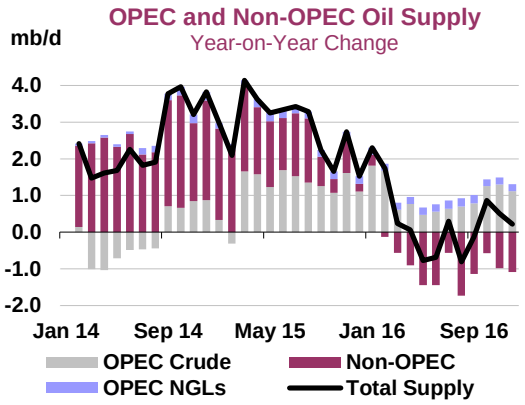
- **OPEC crude production, now excluding Indonesia throughout, fell 320 kb/d from record rates to 33.09 mb/d in December** after lower Saudi output and disruptions in Nigeria curbed supply. Early indications suggest a deeper OPEC reduction may be under way for January, as Saudi Arabia and its neighbours enforce supply cuts.

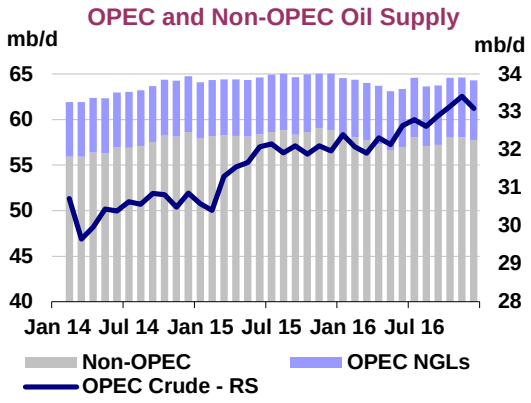
- **Iran, Iraq and Saudi Arabia ranked as the world's top sources of growth in 2016.** Iran, relieved of sanctions, raised crude output by 690 kb/d, while record production in Iraq and Saudi Arabia pushed up supply by 410 kb/d and 260 kb/d, respectively. Robust output from the low-cost Middle East lifted OPEC production in 2016 to an unprecedented 32.6 mb/d, up 970 kb/d year-on-year (y-o-y).

- **Non-OPEC oil production is estimated to have dropped by 315 kb/d in December,** mainly due to seasonally lower global biofuels output. At just over 57.7 mb/d, including Indonesia throughout, total non-OPEC liquids production was nearly 1.1 mb/d below a year earlier.

- **Non-OPEC supply growth for 2017 has been revised up by 175 kb/d since last month's *Report*** as higher prices stimulate increased investment in the US. Non-OPEC production is now seen averaging 58 mb/d, 385 kb/d higher than a year earlier. For 2016 meanwhile, estimates have been cut by 50 kb/d due to a reassessment of production in Congo and slightly lower biofuels output.

- **US total oil production is forecast to increase by 320 kb/d in 2017,** to average 12.8 mb/d. Crude oil supplies are on track to rise by 140 kb/d as higher prices and increased investments are spurring new Light Tight Oil (LTO) growth. The output of natural gas liquids is seen rising 200 kb/d, supported by new export and petrochemical facilities.

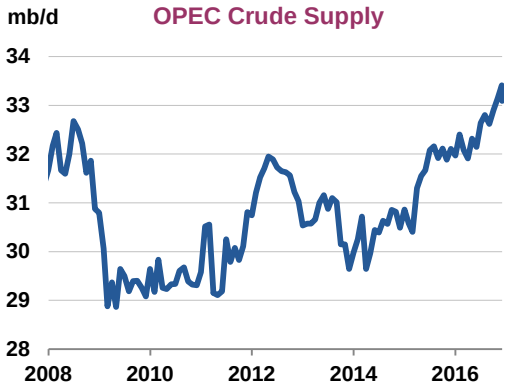


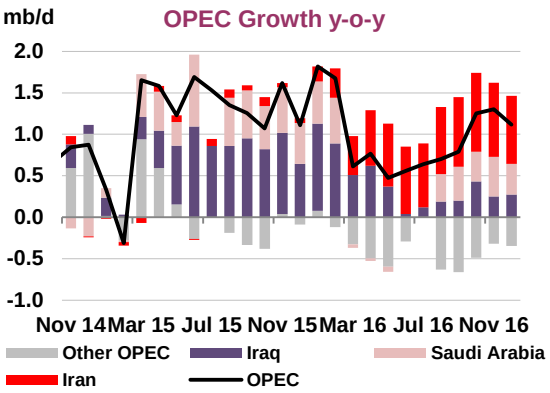


All world oil supply data for December discussed in this report are IEA estimates. Estimates for OPEC countries, Alaska, Mexico and Russia are supported by preliminary December supply data.

OPEC crude oil supply

OPEC crude oil production, excluding Indonesia throughout, dropped to 33.09 mb/d in December – 320 kb/d down on an all-time high reached in November. Saudi production fell by 160 kb/d due to lower exports and domestic consumption. Militant attacks and strike action cut crude oil flows in Nigeria by 110 kb/d month on month (m-o-m). Output in Libya rose the most, up 40 kb/d m-o-m, after the lifting of a two-year pipeline blockade allowed production to resume from a major western oil field. Iraq, including the Kurdistan Regional Government (KRG), lifted output to 4.64 mb/d, the highest ever, as oil fields in the south pumped more. Supply from Iran dipped to 3.72 mb/d, but held at pre-sanctions levels. Despite December's m-o-m decline, output from the group's 13 members stood 1.1 mb/d above a year ago. Effective spare capacity was at 2.17 mb/d, with Saudi Arabia accounting for nearly 80% of the cushion.





Initial indications are that a steeper m-o-m decline may be on the way in January, as Saudi Arabia and nearby producers move to implement a 1.2 mb/d output reduction that came into effect at the start of the year. The cutbacks appear to be heavily weighted towards Europe and North America as producers seek to preserve market share in the lucrative Asian market. Saudi Arabia has moved quickly to remove barrels from the market, signalling that production has already fallen below its 10.06 mb/d supply target. Kuwait, too, said that it has cut more than required by shutting in wells. The UAE has scheduled oil field maintenance to help curb production. Iraq plans to lower its southern oil exports from all-time highs.

While 2017 marks a return to OPEC market management, last year saw Iran, Iraq and Saudi Arabia emerge as the world's largest sources of supply growth following two years of the group's market share strategy. Average crude output from Iran rose 690 kb/d, while record pumping pushed up supply from Iraq by 410 kb/d and raised Saudi flows by 260 kb/d. The UAE also cranked out the highest-ever annual output. Robust production from relatively low-cost Middle East oil fields pushed OPEC output in 2016 (excluding Indonesia, which quit OPEC in November) to an unprecedented 32.6 mb/d – up 970 kb/d year-on-year (y-o-y). Producers such as Nigeria and Venezuela – in the grip of domestic turmoil – are struggling to stem declines. Annual average crude output in both countries plunged to near 30-year lows, with Nigeria down 310 kb/d y-o-y to 1.46 mb/d and Venezuela off 220 kb/d to an average 2.24 mb/d.

OPEC's elevated supply during 2016 helped push global oil stocks to record levels and the explicit aim of the group's 30 November supply deal is to speed the market's return to balance by working off the excess. An implicit goal may be to keep the price of oil above $50/bbl. Coordinated action with non-OPEC countries – 11 producers led by Russia have also agreed to cut output by 558 kb/d – could hasten the process. Saudi Energy Minister Khalid al-Falih said on 16 January that the OPEC/non-OPEC pact was unlikely to be extended to the second half of 2017 due to anticipated strong compliance and higher demand. "The extension will only happen if there is a need," he was quoted as saying.

If OPEC and non-OPEC were to implement strictly their agreed cuts, global inventories could start to draw in the first half of this year. A committee to monitor compliance - Kuwait, Algeria and Venezuela along with non-OPEC producers Russia and Oman – is tentatively scheduled to meet on 21 January.

OPEC Crude Production

(million barrels per day)

	Oct 2016 Supply	Nov 2016 Supply	Dec 2016 Supply	Sustainable Production Capacity[1]	Spare Capacity	2016 Average Supply	OPEC Adjustment	Supply Target from Jan 2017[2]
Algeria	1.13	1.12	1.13	1.13	0.00	1.11	-0.05	1.04
Angola	1.51	1.69	1.65	1.78	0.13	1.71	-0.08	1.67
Ecuador	0.54	0.55	0.54	0.56	0.02	0.55	-0.03	0.52
Gabon	0.22	0.23	0.23	0.23	0.00	0.23	-0.01	0.19
Iran	3.82	3.75	3.72	3.75	0.03	3.54	0.09	3.80
Iraq	4.59	4.61	4.64	4.66	0.02	4.41	-0.21	4.35
Kuwait	2.93	2.83	2.81	2.93	0.12	2.88	-0.13	2.71
Libya[3]	0.51	0.58	0.62	0.65	0.03	0.39		0.53
Nigeria[3]	1.43	1.50	1.39	1.70	0.31	1.46		1.63
Qatar	0.63	0.65	0.63	0.67	0.04	0.65	-0.03	0.62
Saudi Arabia	10.56	10.64	10.48	12.20	1.72	10.42	-0.49	10.06
UAE	3.12	3.13	3.13	3.14	0.01	3.03	-0.14	2.87
Venezuela	2.15	2.13	2.12	2.20	0.08	2.24	-0.10	1.97
Total OPEC	**33.14**	**33.41**	**33.09**	**35.60**	**2.51**	**32.62**		**31.96**
(excluding Nigeria, Libya)					**2.17**		**-1.16**	

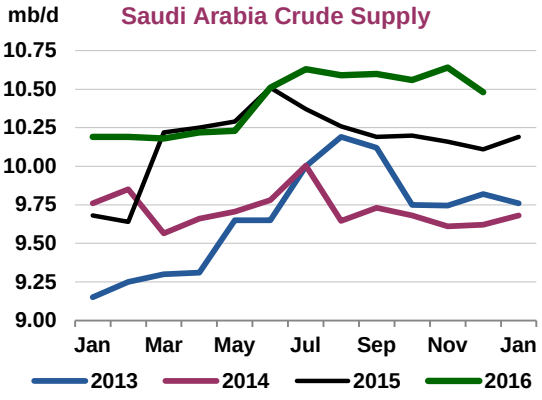
1 Capacity levels can be reached within 90 days and sustained for an extended period.

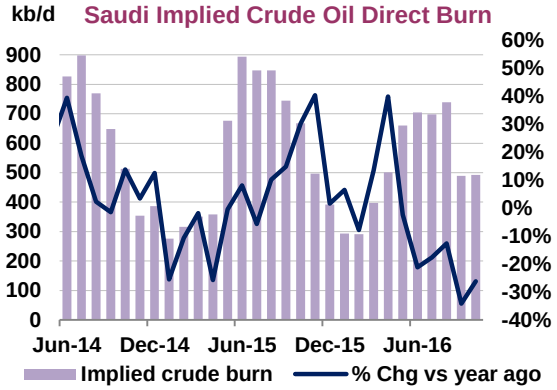
2 Supply targets are based on October 2016 OPEC secondary source figures, except Angola which is based on September 2016.

3 Libya and Nigeria are exempt from cuts.

* Iran's production is due to increase slightly

Supply from **Saudi Arabia** fell 160 kb/d from record levels to 10.48 mb/d in December as shipments to world markets edged lower and the Kingdom's domestic consumption eased. Output in January may see a more substantial decline after Riyadh signalled that it is cutting even more than an agreed 0.5 mb/d. "Our production now is below 10 million barrels a day," Saudi Energy Minister Falih was quoted as saying. "We are going the extra mile to lead our colleagues within and outside OPEC to make sure the market sees that there is serious action." He said previously that Saudi Aramco had made a "very high reduction" to customers in Europe and the US as well as some customers in Asia.





On the domestic front, Saudi power plants are estimated to have consumed less oil during December. In any case, the facilities have been burning fewer barrels of crude this year due to an energy efficiency drive as well as the ramp up of the giant Wasit gas plant. Crude oil burn averaged 630 kb/d from May through October this year, down 150 kb/d from the same period in 2015, according to JODI data.

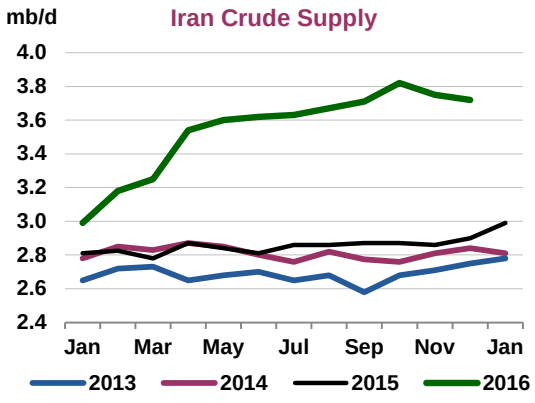
While Aramco has spared most of its Asian customers from cuts, it has raised the price of its flagship Arab Light crude for February loading to the region by $0.60/bbl versus the previous month. The increase was in line with a strengthening Dubai price structure, which is a driver in Aramco's price setting. Saudi Arabia, along with other Middle East producers, is seeking to preserve its market share in Asia. During the first 10 months of 2016, its total sales of crude oil rose to an average 7.55 mb/d – up 200 kb/d on the same period the previous year, according to the latest official data from the Joint Organisations Data Initiative (JODI).

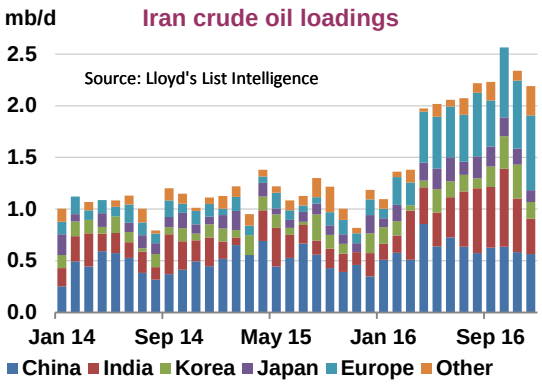
Saudi Arabia's Gulf neighbours are making similar strides to comply with their OPEC targets. **Kuwaiti** production during December dipped to 2.81 mb/d, with ongoing maintenance at an oil field gathering centre curbing supply by 120 kb/d since October. Output could fall still lower in January after Kuwait said it cut more than its OPEC requirement by shutting up to 90 wells at oil fields across the country. Supply from **Qatar** slipped 20 kb/d in December to 630 kb/d.

Production from the **UAE** held at 3.13 mb/d. The UAE plans to honour its 139 kb/d cut by carrying out maintenance on the fields that produce Murban and Das blend. On the upstream front, BP has become the second Western oil major to secure a 10% stake in Abu Dhabi's giant onshore oil field concession, the Abu Dhabi Co for Onshore Petroleum Operations (Adco). After prolonged negotiations, BP agreed to pay roughly $2.2 billion for its stake in shares, rather than cash. Abu Dhabi state investment firm Mubadala is expected to hold the BP shares. As part of the deal, BP becomes the asset leader of the Bab field.

The UK major was a partner in the original 75-year Abu Dhabi onshore concession that expired in January 2014. Total won a 10% stake in the 1.6 mb/d onshore fields (including Bab, Bu Hasa, Shah and Asab) in 2015 after paying a signature bonus reported to be in excess of $2 billion. Inpex Corp of Japan and GS Energy of South Korea won smaller stakes of 5% and 3%, respectively. Abu Dhabi is now seeking to award the remaining 12% of the concession.

Iranian supply in December held relatively steady at 3.72 mb/d, a rise of 820 kb/d on a year ago when its oil sector was shackled by international sanctions. Under the 30 November OPEC agreement, Tehran was given the go-ahead to raise output to 3.8 mb/d – a level that should prove sustainable. Iranian oil fields have been pumping at pre-sanctions rates of at least 3.6 mb/d since May. Exports of Iranian crude oil eased to 2.2 mb/d during December and ran at just under 2 mb/d during 2016. The National Iranian Oil Co (NIOC) has lost no time in reclaiming its European customer base and oil sales to the region in December rose by 60 kb/d to 720 kb/d, accounting for a third of overall volume.





As for Asia, crude oil loadings for India fell for a second month in December to reach 345 kb/d – sharply down from a whopping 750 kb/d purchase during October. Iranian shipments to India more than doubled during 2016 to reach an average 440 kb/d. Sales to China dipped 20 kb/d to 560 kb/d, while sailings to Japan fell 40 kb/d to 110 kb/d. Exports to Korea dropped to 160 kb/d versus a hefty 330 kb/d

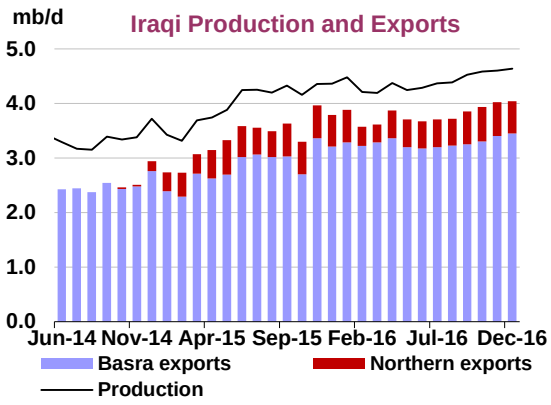
in November. Shipments of condensate from Iran's South Pars gas project crept up to 190 kb/d from 180 kb/d during November, although preliminary figures are subject to revision. At the end of November, volumes of condensate stored at sea declined by 6 million barrels to 42 million barrels.

On the upstream front, Iran's South Azadegan project is tipped to become the first oil development project offered to international oil companies (IOCs). NIOC has selected 29 firms - including Total, Royal Dutch Shell, Eni, China National Petroleum Corp and Lukoil - to qualify for bidding on oil and gas fields under its Iran Petroleum Contract (IPC). The list did not include BP. The *Financial Times* said BP had opted out due to concerns over possible renewed US-Iran tension under the incoming US administration. There are lingering concerns that Washington could decide to cancel or re-write the nuclear deal struck between Tehran and the P5+1 at the start of last year.

Following years of acute underinvestment, Iran hopes its new IPC will lure the foreign cash and technology that is vital to raising output. Total was the first international company to sign an initial deal to develop a field, Phase 11 of the South Pars gas field, under the new IPC. NIOC has signed a number of memoranda of understanding with IOCs, including Shell, to study South Azadegan, which bumps up against the Shell-operated Majnoon field in Iraq. Development of the vast reservoirs of South Azadegan, North Azadegan and Yadavaran, which straddle the border with Iraq, is a top priority. Target production from the fields is 1 mb/d, but achieving that goal will require the help of Western oil companies.

Iraqi production, including the KRG, edged up 30 kb/d in December to a new all-time high of 4.64 mb/d. Exports of crude breached the 4 mb/d mark for a second straight month after southern oil fields pumped more. Shipments of Basra crude from Gulf terminals rose to a record 3.45 mb/d, while northern exports along the KRG pipeline to Turkey dipped 30 kb/d to 590 kb/d. Overall exports to world markets ran at roughly 3.8 mb/d during 2016, a rise of 440 kb/d on the previous year. Basra exports in 2016 rose by 440 kb/d to 3.28 mb/d, while northern shipments held steady at around 520 kb/d.

Output may, however, start to ease from elevated levels as Baghdad moves to implement its OPEC cut. Dependent on oil exports for much of its revenue, the federal government had insisted it should be exempt from the OPEC reduction – saying it had to finance a costly battle against the Islamic State of Iraq and the Levant. In the end, it accepted a cut of 210 kb/d. Iraq has vowed to curb its southern exports to help honour its OPEC commitment. Loading programmes imply record Iraqi exports from Gulf ports in January and February, but preliminary schedules are only indicative and often revised.

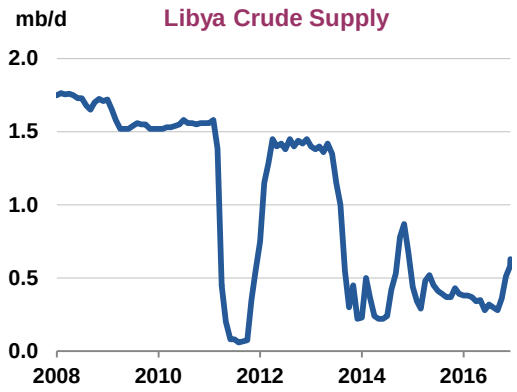


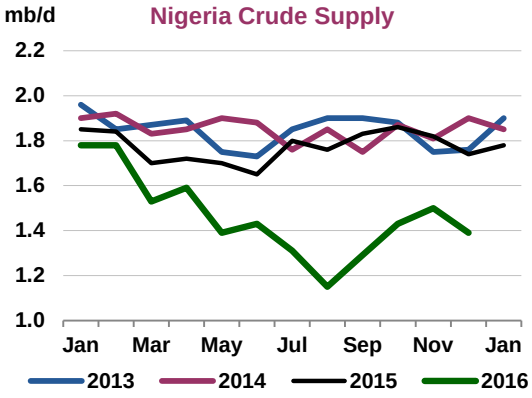
Iraq's impressive growth has come with the assistance of IOCs that are developing its prized southern oil fields. The country's OPEC reduction might be carried out by coordinating maintenance on fields that are operated by the IOCs as well as the federal government. Baghdad cannot enforce cuts at fields in the north that are controlled by the autonomous KRG.

At the start of last year, expectations were that Iraqi production would remain flat due to low oil prices and budget cuts on projects run by the IOCs. But Baghdad defied the odds and posted y-o-y growth in 2016 of 410 kb/d. Oil fields in the south such as Zubair, West Qurna-1 and Missan helped fuel the gains.
Libya ended 2016 on a high note, with production recovering to 620 kb/d – the highest monthly rate in two years. Output rose 40 kb/d m-o-m and was up 240 kb/d y-o-y after a major southwestern oil field resumed pumping following the lifting of a pipeline blockade. The country's oil output has risen steadily since September, when strategic oil terminals were reopened, and production at the start of 2017 was running close to 700 kb/d.

Libyan officials have suggested that output of 775 kb/d could be reached with relative ease following the reopening of the pipeline that links the Repsol-operated El Sharara field, which can crank out up to 330 kb/d, with the Eni-managed El Feel, which can pump roughly 90 kb/d. Exports from El-Sharara are scheduled to load from the port of Zawiya during January.

The Libyan recovery may prove fragile, however, given the twin challenge of enhancing security and raising cash to fund urgently needed infrastructure repairs. The NOC is also keeping close guard over strategic eastern oil terminals. Repairs are continuing at the 350 kb/d Es Sider terminal, damaged by militant attacks at the start of 2016, with most of the barrels pumped in the east of the country shipped via the nearby Ras Lanuf terminal. More than two years of oil sector attacks and civil unrest have led to the repeated closure and restart of oil fields and ports. As a result, Libya is producing only a fraction of the 1.6 mb/d seen before the fall of the Gaddafi regime. In neighbouring **Algeria**, production inched up to 1.13 mb/d in December.



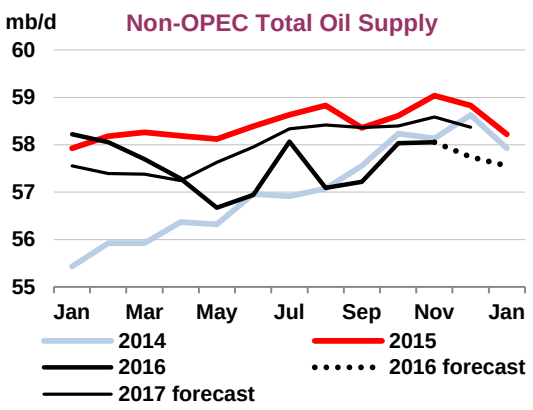


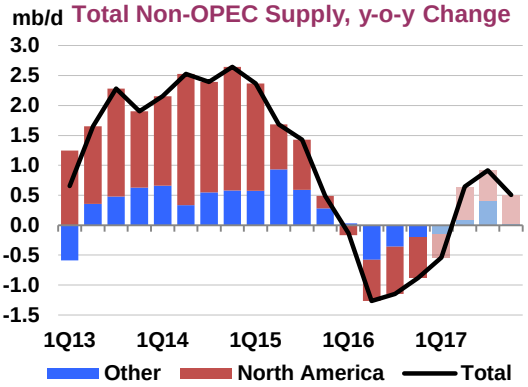
Nigerian output fell by 110 kb/d in December after oil sector attacks and strike action derailed a fragile recovery. Crude oil production of 1.39 mb/d was down 350 kb/d on December 2015. A strike by ExxonMobil staff disrupted shipments of Qua Iboe and Erha crude, while militant attacks halted the supply of Forcados, a key crude export stream. Repeated sabotage sank Forcados shipments to just 60 kb/d during 2016 from more than 200 kb/d the previous year. Nigeria, which is exempt from the OPEC cut, is due to carry out maintenance at the 200 kb/d Bonga offshore field from mid-February. Crude oil output had recovered from 30-year lows of roughly 1.2 mb/d during the summer following a ceasefire by militants in the restive Niger Delta. In early January, however, the Niger Delta Avengers called an end to its ceasefire after a collapse in talks with the government. Nigeria is meanwhile hoping to boost production by re-renegotiating debt owed to foreign joint venture partners such as Exxon, Shell, Chevron and Total. Elsewhere in West Africa, production in **Angola** sank to 1.65 mb/d in December, while supply in **Gabon** held steady at 230 kb/d. Gabon has appointed Pascal Ambourouet as its oil minister, replacing Etienne Ngoubou.

Supply from **Venezuela** inched down 10 kb/d to 2.12 mb/d in December, 320 kb/d below a year ago, as the country's economic crisis takes a toll on the oil sector. An acute cash crunch at Petroleos de Venezuela (PDVSA) has led to operational difficulties at oil fields and installations across the country, which knocked annual output in 2016 to 2.24 mb/d, the lowest in nearly three decades. An early 2017 cabinet reshuffle by Venezuelan President Nicolas Maduro stripped Eulogio Del Pino, who served as oil minister and president of PDVSA since 2015, of his ministerial rank. Nelson Martinez, the new oil minister, has headed Citgo, the US refining unit of PDVSA since 2013. Nearly all of Venezuela's foreign currency is generated via oil exports, but a lower oil price environment and mismanagement have left PDVSA short of money to pay suppliers or spend on upstream investment. Production in **Ecuador** slipped to 540 kb/d in December.

Non-OPEC overview

The forecast for 2017 non-OPEC supply growth has been lifted by 175 kb/d since last month's *Report*, to 385 kb/d, as higher prices spur on investment in the US shale sector. After contracting by 475 kb/d in 2016, US oil production is expected to rise by 320 kb/d this year, compared with only a marginal increase estimated in last month's *Report*.





During December, US producers brought back an additional 48 new rigs to service, the highest monthly increase since early 2014, and a further rise is on the way. Following the Vienna agreement to rein in oversupply, producers feel more confident that higher prices will be sustained and consequently plan to step up activity through 2017. According to Barclays's recently released Upstream Spending Survey, North American expenditures are set to increase by 27% this year, after investments were cut 38% in 2016. The higher spending will result both from increased activity and oil field service cost inflation. Most companies surveyed expect oilfield services costs to increase this year, with pressure pumping and land rig costs seen rising the most.

Even before the latest ramp-up in drilling, signs were emerging that the decline in US output might be bottoming out. In October, output in non-OPEC's largest oil producer rose 310 kb/d month-on-month (m-o-m) – by far exceeding expectations and levels outlined in preliminary data. Crude oil output was up 230 kb/d m-o-m, with a substantial increase from shale producing states, such as North Dakota. While LTO output is set to increase by more than 0.5 mb/d over the course of 2017, for the year as a whole production is only 170 kb/d higher. Given the time delay between spud-to-completion times, shale volumes are not expected to see more substantial gains until 2018.

Tentative signs that output declines might ease in 2017 are also emerging outside of the US. Oil supplies in China, which recorded non-OPEC's second largest decline in 2016 (-315 kb/d), saw a partial recovery in November. As we have long argued in this *Report,* declines are likely to ease from the steep rates seen during much of 2016 as prices recover. International crude volumes currently trade above lifting costs at China's largest oil field, Daqing, which company officials reportedly have said are about $45/bbl.

The outlook for Colombia, where oil production plunged 115 kb/d (-11%) over the first 11 months of 2016, also looks to be improving. After a precipitous decline over the first half of the year, output has largely stabilised since August, with some oil fields shut early last year restarted. According to the Colombian Petroleum Association, oil firms plan to invest more than $3 billion in exploration and development projects in 2017, a 30% increase from 2016 – which marked the lowest capital spending seen since 2004. Drilling activity is already trending higher, with the rig count hitting 19 in December, after bottoming out at only two in April according to the latest Baker Hughes International Rig Count data. The government has also wowed to take action to cut the number of community blockades, which forced oil companies to suspend drilling last year.

At the same time, officials from Russia, Oman, Kazakhstan and Azerbaijan state that their oil output has already fallen in line with commitments made in Vienna in December. Russian oil production might decline in January by even more than the initially agreed reduction as freezing temperatures hampered operations across western Siberia and forced field shut-ins. Over the first half of the month, output was down 130 kb/d versus December. Omani officials said in early January that it had already complied with its agreed 45 kb/d cut.

A reassessment of historical production estimates for a number of countries for which monthly data is not readily available has significantly cut our 2016 estimate for Congo, amongst others. While Total, Eni and Chevron all started up new projects in late 2015 or early 2016, output, based on tanker tracking data, shows output declining compared with 2015. As such, both the 2016 and 2017 estimates for Congolese crude production have been cut by 75 kb/d and 150 kb/d, respectively, compared with our previous assessments. Updated guidance from Tullow Oil, also curbs the expected ramp up of its newly commissioned TEN field in Ghana this year. Lastly, a poor crop and high sugar prices stymied Brazilian ethanol growth in 2016, lowering our global biofuel supply baseline by 35 kb/d.

While the 2016 estimate for non-OPEC supplies has been cut by 50 kb/d since last month's *Report*, to 57.6 mb/d, the year-on-year decline remains around 0.9 mb/d. Total non-OPEC supplies, including Indonesia, are expected to rise to 58 mb/d in 2017.

Non-OPEC Supply

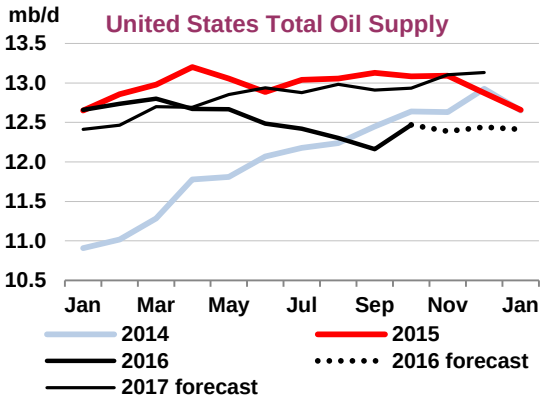
(million barrels per day)

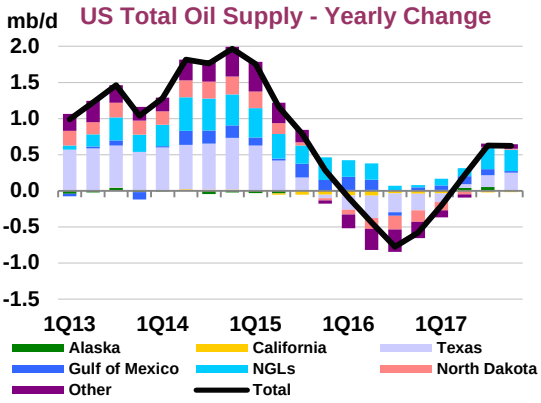
	2015	1Q16	2Q16	3Q16	4Q16	2016	1Q17	2Q17	3Q17	4Q17	2017
Americas	20.0	19.9	19.0	19.3	19.4	19.4	19.5	19.5	19.8	19.9	19.7
Europe	3.5	3.6	3.4	3.3	3.6	3.5	3.6	3.5	3.3	3.5	3.5
Asia Oceania	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.4
Total OECD	23.9	24.0	22.8	23.1	23.5	23.4	23.5	23.4	23.6	23.9	23.6
Former USSR	14.0	14.3	14.0	14.0	14.5	14.2	14.4	14.2	14.3	14.5	14.4
Europe	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
China	4.3	4.2	4.1	3.9	3.9	4.0	3.9	3.8	3.8	3.7	3.8
Other Asia	3.6	3.6	3.6	3.5	3.5	3.6	3.5	3.5	3.5	3.4	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	1.3	1.3	1.2
Africa	2.1	2.0	1.9	2.0	2.0	2.0	1.9	1.9	2.0	2.0	2.0
Total Non-OECD	30.0	29.8	29.4	29.4	29.9	29.6	29.6	29.4	29.7	29.8	29.6
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	2.3	2.0	2.5	2.8	2.5	2.5
Total Non-OPEC	58.4	58.0	57.0	57.5	57.9	57.6	57.4	57.6	58.4	58.4	58.0
Annual Chg (mb/d)	1.5	-0.1	-1.3	-1.1	-0.9	-0.9	-0.5	0.6	0.9	0.5	0.4
Changes from last OMR (mb/d)	0.0	0.0	0.0	-0.2	0.0	0.0	0.1	0.0	0.2	0.3	0.1

OECD

North America

US – October actual: US oil production rebounded by a sharp 310 kb/d in October, the latest month for which consolidated official statistics are available. Crude and condensate output rose 230 kb/d from the month prior, as supplies in the Gulf of Mexico increased by 84 kb/d after Tropical Storm Hermine had disrupted supplies; Alaskan output increased by around 40 kb/d as onshore output saw its first substantial gain in more than a year and a half. Lower-48 crude oil production rose 106 kb/d m-o-m, with the lion's share of growth coming from North Dakota (+72 kb/d). Other tight oil regions, including Oklahoma (+12 kb/d), Texas (+23 kb/d) and New Mexico (+7 kb/d) posted smaller gains. At just over 8.8 mb/d, total US crude production was 820 kb/d lower than at its peak seen in April 2015, and more than 300 kb/d higher than output suggested by preliminary weekly estimates.

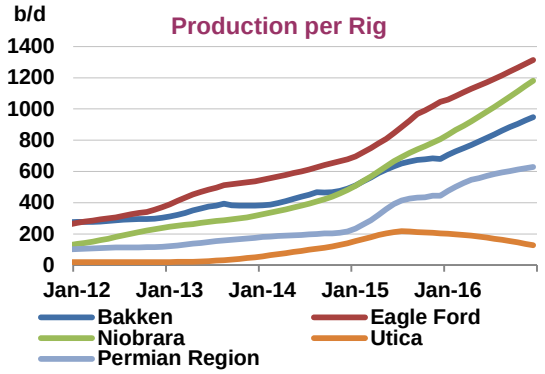




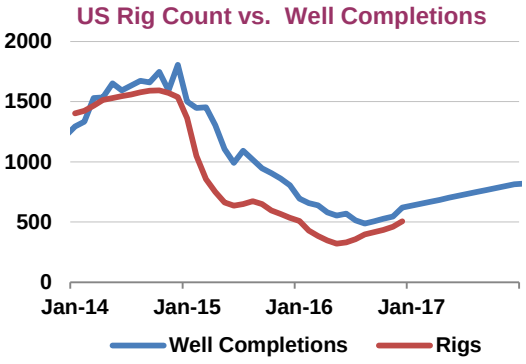
Following the recent upward bounce in output, and the prospect of higher prices supporting increased activity in the US shale patch, the outlook for US oil production for 2017 has materially improved. US total oil production is forecast to rise 320 kb/d next year to 12.8 mb/d, as higher than expected 4Q16 drilling activity translates into more robust LTO production this year than our previous forecast. Tight oil production is now expected to rise by 170 kb/d for 2017 as a whole, as output rises by an estimated 520 kb/d from end-2016 to end-2017. The increase in total US crude and condensate production is a lesser 135 kb/d, even with a 70 kb/d gain expected for the Gulf of Mexico (GoM), as other conventional crude output continues to decline. The output of NGLs rises another 200 kb/d in 2017.

During December, US producers brought back 48 rigs to service, the highest monthly addition since April 2014. Moreover, a spending survey done by Barclays Capital indicates that after two years of double digit declines, North American upstream spending is set to increase by 26.5% this year, with NAM independents raising their capex budgets by a substantial 58.5%. The spending hike reflects not only increased activity, but also expected cost inflation – with pressure pumping and land drilling costs seen as rising most.

The increase in rig count will take time to translate into real output growth, however, with the average delay between spud and completion dates generally around four to five months. Our shale production forecast assumes the number of wells completed this year to increase by 26% compared with the 2016 total, with more substantial growth expected in 2018. Most of the gains will come from the Permian Basin, where producers are currently focussing their efforts. Output from Bakken and Eagle Ford is expected to continue to lag year earlier levels in the near term.



Source: EIA Drilling Productivity Report



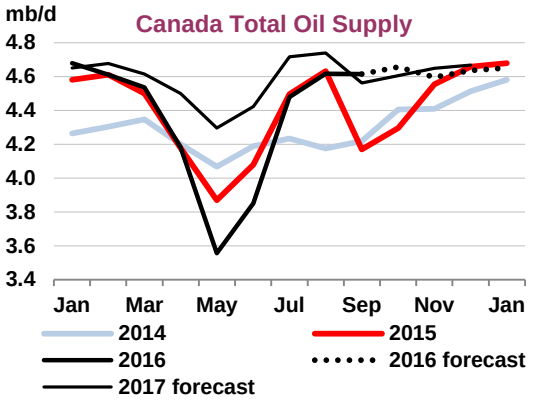
Source: Baker Hughes, Rystad Energy, IEA estimates

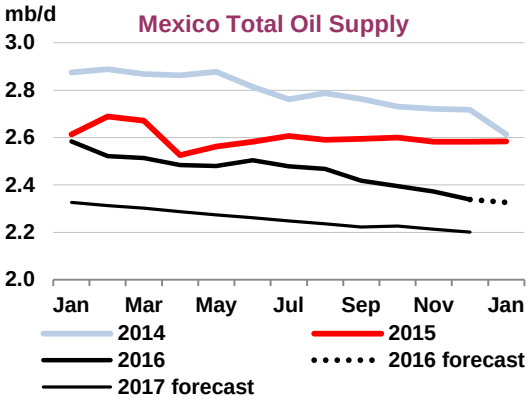
As we turn the page on 2016, it is also becoming clear that the US shale industry is coming out of the downturn fitter than initially anticipated. Out of the total 545 kb/d decline seen in US crude and condensate production during 2016, tight oil production only declined 280 kb/d, in large part due to higher productivity rates and more efficient operations. According the EIA's latest Drilling Productivity

Report, over the course of 2016, oil production per rig rose by as much as 39% in the Bakken, 41% in the Permian Basin and 26% in Eagle Ford. Of course, this is not only due to technological improvements but also as companies have focused their efforts on only the most prolific acreage, using their best rigs and crews. Improved completion techniques and the shifting to longer laterals and the use of more sand and other proppants have significantly improved the estimated ultimate recovery (EUR), and thus the economics, of new wells. Going forward however, well economics might once again deteriorate as service and material costs increase and as activity increases outside premium locations.

Canada – Newfoundland November actual; Alberta October actual; others estimated: Canadian oil production was unchanged from August to September, the latest month for which consolidated data is available. Total oil supplies averaged 4.6 mb/d, of which nearly 2.6 mb/d was Albertan oil sands. A slight decrease in Albertan crude and bitumen production was offset by higher output of NGLs. Albertan oil output recovered by 65 kb/d in October, to 3.06 mb/d, as the output of synthetic crude hit its highest level in more than a year.

Meanwhile, offshore oil production in Newfoundland and Labrador averaged nearly 250 kb/d in November, 50 kb/d higher than the same month a year earlier. Most of the gains stemmed from the Hibernia field, which produced its one billionth barrel of oil in December. In recent years, Hibernia has been drilling subsea tie-backs and satellite fields, including the Hibernia Southern Extension, to extend the life of the project by another 15 -20 years.

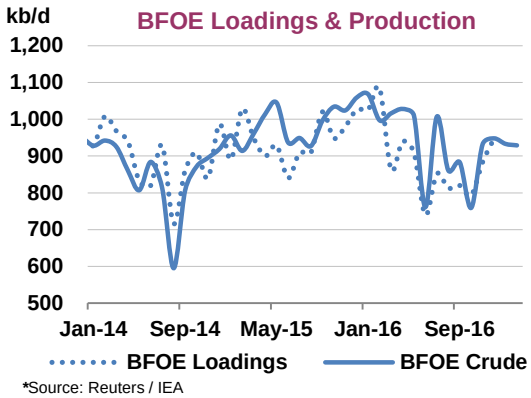




Mexico - November actual, December preliminary: Mexican crude and condensate output was confirmed at 2.07 mb/d for November, 30 kb/d lower than a month earlier and in line with preliminary estimates. Early indications for December production see a further decline of 33 kb/d below November's output, and 235 kb/d lower than a year earlier. Total Mexican oil production, including NGLs, is forecast to decline by 200 kb/d in 2017, to 2.26 mb/d, following a decline of 135 kb/d in 2016.

North Sea

North Sea oil production continues to surprise to the upside. Preliminary data for November put total oil supplies up another 250 kb/d from October, which itself increased nearly 500 kb/d m-o-m. At 3.35 mb/d, regional production was 150 kb/d above a year earlier and at its highest since February 2012. Tanker tracking data from Lloyd's List Intelligence suggest shipments in November were 2.3 mb/d, their highest level since February and stayed at this level in December

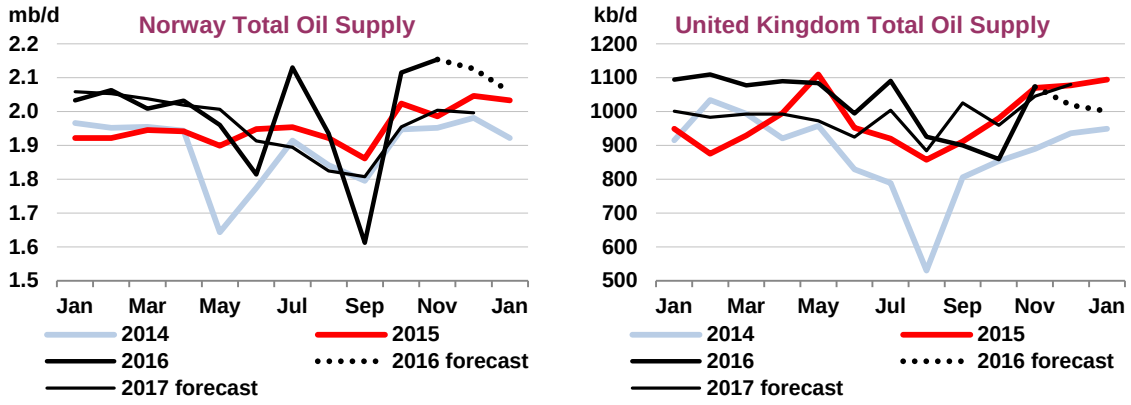


*Source: Reuters / IEA

Meanwhile, loading schedules for BFOE crude, which underpins the Dated Brent futures contract, rose to an 11-month high in January. Shipments of Brent, Forties, Oseberg and Ekofisk were expected to average 985 kb/d in January, compared with 950 kb/d in December. Loadings are set to drop back to 965 kb/d in February on slightly lower scheduled Forties and Ekofisk volumes.

Norway – October actual, November provisional: Inching up another 40 kb/d, Norwegian oil production hit its highest level in nearly six years in November at 2.15 mb/d. Output stood 170 kb/d, or 8%, above a year earlier, supported by new field start-ups such as the Goliat and Edvard Grieg fields. Goliat produced a new high of 98 kb/d in October, while Edvard Grieg produced close to a record 71 kb/d.

First oil from Aker BP's Ivar Aasen field was reported on 24 December. The field, which is located in the northern part of the North Sea, comprises three discoveries including Ivar Aasen, West Cable and Hanz. The first two fields are being developed under phase one while the Hanz field is part of the second phase. Production from the field is estimated to reach 45 kb/d in the first phase and 66 kb/d at when both phases reach peak output in 2019. Meanwhile, Eni was forced to once again shut down the Goliat field in December due to a fault in its offloading equipment. Repair works were delayed due to rough weather conditions and the field was only expected to restart during the second half of January.



UK – October actual, November preliminary: Preliminary JODI data suggest UK total oil production rose 215 kb/d in November, to its highest level since July. The increase followed a resumption of flows from Buzzard, UK's largest field, which had been shut for maintenance during September and October. At 1.07 mb/d, total UK oil production was unchanged from a year earlier.

Non-OECD

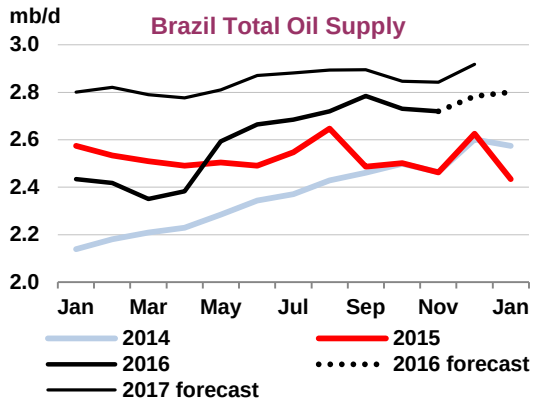
Latin America

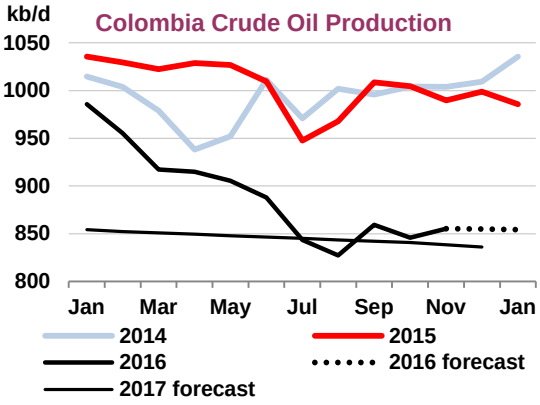
Brazil – November actual: While slipping by a marginal 10 kb/d from a month earlier, Brazilian oil production stood nearly 260 kb/d above a year earlier in November – at 2 720 kb/d. A delayed start-up of Petrobras's Lapa field to December and lower onshore output in São Paulo state took total oil output some 45 kb/d below our earlier forecast. Annual gains continued to come from the Lula field, which produced 663 kb/d in November, an increase of 282 kb/d compared with only one year ago. Petrobras reported first oil from the offshore Lapa field in the Santos Basin. The Cidade de Caraguatatuba floating production, storage and offloading vessel, which has a production capacity of 100 kb/d, started pumping on 20 December, several months behind schedule.

Preliminary data suggest output continued to increase in December. Petrobras reported that its domestic production surpassed the 2.3 mb/d mark for the first time in December, and achieved 2.4 mb/d by the end of the month. For the year as a whole, Petrobras produced 2 145 mb/d of oil in Brazil, an increase of only 0.75% from the year earlier, but in line with the company's production target. Including its foreign

partners and independent oil producers, Brazilian oil production, including around 100 kb/d of NGLs, is on track to average 2.6 mb/d in 2016, an increase of 75 kb/d from a year earlier.

Growth is set to accelerate in 2017, however, to 240 kb/d, not only stemming from the three production units started in 2016 (Cidade de Marica, Cidade de Saquarema, and, most recently, Cidade de Caraguatatuba), but also as Petrobras plans to start up another four production units during 2017. These are Tartaruga Verde e Mestiça, Lula Norte (P-67), Lula Sul (P-66) and extended well tests at the Libra field it is developing along with Shell, Total, CNOOC and CNPC.





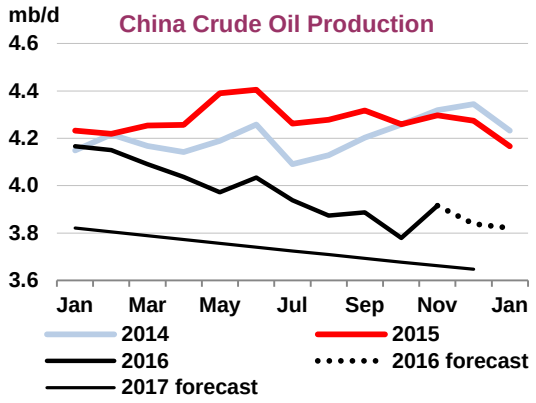
Colombia – November actual: Colombia produced an average of 855 kb/d of crude oil in November, roughly unchanged from October, but 135 kb/d less than a year earlier. For the year as a whole, Colombian crude oil supplies are on track to decline by 120 kb/d, to 890 kb/d, after the two largest producers, Ecopetrol and Pacific Exploration and Production (formerly known as Pacific Rubiales) slashed their spending and as security concerns forced companies to halt drilling. While Ecopetrol cut spending by 25% and 66% over 2015 and 2016, respectively, Pacific E&P cut its capex by 70% in 2015 and a further 83% over the first three quarters of 2016.

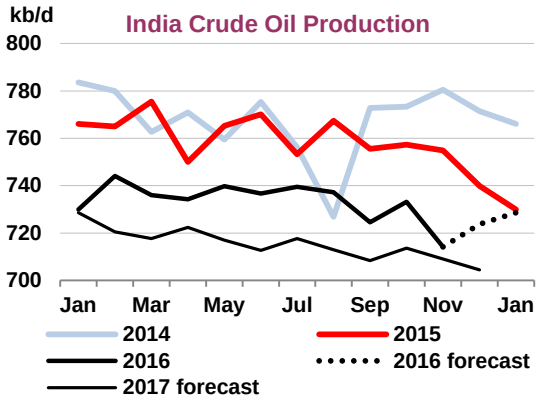
Colombian crude oil production declines are expected to ease in 2017, to around 40 kb/d, as a higher oil price and government incentives are set to reverse the investments drought. According to the Colombian Petroleum Association (ACP), oil firms plan to invest more than $3 billion on exploration and development projects in Colombia in 2017, a 30% increase from the $2.3 billion spent this year which was the lowest capital spending seen since 2004. ACP had surveyed 28 of its members representing 98% of Colombia's crude oil production.

As a result of the decreased spending, the number of exploration and production wells drilled in 2016 totalled only 25 and 150 compared with 25 and 710, respectively, in 2015, and more than 130 and 1 000 in 2013 when Colombia was still seeing strong growth in crude output. Drilling activity is already trending higher, however, as the rig count hit 19 in December, after bottoming out at two in April according to the latest Baker Hughes International Rig Count data.

Asia

China – November actual: After months of losses, Chinese crude oil production rose by 135 kb/d in November to 3.9 mb/d. Over the first 10 months of the year, China's oil supplies dropped by a staggering 495 kb/d. Compared with the year earlier, output was 295 kb/d lower over the period and as much as 480 kb/d (11%) below year earlier levels in October – when production hit a seven-year low. Chinese oil companies had severely curtailed upstream spending in 2016 and shut marginal wells with lifting costs higher than international oil prices. With global crude oil prices recovering to above $50/bbl, production declines are likely to slow in coming months. For the year as a whole, Chinese's crude oil production is nevertheless expected to decline by 240 kb/d, to 3.7 mb/d, compared with a 315 kb/d decline last year.

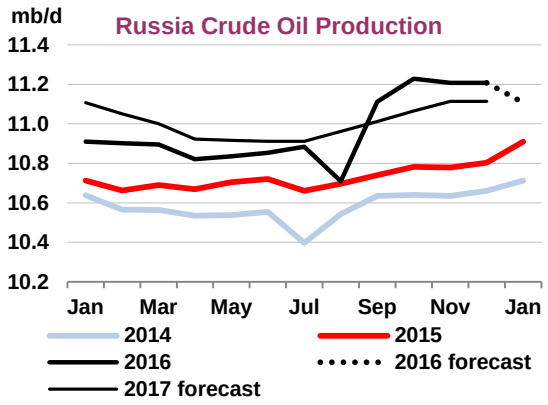




India – November actual: Indian crude and condensate output dropped by 20 kb/d in November, to 715 kb/d – its lowest level in more than seven years. Over the January-November period, production was roughly 30 kb/d, or 4%, lower than the same period the previous year, and well short of the target published by the Indian Ministry of Petroleum and Natural Gas. According to the oil companies, the main reasons for the shortfall were natural declines at mature and marginal fields, and lower than planned contributions from high producing areas like Greater Hapjan, Greater Chandmari and Nahorkatiya fields.

Former Soviet Union

Russia – November actual, December provisional: Russian crude and condensate output held steady above 11.2 mb/d in December, close to the October and November levels, according to preliminary data from the Central Dispatching Unit, the statistical arm of the Energy Ministry. For 2016 as a whole, production averaged 10 965 mb/d, an increase of 245 kb/d from a year earlier, driven by gains from Gazprom Neft, Bashneft and Novatek in particular. Russia's largest producer, Rosneft, saw output increase by 0.5% year-on-year on due to a 40% hike in drilling activity. The second largest producer, Lukoil, remained the only major company that saw continued declines, despite also increasing its drilling rates in Western Siberia. Lukoil's domestic supplies fell 3.4% compared with the previous year.



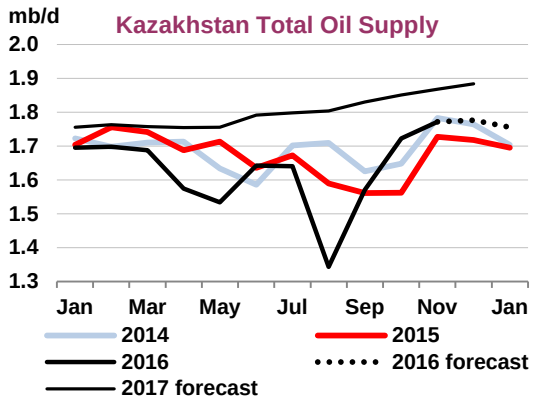
Unusually freezing temperatures across large parts of Russia during early January have curbed production by more than the 50-100 kb/d cut pledged as part of the output deal agreed in November. Energy Minister Alexander Novak had earlier said that Russia's output cut would be gradual, with 50-100 kb/d taken offline in January, rising to 200 kb/d by end-March and then 300 kb/d by end-April. Preliminary daily production data for the start of January, however, suggests output had dropped nearly 130 kb/d compared with December, as temperatures below minus 50°C in Siberia forced faster than planned output cuts.

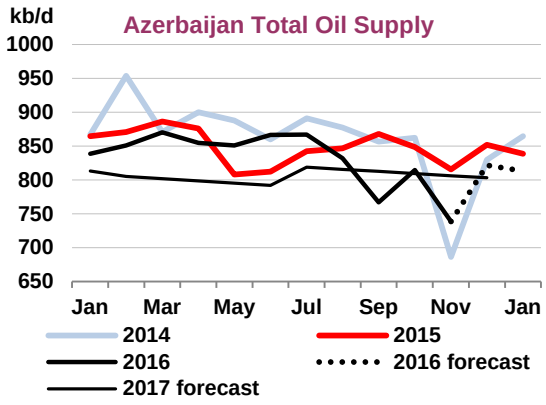
Even as production is set to fall from end-2016 levels, output is still showing growth of 40 kb/d in 2017. Crude oil production will average just over 11 mb/d, with NGLs contributing an additional 370 kb/d to take total supplies close to 11.4 mb/d.

Kazakhstan – November actual: Kazakhstan's crude and condensate production rose another 50 kb/d in November to 1.7 mb/d as the newly commissioned Kashagan field continued to ramp up output. Kashagan produced 92.5 kb/d in November, an increase of 44.8 kb/d from October. Loading schedules for the CPC pipeline suggest Kashagan output increased further in December

The near term outlook for Kazakhstan's oil production has been clouded by the agreement to cut its production along with other OPEC and non-OPEC producers, just as its long delayed Kashagan project starts commercial output. In early January, the Ministry of Oil and Gas said it had reduced its overall crude oil production by 20 kb/d, in line with the agreed cut, with the decrease coming mostly from fields in the Aktobe and Kyzylorda regions and that output at three key projects - Karachaganak, Tengiz and Kashagan - would not be affected.

The North Caspian Operating Company (NCOC), which consists of Eni, Total, Exxon, Shell and Kazmunaigas, had earlier said that Kashagan would reach its first phase plateau of around 370 kb/d by year-end. Comments from the ministry however suggest that the project will ramp up towards only 180 kb/d during the second half of the year. In the meantime, Kazakh producer Kazmunaigas has pledged a 15% increase in its capital budget for 2017, in order to maintain output at current levels by improving the recovery rates at its two main onshore fields Uzen and Emba. The ministry said earlier this month that Kazakhstan aims to increase production to 81 million metric tons (about 1.7 mb/d) in 2017 compared with 78 million tons last year, or an increase of roughly 60 kb/d. Assuming a quicker ramp-up at Kashagan, in line with the latest guidance from Eni, the field's operator, we expect Kazakh supply growth to average a more substantial 160 kb/d.





Azerbaijan – November actual: Azeri oil production, meanwhile, fell 75 kb/d in November, to 740 kb/d. Output at the Azeri-Chirag-Guneshli (ACG) complex dropped to 530 kb/d from 607 kb/d a month earlier, due to maintenance at the East Azeri platform for most of the month. Azerbaijan and the BP-led consortium reached agreement to extend the life of the ACG field to 2050 from the current deadline of 2024. BP and state SOCAR are setting up a new production sharing agreement for the 25-year extension, and hope to squeeze out an extra 2.5 billion barrels of oil using enhanced oil recovery technology for a total investment of $20 billion.

Africa

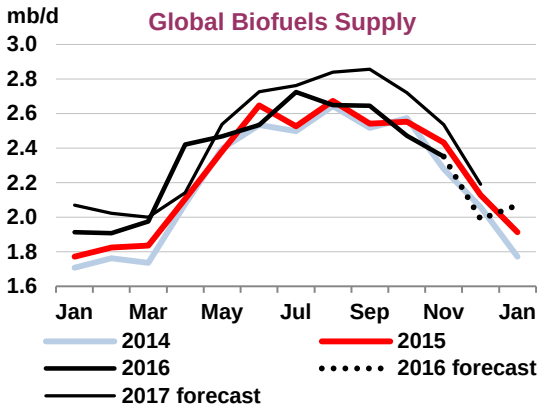
Estimates of oil production in the **Republic of Congo** have been revised lower for 2016 and 2017 based on the latest tanker tracking data. Despite the start-up of a number of new projects, loading data suggest crude oil shipments from Congo averaged around 210 kb/d – a drop of more than 20 kb/d compared

with a year earlier. In December 2015, Total started up its 40 kb/d Moho Bilondo Phase 1 bis while Chevron commissioned its 40 kb/d Lianzi project, which straddles the border of Angola. Eni also expanded output from its Nenè Marine and its Litchendjili fields during the year. Total plans to commission its Moho Nord development during 2017, which will add a further 100 kb/d of capacity according to the company.

The forecast for oil production in **Ghana** for 2017 has also been lowered since last month's Report. Tullow reported in an operational update in early January that it had curbed its output expectations for its newly commissioned Tweneboa, Enyenra, Ntomme (TEN) project to 50 kb/d (from 80 kb/d expected previously). The lower guidance follows some issues with managing pressure in the Enyenra reservoir and because no new wells can be drilled until after the International Tribunal for the Law of the Sea issues a final ruling by year-end with regard to a maritime border dispute between Ghana and Côte d'Ivoire. TEN, which started up last August, produced an average of 14.6 kb/d in 2016. Tullow also issued new guidance for its Jubilee field. Jubilee production dropped to 73.7 kb/d last year following problems with the FPSO's turret. Output is set to drop further, to 68.5 kb/d in 2017 as production has to be shut for an estimated 12 weeks for remediation works.

Oman – November actual: According to the Ministry of Oil and Gas, Oman has begun reducing crude oil and condensate production by 45 kb/d from January as part of its contribution to the OPEC and non-OPEC cuts. The ministry says that output has been reduced to 970 kb/d, down from 1 mb/d in December. Oman produced 1 015 mb/d in November, the latest month for which official statistics are available. Of this 924 kb/d was crude and the remainder condensates. Over January-November, Oman oil production averaged 1 005 mb/d, up 2.7% from the same period a year earlier.

Biofuels



Global biofuels production for 2016 has been revised down by 35 kb/d since last month's Report, due to lower production of Brazilian ethanol during the second half of the year. Ethanol production in Brazil, which accounted for 21% of global biofuels production, contracted 6% y-o-y in calendar year 2016 to around 480 kb/d. Despite an early start to the harvest due to the availability of standover sugar cane from 2015, the rebound in international sugar prices resulted in a higher share of sugar production at the expense of fuel ethanol. During 2016, price competitiveness generally tipped in favour of gasoline resulting in a reduction in hydrous ethanol consumption, only partially compensated by higher blended anhydrous ethanol. Global biofuels production growth last year was therefore only 50 kb/d. Gains of 115 kb/d are forecast this year, as Brazilian biofuels is expected to return to growth.

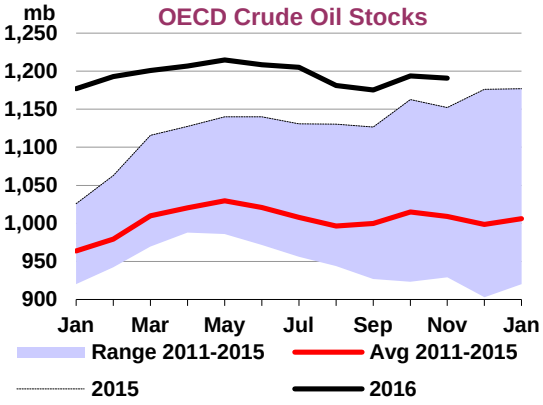
STOCKS

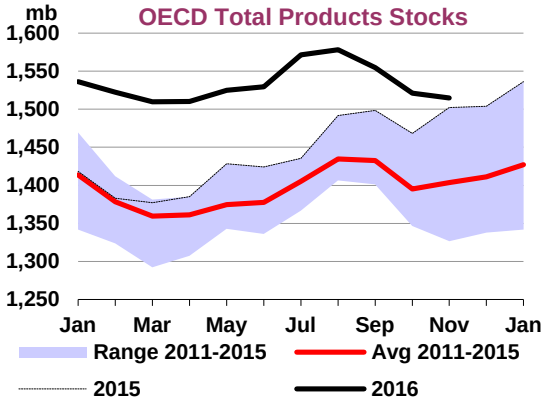
Summary

- **OECD industry stocks fell across crude and oil products in November, marking a fourth monthly decline**. However, inventories remain 311 mb above the five-year average.

- **Preliminary data show a fifth monthly draw in oil stocks** in the OECD in December, with crude oil rather than products likely to have driven the fall.

- **Chinese crude stocks recovered in November on higher imports** and likely built further in December.





Global Overview

Oil stocks fell in the OECD in November for the fourth month in a row, driven by lower crude and oil product inventories. While this is the longest stretch of draws since 2011, the drop in stocks since July's peak of 3 101 mb has remained modest relative to the relentless builds witnessed in recent years. For example, it was not uncommon in 2014-2015 to see months when stocks built by 40 mb or more whereas they have fallen by only 17 mb per month on average since July in a period that usually sees lower stocks due to widespread refinery maintenance. Furthermore, OECD stocks remain above the symbolic 3 000 mark and 311 mb higher than the five-year average. Our implied balances for 4Q16 show a global build in stocks, thus contrasting with the picture seen in the OECD. It seems likely that a large portion of the stock overhang in 4Q16 was therefore absorbed by countries situated outside the OECD, including China and India. Stock balances for China show an implied build of 71 mb during the August to November period, an average of approximately 600 kb/d.

OECD stock position at end-November and revisions to preliminary data

OECD industry stocks drew by a larger-than-seasonal 11.6 mb to end November at 3 033 mb, their fourth consecutive monthly fall. Crude stockpiles decreased seasonally by 3.2 mb to 1 191 mb due to higher refinery runs. Oil product stocks also drew, whereas they normally build at this time of year. They were 1 515 mb at end-month, down 6.4 mb from October. 'Other oils' (largely LPG and naphtha) led the fall, helped by seasonally colder temperatures in the northern hemisphere and exports to Asia. Gasoline, middle distillates and fuel oil built, even if this was not the case in all three OECD regions. The French strategic petroleum reserve gained 7 mb due to a classification change. There was a corresponding drop in French commercial holdings.

Preliminary Industry Stock Change in November 2016 and Third Quarter 2016

	November 2016 (preliminary) (million barrels)				November 2016 (preliminary) (million barrels per day)				Third Quarter 2016 (million barrels per day)			
	Am	Europe	As. Ocean	Total	Am	Europe	As. Ocean	Total	Am	Europe	As. Ocean	Total
Crude Oil	**-0.7**	**0.1**	**-2.6**	**-3.2**	**-0.02**	**0.00**	**-0.09**	**-0.11**	**-0.31**	**-0.04**	**-0.01**	**-0.36**
Gasoline	5.8	-0.8	-1.0	4.0	0.19	-0.03	-0.03	0.13	-0.15	-0.07	-0.03	-0.25
Middle Distillates	6.9	-1.7	-5.1	0.1	0.23	-0.06	-0.17	0.00	0.18	0.00	0.07	0.25
Residual Fuel Oil	1.6	0.5	0.8	2.9	0.05	0.02	0.03	0.10	-0.02	-0.05	0.00	-0.07
Other Products	-9.5	-1.5	-2.4	-13.4	-0.32	-0.05	-0.08	-0.45	0.29	-0.03	0.08	0.34
Total Products	**4.8**	**-3.4**	**-7.8**	**-6.4**	**0.16**	**-0.11**	**-0.26**	**-0.21**	**0.30**	**-0.15**	**0.12**	**0.27**
Other Oils[1]	-2.6	0.7	-0.1	-2.0	-0.09	0.02	0.00	-0.07	0.10	0.04	0.01	0.15
Total Oil	**1.5**	**-2.7**	**-10.4**	**-11.6**	**0.05**	**-0.09**	**-0.35**	**-0.39**	**0.10**	**-0.16**	**0.13**	**0.07**

1 Other oils includes NGLs, feedstocks and other hydrocarbons.

Preliminary data for December show OECD inventories falling for a fifth month in a row, by 13.3 mb, but they are likely to remain above the symbolic 3 000 mb mark. Crude stocks are likely to have dropped by a further 19.6 mb during December thanks to the second largest export flow of US crude seen since Congress authorised domestic exports at the end of 2015. The open arbitrage from the Atlantic Basin to Asia was a major factor. Meanwhile, oil product stocks are likely to have built due to higher refinery runs. Gasoline, middle distillates and fuel oil inventories all increased, whereas propane and naphtha stocks fell due to a continuation of the export trend to Asia seen in November.

Revisions versus December 2016 Oil Market Report

(million barrels)

	Americas		*Europe*		*Asia Oceania*		*OECD*	
	Sep-16	Oct-16	Sep-16	Oct-16	Sep-16	Oct-16	Sep-16	Oct-16
Crude Oil	**2.0**	**12.5**	**1.5**	**2.2**	**0.0**	**0.0**	**3.5**	**14.6**
Gasoline	0.0	3.5	0.1	2.0	0.0	-0.1	0.1	5.5
Middle Distillates	0.0	5.9	0.0	-6.5	0.1	-0.5	0.1	-1.1
Residual Fuel Oil	0.0	0.1	0.0	-0.6	0.0	-0.2	0.0	-0.7
Other Products	0.0	2.3	0.2	0.6	0.0	-0.4	0.2	2.5
Total Products	**0.0**	**11.8**	**0.2**	**-4.6**	**0.1**	**-1.1**	**0.3**	**6.2**
Other Oils[1]	-0.4	-4.0	0.0	-0.1	0.0	0.5	-0.4	-3.6
Total Oil	**1.6**	**20.3**	**1.7**	**-2.4**	**0.1**	**-0.6**	**3.4**	**17.2**

1 Other oils includes NGLs, feedstocks and other hydrocarbons.

On the receipt of more complete data, OECD inventories were revised up by 3.4 mb for September and 17.2 mb for October. For September, crude oil stocks were raised by 3.5 mb and oil products by 0.3 mb, while “other oils” were reduced by 0.4 mb. For October, crude was revised up by 14.6 mb, oil products up by 6.2 mb and “other oils” down by 3.6 mb.

Recent OECD industry stock changes

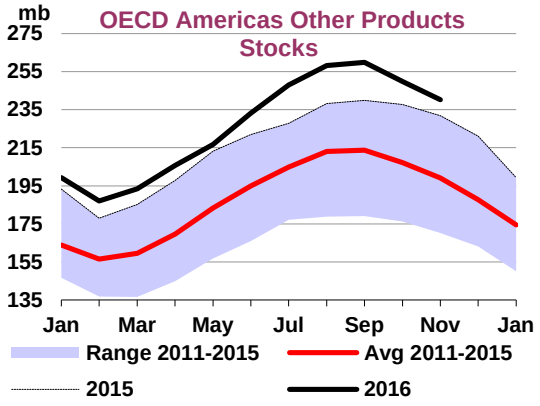
OECD Americas

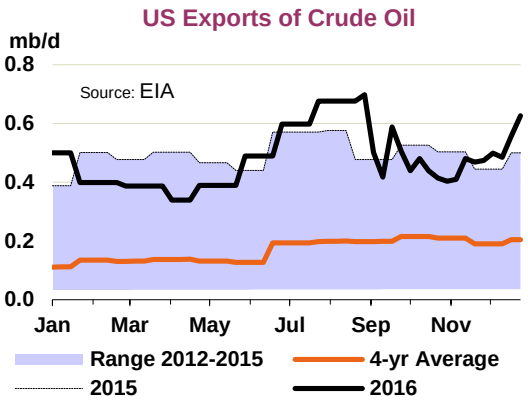
Commercial holdings in the OECD Americas gained by 1.5 mb in November in line with seasonal norms to reach 1 625 mb, with a build observed in oil products and a small draw in crude. Crude stocks fell 0.7 mb to 646 mb as US refineries ramped up runs after the end of seasonal maintenance work and with higher exports to Europe and Asia following the widening of the spread between European and Middle Eastern benchmarks and US crudes. This pattern held in December with an even higher amount of crude exported from the US.

Gasoline stocks returned to growth in November and were up 5.8 mb to 263 mb thanks to higher refinery output. Stocks of middle distillates (+6.9 mb) and fuel oil (+1.6 mb) also rose. By contrast, stocks of ‘other products’ (mostly US propane) fell for the second month in November by 9.5 mb and were 19.6 mb below the historical record reached in September, as consumption picked up seasonally and US exports grew in line with strong demand from Asia. Propane exports from the US Gulf Coast grew in

2016 with the expansion of Enterprise's LPG terminal near Houston. In December, Phillips 66's new LPG terminal in Freeport, Texas, became fully operational, thus increasing US export capacity.

Preliminary data from the US EIA suggest that US crude stockpiles fell in December after three consecutive months of builds. They were 480 mb at end-month, down 6.8 mb on November. The fall was largely driven by higher refinery runs and what amounted to the second largest export flow seen since the US Congress authorised domestic crude exports at the end of 2015. The opening of a new export terminal in November, Occidental's Ingleside near Corpus Christi, Texas, beefed up US crude export capacity. Nonetheless, crude stocks were higher by 28.6 mb than at the end of 2015. As US refineries continued to increase runs, oil product stocks gained in December. Gasoline stockpiles increased by 7.6 mb despite steady exports to Mexico and Latin America. Imports into the US Atlantic Coast (PADD 1) fell in December, but were forecast to rise in January due to strong demand in the area. Stocks of middle distillates also built to their highest level since March 2016 on poor export opportunities to Europe, even if this could change in January with colder temperatures witnessed in the Mediterranean area. Propane stocks declined for a third month running with the return of cold temperatures in the US and a strong demand pull from China and the rest of Asia, and were below their December 2015 level. Fuel oil stocks were up 2 mb to 42 mb.





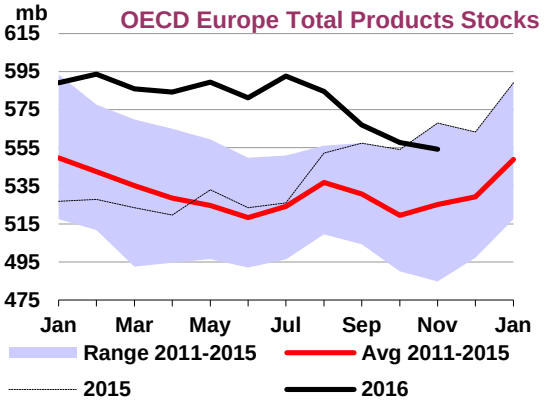
In other developments, the US *Department of Energy* announced in early January the sale of up to 8 mb of crude from the Strategic Petroleum Reserve (SPR). Bids were due by 17 January, but deliveries will not take place until February or March and are thus unlikely to show up in stocks figures before then. The US currently has 695 mb of crude stored at underground caverns in Texas and Louisiana. The SPR has hovered between 690-695 mb since mid-2011, when the last major sale took place. Across the OECD, total strategic crude and oil product stocks amounted to 1 600 mb in November, up 7.2 mb on October and 20.4 mb from November 2015.

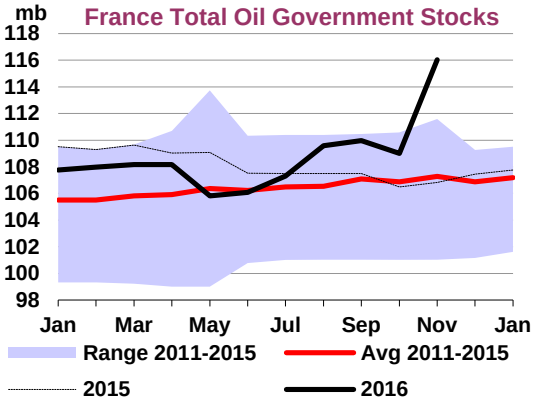
OECD Europe

European industry inventories fell counter-seasonally in November to reach 971 mb, their lowest level since September 2015, driven by oil products. A drop in middle distillates imports linked to refinery maintenance in Russia and the Middle East, as well as strong demand for European gasoline in the US and Middle East, were largely responsible. By contrast, crude stockpiles were stable after they had fallen the previous month, with higher production from the North Sea and a steady level of imports.

Oil product stocks decreased for the fourth month in a row to 554 mb in November. This came despite higher runs at European refineries following the end of seasonal turnarounds, and was due to lower diesel cargo arrivals and high gasoline exports. Middle distillate stocks fell counter-seasonally by 1.7 mb to 299 mb as maintenance at refineries in Russia and Saudi Arabia curtailed exports to Europe. Gasoline inventories also drew by 0.8 mb to 92 mb with higher demand for exports to the Middle East and the US.

Stocks of other products, including naphtha and LPG, also fell on the month, whereas fuel oil was the only oil product to show a rise in inventories. The French SPR gained 7 mb in November to 116 mb due to a classification change. Industry players decided to delegate a larger share of their stockholding requirement to the country's stocks agency Sagess. There was a corresponding drop in French commercial inventories.

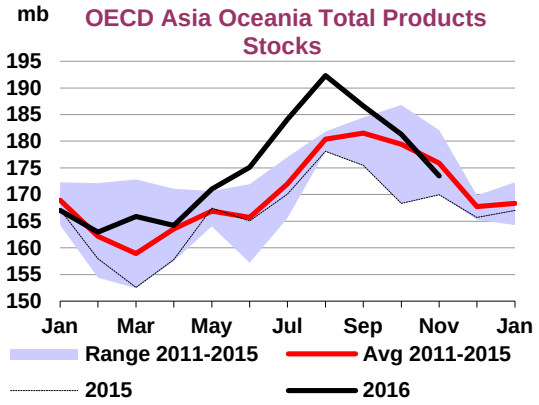


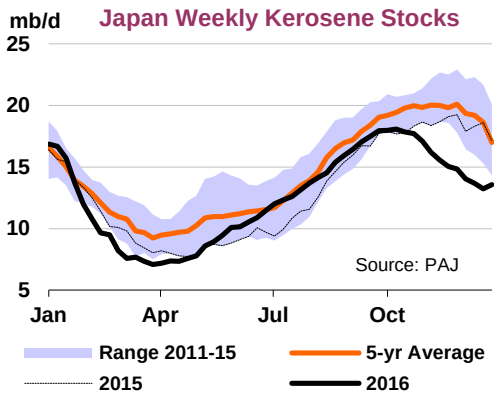


Preliminary data from Euroilstock for 16 European countries showed total industry stocks more than made up for the fall seen in November, rising by 15.3 mb month-on-month in December on the back of higher inventories of middle distillates (+14.6 mb), gasoline (+4 mb) and fuel oil (+2.1 mb). Crude stocks, which had risen in November, fell by 5.3 mb in December as refineries increased output. To the contrary, reports concerning oil products held in independent storage in Northwest Europe showed a consistent draw in diesel and gasoil in particular even as consistently low water levels on the Rhine prevented barges from sailing fully loaded to the demand centres of Germany, Eastern France and Switzerland. Gasoline stocks, for their part, rose in the latter part of December and early January.

OECD Asia Oceania

Commercial stocks in OECD Asia Oceania fell seasonally by 10.4 mb to 437 mb in November with draws seen in both crude and oil products. Crude inventories decreased by 2.6 mb as Japanese refineries ramped up production following two months of below-normal runs. South Korean crude stocks rose in November, but the draw in Japan was large and more than offset it. Oil product stocks drew by a larger-than-seasonal 7.8 mb to 174 mb at end-November, their lowest level since May 2016. Freezing temperatures in Japan boosted demand for kerosene, and this in turn meant OECD Asia Oceania middle distillate stocks fell by 5.1 mb in November to 67 mb, even if they remained marginally above their level of the previous year. 'Other products' drew by 2.5 mb, gasoline by 1 mb, whereas fuel oil gained 0.8 mb.



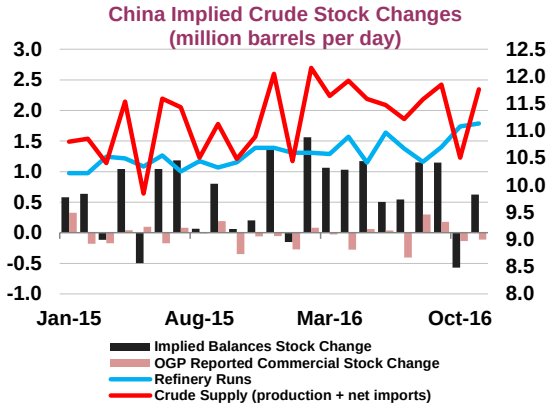


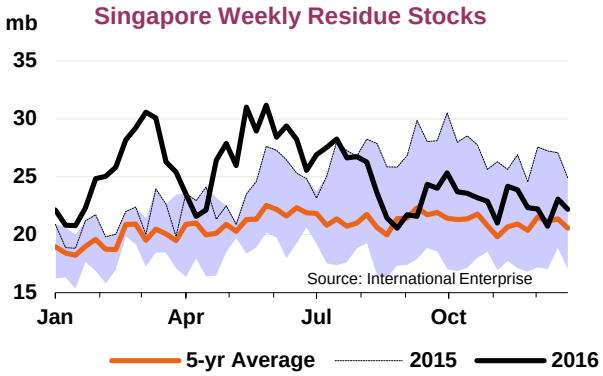
Preliminary weekly data from the *Petroleum Association of Japan* (*PAJ*) suggest that total oil stocks decreased by a further 10.2 mb over December and that once again they fell across crude and oil products. Kerosene stocks drew by 1.4 mb in December to their lowest since at least 2008 for this time of year, while gasoline (-0.5 mb), naphtha (-0.4 mb) and jet fuel (-0.5 mb) also fell. Inventories of fuel oil gained, gasoil and diesel were unchanged whereas crude oil fell by a significant 7.4 mb.

Recent developments in Singapore and China stocks

Data from *China Oil, Gas and Petrochemicals* (*China OGP*) indicate that Chinese commercial crude stocks fell by 3.4 mb in November and that gasoil stocks decreased by 2.3 mb, whereas gasoline inventories gained 0.6 mb and kerosene was up 1.8 mb. Gasoil stocks have fallen by a combined 27.2 mb over the August-November period and were 15.2 mb below their level of November 2015. A steady export flow to Singapore and South East Asia contributed to the draw, while Chinese refiners sought to minimise gasoil production due to an oversupply situation.

Despite the draw in commercial crude stocks reported in November, total Chinese crude stocks are likely to have built strongly given that supplies (Chinese crude production plus net imports) outpaced refinery runs by around 18.8 mb. This implies a build for the country's SPR of 22.1 mb (740 kb/d) during the month. Preliminary data for December point to a further acceleration of this trend, with lower forecast refinery runs and a strong rise in crude imports to the highest ever volume. Three SPR sites – Zhoushan Phase 2, Huizhou and Jinzhou – are still filling crude, according to various reports.

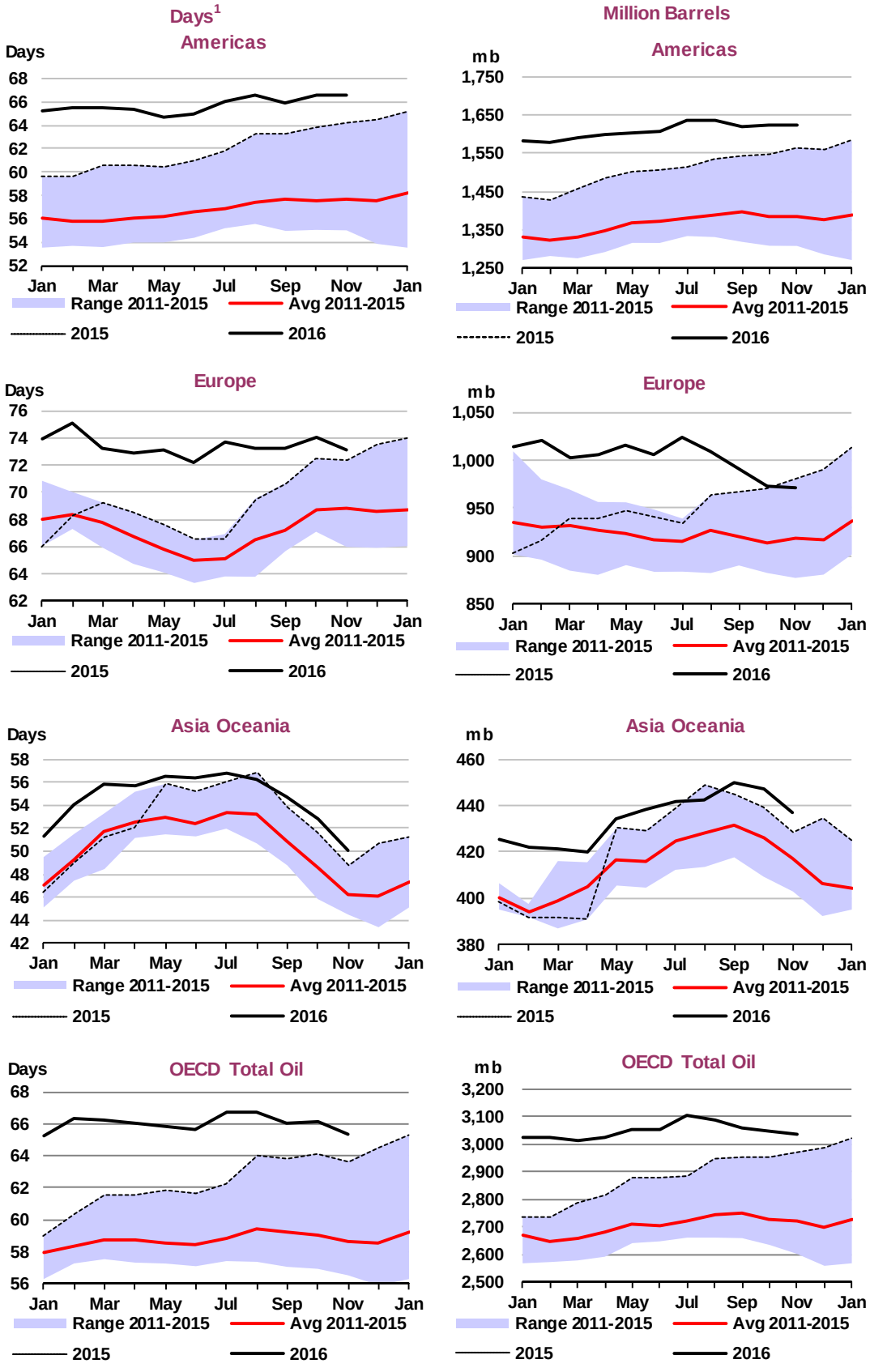




According to weekly data from *International Enterprise*, fuel oil inventories in Singapore stood at 20.1 mb by end-December, their lowest level in 22 months. The fall in stockpiles came amid strong fuel oil prices in the region with robust demand from China ahead of Chinese New Year, and low arrivals. A string of fuel oil cargoes from Europe were due to arrive in Singapore over the course of January and February, providing some relief, and by mid-January residual fuel stocks were back to 22 mb. In other figures, stocks of middle distillates also fell steeply in December by 4.5 mb with high exports to neighbouring countries, whereas light distillate stocks were broadly stable. The middle distillates stock draw accelerated up until mid-January at least, providing renewed impetus to Asian gasoil differentials.

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

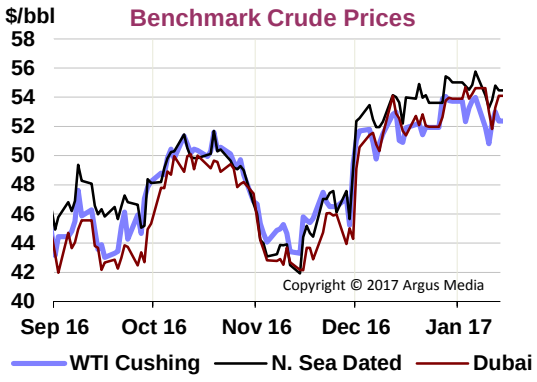
Summary

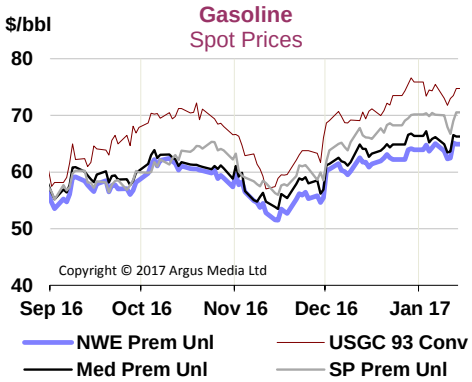
- **Benchmark crude prices increased early in December after OPEC's deal announcement and stayed elevated** throughout the month. At the time of writing, front-month Brent was $54.40/bbl.

- **Sour benchmark Dubai, after weakening initially, rose in the second half of December** on the back of lower planned OPEC output, opening the arbitrage to Asia for Brent and WTI-linked crudes.

- **Oil product prices generally followed the crude price rise, even if they lagged** in most regions. Fuel oil in December was a strong performer for the second month running due to supply shortages.

- **Spot freight rates for dirty and clean tankers continued to rise in December** with high shipments from OPEC and non-OPEC countries, and the return of refineries from maintenance.





Market overview

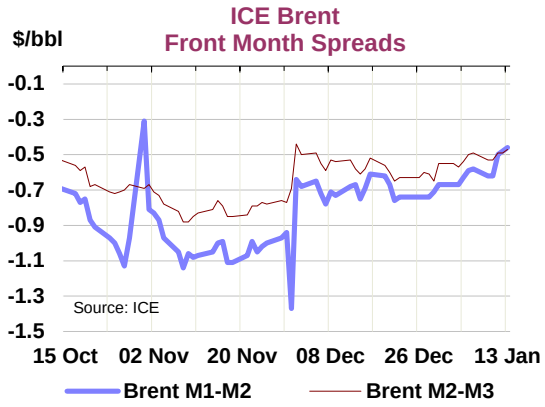
In early December, outright oil prices were boosted by OPEC's announcement of an output cut for an initial six-month period and non-OPEC's decision to follow through with its own cuts. Brent prices stayed elevated throughout the month between $53-57/bbl. At the time of writing in mid-January, prices were still within this range. In the physical markets, sour crude continued to outperform light sweet grades with the majority of the output cuts centred on sour fields. Brent-linked crudes from the North Sea, West Africa and the Caspian also gained with higher demand from Asian refiners. Lighter grades for delivery in the Mediterranean fell relative to Brent, while WTI-linked crudes from North America were the weakest performers on the global scene with expectations of higher crude production in the US this year. Global spot product prices went up too, but they lagged behind crude oil, leading to weaker refinery cracks in most regions. Fuel oil was a strong performer for the second month running due to supply shortages, while US gasoline prices also gained significantly. Middle distillate prices rose uniformly across all three major pricing regions.

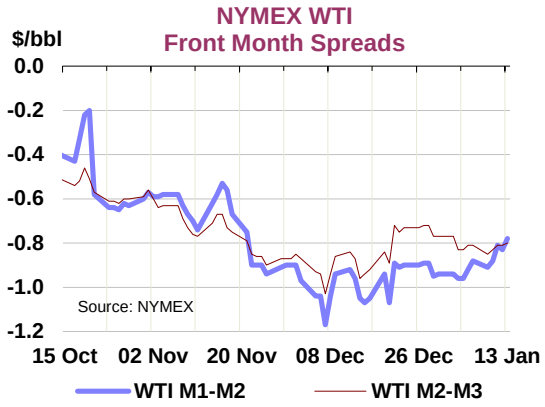
Futures markets

Front-month ICE Brent crude futures rose by $7.84/bbl on an outright basis in December to $54.40/bbl as a result of OPEC's decision to cut output on 30 November, later complemented by additional cuts from non-OPEC countries. Economic optimism symbolised by rising equity markets also played a part in the uptrend. Prices gained strongly in the immediate aftermath of the OPEC announcement but then hovered between $53-57/bbl for the rest of the month. Brent was $54.92/bbl at the time of writing, still within this range. Long-dated Brent inter-month spreads narrowed after the deal and have been relatively stable since. Brent spreads for 4Q17 delivery have been in backwardation since early

December, signalling that on current fundamentals traders expect sizeable stock draws in the second half of 2017. Backwardation, when prompt prices are higher than further out on the curve, is typically the sign of a tight market with stock draws, whereas contango is the opposite.

The rolling Month 1-Month 2 spread moved from $0.94/bbl in contango on 29 November, a day before the OPEC deal, to a lesser contango of $0.42/bbl at the time of writing, helped by forecast output cuts from OPEC and non-OPEC, and strong demand from Asia. Refiners in Europe and Asia absorbed 9-10 mb of unsold physical North Sea oil held in floating storage offshore the UK over the course of December, even if 2-3 mb remained at the time of writing.





Inter-month spreads in the NYMEX West Texas Intermediate (WTI) contract moved up after the OPEC deal, but in contrast to Brent have largely moved back to their end-November level since, showing that traders expect a lesser impact from the OPEC output deal in the US, perhaps due to higher forecast production this year. In parallel, the Month 1 prompt differential between WTI and other international benchmarks (Brent, Dubai) widened in December and the first half of January, encouraging higher exports from the US in the short-term.

Prompt Month Oil Futures Prices

(monthly and weekly averages, $/bbl)

	Oct	Nov	Dec	Dec-Nov Avg Chg	% Chg	Week Commencing: 12 Dec	19 Dec	26 Dec	02 Jan	09 Jan
NYMEX										
Light Sweet Crude Oil	49.94	45.76	52.17	6.41	14.0	51.93	52.56	53.86	53.34	52.08
RBOB	62.58	57.94	66.23	8.29	14.3	64.90	67.14	70.08	68.66	66.64
ULSD	65.85	61.57	69.79	8.22	13.3	69.76	69.73	71.47	71.05	69.12
ULSD ($/mmbtu)	11.61	10.86	12.31	1.45	13.3	12.30	12.30	12.60	12.53	12.19
Henry Hub Natural Gas ($/mmbtu)	3.07	2.87	3.58	0.71	24.7	3.47	3.48	3.80	3.29	3.28
ICE										
Brent	51.39	47.08	54.92	7.84	16.7	54.91	54.99	56.32	56.55	55.03
Gasoil	62.12	57.33	64.96	7.63	13.3	64.87	65.40	67.29	66.22	64.62
Prompt Month Differentials										
NYMEX WTI - ICE Brent	-1.45	-1.32	-2.75	-1.43		-2.98	-2.43	-2.46	-3.21	-2.95
NYMEX ULSD - WTI	15.91	15.81	17.62	1.81		17.83	17.17	17.61	17.71	17.04
NYMEX RBOB - WTI	12.64	12.18	14.06	1.88		12.97	14.58	16.22	15.32	14.56
NYMEX 3-2-1 Crack (RBOB)	13.73	13.39	15.24	1.85		14.59	15.45	16.68	16.12	15.38
NYMEX ULSD - Natural Gas ($/mmbtu)	8.54	7.99	8.72	0.74		8.83	8.82	8.80	9.24	8.91
ICE Gasoil - ICE Brent	10.73	10.25	10.04	-0.21		9.96	10.41	10.97	9.67	9.59

Source: ICE, NYMEX.

In oil products, the major futures contracts followed crude higher in December, though with varying fortunes. European benchmark ICE Gasoil futures averaged $64.96/bbl, up $7.63/bbl on the month but

down a little relative to Brent futures, as the return of many refineries to full production increased supplies. Persistently low water levels on the Rhine have also prevented barges from moving up the river fully loaded, trapping volumes in the Amsterdam-Rotterdam-Antwerp refining hub. Freezing temperatures across swathes of Europe in early January appeared to have little impact. By contrast, US benchmarks NYMEX Ultra Low Sulfur Diesel (ULSD) and Reformulated Blend-stock for Oxygen Blending (RBOB) rose even higher than crude in December because of strong exports to Latin America and cold temperatures. NYMEX ULSD was up $8.22/bbl to $69.79/bbl in December and RBOB up $8.29/bbl to $66.23/bbl. The Month 1-Month 2 RBOB spread came under heavy selling pressure in the first half of January with higher gasoline cargo arrivals expected in the US Northeast.

Spot crude oil prices

Spot crude oil prices rose on the back of OPEC's decision to cut production. As expected, sour grades from the Middle East and Russia benefitted the most with the brunt of output cuts centred on those regions. Brent-linked crudes from the North Sea, West Africa and the Caspian also gained due to an open arbitrage to Asia, which imported a record amount of crudes. Lighter grades for delivery in the Mediterranean, including Azeri Light and Saharan Blend, fell in relative terms with more output from Libya, while WTI-linked crudes from North America appeared to lag behind the global crude price rise.

Spot Crude Oil Prices and Differentials

(monthly and weekly averages, $/bbl)

	Oct	Nov	Dec	Dec-Nov Avg Chg	%	Week Commencing: 12 Dec	19 Dec	26 Dec	02 Jan	09 Jan
Crudes										
North Sea Dated	49.74	45.13	53.57	8.44	18.7	53.60	54.10	55.25	54.97	54.09
Brent (Asia) Mth 1	50.98	46.07	54.42	8.36	18.1	54.75	54.83	55.75	56.04	55.04
WTI (Cushing) Mth 1	49.89	45.62	52.02	6.40	14.0	51.93	51.93	53.86	53.34	52.08
Urals (Mediterranean)	48.24	43.83	52.29	8.46	19.3	52.30	52.60	53.75	53.66	52.86
Dubai	48.94	43.98	52.08	8.11	18.4	52.52	52.33	53.57	54.36	53.37
Tapis (Dated)	50.09	46.04	54.72	8.68	18.9	54.74	54.90	55.85	55.77	54.89
Differential to North Sea Dated										
WTI (Cushing)	0.15	0.48	-1.55	-2.04		-1.67	-2.17	-1.39	-1.64	-2.00
Urals (Mediterranean)	-1.50	-1.30	-1.28	0.02		-1.30	-1.50	-1.50	-1.31	-1.23
Dubai	-0.80	-1.16	-1.48	-0.33		-1.07	-1.77	-1.68	-0.61	-0.71
Tapis (Dated)	0.35	0.91	1.15	0.25		1.14	0.80	0.59	0.80	0.80
Prompt Month Differential										
Forw ard Cash Brent Mth1-Mth2	-0.70	-1.03	-0.56	0.46		-0.51	-0.51	-0.62	-0.57	-0.45
Forw ard WTI Cushing Mth1-Mth2	-0.47	-0.74	-1.00	-0.26		-1.01	-1.03	-0.92	-0.93	-0.84
Forw ard Dubai Mth1-Mth2	0.29	-0.48	-0.19	0.29		-0.06	-0.29	-0.27	-0.14	0.03

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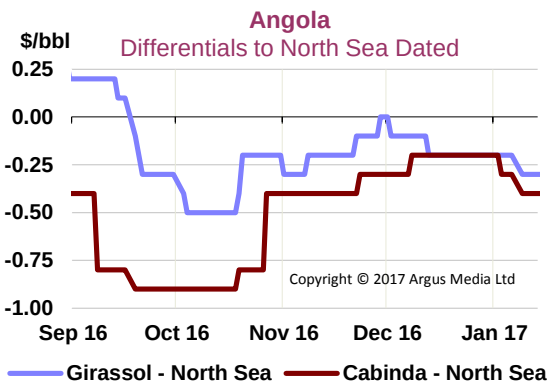
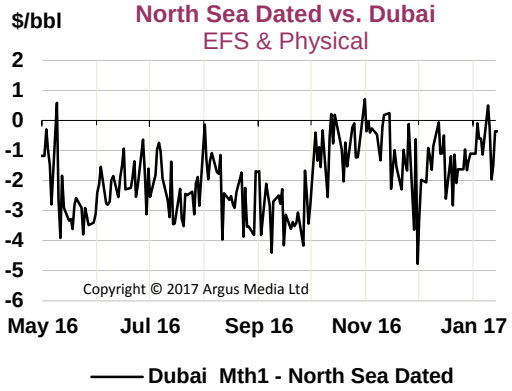
Middle Eastern sour crude benchmark Dubai rose $8.11/bbl in December to $52.08/bbl, maintaining most of the gains achieved against North Sea Dated in October and November. Following a brief period of respite in early December, Dubai has strengthened some more versus North Sea Dated and WTI since mid-December. The Month 1 Brent-Dubai spread stood at $1.71/bbl at the time of publication, close to its narrowest in 15 months. OPEC's decision to cut output of its mostly sour crudes was the main driver behind Dubai's rise. This was underpinned in early January by large buying of Dubai crude by a Chinese refiner in the public trading window. This also incentivised large outflows of crude from the North Sea, the Caspian and West Africa to Asia. Dubai has generally been on an upward trend against North Sea Dated since May 2016 with the spread between the two grades roughly halving in the period, even if it remains some way off the level reached in the summer of 2015 when Asian refiners piled into the grade. Russia's lighter crude blend ESPO, which typically trades against Dubai, also strengthened in December, supported by planned pipeline maintenance and a strong gasoil crack.

Global benchmark North Sea Dated rose $8.44/bbl to $53.57/bbl on an outright basis in December, supported by OPEC's announced production cut and an open arbitrage window to Asia. Crude held in floating storage offshore the UK was largely placed with refiners in Europe and Asia by early January. A total of 6 mb of Forties blend crude loading in January was scheduled to move to Asia at the time of writing, with some Ekofisk going to Canada. The contract-for-difference (CFD) swaps curve analysed in early January pointed to muted price gains ahead for physical North Sea cargoes. The gradual return of Libyan production, which is similar in quality to North Sea grades, no doubt weighed on prices and differentials, but it was barely discernible amid strong buying interest from Asian refiners.

West African crude prices followed North Sea Dated higher, rising by between $8.31-8.59/bbl from November depending on the grade. Nigerian crudes, most notably Bonny Light and Qua Iboe, did not rise as fast as Angolan crudes, a reflection of the general preference for sour grades from refiners as well as continued uncertainty around Nigeria's loadings due to militant uprisings. By early January, most Angolan cargoes loading in February were sold to refiners, whereas the majority of the Nigerian loading programme was still unsold. The spread between Brent and WTI remained relatively wide throughout the month so the arbitrage between Nigeria and the US was not always workable. Asian refiners, mainly from India and China, continued to mop up excess crudes due to favourable economics.





Russian sour Urals crude for delivery in Northwest Europe was up $8.28/bbl on average in December to $51.51/bbl. Physical differentials to North Sea Dated were stable throughout the month, highlighting few changes in supply fundamentals. Urals for delivery in the Mediterranean rose against prices in Northwest Europe, reflecting strong oil products demand in that region and shipping delays in the Bosphorus. Supplies are expected to rise in Novorossiysk during the rest of 2017 and fall moderately in the Baltic. Light Mediterranean grades such as Azeri Light, CPC Blend and Saharan Blend fell relative to North Sea Dated in line with higher production from Libya, which is similar in quality. A record volume of 11 mb of Azeri Light was scheduled to ship to Asia in January following the narrowing of the Brent-Dubai spread, according to market reports. Some Urals and Libyan blend cargoes were also bought by Asian refiners.

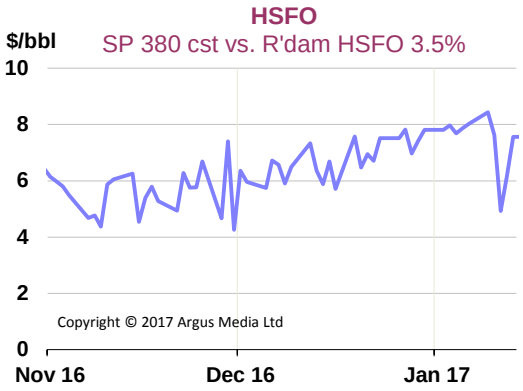
In the US, Light Louisiana Sweet (LLS) moved up $6.82/bbl in December to $53.53/bbl, but this was less than the gains seen for other global crude benchmarks. WTI for delivery in the US Gulf Coast continued its strong run started in November with the commissioning of a new crude export terminal in Ingleside, Texas, and generally improved opportunities for exporting crude from the US in December. Total exports of crude were likely to have risen over December to close to their highest level since the US Congress allowed exports at the end of 2015, and the trend appeared to accelerate in January.

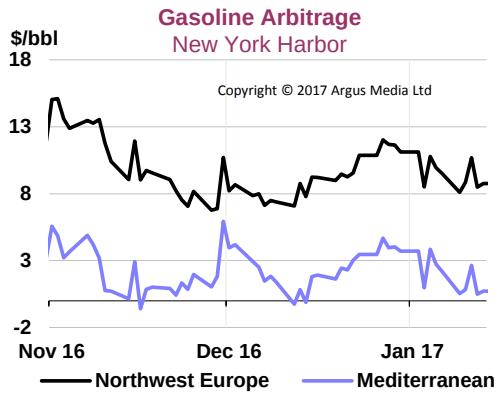
Spot product prices

Global spot product prices went up across the board in December, however they lagged behind crude oil, as tends to be the case in a rising market. Fuel oil was a strong performer for the second month running

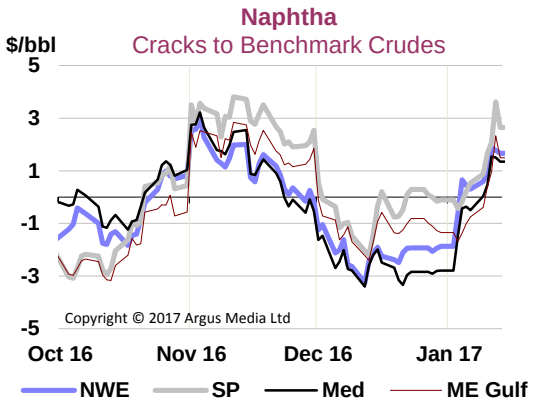
due to supply shortages, while US gasoline prices also went up significantly. Middle distillate prices rose uniformly across all three major pricing regions.

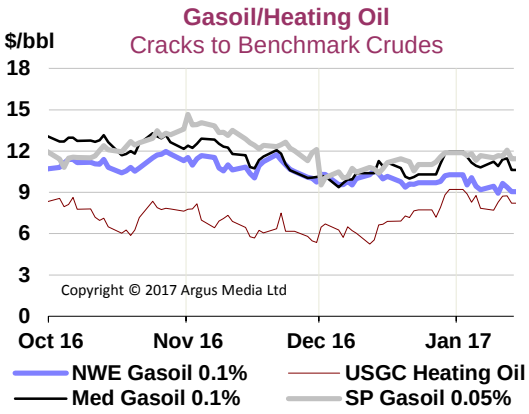
In December, fuel oil prices maintained most of the gains achieved the previous month relative to other oil products and even surpassed them in Asia. The performance was all the more remarkable given that it came amid rising crude prices, which do not traditionally favour the bottom of the barrel. A large cut in Russian fuel exports in 2016 of around 20% has for several months provided support to the product. Singapore 380-cst fuel oil cargoes rose by $7.91/bbl in December, or 19%, to $50.27/bbl with strong Asian demand ahead of Chinese New Year, high bunker fuel sales in Singapore and low cargo arrivals from Europe and the US. Singapore fuel oil stocks were at a 22-month low at end-December and the city-state saw record bunker fuel sales for 2016. Rotterdam 3.5% fuel oil barge prices rose $6.77/bbl to $43.58/bbl in December due to higher exports to Asia, despite sluggish local demand. The price arbitrage between Europe and Asia fell in late December, but it remained generally workable, as it has been for the last few months. Russian exports are likely to fall further in 2017 due to higher export duties.





Gasoline prices went up in December led by significant gains in the US Gulf Coast linked to high export demand from Mexico and Latin America where there are various refinery problems. USGC unleaded gasoline jumped $10.86/bbl month-on-month to $65.66/bbl. Rotterdam premium unleaded barges were less buoyant, rising by $6.75/bbl from November to $61.75/bbl with continued high demand from the US, despite rising freight costs. Exports were likely to be even higher in January with high US and Singapore gasoline cracks. By contrast, demand from West Africa for European gasoline was said to be relatively lower in December and early January amid higher retail prices in Nigeria following last year's reform to the subsidy regime, which has dampened demand. In Singapore, premium unleaded cargoes rose $7.68/bbl in December to $66.68/bbl, amid maintenance at refineries in Asia and the Middle East.





The global naphtha market gained significantly in November, but in December prices did not rise as much as crude and other oil products. Supply in Asia, the key global benchmark, was plentiful for most of

the month with steady exports from India, the US and Europe. Singapore naphtha cargoes moved up $4.69/bbl month-on-month to $51.51/bbl in December. By early January, higher demand from petrochemical crackers meant supplies began to run out and prices rose as a result. Cargo arrivals from Europe were likely to fall by around 5 mb in February relative to January, according to market reports. Rotterdam barge prices rose $5.13/bbl in December to $51.47/bbl.

Finally, middle distillate prices rose in the US, Europe and Asia regions, but they lagged the crude price rise. Rotterdam diesel barge prices gained $7.60/bbl to $64.89/bbl in December. Prices were supported by maintenance work at refineries and cold weather in the northern hemisphere, but they came down in the first half of January due to higher scheduled exports from Russia and the Middle East. Russia's Primorsk, one of the major export outlets globally, is scheduled to send 10.4 million barrels in January, close to a record high, while refineries in the Middle East have now returned from maintenance. A deepening contango on the ICE gasoil futures curve meant longer voyages became profitable in some cases, with at least five tankers seen going around the Cape of Good Hope in January and a Very Large Crude Carrier laden with diesel going from the Caribbean region to Europe. In the first half of January, the price of diesel delivered in the Mediterranean went above that of Northwest Europe due to high demand linked to cold weather. Asian 500 parts per million (ppm) gasoil cargoes rose $6.07/bbl in December to $62.91/bbl with strong demand from China and parts of South East Asia.

Spot Product Prices

(monthly and weekly averages, $/bbl)

	Oct	Nov	Dec	Dec-Nov		Week Commencing:					Oct	Nov	Dec	Chg
				Chg	%	12 Dec	19 Dec	26 Dec	02 Jan	09 Jan				
Rotterdam, Barges FOB											**Differential to Dated Brent**			
Premium Unl 10 ppm	60.51	55.00	61.75	6.75	12.3	61.67	62.46	64.02	64.43	63.71	10.77	9.87	8.18	-1.69
Naphtha	49.15	46.34	51.47	5.13	11.1	51.20	51.93	53.30	55.17	55.45	-0.59	1.21	-2.10	-3.31
Jet/Kerosene	60.86	56.97	64.00	7.03	12.3	64.32	64.09	65.87	64.77	64.46	11.11	11.84	10.43	-1.40
ULSD 10ppm	61.82	57.29	64.89	7.60	13.3	65.17	65.28	67.29	66.01	64.67	12.07	12.16	11.32	-0.84
Gasoil 0.1%	60.91	55.98	63.51	7.53	13.4	63.87	63.71	65.35	64.54	63.38	11.17	10.85	9.94	-0.91
LSFO 1%	44.08	40.62	48.29	7.67	18.9	48.57	49.03	49.85	50.76	51.60	-5.66	-4.51	-5.28	-0.76
HSFO 3.5%	39.26	36.80	43.58	6.77	18.4	44.24	43.94	44.79	45.21	44.72	-10.48	-8.33	-9.99	-1.66
Mediterranean, FOB Cargoes											**Differential to Urals**			
Premium Unl 10 ppm	61.58	56.91	63.63	6.72	11.8	63.79	64.44	66.59	66.11	64.96	13.34	13.08	11.34	-1.74
Naphtha	48.18	45.09	49.70	4.61	10.2	49.76	49.61	50.92	52.98	53.84	-0.06	1.26	-2.60	-3.85
Jet Aviation fuel	60.06	55.87	62.61	6.74	12.1	63.11	62.32	64.29	63.49	63.42	11.82	12.04	10.32	-1.72
ULSD 10ppm	62.03	56.96	64.11	7.15	12.5	64.42	64.06	66.33	65.45	64.79	13.78	13.13	11.82	-1.31
Gasoil 0.1%	60.87	55.39	62.79	7.40	13.4	63.12	62.87	65.37	64.78	63.98	12.63	11.56	10.50	-1.06
LSFO 1%	44.83	41.05	49.24	8.19	20.0	49.38	50.18	51.11	52.71	53.96	-3.41	-2.78	-3.05	-0.27
HSFO 3.5%	41.68	38.17	45.04	6.87	18.0	45.51	45.59	46.64	47.50	47.32	-6.57	-5.66	-7.25	-1.59
US Gulf, FOB Pipeline											**Differential to LLS**			
Super Unleaded	69.78	61.84	71.25	9.41	15.2	70.19	71.64	75.58	74.42	73.21	18.43	15.13	17.72	2.59
Unleaded	62.21	54.80	65.66	10.86	19.8	64.36	67.26	70.83	69.39	67.35	10.85	8.09	12.14	4.05
Jet/Kerosene	60.68	56.11	62.80	6.69	11.9	62.68	63.06	65.66	64.55	63.51	9.32	9.40	9.28	-0.13
ULSD 10ppm	64.80	59.60	67.38	7.78	13.0	67.30	67.72	69.96	68.26	66.59	13.44	12.89	13.85	0.96
Heating Oil	58.76	53.32	60.42	7.10	13.3	59.68	60.77	63.52	63.23	61.98	7.40	6.61	6.90	0.28
No. 6 3%*	40.08	38.15	45.22	7.08	18.6	45.45	45.10	46.91	47.15	45.93	-11.28	-8.57	-8.30	0.26
Singapore, FOB Cargoes											**Differential to Dubai**			
Premium Unleaded	62.99	58.99	66.68	7.68	13.0	66.44	67.96	69.69	70.19	68.85	14.05	15.02	14.59	-0.43
Naphtha	47.70	46.82	51.51	4.69	10.0	51.36	52.02	53.53	54.39	55.55	-1.24	2.84	-0.58	-3.42
Jet/Kerosene	61.02	56.63	64.10	7.47	13.2	64.47	64.56	66.30	66.18	65.10	12.08	12.66	12.02	-0.64
Gasoil 0.05%	61.23	56.84	62.91	6.07	10.7	63.28	63.44	65.21	65.98	65.04	12.29	12.87	10.83	-2.04
LSWR Cracked	49.04	49.93	59.15	9.22	18.5	59.30	59.55	60.54	61.09	58.99	0.10	5.96	7.07	1.11
HSFO 180 CST	45.02	43.59	51.44	7.85	18.0	51.76	52.19	52.97	53.80	52.42	-3.93	-0.39	-0.64	-0.25
HSFO 380 CST 4%	43.76	42.36	50.27	7.91	18.7	50.63	50.99	51.89	53.10	51.66	-5.18	-1.62	-1.81	-0.20

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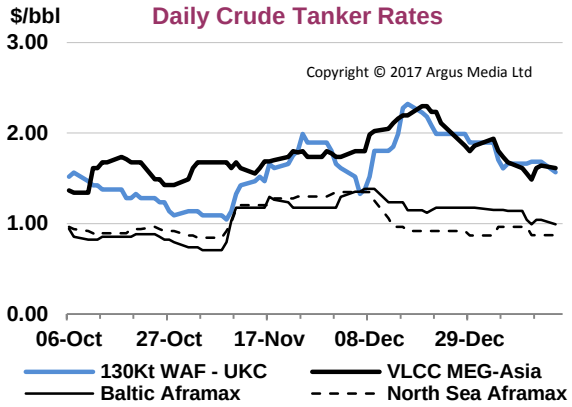
Freight

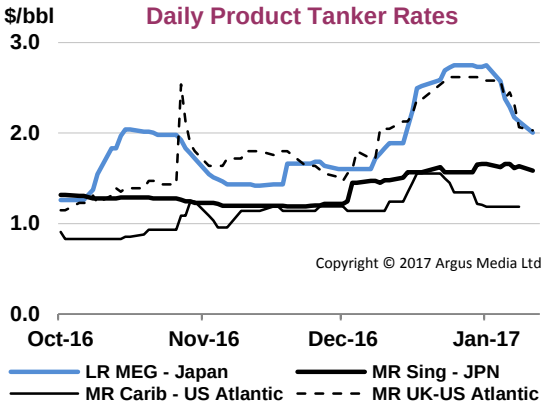
Freight rates for **Very Large Crude Carriers** (VLCCs) went up in December, buoyed by high liftings out of the Middle East and record demand from Asian refiners. The rate on the Middle East Gulf (MEG) to Asia route was $2.01/bbl on average, up from $1.70/bbl in November, but it tumbled to as low as $1.49/bbl

on 11 January with lower forecast loadings following the OPEC deal as well as the delivery of new-build vessels in the New Year.

Suezmaxes on the West Africa to Northwest Europe route also gained in December as Asian refiners sought barrels in that region due to the narrow Brent-Dubai spread, despite a drop in Nigerian production (See *OPEC Supply*). They were chartered for $1.87/bbl on average, up from $1.50/bbl in November. The average rate for Suezmaxes on that route fell by a significant $0.90/bbl in 2016 with production issues in Nigeria and a general oversupply of vessels. On the West Africa to US Gulf Coast route, rates went up by $0.26/bbl in December to $1.85/bbl, but fell again in the first half of January as the arbitrage became more difficult following the widening of WTI versus Brent.

For smaller **Aframax** ships, prices also went up in the Baltic in December with the introduction of ice restrictions and a general rise in crude loadings out of the North Sea and Baltic regions. Freight for Baltic Aframaxes was $1.23/bbl in December, up from $1.06/bbl the previous month. By contrast, rates in the North Sea fell in December, while in the Mediterranean prices also dropped with higher ship availability.





Clean product rates in the **West of Suez** area were mostly higher in December, reflecting the return of many refineries from maintenance and open arbitrage windows for several oil product markets. Freight on the benchmark UK Continent-US Atlantic Coast route averaged $1.98/bbl in December, up from $1.79/bbl in November, and went higher still in January, with open opportunities to send gasoline from Europe to the US. However, freight on the US Gulf Coast-UK Continent route fell in December with below-normal shipments of diesel linked to an oversupply situation in Europe.

East of Suez, the benchmark LR MEG-Japan rate rose to its highest level since August, and at $2/bbl in December was up $0.44/bbl on the month. The Asian naphtha market was buoyant in early January, leading to a flurry of activity and higher freight rates. Freight on the MR MEG-Singapore route also rose $0.20/bbl with generally higher demand for oil products linked to colder temperatures.

REFINING

Summary

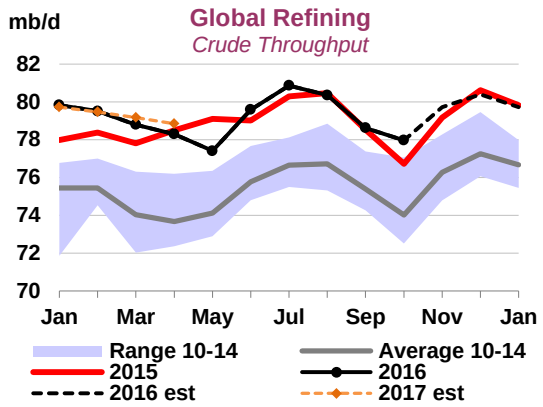
- **4Q16 global refinery throughput is estimated to have seasonally declined by 610 kb/d** from 3Q16, up 520 kb/d year-on-year (y-o-y). At 79.26 mb/d, the estimate is 160 kb/d higher than in our previous *Report*.

- **Our forecast for 1Q17 refinery throughput is revised down by 260 kb/d to 79.36 mb/d,** only 80 kb/d higher y-o-y, as higher refining activity in 4Q16 slowed the global refined product stocks drawdown.

- **Following implied product stock draws in 1Q17, our forecast for crude throughput for April 2017 is at 78.75 mb/d, with a y-o-y growth rebounding to 550 kb/d** (See *Are we there yet?*).

Global refinery overview

After an uninspiring 3Q16, 4Q16 global refinery intake, as data gradually comes in, is shaping up to be more robust. The latest estimate is revised up by 160 kb/d. At 79.26 mb/d, global refining throughput grew by 520 kb/d y-o-y, after a mere 190 kb/d of growth in 3Q16. October's y-o-y high growth was in stark contrast to the previous two months. While global runs in August and September were very close to year earlier levels – down by 100 kb/d and up by 90 kb/d, respectively – October's throughput surged 1.25 mb/d y-o-y.



OECD October refinery intake was finalised 300 kb/d lower from the preliminary numbers, now showing 640 kb/d y-o-y decline. This was more than offset by a 1.89 mb/d growth in non-OECD countries, with China and India each accounting for a third of the volume. For November, with either preliminary or finalised data available for some 80% of the global intake, there seems to be a more measured growth at 540 kb/d y-o-y, with slowdown throughout the Western hemisphere compensated by higher runs in Europe and Asia.

Global Refinery Crude Throughput[1]

(million barrels per day)

	3Q2016	Oct 16	Nov 16	Dec 16	4Q2016	2016	Jan 17	Feb 17	Mar 17	1Q2017	Apr 17
Americas	**19.2**	17.8	18.7	19.0	**18.5**	**18.9**	18.8	18.5	18.5	**18.6**	18.5
Europe	**12.3**	12.1	12.4	12.3	**12.3**	**11.9**	11.9	11.8	11.5	**11.7**	11.3
Asia Oceania	**6.7**	6.4	6.9	7.1	**6.8**	**6.8**	7.2	7.2	7.0	**7.1**	6.9
Total OECD	**38.2**	36.3	38.0	38.5	**37.6**	**37.7**	38.0	37.6	37.0	**37.5**	36.7
FSU	**6.9**	6.8	7.1	7.2	**7.1**	**6.9**	7.0	6.9	6.8	**6.9**	6.7
Non-OECD Europe	**0.5**	0.5	0.5	0.5	**0.5**	**0.5**	0.5	0.5	0.5	**0.5**	0.5
China	**10.6**	11.1	11.1	11.1	**11.1**	**10.8**	10.9	10.9	11.0	**11.0**	11.0
Other Asia	**10.5**	10.4	10.5	10.5	**10.4**	**10.4**	10.5	10.3	10.6	**10.5**	10.7
Latin America	**4.2**	4.0	3.9	4.0	**4.0**	**4.2**	4.1	4.2	4.1	**4.1**	4.2
Middle East	**6.9**	6.8	6.5	6.5	**6.6**	**6.7**	6.6	6.8	6.8	**6.7**	6.8
Africa	**2.0**	2.0	2.0	2.0	**2.0**	**2.0**	2.0	2.2	2.1	**2.1**	2.1
Total Non-OECD	**41.7**	41.6	41.6	41.8	**41.7**	**41.5**	41.6	41.8	42.0	**41.8**	42.1
Total	**79.9**	77.9	79.6	80.3	**79.3**	**79.2**	79.6	79.4	79.1	**79.4**	78.7
Year-on-year change	*0.19*	*1.25*	*0.54*	*-0.23*	*0.52*	*0.39*	*-0.11*	*-0.04*	*0.38*	*0.08*	*0.55*

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

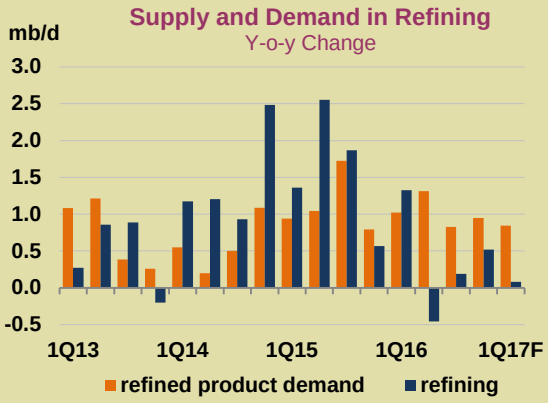
Our forecast for 1Q17 is revised down by 260 kb/d, to only 80 kb/d y-o-y growth, as our analysis of global refined product stocks shows that lower refining throughput will be required to further reduce the inventory overhang (See *Are we there yet?*). Further out, April sees a more robust throughput gain of 550 kb/d.

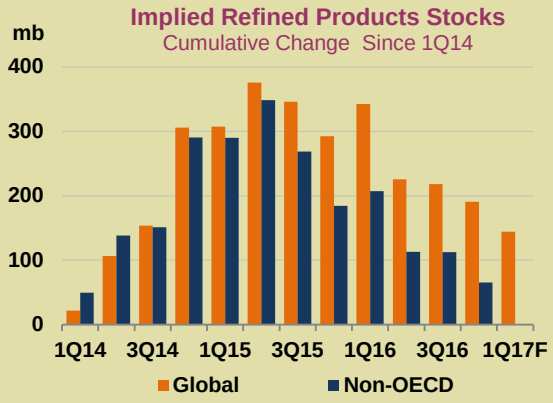
Are we there yet?

After two years of runaway refinery throughput growth, the pace slowed down significantly in 2016, implying global product stock draws. In the absence of comprehensive global crude and product stocks data, any attempt to split our *Report's* "miscellaneous to balance" line into crude oil and products would be more an act of art rather than of science. Hoping to borrow techniques from the school of realism rather than surrealism, we looked at estimating global refined product stock changes in recent years, to help us forecast refinery throughput.

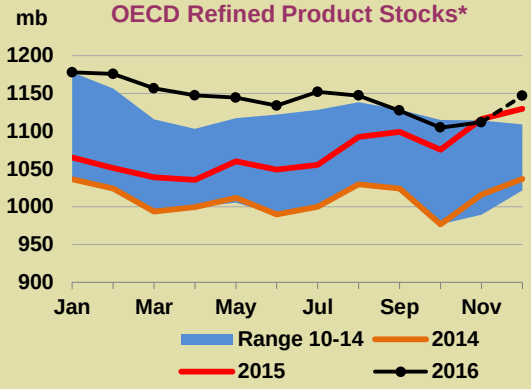
Our October *Report* contained an estimate of about 400 mb of stock builds in 2014-15, using a top-down approach based on refinery runs and refined product demand calculations. The latter was derived from headline demand numbers, excluding biofuels supply, non-refined NGL supply, and products from gas-to-liquids and coal-to-liquids projects. This approach works well on an annual basis, but not for quarterly or monthly analysis. To estimate how much of the stocks overhang we have worked through in 2016 on a quarterly basis, we used a somewhat less accurate but still helpful methodology.

A proxy for refined product demand can be derived from our headline oil demand by simply excluding LPG/ethane and naphtha categories. Refineries do partially provide for the world's LPG and naphtha demand, but since this analysis uses annual growth numbers rather than absolute volumes, this simplification is justified.





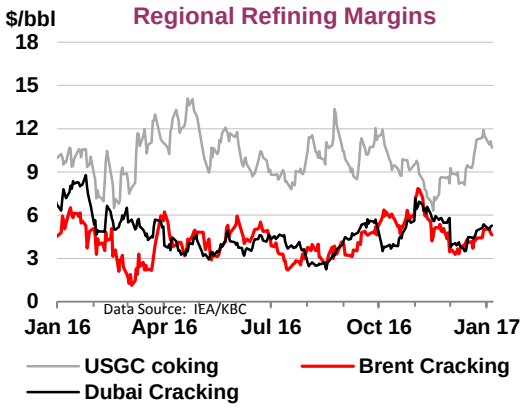
Global refined product oversupply in 2014-15 is well demonstrated by the gap between annual growth in refinery runs and refined product demand. This translated into close to 380 mb additional refined product stocks globally at its peak. Subtracting OECD refined stocks data for the period, we derived non-OECD refined product stocks movement. Interestingly, OECD refined product stocks in December, judging by weekly data for the US and Japan, and Euroilstock for Europe, marked yet another seasonal high, after a two-month pause, implying a build in 4Q16.



These calculations show that non-OECD refined product stocks drew in four out of the last six quarters, with the overhang at the end of 4Q16 at relatively insignificant levels. Thus, while the non-OECD refined products stocks situation is rather bullish for refinery runs, the overhang in OECD regions, which host most of the trading and pricing hubs, are likely to continue acting as a dampener on near-term forecast refining activity.

Margins

For the first time since July 2015, the Brent price stayed firmly above $50/bbl for the whole month of December, having gained some $8/bbl from November. European and Singapore margins were quick to concede, losing between $1.35 - $1.90/bbl. Nevertheless, continuously tight fuel oil markets maintained simple margins in positive territory. US margins, by contrast, not only braved the crude oil price increase but made gains symmetrical to losses in Europe and Singapore. Thanks to continued unplanned refinery stoppages, gasoline and diesel cracks were pushed higher, resulting in as much as $2/bbl month-on-month gains for margins. At the same time, persisting problems in Mexican and Venezuelan refining continues to pull products from the US Gulf coast.



IEA/KBC Global Indicator Refining Margins[1]

($/bbl)

	Monthly Average				Change	Average for week ending:				
	Sep 16	Oct 16	Nov 16	Dec 16	Dec 16-Nov 16	16 Dec	23 Dec	30 Dec	06 Jan	13 Jan
NW Europe										
Brent (Cracking)	4.19	5.76	5.65	4.02	-1.63	4.07	4.21	4.81	4.69	5.00
Urals (Cracking)	5.96	7.27	7.01	5.44	-1.57	5.63	5.58	6.15	6.19	6.12
Brent (Hydroskimming)	0.56	2.07	2.27	0.82	-1.45	0.96	1.06	1.42	1.51	2.16
Urals (Hydroskimming)	1.27	2.26	2.61	1.02	-1.59	1.39	1.11	1.44	1.62	1.61
Mediterranean										
Es Sider (Cracking)	6.29	8.01	7.80	6.36	-1.45	6.35	6.40	7.18	7.04	6.94
Urals (Cracking)	6.36	7.16	7.39	5.71	-1.68	5.84	5.84	6.64	6.33	6.38
Es Sider (Hydroskimming)	3.08	4.67	4.60	3.38	-1.22	3.39	3.53	4.04	4.38	4.71
Urals (Hydroskimming)	1.99	2.37	2.83	1.10	-1.73	1.33	1.27	1.77	1.88	2.11
US Gulf Coast										
50/50 HLS/LLS (Cracking)	7.41	7.32	5.83	7.73	1.90	6.98	8.55	10.34	9.39	9.00
Mars (Cracking)	5.40	4.98	4.51	5.91	1.40	5.17	6.42	8.41	7.30	7.04
ASCI (Cracking)	5.14	4.65	4.37	5.74	1.37	5.18	6.05	8.06	6.99	6.74
50/50 HLS/LLS (Coking)	9.25	9.28	7.35	9.34	1.99	8.50	10.25	12.12	11.03	10.54
50/50 Maya/Mars (Coking)	10.22	9.81	8.09	9.56	1.47	8.88	10.18	11.58	10.83	10.77
ASCI (Coking)	10.32	10.14	8.84	10.31	1.47	9.57	10.87	12.98	11.45	11.12
US Midcon										
WTI (Cracking)	11.93	7.42	6.26	8.22	1.96	7.25	10.11	11.01	11.43	9.18
30/70 WCS/Bakken (Cracking)	11.27	7.82	7.78	8.76	0.98	7.31	9.87	11.60	11.27	9.11
Bakken (Cracking)	12.75	9.06	8.20	8.99	0.79	7.27	9.99	12.03	11.77	9.86
WTI (Coking)	14.13	9.33	7.69	9.75	2.06	8.68	11.73	12.80	13.17	10.67
30/70 WCS/Bakken (Coking)	14.95	11.00	10.09	11.10	1.01	9.55	12.12	14.26	13.82	11.48
Bakken (Coking)	13.67	9.84	8.75	9.57	0.81	7.79	10.62	12.74	12.45	10.42
Singapore										
Dubai (Hydroskimming)	1.04	0.08	2.35	0.84	-1.50	0.50	1.08	1.55	1.64	1.74
Tapis (Hydroskimming)	1.20	3.37	5.30	3.96	-1.35	4.09	4.11	4.80	5.19	4.87
Dubai (Hydrocracking)	5.04	4.44	6.08	4.28	-1.80	3.85	4.57	5.26	5.20	5.35
Tapis (Hydrocracking)	3.45	5.91	6.96	5.09	-1.87	5.20	5.36	6.19	6.66	6.53

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

Source: IEA, KBC Advanced Technologies (KBC)

OECD refinery throughput

October data for OECD throughput were finalised 300 kb/d lower than the preliminary data, due to downward revisions in Canada and Japan. Total runs fell 640 kb/d y-o-y with weak performance in Canada and Mexico the biggest contributors. November preliminary monthly data show a post-maintenance surge in US and European runs and a seasonal ramp-up in OECD Asia. On balance though, we have revised down the estimate for 4Q16 runs by 110 kb/d on weaker performance in North America (See *North America: runs heading south*?). The trend of y-o-y decline extends through the first four months of this year, with 1Q17 and April lower by an average 350 kb/d y-o-y.

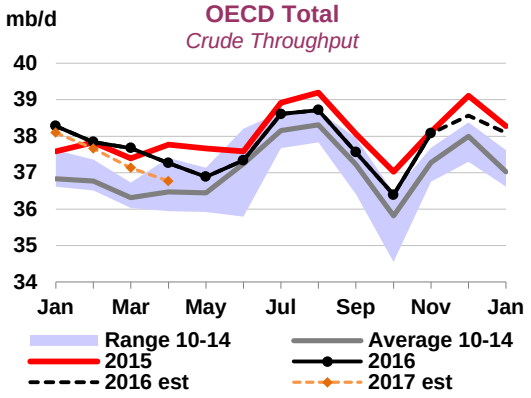
Refinery Crude Throughput and Utilisation in OECD Countries
(million barrels per day)

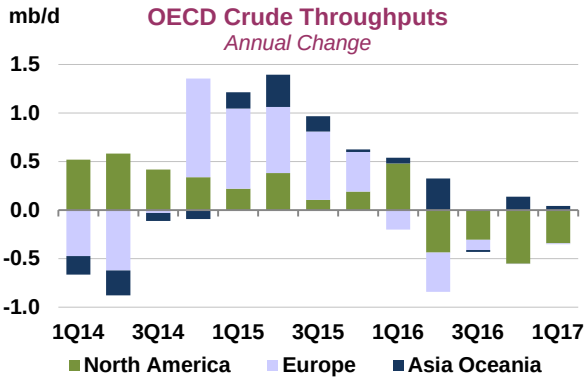
	Jun 16	Jul 16	Aug 16	Sep 16	Oct 16	Nov 16	Change from Oct 16	Change from Nov 15	Utilisation rate[1] Nov 16	Utilisation rate[1] Nov 15
US[2]	16.43	16.56	16.59	16.36	15.45	16.25	0.80	-0.24	0.88	0.92
Canada	1.57	1.77	1.75	1.54	1.38	1.57	0.18	-0.02	0.79	0.80
Chile	0.18	0.15	0.17	0.18	0.17	0.15	-0.03	0.00	0.64	0.66
Mexico	1.03	0.93	0.85	0.75	0.80	0.77	-0.04	-0.28	0.46	0.64
OECD Americas[3]	**19.21**	**19.41**	**19.36**	**18.83**	**17.81**	**18.73**	**0.92**	**-0.54**	**0.84**	**0.88**
France	0.76	1.21	1.22	1.20	1.23	1.32	0.09	0.15	0.95	0.84
Germany	1.93	1.98	2.00	1.99	1.95	1.94	-0.01	0.05	0.96	0.93
Italy	1.25	1.34	1.41	1.39	1.23	1.35	0.12	-0.05	0.77	0.80
Netherlands	1.07	1.04	1.10	1.13	1.10	1.12	0.03	0.16	0.87	0.75
Spain	1.21	1.35	1.33	1.31	1.42	1.42	0.00	0.21	0.94	0.80
United Kingdom	1.11	1.09	1.12	1.13	1.11	1.18	0.07	0.00	0.93	0.86
Other OECD Europe	4.16	4.32	4.28	3.93	4.06	4.05	-0.01	-0.28	0.84	0.90
OECD Europe	**11.50**	**12.32**	**12.45**	**12.07**	**12.10**	**12.38**	**0.28**	**0.23**	**0.88**	**0.86**
Japan	2.85	3.03	3.22	3.00	2.77	3.11	0.34	0.00	0.88	0.81
South Korea	2.89	2.98	2.89	2.83	2.87	2.99	0.12	0.26	0.91	0.83
Other Asia Oceania	0.79	0.76	0.70	0.74	0.74	0.76	0.02	0.02	0.77	0.75
OECD Asia Oceania	**6.53**	**6.78**	**6.81**	**6.57**	**6.38**	**6.86**	**0.48**	**0.27**	**0.88**	**0.81**
OECD Total	**37.24**	**38.51**	**38.62**	**37.46**	**36.29**	**37.98**	**1.69**	**-0.04**	**0.86**	**0.86**

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

[2] US50

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



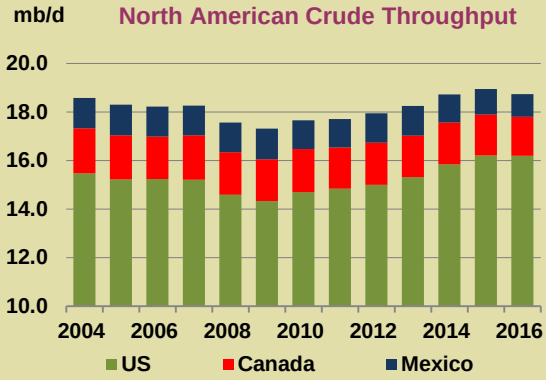


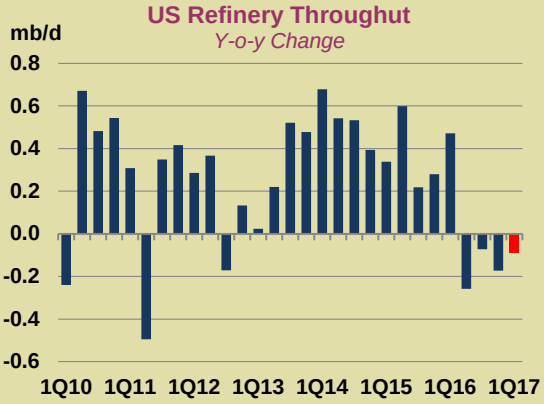
North American refinery woes were probably the main reason behind the renewed appetite in **Europe**, where preliminary November data show significantly higher y-o-y runs, for the first time since January

2016. Spain and France continued operating at high utilisation rates. Contrary to our initial expectations, Total's La Mede refinery in France was not permanently shut in 4Q16, with the closure now reportedly scheduled in spring 2017. Both our 4Q16 and 1Q17 forecast are now flat y-o-y, with April forecast to dip 140 kb/d y-o-y.

North America: runs heading south?

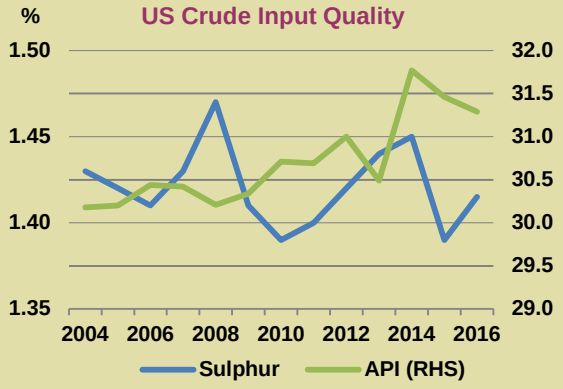
OECD North American refinery throughput has been in y-o-y decline in the last three quarters, in a reversal of a long run of ramp-ups. The last time it saw more than two consecutive quarters of y-o-y declines was in 2008. While Mexican downstream problems and the impact of the Canadian wildfires on 2Q16 throughput explain much of the underperformance, recently the US has started contributing too. Having reached an all-time peak in 2015, North American combined runs were down 200 kb/d in 2016.





While US refiners, especially in the Midcontinent (PADD 2) and on the Gulf Coast (PADD 3) no longer enjoy the oversized WTI discount to Brent that persisted through 2011-14, having reached $26.88/bbl in October 2011, their margins still dominate the global rankings. Recently, the strength in product cracks has come mostly from supply-side issues, rather than demand strength, as refineries have experienced an unusual number of secondary unit problems, forcing them to restrict temporarily crude intake and/or on-spec product output. Refineries likely pushed back maintenance programmes to continue benefitting from higher margins. Equipment fatigue after years of high capacity utilisation is now causing reliability issues, which is only exacerbated by crude diet changes.

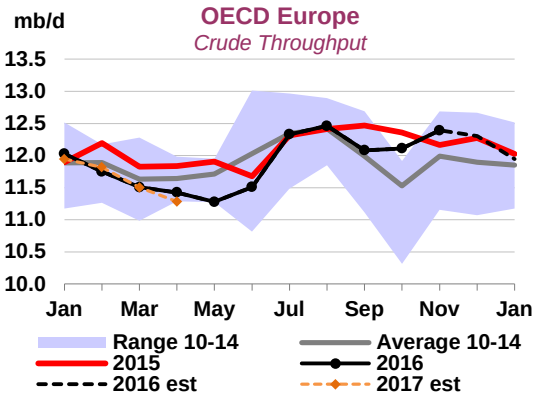
According to the data form the Energy Information Administration, the US input barrel has become sweeter and lighter over the last few years. However, these weighted average statistics do not capture the increasingly wide range of both sulphur and API gravity of the feedstocks. The so-called dumbbell effect of higher proportions of both extra-heavy (Canadian bitumen) and ultra-light crude oils presents challenges to both light fraction evacuation and heavy residue upgrading units.

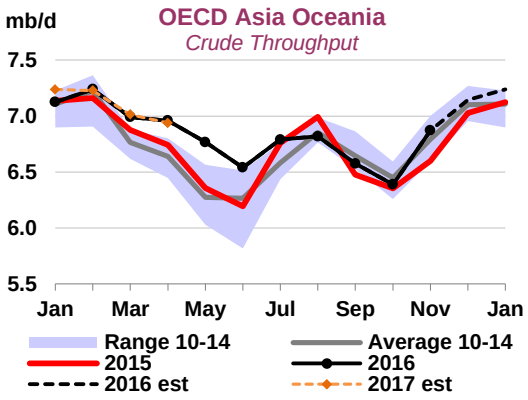


Over the recent years Canadian bitumen volumes have grown to take over 10% share in the US refinery inputs, with its use concentrated in PADD 2, where it accounts for half of crude feedstocks. This type of crude also comes with a very high sulphur content – above 3%, pushing the operating conditions of hydrotreatment units to the limit.

A comprehensive maintenance programme would help to increase the reliability of operations. On the other hand, a much discussed change to US fiscal policy may present yet another serious concern. The proposed border adjustment tax, if applied to petroleum commodities, would especially affect the refining margins in PADD 1 (US North East) and PADD 5 (West Coast), which are more dependent on imported crude oil, possibly forcing them to cut runs. PADD 1, which can more easily be supplied with products from alternative foreign sources, would particularly be at risk.

Refiners in **South Korea** continue to push OECD Asia Oceania runs higher y-o-y, accounting for 255 kb/d of the 270 kb/d gain in November. December weekly data showed refiners in **Japan** seasonally ramping up runs, slightly faster than in December 2015. With Korean growth projected to slow down, 1Q17 throughput in the region is only slightly higher than last year – by 40 kb/d.

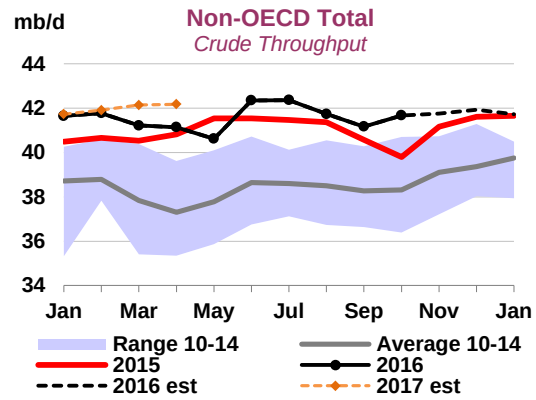


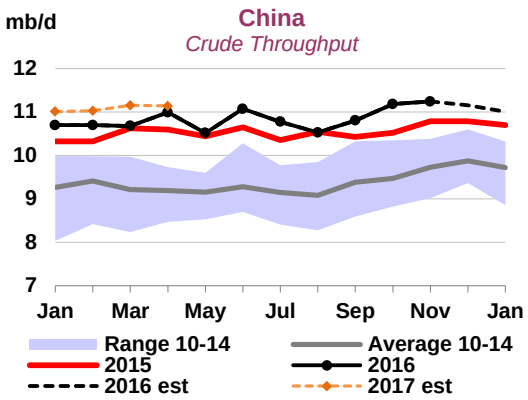


Non-OECD refinery throughput

The October estimate for non-OECD throughput that is now largely finalised shows a y-o-y increase of 1.89 mb/d, the largest in two and a half years. While two thirds came from China and India, another 1 mb/d was added by Russia and Saudi Arabia combined, partly offset by lower runs in Latin America and elsewhere. In October, the difference between non-OECD and OECD monthly throughput stood at 5.3 mb/d, the largest positive gap so far.

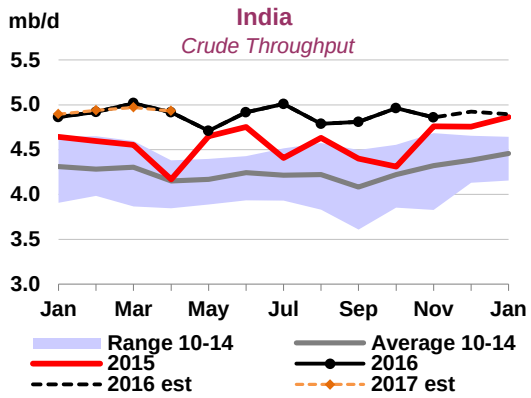
In November, Chinese throughput ramped up further to 11.14 mb/d. It is likely though that the higher numbers are in part due to national statistics increasing coverage of the independent sector. Indian throughput growth slowed, with November runs up by only 100 kb/d y-o-y, the smallest rate in a year. Having declined by 140 kb/d on average in the first 10 months of the year, Brazil's throughput seems to have stabilised at just under 1.9 mb/d – the intake volume in November that was flat y-o-y. Russian December data showed a third consecutive month of y-o-y growth, reversing the trend seen in the first three quarters of the year. While 4Q16 intake increased 240 kb/d y-o-y, the 2016 average was an annual decline of 40 kb/d, following 2015's 130 kb/d decline.

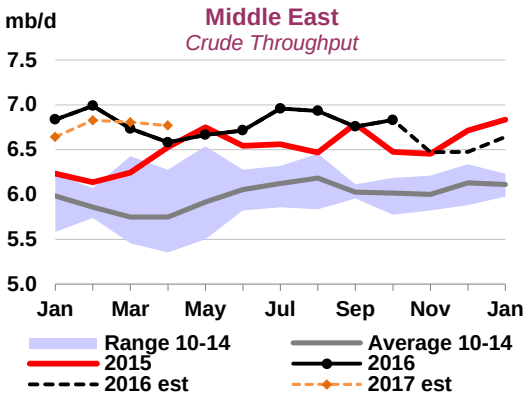




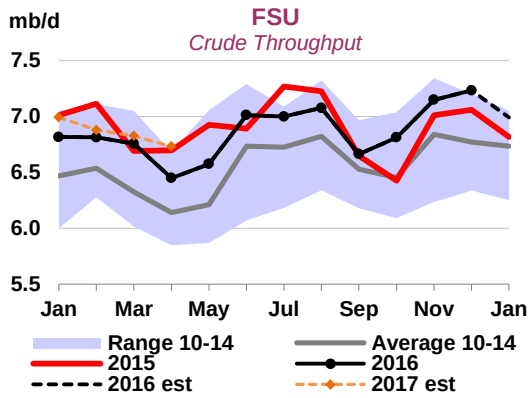
Our forecast of a 930 kb/d y-o-y increase for non-OECD crude runs in 4Q16 is followed by smaller y-o-y growth in 1Q17 at 380 kb/d. A temporary halt in the expansion of crude processing in India is expected in the absence of no immediate commercial start-up of new capacity. In contrast to India, China's plants are operating at lower utilisation rates, with more capacity expected to become operational this year. Facing no capacity ceiling, Chinese refiners are expected to increase runs further, at a solid pace of about

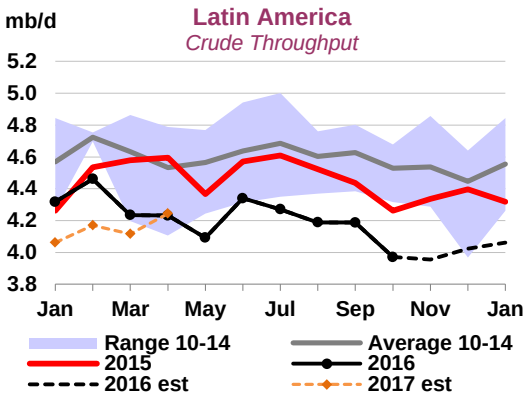
320 kb/d average y-o-y growth for the first four months of 2017, assuming no particular change in this year's crude oil import quotas for independent refiners yet to be allocated by the Ministry of Commerce.





The Middle East is also expected to run less crude oil relative to last year, due to announced output cuts by OPEC members. A very modest growth estimate for 4Q16, at just 45 kb/d y-o-y, due to a large turnaround programme, is followed by a forecast 90 kb/d y-o-y decline in 1Q17.





In April, however, total non-OECD runs are expected to ramp up from 1Q17, contrary to the seasonal trend, based on the likelihood that non-OECD refined product stocks are close to clearing the overhang of recent years. April's forecast of a 1.04 mb/d increase from last year's levels does not imply large gains for individual countries, but a combination of smaller contributions across the Middle East, Asia and Russia.

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
OECD DEMAND																	
Americas	24.2	24.2	24.5	24.4	25.0	24.5	24.6	24.5	24.4	25.0	24.4	24.6	24.4	24.4	24.9	24.5	24.5
Europe	13.6	13.5	13.4	13.6	14.2	13.7	13.7	13.6	13.9	14.4	13.9	14.0	13.8	14.1	14.3	13.8	14.0
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	8.6	7.6	7.8	8.2	8.1
Total OECD	46.1	45.8	46.6	45.6	46.9	46.4	46.4	46.7	46.0	47.2	46.7	46.6	46.8	46.1	47.0	46.5	46.6
NON-OECD DEMAND																	
FSU	4.5	4.7	4.4	4.6	4.8	4.7	4.6	4.7	4.6	5.0	5.0	4.8	4.7	4.8	5.1	5.0	4.9
Europe	0.7	0.6	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
China	10.4	10.8	11.3	11.6	11.6	11.7	11.5	11.7	12.1	11.7	12.1	11.9	12.1	12.2	12.2	12.5	12.2
Other Asia	11.7	12.0	12.3	12.6	12.3	12.8	12.5	13.1	13.1	12.8	13.5	13.1	13.6	13.7	13.4	14.0	13.7
Americas	6.6	6.8	6.6	6.8	6.9	6.8	6.8	6.5	6.7	6.8	6.7	6.6	6.5	6.6	6.8	6.8	6.7
Middle East	8.0	8.4	7.9	8.6	8.9	8.4	8.4	8.0	8.5	8.9	8.4	8.5	8.2	8.6	9.0	8.6	8.6
Africa	3.8	3.8	4.1	4.1	4.0	4.1	4.1	4.2	4.2	4.1	4.2	4.2	4.3	4.3	4.2	4.4	4.3
Total Non-OECD	45.6	47.2	47.3	48.9	49.1	49.2	48.6	48.8	49.9	49.9	50.6	49.8	50.1	51.1	51.5	51.9	51.2
Total Demand[1]	**91.7**	**93.0**	**93.8**	**94.4**	**95.9**	**95.7**	**95.0**	**95.4**	**95.9**	**97.2**	**97.3**	**96.5**	**96.9**	**97.2**	**98.4**	**98.5**	**97.8**
OECD SUPPLY																	
Americas[4]	17.2	19.1	20.1	19.7	20.1	20.1	20.0	19.9	19.0	19.3	19.4	19.4	19.5	19.5	19.8	19.9	19.7
Europe	3.3	3.3	3.4	3.5	3.4	3.6	3.5	3.6	3.4	3.3	3.6	3.5	3.6	3.5	3.3	3.5	3.5
Asia Oceania	0.5	0.5	0.4	0.4	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.4
Total OECD	21.0	22.9	23.9	23.6	24.0	24.2	23.9	24.0	22.8	23.1	23.5	23.4	23.5	23.4	23.6	23.9	23.6
NON-OECD SUPPLY																	
FSU	13.8	13.9	14.1	14.0	13.9	14.1	14.0	14.3	14.0	14.0	14.5	14.2	14.4	14.2	14.3	14.5	14.4
Europe	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
China	4.2	4.2	4.3	4.4	4.3	4.3	4.3	4.2	4.1	3.9	3.9	4.0	3.9	3.8	3.8	3.7	3.8
Other Asia[2]	3.5	3.5	3.6	3.6	3.5	3.6	3.6	3.6	3.6	3.5	3.5	3.6	3.5	3.5	3.5	3.4	3.5
Americas[2,4]	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	1.3	1.3	1.2
Africa[2]	2.0	2.1	2.1	2.1	2.1	2.0	2.1	2.0	1.9	2.0	2.0	2.0	1.9	1.9	2.0	2.0	2.0
Total Non-OECD	29.3	29.6	30.2	30.0	29.8	30.0	30.0	29.8	29.4	29.4	29.9	29.6	29.6	29.4	29.7	29.8	29.6
Processing gains[3]	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	2.3	2.0	2.5	2.8	2.5	2.5
Total Non-OPEC Supply[2]	54.5	57.0	58.1	58.2	58.6	58.8	58.4	58.0	57.0	57.5	57.9	57.6	57.4	57.6	58.4	58.4	58.0
OPEC																	
Crude	30.6	30.5	30.8	31.8	32.1	32.0	31.7	32.1	32.4	32.8	33.2	32.6					
NGLs	6.2	6.3	6.4	6.5	6.6	6.6	6.5	6.6	6.7	6.8	6.8	6.7	6.8	6.8	6.9	6.9	6.9
Total OPEC[2]	36.8	36.8	37.2	38.2	38.6	38.6	38.2	38.7	39.0	39.6	40.0	39.3					
Total Supply[4]	**91.3**	**93.7**	**95.3**	**96.5**	**97.2**	**97.4**	**96.6**	**96.7**	**96.0**	**97.0**	**97.9**	**96.9**					
STOCK CHANGES AND MISCELLANEOUS																	
Reported OECD																	
Industry	-0.2	0.4	0.9	1.0	0.8	0.3	0.8	0.3	0.4	0.1							
Government	0.0	0.0	0.0	0.0	-0.1	0.1	0.0	0.1	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							
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							
Miscellaneous to balance[5]	-0.4	0.4	0.1	0.6	0.7	0.9	0.6	0.7	-0.7	0.0							
Total Stock Ch. & Misc	**-0.5**	**0.8**	**1.4**	**2.0**	**1.3**	**1.8**	**1.6**	**1.2**	**0.1**	**-0.1**	**0.7**	**0.5**					
Memo items:																	
Call on OPEC crude + Stock ch.[6]	31.0	29.7	29.3	29.7	30.8	30.2	30.0	30.9	32.3	32.9	32.5	32.2	32.6	32.8	33.1	33.1	32.9

1 Measured as deliveries from refineries and primary stocks, comprises inland deliveries, international marine bunkers, refinery fuel, crude for direct burning, oil from non-conventional sources and other sources of supply. Includes Biofuels.
2 Other Asia excludes Indonesia throughout. Latin America excludes Ecuador throughout. Africa excludes Angola and Gabon throughout.
Total Non-OPEC excludes all countries that were members of OPEC at 1 December 2016.
Total OPEC comprises all countries which were OPEC members at 1 December 2016.
3 Net volumetric gains and losses in the refining process and marine transportation losses.
4 Comprises crude oil, condensates, NGLs, oil from non-conventional sources and other sources of supply.
5 Includes changes in non-reported stocks in OECD and non-OECD areas.
6 Equals the arithmetic difference between total demand minus total non-OPEC supply minus OPEC NGLs.

Table 1a
WORLD OIL SUPPLY AND DEMAND: CHANGES FROM LAST MONTH'S TABLE 1

(million barrels per day)

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

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

Table 2
SUMMARY OF GLOBAL OIL DEMAND

	2014	1Q15	2Q15	3Q15	4Q15	2015	1Q16	2Q16	3Q16	4Q16	2016	1Q17	2Q17	3Q17	4Q17	2017
Demand (mb/d)																
Americas	24.20	24.45	24.41	24.98	24.53	24.59	24.49	24.39	25.01	24.39	24.57	24.40	24.43	24.85	24.50	24.55
Europe	13.51	13.45	13.58	14.18	13.72	13.73	13.64	13.94	14.44	13.93	13.99	13.76	14.06	14.35	13.81	14.00
Asia Oceania	8.11	8.68	7.58	7.71	8.18	8.04	8.55	7.64	7.79	8.34	8.08	8.63	7.64	7.76	8.22	8.06
Total OECD	45.82	46.58	45.56	46.88	46.43	46.36	46.68	45.98	47.23	46.66	46.64	46.79	46.12	46.96	46.53	46.60
Asia	22.82	23.63	24.16	23.86	24.48	24.03	24.79	25.19	24.50	25.61	25.02	25.70	25.91	25.67	26.42	25.93
Middle East	8.37	7.88	8.57	8.88	8.40	8.43	8.01	8.54	8.87	8.42	8.46	8.25	8.64	8.97	8.60	8.62
Americas	6.83	6.62	6.77	6.86	6.80	6.76	6.47	6.66	6.79	6.66	6.64	6.46	6.64	6.79	6.78	6.67
FSU	4.66	4.37	4.64	4.81	4.74	4.64	4.65	4.61	4.95	4.98	4.80	4.69	4.81	5.09	5.03	4.91
Africa	3.83	4.09	4.07	3.98	4.12	4.06	4.16	4.22	4.11	4.24	4.18	4.30	4.35	4.23	4.38	4.32
Europe	0.65	0.65	0.67	0.69	0.69	0.68	0.68	0.71	0.70	0.71	0.70	0.70	0.72	0.71	0.72	0.71
Total Non-OECD	47.16	47.25	48.87	49.07	49.23	48.61	48.77	49.93	49.92	50.61	49.81	50.10	51.07	51.47	51.94	51.15
World	**92.98**	**93.83**	**94.43**	**95.95**	**95.66**	**94.98**	**95.45**	**95.91**	**97.15**	**97.27**	**96.45**	**96.89**	**97.20**	**98.43**	**98.47**	**97.75**
of which: US50	19.11	19.41	19.47	19.83	19.42	19.53	19.45	19.43	19.90	19.42	19.55	19.39	19.49	19.82	19.50	19.55
Europe 5*	8.05	8.03	8.00	8.37	8.12	8.13	8.14	8.19	8.38	8.13	8.21	8.13	8.15	8.31	8.03	8.15
China	10.80	11.33	11.59	11.58	11.67	11.54	11.70	12.07	11.75	12.09	11.90	12.06	12.19	12.24	12.46	12.24
Japan	4.27	4.70	3.80	3.85	4.14	4.12	4.43	3.66	3.75	4.17	4.00	4.39	3.55	3.65	4.01	3.90
India	3.84	3.97	4.04	3.85	4.10	3.99	4.36	4.32	4.02	4.43	4.28	4.58	4.60	4.38	4.63	4.55
Russia	3.51	3.29	3.50	3.64	3.52	3.49	3.57	3.44	3.76	3.73	3.63	3.59	3.61	3.87	3.78	3.71
Brazil	3.24	3.17	3.17	3.22	3.20	3.19	3.02	3.07	3.14	3.07	3.08	3.00	3.03	3.13	3.16	3.08
Saudi Arabia	3.19	2.89	3.48	3.58	3.22	3.29	2.95	3.34	3.46	3.13	3.22	3.02	3.33	3.48	3.11	3.24
Canada	2.41	2.43	2.33	2.45	2.40	2.41	2.39	2.37	2.52	2.38	2.41	2.42	2.36	2.47	2.38	2.41
Korea	2.35	2.46	2.29	2.36	2.52	2.41	2.59	2.48	2.53	2.66	2.57	2.73	2.59	2.61	2.71	2.66
Mexico	2.04	1.94	1.97	2.07	2.05	2.01	1.98	1.94	1.93	1.94	1.95	1.91	1.92	1.91	1.96	1.92
Iran	2.04	1.98	1.98	1.94	2.03	1.98	1.98	1.93	1.92	2.00	1.96	2.01	1.99	2.01	2.11	2.03
Total	**64.84**	**65.60**	**65.62**	**66.74**	**66.38**	**66.09**	**66.57**	**66.25**	**67.06**	**67.14**	**66.76**	**67.21**	**66.82**	**67.87**	**67.84**	**67.44**
% of World	69.7%	69.9%	69.5%	69.6%	69.4%	69.6%	69.7%	69.1%	69.0%	69.0%	69.2%	69.4%	68.7%	69.0%	68.9%	69.0%
Annual Change (% per annum)																
Americas	0.2	2.1	2.6	2.3	-0.4	1.6	0.1	-0.1	0.1	-0.6	-0.1	-0.4	0.1	-0.6	0.5	-0.1
Europe	-0.7	2.7	0.7	1.8	1.4	1.6	1.5	2.7	1.8	1.5	1.9	0.9	0.9	-0.6	-0.9	0.1
Asia Oceania	-2.8	-2.2	-0.8	0.8	-1.4	-0.9	-1.5	0.9	1.0	2.0	0.5	0.9	-0.1	-0.4	-1.5	-0.3
Total OECD	-0.6	1.5	1.5	1.9	0.0	1.2	0.2	0.9	0.8	0.5	0.6	0.2	0.3	-0.6	-0.3	-0.1
Asia	3.5	4.1	5.2	6.8	5.2	5.3	4.9	4.3	2.7	4.6	4.1	3.7	2.8	4.8	3.2	3.6
Middle East	4.4	-2.7	0.6	2.1	2.8	0.7	1.6	-0.3	-0.1	0.2	0.3	3.0	1.2	1.2	2.1	1.8
Americas	2.7	0.2	-0.4	-1.4	-1.9	-0.9	-2.3	-1.6	-1.1	-2.1	-1.8	-0.1	-0.3	0.1	1.8	0.4
FSU	4.7	-0.1	0.8	-1.3	-1.1	-0.5	6.5	-0.7	3.0	5.1	3.4	0.9	4.4	2.9	1.0	2.3
Africa	0.2	3.8	4.8	6.8	8.8	6.0	1.8	3.8	3.4	2.8	2.9	3.3	3.0	2.9	3.5	3.2
Europe	-1.5	4.9	4.4	3.5	5.1	4.4	3.4	5.1	2.1	3.0	3.4	3.0	1.7	1.2	2.3	2.0
Total Non-OECD	3.3	1.9	3.1	3.9	3.4	3.1	3.2	2.2	1.7	2.8	2.5	2.7	2.3	3.1	2.6	2.7
World	**1.3**	**1.7**	**2.3**	**2.9**	**1.7**	**2.1**	**1.7**	**1.6**	**1.3**	**1.7**	**1.6**	**1.5**	**1.3**	**1.3**	**1.2**	**1.3**
Annual Change (mb/d)																
Americas	0.04	0.51	0.63	0.55	-0.09	0.40	0.04	-0.01	0.02	-0.14	-0.02	-0.09	0.04	-0.15	0.11	-0.02
Europe	-0.10	0.35	0.09	0.25	0.19	0.22	0.20	0.37	0.26	0.21	0.26	0.12	0.12	-0.09	-0.12	0.01
Asia Oceania	-0.23	-0.19	-0.06	0.06	-0.11	-0.07	-0.13	0.06	0.07	0.16	0.04	0.08	-0.01	-0.03	-0.12	-0.02
Total OECD	-0.29	0.67	0.66	0.86	-0.01	0.54	0.10	0.42	0.36	0.23	0.28	0.11	0.15	-0.27	-0.13	-0.04
Asia	0.78	0.93	1.18	1.53	1.20	1.21	1.16	1.04	0.64	1.13	0.99	0.91	0.72	1.17	0.81	0.90
Middle East	0.35	-0.21	0.05	0.18	0.23	0.06	0.13	-0.03	-0.01	0.02	0.03	0.24	0.10	0.11	0.18	0.16
Americas	0.18	0.02	-0.03	-0.10	-0.13	-0.06	-0.15	-0.11	-0.07	-0.14	-0.12	-0.01	-0.02	0.00	0.12	0.02
FSU	0.21	0.00	0.04	-0.06	-0.05	-0.02	0.28	-0.03	0.15	0.24	0.16	0.04	0.20	0.14	0.05	0.11
Africa	0.01	0.15	0.19	0.25	0.33	0.23	0.07	0.16	0.13	0.11	0.12	0.14	0.13	0.12	0.15	0.13
Europe	-0.01	0.03	0.03	0.02	0.03	0.03	0.02	0.03	0.01	0.02	0.02	0.02	0.01	0.01	0.02	0.01
Total Non-OECD	1.52	0.90	1.46	1.82	1.61	1.45	1.52	1.06	0.85	1.38	1.20	1.34	1.14	1.55	1.32	1.34
World	**1.23**	**1.58**	**2.12**	**2.69**	**1.59**	**1.99**	**1.62**	**1.48**	**1.21**	**1.61**	**1.48**	**1.44**	**1.28**	**1.28**	**1.19**	**1.30**
Revisions to Oil Demand from Last Month's Report (mb/d)																
Americas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	-0.17	-0.04	-0.13	-0.09	-0.09	-0.08	-0.10
Europe	0.00	-0.01	-0.01	-0.01	-0.01	-0.01	0.00	-0.01	-0.01	0.26	0.06	0.05	0.08	0.07	0.14	0.09
Asia Oceania	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.12	0.03	0.03	0.03	0.03	0.06	0.04
Total OECD	0.00	-0.01	-0.01	-0.01	-0.01	-0.01	0.00	-0.01	0.00	0.21	0.05	-0.05	0.02	0.01	0.12	0.02
Asia	0.00	0.00	0.01	0.00	0.01	0.00	0.02	0.02	-0.01	0.15	0.04	0.12	0.06	0.03	0.09	0.08
Middle East	0.00	0.06	0.06	0.05	0.08	0.06	0.07	0.08	0.08	0.05	0.07	0.04	0.05	0.05	0.05	0.05
Americas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.04	-0.01	-0.02	-0.02	-0.02	-0.02	-0.02
FSU	0.00	0.00	-0.01	0.00	0.00	0.00	0.02	0.04	0.03	-0.01	0.02	0.01	0.02	0.02	0.02	0.02
Africa	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.04	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01
Europe	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Non-OECD	0.00	0.06	0.06	0.05	0.09	0.07	0.10	0.13	0.10	0.12	0.11	0.14	0.11	0.08	0.13	0.11
World	**0.00**	**0.05**	**0.05**	**0.04**	**0.08**	**0.06**	**0.10**	**0.12**	**0.10**	**0.33**	**0.16**	**0.10**	**0.13**	**0.09**	**0.24**	**0.14**
Revisions to Oil Demand Growth from Last Month's Report (mb/d)																
World	0.00	0.05	0.05	0.04	0.08	0.06	0.04	0.08	0.06	0.25	0.11	0.00	0.00	-0.01	-0.08	-0.02

* France, Germany, Italy, Spain and UK
Includes Biofuels.

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

	2014	2015	4Q15	1Q16	2Q16	3Q16	Aug 16	Sep 16	Oct 16 [2]	Latest month vs. Sep 16	Latest month vs. Oct 15
Americas											
LPG and ethane	3.22	3.29	3.44	3.56	2.93	3.08	3.06	3.18	3.12	-0.05	-0.12
Naphtha	0.35	0.34	0.36	0.35	0.35	0.34	0.35	0.32	0.31	-0.01	-0.02
Motor gasoline	10.61	10.91	10.91	10.85	11.23	11.40	11.44	11.30	10.88	-0.42	-0.11
Jet and kerosene	1.74	1.83	1.85	1.78	1.90	1.99	2.03	1.91	1.91	0.01	0.01
Gasoil/diesel oil	5.28	5.21	5.05	5.06	5.02	5.00	5.12	5.15	5.22	0.07	-0.04
Residual fuel oil	0.58	0.55	0.61	0.59	0.69	0.64	0.65	0.55	0.64	0.09	0.04
Other products	2.40	2.46	2.30	2.30	2.28	2.55	2.72	2.49	2.52	0.04	0.16
Total	**24.20**	**24.59**	**24.53**	**24.49**	**24.39**	**25.01**	**25.38**	**24.89**	**24.60**	**-0.29**	**-0.08**
Europe											
LPG and ethane	1.10	1.14	1.12	1.21	1.15	1.19	1.23	1.13	1.21	0.09	0.20
Naphtha	1.13	1.12	1.10	1.24	1.13	1.19	1.22	1.13	1.08	-0.05	0.03
Motor gasoline	1.92	1.92	1.90	1.79	1.98	2.04	2.05	2.03	1.88	-0.15	-0.05
Jet and kerosene	1.27	1.32	1.26	1.24	1.39	1.55	1.56	1.56	1.43	-0.13	0.10
Gasoil/diesel oil	5.94	6.14	6.27	6.11	6.11	6.24	6.28	6.52	6.40	-0.12	0.02
Residual fuel oil	0.95	0.91	0.92	0.96	0.92	0.94	0.97	0.90	0.94	0.04	0.05
Other products	1.21	1.19	1.15	1.10	1.27	1.31	1.30	1.32	1.34	0.02	0.08
Total	**13.51**	**13.73**	**13.72**	**13.64**	**13.94**	**14.44**	**14.61**	**14.58**	**14.29**	**-0.29**	**0.43**
Asia Oceania											
LPG and ethane	0.82	0.77	0.76	0.83	0.81	0.84	0.84	0.82	0.83	0.01	0.11
Naphtha	1.88	1.96	1.99	2.00	1.85	1.89	1.94	1.91	1.90	-0.01	0.00
Motor gasoline	1.56	1.56	1.58	1.53	1.52	1.64	1.74	1.58	1.53	-0.05	-0.01
Jet and kerosene	0.87	0.87	0.96	1.17	0.73	0.70	0.70	0.74	0.84	0.09	0.03
Gasoil/diesel oil	1.76	1.78	1.84	1.83	1.75	1.74	1.76	1.79	1.78	-0.02	-0.06
Residual fuel oil	0.68	0.64	0.64	0.75	0.60	0.60	0.58	0.58	0.58	0.00	0.04
Other products	0.56	0.45	0.42	0.44	0.37	0.38	0.40	0.35	0.27	-0.07	-0.11
Total	**8.11**	**8.04**	**8.18**	**8.55**	**7.64**	**7.79**	**7.96**	**7.78**	**7.73**	**-0.04**	**0.00**
OECD											
LPG and ethane	5.13	5.20	5.32	5.61	4.89	5.11	5.13	5.13	5.17	0.04	0.19
Naphtha	3.36	3.42	3.45	3.59	3.32	3.41	3.51	3.36	3.29	-0.07	0.02
Motor gasoline	14.09	14.39	14.38	14.17	14.74	15.07	15.24	14.91	14.29	-0.61	-0.17
Jet and kerosene	3.88	4.02	4.07	4.18	4.02	4.24	4.29	4.21	4.18	-0.03	0.15
Gasoil/diesel oil	12.98	13.13	13.17	13.00	12.88	12.98	13.16	13.46	13.40	-0.06	-0.09
Residual fuel oil	2.21	2.10	2.16	2.30	2.21	2.18	2.20	2.03	2.16	0.13	0.13
Other products	4.16	4.10	3.87	3.83	3.92	4.24	4.43	4.16	4.14	-0.02	0.12
Total	**45.82**	**46.36**	**46.43**	**46.68**	**45.98**	**47.23**	**47.95**	**47.24**	**46.62**	**-0.62**	**0.35**

1 Demand, measured as deliveries from refineries and primary stocks, comprises inland deliveries, international bunkers and refinery fuel. It includes crude for direct burning, oil from non-conventional sources and other sources of supply. Jet/kerosene comprises jet kerosene and non-aviation kerosene. Gasoil comprises diesel, light heating oil and other gasoils. North America comprises US 50 states, US territories, Mexico and Canada.
2 Latest official OECD submissions (MOS).

Table 2b
OIL DEMAND IN SELECTED OECD COUNTRIES[1]
(million barrels per day)

	2014	2015	4Q15	1Q16	2Q16	3Q16	Aug 16	Sep 16	Oct 16 [2]	Latest month vs. Sep 16	Latest month vs. Oct 15
United States[3]											
LPG and ethane	2.40	2.45	2.57	2.69	2.21	2.33	2.25	2.44	2.41	-0.03	0.00
Naphtha	0.23	0.22	0.24	0.22	0.22	0.22	0.22	0.21	0.20	0.00	-0.03
Motor gasoline	8.92	9.18	9.17	9.09	9.44	9.56	9.59	9.49	9.10	-0.39	-0.15
Jet and kerosene	1.48	1.55	1.58	1.51	1.62	1.69	1.71	1.64	1.62	-0.02	0.00
Gasoil/diesel oil	4.04	4.00	3.86	3.90	3.81	3.79	3.89	3.91	4.02	0.12	0.01
Residual fuel oil	0.26	0.26	0.28	0.31	0.41	0.36	0.34	0.29	0.35	0.06	0.11
Other products	1.78	1.87	1.70	1.72	1.73	1.95	2.13	1.90	1.92	0.03	0.18
Total	**19.11**	**19.53**	**19.42**	**19.45**	**19.43**	**19.90**	**20.13**	**19.86**	**19.62**	**-0.24**	**0.12**
Japan											
LPG and ethane	0.49	0.43	0.40	0.47	0.42	0.42	0.42	0.40	0.42	0.02	0.05
Naphtha	0.74	0.78	0.80	0.79	0.72	0.70	0.72	0.70	0.71	0.01	-0.04
Motor gasoline	0.92	0.91	0.92	0.87	0.88	0.96	1.03	0.91	0.89	-0.01	0.00
Jet and kerosene	0.52	0.50	0.57	0.74	0.37	0.33	0.32	0.36	0.44	0.08	0.01
Diesel	0.41	0.41	0.42	0.41	0.38	0.41	0.41	0.42	0.41	-0.01	-0.02
Other gasoil	0.36	0.35	0.36	0.40	0.32	0.31	0.30	0.32	0.33	0.01	-0.01
Residual fuel oil	0.42	0.36	0.32	0.38	0.30	0.31	0.30	0.30	0.29	0.00	0.00
Other products	0.41	0.37	0.35	0.37	0.27	0.30	0.32	0.27	0.27	0.00	-0.04
Total	**4.27**	**4.12**	**4.14**	**4.43**	**3.66**	**3.75**	**3.82**	**3.68**	**3.77**	**0.09**	**-0.05**
Germany											
LPG and ethane	0.09	0.10	0.08	0.10	0.11	0.10	0.10	0.10	0.08	-0.02	0.00
Naphtha	0.41	0.40	0.40	0.42	0.36	0.41	0.40	0.37	0.40	0.02	0.04
Motor gasoline	0.43	0.42	0.42	0.40	0.43	0.44	0.43	0.45	0.42	-0.03	-0.02
Jet and kerosene	0.18	0.18	0.18	0.17	0.20	0.23	0.22	0.23	0.21	-0.01	0.02
Diesel	0.71	0.75	0.77	0.72	0.80	0.82	0.80	0.84	0.78	-0.06	-0.01
Other gasoil	0.37	0.35	0.37	0.46	0.27	0.26	0.31	0.27	0.37	0.10	-0.02
Residual fuel oil	0.12	0.12	0.11	0.13	0.13	0.12	0.12	0.12	0.12	0.00	0.01
Other products	0.06	0.05	0.05	0.02	0.07	0.07	0.08	0.06	0.07	0.01	0.01
Total	**2.37**	**2.37**	**2.39**	**2.42**	**2.37**	**2.44**	**2.47**	**2.44**	**2.46**	**0.02**	**0.03**
Italy											
LPG and ethane	0.10	0.11	0.12	0.12	0.10	0.10	0.10	0.10	0.11	0.01	0.00
Naphtha	0.07	0.09	0.09	0.11	0.12	0.11	0.12	0.09	0.09	-0.01	0.01
Motor gasoline	0.20	0.21	0.21	0.20	0.21	0.22	0.22	0.21	0.19	-0.03	-0.02
Jet and kerosene	0.09	0.10	0.08	0.09	0.11	0.12	0.13	0.11	0.10	-0.01	0.00
Diesel	0.48	0.44	0.45	0.42	0.45	0.45	0.43	0.47	0.43	-0.04	-0.02
Other gasoil	0.09	0.09	0.10	0.08	0.08	0.10	0.09	0.11	0.10	-0.01	0.00
Residual fuel oil	0.07	0.08	0.08	0.07	0.07	0.07	0.07	0.07	0.07	0.00	-0.02
Other products	0.15	0.15	0.15	0.12	0.15	0.15	0.12	0.16	0.17	0.01	0.01
Total	**1.27**	**1.27**	**1.28**	**1.21**	**1.29**	**1.31**	**1.26**	**1.33**	**1.25**	**-0.08**	**-0.03**
France											
LPG and ethane	0.13	0.13	0.13	0.17	0.14	0.13	0.14	0.13	0.13	0.00	0.01
Naphtha	0.13	0.13	0.09	0.14	0.12	0.13	0.14	0.11	0.09	-0.02	0.00
Motor gasoline	0.16	0.16	0.16	0.15	0.18	0.18	0.19	0.18	0.16	-0.01	0.00
Jet and kerosene	0.15	0.15	0.15	0.14	0.15	0.17	0.17	0.17	0.16	-0.01	0.00
Diesel	0.70	0.71	0.72	0.67	0.72	0.72	0.70	0.74	0.70	-0.04	-0.02
Other gasoil	0.25	0.25	0.23	0.26	0.20	0.23	0.23	0.27	0.30	0.03	0.05
Residual fuel oil	0.05	0.04	0.04	0.04	0.03	0.04	0.04	0.04	0.04	0.00	0.00
Other products	0.12	0.12	0.10	0.12	0.13	0.14	0.12	0.14	0.12	-0.02	0.00
Total	**1.69**	**1.69**	**1.63**	**1.69**	**1.66**	**1.74**	**1.73**	**1.77**	**1.70**	**-0.07**	**0.04**
United Kingdom											
LPG and ethane	0.12	0.14	0.14	0.17	0.16	0.16	0.16	0.15	0.16	0.01	0.05
Naphtha	0.02	0.03	0.04	0.04	0.03	0.03	0.03	0.03	0.02	-0.01	-0.02
Motor gasoline	0.30	0.29	0.29	0.28	0.30	0.29	0.29	0.30	0.29	-0.01	0.00
Jet and kerosene	0.31	0.31	0.30	0.32	0.31	0.32	0.32	0.35	0.32	-0.03	0.04
Diesel	0.48	0.50	0.51	0.49	0.52	0.52	0.51	0.53	0.51	-0.01	0.02
Other gasoil	0.13	0.13	0.13	0.12	0.13	0.15	0.16	0.15	0.15	-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	0.01
Other products	0.12	0.12	0.12	0.11	0.12	0.12	0.11	0.11	0.12	0.01	-0.01
Total	**1.52**	**1.55**	**1.56**	**1.56**	**1.61**	**1.60**	**1.60**	**1.65**	**1.60**	**-0.04**	**0.08**
Canada											
LPG and ethane	0.36	0.38	0.41	0.43	0.36	0.40	0.45	0.39	0.37	-0.02	-0.01
Naphtha	0.09	0.09	0.10	0.11	0.10	0.10	0.10	0.09	0.08	-0.01	0.00
Motor gasoline	0.81	0.82	0.81	0.83	0.86	0.90	0.90	0.88	0.84	-0.04	0.01
Jet and kerosene	0.14	0.14	0.14	0.13	0.14	0.16	0.17	0.15	0.15	0.01	0.01
Diesel	0.29	0.31	0.29	0.30	0.31	0.30	0.28	0.31	0.30	-0.01	-0.02
Other gasoil	0.30	0.26	0.26	0.22	0.25	0.27	0.30	0.31	0.25	-0.06	-0.01
Residual fuel oil	0.05	0.04	0.03	0.05	0.03	0.03	0.04	0.03	0.03	-0.01	-0.01
Other products	0.36	0.35	0.36	0.32	0.31	0.36	0.35	0.35	0.35	0.00	-0.03
Total	**2.41**	**2.41**	**2.40**	**2.39**	**2.37**	**2.52**	**2.59**	**2.51**	**2.37**	**-0.14**	**-0.07**

1 Demand, measured as deliveries from refineries and primary stocks, comprises inland deliveries, international bunkers and refinery fuel. It includes crude for direct burning, oil from non-conventional sources and other sources of supply. Jet/kerosene comprises jet kerosene and non-aviation kerosene. Gasoil comprises diesel, light heating oil and other gasoils.
2 Latest official OECD submissions (MOS).
3 US figures exclude US territories.

Table 3
WORLD OIL PRODUCTION

(million barrels per day)

	2015	2016	2017	3Q16	4Q16	1Q17	2Q17	3Q17	Oct 16	Nov 16	Dec 16
OPEC											
Crude Oil											
Saudi Arabia	10.12	10.42		10.61	10.56				10.56	10.64	10.48
Iran	2.85	3.54		3.67	3.76				3.82	3.75	3.72
Iraq	4.00	4.41		4.43	4.61				4.59	4.61	4.64
UAE	2.93	3.03		3.12	3.13				3.12	3.13	3.13
Kuwait	2.75	2.88		2.92	2.86				2.93	2.83	2.81
Neutral Zone	0.07	0.00		0.00	0.00				0.00	0.00	0.00
Qatar	0.65	0.65		0.64	0.64				0.63	0.65	0.63
Angola	1.76	1.71		1.72	1.62				1.51	1.69	1.65
Nigeria	1.77	1.46		1.25	1.44				1.43	1.50	1.39
Libya	0.40	0.39		0.31	0.57				0.51	0.58	0.62
Algeria	1.11	1.11		1.13	1.13				1.13	1.12	1.13
Ecuador	0.54	0.55		0.55	0.54				0.54	0.55	0.54
Venezuela	2.46	2.24		2.19	2.13				2.15	2.13	2.12
Gabon	0.23	0.23		0.23	0.23				0.22	0.23	0.23
Total Crude Oil	31.65	32.62		32.77	33.21				33.14	33.41	33.09
Total NGLs[1]	6.51	6.71	6.86	6.79	6.80	6.80	6.83	6.91	6.80	6.80	6.80
Total OPEC[2]	**38.16**	**39.33**		**39.56**	**40.01**				**39.94**	**40.21**	**39.89**
NON-OPEC[2,3]											
OECD											
Americas	19.98	19.40	19.69	19.33	19.44	19.49	19.51	19.84	19.53	19.36	19.42
United States	12.99	12.52	12.84	12.30	12.43	12.53	12.83	12.92	12.47	12.39	12.44
Mexico	2.60	2.46	2.26	2.46	2.37	2.31	2.27	2.24	2.40	2.37	2.34
Canada	4.39	4.42	4.59	4.57	4.63	4.65	4.41	4.67	4.66	4.60	4.64
Chile	0.01	0.01	0.00	0.01	0.01	0.00	0.00	0.00	0.01	0.00	0.00
Europe	3.48	3.51	3.46	3.34	3.63	3.56	3.45	3.31	3.49	3.74	3.66
UK	0.97	1.03	0.99	0.97	0.98	0.99	0.96	0.97	0.86	1.07	1.02
Norway	1.95	2.00	1.96	1.90	2.13	2.05	1.98	1.84	2.12	2.15	2.13
Others	0.56	0.49	0.50	0.47	0.52	0.51	0.51	0.50	0.52	0.52	0.51
Asia Oceania	0.46	0.43	0.45	0.45	0.44	0.45	0.44	0.45	0.44	0.44	0.44
Australia	0.38	0.36	0.38	0.37	0.37	0.37	0.37	0.37	0.36	0.37	0.37
Others	0.08	0.08	0.07	0.08	0.07	0.08	0.07	0.07	0.07	0.07	0.08
Total OECD	**23.92**	**23.35**	**23.60**	**23.12**	**23.51**	**23.49**	**23.41**	**23.60**	**23.46**	**23.55**	**23.52**
NON-OECD											
Former USSR	14.03	14.20	14.37	13.99	14.51	14.37	14.23	14.34	14.51	14.46	14.55
Russia	11.09	11.34	11.38	11.27	11.58	11.42	11.29	11.33	11.60	11.58	11.58
Others	2.94	2.86	2.99	2.72	2.92	2.95	2.94	3.01	2.91	2.89	2.97
Asia[2]	7.91	7.59	7.25	7.49	7.41	7.33	7.27	7.23	7.37	7.47	7.41
China	4.34	4.02	3.79	3.95	3.89	3.86	3.81	3.77	3.83	3.97	3.89
Malaysia	0.71	0.71	0.69	0.70	0.69	0.68	0.68	0.69	0.69	0.68	0.69
India	0.87	0.85	0.83	0.85	0.84	0.84	0.83	0.83	0.85	0.83	0.84
Others	2.00	2.02	1.94	1.99	1.99	1.96	1.95	1.93	2.00	1.99	1.99
Europe	0.14	0.14	0.13	0.14	0.13	0.13	0.13	0.13	0.14	0.13	0.13
Americas[2]	4.58	4.49	4.67	4.56	4.58	4.64	4.64	4.71	4.56	4.55	4.63
Brazil	2.53	2.61	2.85	2.73	2.75	2.80	2.82	2.89	2.73	2.72	2.78
Argentina	0.63	0.61	0.60	0.61	0.61	0.60	0.60	0.60	0.61	0.60	0.61
Colombia	1.01	0.89	0.85	0.85	0.86	0.86	0.85	0.85	0.85	0.86	0.86
Others	0.41	0.38	0.37	0.38	0.37	0.37	0.37	0.37	0.37	0.37	0.38
Middle East[2,4]	1.27	1.26	1.24	1.27	1.27	1.23	1.22	1.25	1.28	1.28	1.27
Oman	0.99	1.01	0.98	1.02	1.02	0.97	0.96	0.99	1.02	1.02	1.01
Syria	0.03	0.03	0.02	0.03	0.02	0.02	0.02	0.02	0.03	0.02	0.02
Yemen	0.04	0.02	0.03	0.02	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Others	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21
Africa	2.07	1.95	1.98	1.95	1.98	1.92	1.94	2.01	1.98	1.98	1.98
Egypt	0.72	0.69	0.66	0.69	0.68	0.67	0.67	0.66	0.68	0.68	0.68
Others	1.35	1.26	1.31	1.27	1.30	1.25	1.28	1.35	1.30	1.30	1.30
Total Non-OECD	**30.00**	**29.63**	**29.63**	**29.40**	**29.90**	**29.62**	**29.44**	**29.66**	**29.84**	**29.89**	**29.96**
Processing gains[5]	2.24	2.27	2.29	2.27	2.27	2.29	2.29	2.29	2.27	2.27	2.27
Global Biofuels	2.29	2.34	2.45	2.67	2.27	2.03	2.47	2.82	2.47	2.35	1.99
TOTAL NON-OPEC	**58.45**	**57.59**	**57.97**	**57.46**	**57.94**	**57.45**	**57.61**	**58.37**	**58.03**	**58.06**	**57.74**
TOTAL SUPPLY	**96.61**	**96.92**		**97.02**	**97.95**				**97.97**	**98.26**	**97.63**

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

2 Other Asia excludes Indonesia throughout. Latin America excludes Ecuador throughout. Africa excludes Angola and Gabon throughout.
Total Non-OPEC excludes all countries that were members of OPEC at 1 December 2016.
Total OPEC comprises all countries which were OPEC members at 1 December 2016.

3 Comprises crude oil, condensates, NGLs and oil from non-conventional sources

4 Includes small amounts of production from Jordan and Bahrain.

5 Net volumetric gains and losses in refining and marine transportation losses.

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

	RECENT MONTHLY STOCKS[2] in Million Barrels					PRIOR YEARS' STOCKS[2] in Million Barrels			STOCK CHANGES in mb/d			
	Jul2016	Aug2016	Sep2016	Oct2016	Nov2016*	Nov2013	Nov2014	Nov2015	4Q2015	1Q2016	2Q2016	3Q2016
OECD Americas												
Crude	646.3	638.9	621.4	646.4	645.8	493.1	513.2	615.4	0.26	0.54	-0.09	-0.31
Motor Gasoline	272.2	262.1	259.1	256.9	262.7	250.3	252.9	254.9	0.11	0.05	0.01	-0.15
Middle Distillate	229.6	233.9	236.4	229.6	236.5	189.8	195.5	226.7	0.17	0.05	-0.23	0.18
Residual Fuel Oil	44.8	46.8	45.1	45.6	47.2	43.4	44.6	50.2	0.02	0.01	-0.04	-0.02
Total Products[3]	794.5	801.2	800.6	782.0	786.8	668.9	707.6	763.8	0.10	-0.19	0.17	0.30
Total[4]	1635.7	1634.5	1617.3	1623.3	1624.8	1322.3	1394.6	1563.8	0.20	0.31	0.21	0.10
OECD Europe												
Crude	362.5	354.8	352.6	344.7	344.8	325.5	307.2	346.0	0.23	-0.16	0.11	-0.04
Motor Gasoline	96.9	92.7	90.0	92.5	91.7	86.1	87.8	91.4	0.03	0.09	-0.04	-0.07
Middle Distillate	321.9	322.1	312.8	300.9	299.3	244.9	256.4	305.6	0.00	0.08	0.04	0.00
Residual Fuel Oil	70.8	70.1	67.1	64.7	65.2	67.3	65.3	74.5	0.03	0.06	-0.07	-0.05
Total Products[3]	592.8	584.8	567.2	557.8	554.4	485.0	507.3	568.2	0.06	0.25	-0.05	-0.15
Total[4]	1024.0	1009.0	991.3	973.5	970.9	877.3	884.6	980.3	0.25	0.13	0.04	-0.16
OECD Asia Oceania												
Crude	196.2	187.5	201.5	202.8	200.2	157.8	173.9	191.0	0.04	-0.11	0.07	-0.01
Motor Gasoline	24.9	24.2	24.0	24.1	23.1	24.8	22.7	23.4	0.00	0.03	0.00	-0.03
Middle Distillate	71.7	75.6	73.8	71.7	66.6	65.0	70.7	65.9	-0.01	-0.08	0.09	0.07
Residual Fuel Oil	19.4	19.8	19.2	19.1	19.9	18.0	20.3	23.6	-0.01	-0.01	-0.01	0.00
Total Products[3]	184.3	192.5	186.8	181.4	173.7	172.9	182.2	170.1	-0.11	0.00	0.10	0.12
Total[4]	441.7	442.1	450.0	447.5	437.1	402.9	424.1	428.2	-0.11	-0.15	0.19	0.13
Total OECD												
Crude	1205.0	1181.2	1175.5	1193.9	1190.7	976.4	994.3	1152.5	0.53	0.27	0.08	-0.36
Motor Gasoline	394.0	379.0	373.1	373.5	377.5	361.2	363.4	369.7	0.14	0.18	-0.03	-0.25
Middle Distillate	623.1	631.7	622.9	602.2	602.3	499.7	522.6	598.2	0.15	0.06	-0.10	0.25
Residual Fuel Oil	135.0	136.7	131.5	129.3	132.2	128.7	130.1	148.2	0.04	0.06	-0.12	-0.07
Total Products[3]	1571.5	1578.4	1554.6	1521.3	1514.8	1326.8	1397.1	1502.1	0.06	0.06	0.22	0.27
Total[4]	3101.3	3085.7	3058.6	3044.3	3032.7	2602.5	2703.3	2972.2	0.35	0.29	0.44	0.07

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

	RECENT MONTHLY STOCKS[2] in Million Barrels					PRIOR YEARS' STOCKS[2] in Million Barrels			STOCK CHANGES in mb/d			
	Jul2016	Aug2016	Sep2016	Oct2016	Nov2016*	Nov2013	Nov2014	Nov2015	4Q2015	1Q2016	2Q2016	3Q2016
OECD Americas												
Crude	695.1	695.1	695.1	695.1	695.1	696.0	691.0	695.1	0.00	0.00	0.00	0.00
Products	2.0	2.0	2.0	2.0	2.0	1.0	2.0	2.0	0.00	0.00	0.00	0.00
OECD Europe												
Crude	205.7	205.9	206.3	204.9	208.3	206.7	209.6	205.5	-0.01	0.00	-0.01	0.01
Products	267.0	267.9	267.0	266.8	270.6	259.7	254.4	257.7	0.08	0.05	-0.02	0.03
OECD Asia Oceania												
Crude	385.4	385.4	385.4	385.7	385.7	385.8	385.3	381.5	0.01	0.02	0.01	0.00
Products	35.5	35.9	35.9	36.5	36.5	30.1	31.5	33.9	0.01	0.01	0.00	0.00
Total OECD												
Crude	1286.2	1286.4	1286.8	1285.7	1289.1	1288.4	1285.9	1282.1	0.00	0.02	0.00	0.01
Products	304.5	305.8	304.9	305.3	309.0	290.8	287.9	293.6	0.08	0.06	-0.02	0.03
Total[4]	1593.2	1594.4	1593.9	1593.3	1600.5	1583.3	1578.0	1580.1	0.08	0.07	-0.03	0.03

* estimated

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

2 Closing stock levels.

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

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

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

Table 5

TOTAL STOCKS ON LAND IN OECD COUNTRIES[1]

('millions of barrels' and 'days')

	End September 2015		End December 2015		End March 2016		End June 2016		End September 2016 [3]	
	Stock Level	Days Fwd[2] Demand	Stock Level	Days Fwd Demand	Stock Level	Days Fwd Demand	Stock Level	Days Fwd Demand	Stock Level	Days Fwd Demand
OECD Americas										
Canada	182.5	76	188.4	79	183.6	77	175.2	70	184.8	-
Chile	12.1	36	11.3	33	11.2	32	10.7	31	12.2	-
Mexico	49.5	24	49.7	25	45.9	24	48.8	25	45.7	-
United States[4]	1973.4	102	1986.6	102	2023.5	104	2048.9	103	2049.6	-
Total[4]	2239.5	91	2258.0	92	2286.2	94	2305.7	92	2314.4	94
OECD Asia Oceania										
Australia	35.5	31	33.5	30	37.0	33	38.2	35	36.7	-
Israel	-	-	-	-	-	-	-	-	-	-
Japan	589.6	143	582.0	131	559.8	153	573.5	153	586.6	-
Korea	226.0	90	227.9	88	235.7	95	238.0	94	239.3	-
New Zealand	8.7	52	7.7	45	8.2	51	9.3	57	8.7	-
Total	859.7	105	851.1	100	840.7	110	859.0	110	871.3	106
OECD Europe[5]										
Austria	23.7	90	24.1	94	25.4	93	22.5	80	21.6	-
Belgium	51.3	81	50.4	73	52.7	84	52.6	81	50.5	-
Czech Republic	21.8	127	22.1	148	22.8	130	22.8	125	22.9	-
Denmark	28.6	186	31.8	211	32.4	204	30.7	187	29.7	-
Estonia	1.5	53	1.8	66	2.2	89	2.6	89	2.4	-
Finland	39.9	205	44.9	238	46.0	242	45.4	225	44.9	-
France	166.8	103	167.6	99	165.8	100	167.5	96	166.9	-
Germany	281.4	118	285.3	118	288.8	122	288.0	118	284.3	-
Greece	29.2	94	32.4	115	33.4	116	32.6	100	31.1	-
Hungary	20.4	125	22.0	156	21.1	128	22.7	137	23.4	-
Ireland	11.3	75	11.6	75	12.2	82	12.3	84	11.7	-
Italy	117.2	92	117.3	97	119.9	93	120.9	93	127.4	-
Luxembourg	0.6	10	0.7	13	0.7	12	0.8	15	0.7	-
Netherlands	153.1	160	158.8	165	157.7	160	159.6	155	154.2	-
Norway	25.1	105	26.7	127	24.9	117	26.5	119	23.2	-
Poland	63.9	121	69.4	131	67.4	119	65.4	105	68.4	-
Portugal	23.0	97	23.9	108	24.5	100	24.9	99	23.2	-
Slovak Republic	11.0	134	11.6	150	11.9	135	12.4	132	11.3	-
Slovenia	4.6	96	4.5	90	4.6	90	4.7	85	4.4	-
Spain	139.7	111	130.9	104	140.3	112	134.2	104	138.8	-
Sweden	33.3	120	35.2	122	34.9	116	33.3	106	35.7	-
Switzerland	36.3	149	34.4	171	36.1	165	35.8	166	36.5	-
Turkey	71.2	82	74.6	88	75.9	80	78.0	76	76.5	-
United Kingdom	79.0	51	81.3	52	77.2	48	82.4	51	77.0	-
Total	1434.1	104	1463.4	107	1478.8	106	1478.6	102	1466.8	108
Total OECD	**4533.4**	**98**	**4572.5**	**98**	**4605.6**	**100**	**4643.3**	**98**	**4652.5**	**100**
DAYS OF IEA Net Imports[6]	-	**193**	-	**195**	-	**198**	-	**202**	-	**202**

1 Total Stocks are industry and government-controlled stocks (see breakdown in table below). Stocks are primary national territory stocks on land (excluding utility stocks and including pipeline and entrepot stocks where known) they include stocks held by industry to meet IEA, EU and national emergency reserves commitments and are subject to government control in emergencies.
2 Note that days of forward demand represent the stock level divided by the forward quarter average daily demand and is very different from the days of net imports used for the calculation of IEA Emergency Reserves.
3 End September 2016 forward demand figures are IEA Secretariat forecasts.
4 US figures exclude US territories. Total includes US territories.
5 Data not available for Iceland.
6 Reflects stock levels and prior calendar year's net imports adjusted according to IEA emergency reserve definitions (see www.iea.org/netimports.asp). Net exporting IEA countries are excluded.

TOTAL OECD STOCKS

CLOSING STOCKS	Total	Government[1] controlled	Industry	Total	Government[1] controlled	Industry
	Millions of Barrels			*Days of Fwd. Demand[2]*		
3Q2013	4267	1582	2686	92	34	58
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	2705	92	34	58
1Q2015	4372	1583	2789	96	35	61
2Q2015	4463	1585	2878	95	34	61
3Q2015	4533	1579	2954	98	34	64
4Q2015	4573	1587	2986	98	34	64
1Q2016	4606	1593	3012	100	35	66
2Q2016	4643	1591	3052	98	34	65
3Q2016	4653	1594	3059	100	34	66

1 Includes government-owned stocks and stock holding organisation stocks held for emergency purposes.
2 Days of forward demand calculated using actual demand except in 3Q2016 (when latest forecasts are used).

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

											Year Earlier	
	2013	2014	2015	4Q15	1Q16	2Q16	3Q16	Aug 16	Sep 16	Oct 16	Oct 15	change
Saudi Light & Extra Light												
Americas	0.74	0.65	0.63	0.72	0.74	0.72	0.69	0.70	0.48	0.60	0.51	0.09
Europe	0.79	0.84	0.78	0.69	0.76	0.73	0.78	0.90	0.71	0.88	0.75	0.13
Asia Oceania	1.21	1.17	1.25	1.21	1.40	1.44	1.21	1.18	1.28	1.49	1.15	0.34
Saudi Medium												
Americas	0.45	0.36	0.37	0.43	0.39	0.44	0.44	0.41	0.50	0.55	0.44	0.11
Europe	0.01	0.03	0.03	0.04	-	0.01	0.03	0.02	0.03	0.00	0.03	-0.03
Asia Oceania	0.43	0.45	0.44	0.41	0.46	0.43	0.41	0.39	0.43	0.37	0.33	0.03
Iraqi Basrah Light[2]												
Americas	0.38	0.35	0.17	0.29	0.21	0.44	0.47	0.55	0.41	0.61	0.22	0.39
Europe	0.25	0.50	0.72	0.94	0.90	0.78	0.90	0.92	0.91	0.69	0.96	-0.27
Asia Oceania	0.31	0.24	0.41	0.49	0.47	0.51	0.44	0.46	0.45	0.29	0.39	-0.10
Kuwait Blend												
Americas	0.28	0.27	0.13	0.07	0.13	0.12	0.18	-	0.28	-	-	-
Europe	0.10	0.09	0.13	0.18	0.20	0.10	0.22	0.25	0.24	0.28	0.17	0.11
Asia Oceania	0.64	0.62	0.65	0.69	0.71	0.65	0.68	0.61	0.72	0.64	0.57	0.08
Iranian Light												
Americas	-	-	-	-	-	-	-	-	-	-	-	-
Europe	0.08	0.10	0.09	0.10	0.09	0.18	0.33	0.36	0.23	0.22	0.10	0.11
Asia Oceania	0.00	0.01	0.01	-	0.02	0.01	0.01	-	0.04	0.02	-	-
Iranian Heavy[3]												
Americas	-	-	-	-	-	-	-	-	-	-	-	-
Europe	0.03	0.01	0.02	0.01	0.04	0.16	0.27	0.20	0.39	0.27	-	-
Asia Oceania	0.30	0.28	0.27	0.26	0.44	0.47	0.58	0.51	0.68	0.41	0.28	0.13
Venezuelan 22 API and heavier												
Americas	0.61	0.64	0.67	0.67	0.61	0.61	0.65	0.59	0.63	0.68	0.67	0.02
Europe	0.07	0.08	0.09	0.10	0.06	0.05	0.04	0.03	0.03	0.04	0.09	-0.04
Asia Oceania	-	-	-	-	-	-	-	-	-	-	-	-
Mexican Maya												
Americas	0.70	0.66	0.50	0.54	0.52	0.54	0.52	0.55	0.45	0.51	0.49	0.02
Europe	0.14	0.14	0.15	0.11	0.15	0.16	0.17	0.20	0.14	0.17	0.13	0.04
Asia Oceania	-	-	0.01	0.02	0.02	0.04	0.06	0.04	0.04	0.06	0.03	0.03
Canada Heavy												
Americas	1.49	1.71	1.90	1.94	2.12	1.85	2.12	2.22	2.07	1.94	1.87	0.07
Europe	-	0.00	0.01	0.01	0.01	0.01	0.02	-	0.05	0.02	0.02	0.00
Asia Oceania	-	0.00	-	-	-	-	-	-	-	-	-	-
BFOE												
Americas	0.03	0.01	0.01	0.02	0.02	0.02	0.02	0.03	-	0.04	-	-
Europe	0.47	0.56	0.49	0.49	0.47	0.37	0.48	0.68	0.37	0.26	0.49	-0.24
Asia Oceania	0.06	0.07	0.06	0.09	0.09	0.03	-	-	-	0.05	-	-
Russian Urals												
Americas	0.00	-	-	-	-	-	-	-	-	-	-	-
Europe	1.79	1.58	1.61	1.74	1.58	1.78	1.73	1.65	1.81	1.79	1.62	0.16
Asia Oceania	-	-	-	-	-	-	-	-	-	-	-	-
Kazakhstan												
Americas	0.06	0.01	0.00	-	-	-	0.02	-	0.07	-	-	-
Europe	0.59	0.64	0.64	0.65	0.76	0.72	0.70	0.59	0.61	0.48	0.58	-0.09
Asia Oceania	0.00	0.02	0.06	0.06	0.05	0.00	0.01	0.03	-	-	0.07	-
Libya Light and Medium												
Americas	0.00	-	-	-	-	-	-	-	-	-	-	-
Europe	0.57	0.31	0.22	0.25	0.16	0.15	0.17	0.11	0.17	0.27	0.27	0.00
Asia Oceania	0.03	0.02	0.01	-	0.02	0.01	0.03	0.03	0.05	0.02	-	-
Nigerian Light[4]												
Americas	0.07	0.00	0.02	0.02	0.07	0.06	0.08	0.17	-	-	0.03	-
Europe	0.53	0.55	0.57	0.58	0.44	0.46	0.33	0.31	0.25	0.33	0.60	-0.27
Asia Oceania	0.03	0.02	-	-	-	0.01	0.01	0.03	-	0.03	-	-

1 Data based on monthly submissions from IEA countries to the crude oil import register (in '000 bbl), subject to availability. May differ from Table 8 of the Report.
IEA Americas includes United States and Canada.
IEA Europe includes all countries in OECD Europe except Estonia, Hungary and Slovenia.
IEA Asia Oceania includes Australia, New Zealand, Korea and Japan.
2 Iraqi Total minus Kirkuk.
3 Iranian Total minus Iranian Light.
4 33° API and lighter (e.g., Bonny Light, Escravos, Qua Iboe and Oso Condensate).

Table 7
REGIONAL OECD IMPORTS[1,2]
(thousand barrels per day)

	2013	2014	2015	4Q15	1Q16	2Q16	3Q16	Aug 16	Sep 16	Oct 16	Year Earlier Oct 15	Year Earlier % change
Crude Oil												
Americas	5130	4201	4026	4066	4350	4663	4867	4810	4724	4044	3845	5%
Europe	8926	8679	9503	9741	8963	8826	9640	9433	9394	9484	9593	-1%
Asia Oceania	6537	6371	6572	6522	6802	6647	6617	6512	6920	6142	6289	-2%
Total OECD	20592	19251	20101	20328	20115	20135	21125	20756	21038	19670	19727	0%
LPG												
Americas	17	12	10	10	29	9	23	25	14	20	10	100%
Europe	382	427	412	404	400	400	447	413	435	501	391	28%
Asia Oceania	547	532	518	506	590	576	546	574	442	555	441	26%
Total OECD	946	971	940	920	1020	984	1017	1012	891	1075	842	28%
Naphtha												
Americas	17	20	14	12	11	7	4	2	4	16	8	93%
Europe	332	356	348	283	362	299	390	392	420	381	382	0%
Asia Oceania	920	953	951	977	948	834	946	986	890	836	899	-7%
Total OECD	1269	1328	1313	1271	1322	1141	1340	1381	1315	1233	1289	-4%
Gasoline[3]												
Americas	659	665	670	549	460	873	918	853	949	815	613	33%
Europe	106	131	107	117	92	57	49	110	65	150	130	15%
Asia Oceania	75	76	93	98	73	84	72	68	66	124	86	43%
Total OECD	841	871	870	765	625	1014	1039	1031	1080	1088	830	31%
Jet & Kerosene												
Americas	81	100	141	133	152	154	180	159	180	208	137	51%
Europe	445	454	445	397	461	514	568	616	539	512	401	28%
Asia Oceania	73	60	64	74	79	76	47	31	60	73	62	18%
Total OECD	600	614	650	605	692	744	795	806	780	792	600	32%
Gasoil/Diesel												
Americas	58	95	76	63	57	40	84	97	101	54	72	-25%
Europe	1121	1097	1217	1183	1411	1459	1261	1270	1240	1235	1165	6%
Asia Oceania	141	159	164	200	180	225	173	158	195	194	210	-7%
Total OECD	1319	1352	1457	1446	1649	1724	1518	1525	1536	1483	1447	3%
Heavy Fuel Oil												
Americas	165	132	116	91	163	126	158	186	108	116	76	53%
Europe	552	617	565	575	530	515	484	473	503	286	437	-35%
Asia Oceania	232	203	176	204	188	150	158	164	124	105	181	-42%
Total OECD	949	953	856	870	881	791	800	823	735	507	694	-27%
Other Products												
Americas	812	671	675	553	627	713	663	640	626	695	500	39%
Europe	791	704	708	729	759	794	753	690	908	789	741	6%
Asia Oceania	426	408	352	351	384	347	361	380	320	390	339	15%
Total OECD	2029	1784	1735	1632	1770	1854	1777	1710	1854	1875	1581	19%
Total Products												
Americas	1810	1695	1702	1412	1499	1923	2031	1963	1983	1924	1417	36%
Europe	3729	3786	3802	3688	4016	4038	3952	3965	4110	3852	3647	6%
Asia Oceania	2414	2391	2318	2411	2444	2292	2303	2361	2098	2277	2218	3%
Total OECD	7953	7872	7822	7510	7959	8253	8287	8288	8191	8053	7282	11%
Total Oil												
Americas	6940	5896	5728	5478	5850	6585	6898	6773	6707	5969	5262	13%
Europe	12655	12465	13305	13428	12978	12864	13592	13398	13504	13337	13240	1%
Asia Oceania	8951	8762	8890	8932	9246	8939	8921	8873	9017	8418	8507	-1%
Total OECD	28545	27123	27923	27838	28074	28388	29411	29044	29229	27724	27008	3%

1 Based on Monthly Oil Questionnaire data submitted by OECD countries in tonnes and converted to barrels.
2 Excludes intra-regional trade.
3 Includes additives.

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Oil Market Report Contacts

Editor	**Neil Atkinson** ☎ +33 (0)1 40 57 65 90 ✉ Neil.Atkinson@iea.org
Demand	**Matt Parry** ☎ +33 (0)1 40 57 66 23 ✉ Matthew.Parry@iea.org
Non-OPEC Supply	**Toril Bosoni** ☎ +33 (0)1 40 57 67 18 ✉ Toril.Bosoni@iea.org
OPEC Supply	**Peg Mackey** ☎ +33 (0)1 40 57 65 81 ✉ Peg.Mackey@iea.org
Refining	**Kristine Petrosyan** ☎ +33 (0)1 40 57 66 05 ✉ Kristine.Petrosyan@iea.org
Stocks and Prices And Freight	**Olivier Lejeune** ☎ +33 (0)1 40 57 67 58 ✉ Olivier.Lejeune@iea.org
Analyst	**Emma Xiwei Zhou** ☎ +33 (0)1 40 57 67 54 ✉ Xiwei.Zhou@iea.org
Analyst	**Jose Alfredo Peral** ☎ +33 (0)1 40 57 65 03 ✉ JoseAlfredo.Peral@iea.org
Statistics	**Nestor Abraham** ☎ +33 (0)1 40 57 65 48 ✉ Nestor.Abraham@iea.org
Editorial Assistant	**Deven Mooneesawmy** ☎ +33 (0)1 40 57 65 03 ✉ Deven.Mooneesawmy@iea.org
Media Enquiries **IEA Press Office**	☎ +33 (0)1 40 57 65 54 ✉ ieapressoffice@iea.org

Subscription and Delivery Enquiries

Oil Market Report Subscriptions
International Energy Agency
BP 586-75726 PARIS Cedex 15, France ☎ +33 (0)1 40 57 67 12
✉ **OMRSubscriptions@iea.org**
www.iea.org/publications/oilmarketreport/ ☎ +33 (0)1 40 57 66 90

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

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