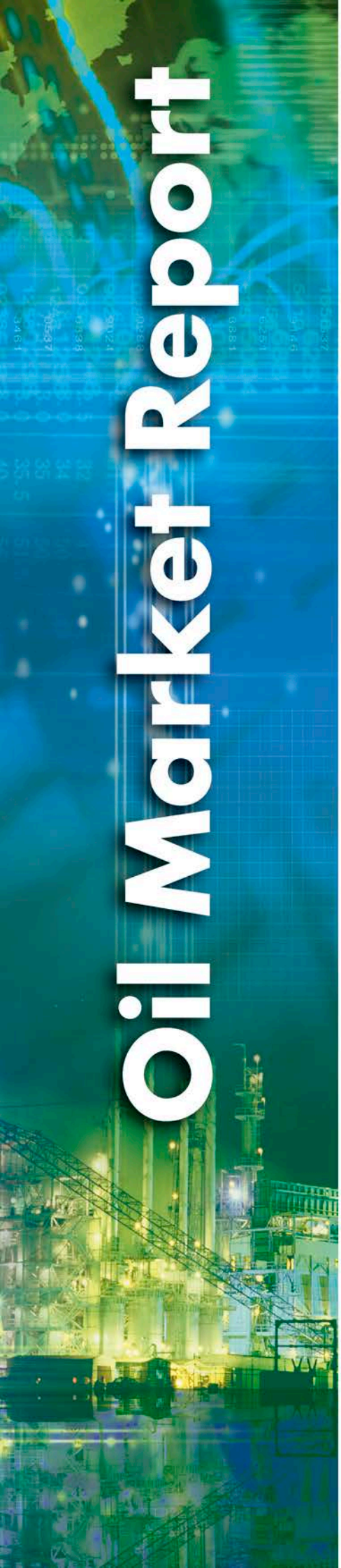

International Energy Agency
Secure Sustainable Together

13 September 2017

HIGHLIGHTS

- **Global oil demand grew very strongly year-on-year in 2Q17, by 2.3 mb/d (2.4%). For 2017, we have revised upwards our growth estimate to 1.6 mb/d.** OECD demand growth continues to be stronger than expected, particularly in Europe and the US. Hurricanes Harvey and Irma are projected to slow US oil demand growth in 3Q17.

- **Global oil supply fell by 720 kb/d in August due to unplanned outages and scheduled maintenance, mainly in non-OPEC countries.** The first decline in four months cut supply to 97.7 mb/d. Compared to a year ago, output was up 1.2 mb/d as non-OPEC continued to show substantial growth. Ten non-OPEC countries cooperating with production cuts achieved more than 100% compliance for the first time.

- **OPEC crude output fell in August for the first time in five months, after renewed turmoil in Libya disrupted flows and others pumped less.** Output decreased by 210 kb/d from a 2017 high to 32.67 mb/d. The 12 members bound by OPEC's supply pact raised their compliance rate to 82% from 75% during July. For the year as whole their compliance rate is 86%.

- **OECD commercial stocks were unchanged in July at 3 016 mb, when they normally increase. The surplus over the five-year average fell to 190 mb.** OECD product stocks were only 35 mb above the five-year average at end-July and could soon fall below it because of the impact of Hurricane Harvey.

- **Benchmark crude prices rose by $1-3/bbl in August with higher crude demand and outages in Libya.** North American crudes lagged behind global benchmarks and Hurricane Harvey increased the gap in late August. Diesel and gasoline prices went higher.

- **For 3Q17, our refinery throughput forecast is revised down by 0.7 mb/d, due to Hurricane Harvey's impact.** This results in global refined product undersupply for the second consecutive quarter. In 4Q17, throughput will reach another record level, at 80.9 mb/d as refiners respond to higher margins in the tight product markets.

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Ready for a rainy day

The US has recently seen two severe weather events: Hurricane Harvey has more directly affected oil industry operations than Hurricane Irma, although the full impact of the latter remains to be seen at the time of writing. As far as Harvey is concerned, disruption to local oil markets in the US Gulf Coast is easing on a daily basis and its impact on global markets is likely to be relatively short-lived. Given the severity of the storm, it was inevitable that the normal output and distribution of products would be hampered, that local shortages would emerge, and prices would rise. Before the storm hit Texas, commercial stocks in the US and in the Gulf Coast region were at comfortable levels. This was a good thing because the estimated loss of refinery output in September of about 1.6 mb/d has only partially been offset by lower demand. Loans to refiners from the US Strategic Petroleum Reserve as well as the availability of surplus European gasoline ensured that the Gulf Coast and areas of the US dependent on it were well covered, as was Mexico. In addition to the adaptations made by the market, the IEA was ready to act through its collective response mechanism if the situation had worsened, although that did not turn out to be necessary. However, the availability of global strategic stocks proved their value, even at a time of strong oil market liquidity.

While the industry responded much better than a decade ago when severe storms hit the Gulf Coast, the region nowadays is more important to the global oil market. For a long time it has been a production and refining hub; today it is an important global trading centre with more than 4 mb/d of products and 0.8 mb/d of crude oil being exported. For products, US exports are important for many countries e.g. Mexico, Venezuela and several Central American states. Crude oil from the US finds its way to an increasing number of countries including China, Korea, Italy, the Netherlands, Singapore and the United Kingdom. With US export volumes expected to increase, the strategic importance of the Gulf Coast will only grow. The rise of the Gulf Coast as a major energy hub means that, in some respects, it can be compared to the Strait of Hormuz in that normal operations are too important to fail.

In the sections of this *Report,* we assess the impact of Hurricane Harvey, but, as always, there are other market developments that affect our forecast. Demand growth is strengthening: robust demand in OECD countries was a key factor in 2Q17's global growth of 2.3 mb/d, the highest quarterly year-on-year increase since mid-2015. Consequently, our estimated demand growth for 2017 has been increased to 1.6 mb/d. On the supply side, global production fell in August for the first time since April, with lower output from OPEC countries being one factor but also, following a fall in month-on-month production in June, US crude production has been affected by Harvey from a lower base than we anticipated. As for stocks, OECD levels were unchanged in July versus June, when the normal trend is for an increase. Within the OECD total, product stocks are now only 35 mb above the five-year average. Depending on the pace of recovery for the US refining industry post-Harvey, very soon OECD product stocks could fall to, or even below, the five-year level. Oil prices have recently settled down after the disturbance brought by Hurricane Harvey and, indeed, Brent crude values have increased to levels last seen in early April and the market is now in backwardation, albeit a shallow one. Based on recent bets made by investors, expectations are that markets are tightening and that prices will rise, albeit very modestly.

The oil market has coped relatively well with the challenges posed by the hurricane season thus far, but that said, now may be a good time to consider steps to mitigate the impact of future severe-weather events. This could encompass reviewing the robustness of the Gulf Coast energy infrastructure, including production facilities, refineries, crude and product storage capacity, pipelines and marine infrastructure, and what measures can be taken to minimize disruptions to port operations. There is also an opportunity to examine whether more can be done by industry and government working together to strengthen energy security, perhaps including the provision of government-held product stocks in the US, a subject that was last examined in 2015's *Quadrennial Energy Review*. The IEA remains committed to strengthening energy security in all parts of the value chain and we will work with our member governments and others to achieve this objective.

DEMAND

Summary

- This month's *Report* combines the impact of very strong demand numbers in OECD countries in June and the effect of hurricanes Harvey and Irma on US energy demand in 3Q17. The overall demand growth is slightly modified, with an upward revision of 0.1 mb/d in 2017. **We now forecast demand growth of approximately 1.6 mb/d in 2017 (or 1.7%) and 1.4 mb/d in 2018 (or 1.4%).**

- **Estimates of year-on-year (y-o-y) global demand point to very strong growth in 2Q17, at 2.3 mb/d** (2.4%). OECD demand growth continues to be much stronger than expected, particularly in Europe and the US.

- **US June data showed demand growth of 665 kb/d y-o-y.** Gasoline demand growth was 100 kb/d and gasoil rose 115 kb/d, benefitting from healthy industrial production and rising freight transportation. LPG/ethane demand rose by 275 kb/d.

- **German oil consumption rose by 120 kb/d y-o-y in July, supported by a jump of 160 kb/d in gasoil deliveries.** German consumers may have stored heating oil ahead of the winter season.

- **Chinese oil demand growth slowed to 480 kb/d y-o-y in July** from 700 kb/d in 1Q17 and 573 kb/d in 2Q17.

- **Indian demand growth slowed to 70 kb/d in July**, after a strong 2Q17. LPG and gasoil demand remained strong, while kerosene demand declined by 30 kb/d.

Global Oil Demand (2016-2018)

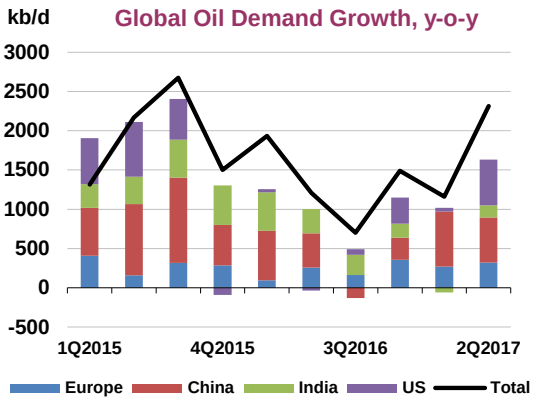
(million barrels per day)*

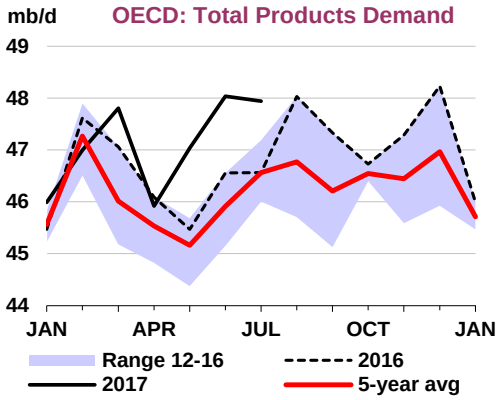
	1Q16	2Q16	3Q16	4Q16	2016	1Q17	2Q17	3Q17	4Q17	2017	1Q18	2Q18	3Q18	4Q18	2018
Africa	4.2	4.2	4.0	4.1	4.1	4.3	4.2	4.1	4.2	4.2	4.4	4.3	4.2	4.4	4.3
Americas	31.0	31.0	31.7	31.4	31.3	30.9	31.6	31.7	31.8	31.5	31.2	31.8	32.1	31.9	31.7
Asia/Pacific	33.4	32.8	32.2	33.3	32.9	34.2	33.9	32.9	34.3	33.8	35.0	34.5	33.6	35.2	34.6
Europe	14.3	14.6	15.2	14.9	14.8	14.6	15.0	15.3	15.0	15.0	14.5	15.0	15.4	15.1	15.0
FSU	4.6	4.6	4.9	4.9	4.8	4.6	4.8	5.0	5.0	4.8	4.7	4.8	5.1	5.0	4.9
Middle East	7.9	8.4	8.7	8.1	8.3	7.8	8.4	8.7	8.3	8.3	8.1	8.6	8.9	8.4	8.5
World	**95.3**	**95.6**	**96.7**	**96.8**	**96.1**	**96.5**	**97.9**	**97.8**	**98.7**	**97.7**	**97.9**	**99.0**	**99.4**	**100.0**	**99.1**
Annual Chg (%)	2.1	1.3	0.7	1.6	1.4	1.2	2.4	1.1	1.9	1.7	1.4	1.2	1.7	1.3	1.4
Annual Chg (mb/d)	1.9	1.2	0.7	1.5	1.3	1.2	2.3	1.1	1.9	1.6	1.4	1.1	1.7	1.3	1.4
Changes from last OMR (mb/d)	0.0	0.0	0.0	0.0	0.0	0.0	0.5	-0.1	0.0	0.1	0.0	0.3	0.2	-0.1	0.1

* Including biofuels

Global overview

Estimates of global oil demand growth in 2017 have been revised up again, this time by 0.1 mb/d, to 1.6 mb/d, as 2Q17 numbers were particularly strong. Oil demand grew by 1.2 mb/d y-o-y in 1Q17, and accelerated to 2.3 mb/d in 2Q17, due to a combination of solid non-OECD demand and very strong OECD consumption. World growth should slow in 3Q17 due to the impact of hurricanes on US oil demand before bouncing back in 4Q17. Our estimate of global oil demand has been revised up by 90 kb/d for 2017, to 97.7 mb/d, and our forecast for 2018 has increased by 100 kb/d to 99.1 mb/d. We forecast demand growth of approximately 1.6 mb/d in 2017 and 1.4 mb/d in 2018. We have also estimated in this *Report* the possible impact of hurricanes Harvey and Irma on US oil demand.





OECD

This month we have data through June for all OECD countries. For July, we have preliminary estimates for the US, Mexico, Japan, Korea and the major Western European economies. Recent data confirms exceptionally strong growth for oil deliveries in June and preliminary data for July shows a slight slowdown. OECD oil demand benefited from a rebound in economic activity and world trade, lower oil prices, and one-off elements boosting the y-o-y comparison.

OECD Demand based on Adjusted Preliminary Submissions - July 2017

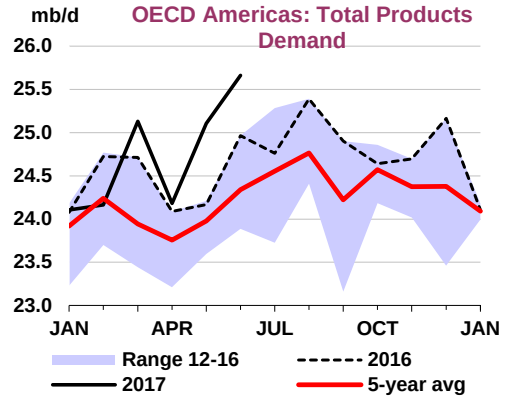
(million barrels per day)

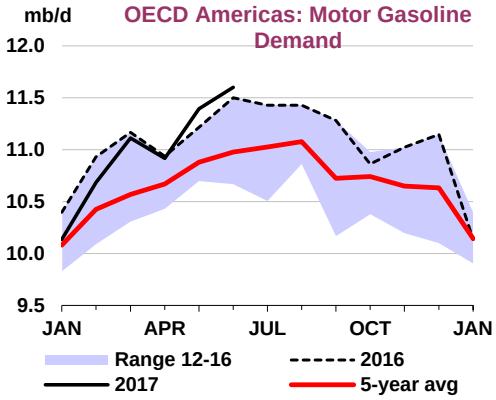
	Gasoline		Jet/Kerosene		Diesel		Other Gasoil		RFO		Other		Total Products	
	mb/d	% pa	mb/d	% pa	mb/d	% pa	mb/d	% pa	mb/d	% pa	mb/d	% pa	mb/d	% pa
OECD Americas*	**11.57**	**1.2**	**2.14**	**5.2**	**4.63**	**7.3**	**0.45**	**7.2**	**0.72**	**0.1**	**5.98**	**2.38**	**25.49**	**3.0**
US50	9.76	1.7	1.82	5.7	3.78	10.0	0.16	10.0	0.42	-8.0	4.52	3.68	20.46	3.8
Canada	0.91	1.0	0.16	2.8	0.30	2.2	0.22	8.7	0.04	9.1	0.83	2.70	2.46	2.6
Mexico	0.76	-4.4	0.09	4.0	0.34	-11.0	0.05	-3.4	0.16	26.5	0.52	-8.60	1.91	-4.5
OECD Europe	**2.03**	**1.7**	**1.56**	**2.9**	**5.01**	**2.6**	**1.30**	**18.6**	**0.93**	**3.3**	**3.72**	**-0.59**	**14.55**	**3.0**
Germany	0.45	3.3	0.23	-0.6	0.81	1.8	0.36	66.2	0.08	1.0	0.59	-7.63	2.52	5.1
United Kingdom	0.28	-0.1	0.29	0.5	0.51	-0.4	0.14	4.0	0.03	0.4	0.33	5.91	1.57	1.5
France	0.19	-0.2	0.18	3.1	0.70	-1.1	0.23	11.1	0.06	38.8	0.36	-1.09	1.72	1.9
Italy	0.19	-5.6	0.13	8.0	0.47	-1.1	0.09	0.0	0.07	5.6	0.34	-3.39	1.29	-1.1
Spain	0.13	3.6	0.16	3.9	0.51	5.0	0.14	8.3	0.16	-3.1	0.28	-0.21	1.37	3.0
OECD Asia & Oceania	**1.62**	**1.6**	**0.71**	**7.8**	**1.39**	**9.2**	**0.43**	**1.0**	**0.61**	**-6.7**	**3.13**	**2.24**	**7.90**	**2.9**
Japan	0.95	0.1	0.33	9.6	0.44	4.4	0.28	-7.9	0.35	1.0	1.42	-2.62	3.77	-0.3
Korea	0.23	8.9	0.16	10.4	0.42	13.0	0.10	34.3	0.23	-17.4	1.49	7.31	2.63	6.6
Australia	0.32	1.0	0.15	2.5	0.47	11.2	0.00	0.0	0.02	5.0	0.16	1.26	1.13	5.4
OECD Total	**15.23**	**1.3**	**4.40**	**4.8**	**11.03**	**5.4**	**2.19**	**12.2**	**2.26**	**-0.6**	**12.83**	**1.47**	**47.94**	**3.0**

* Including US territories

Americas

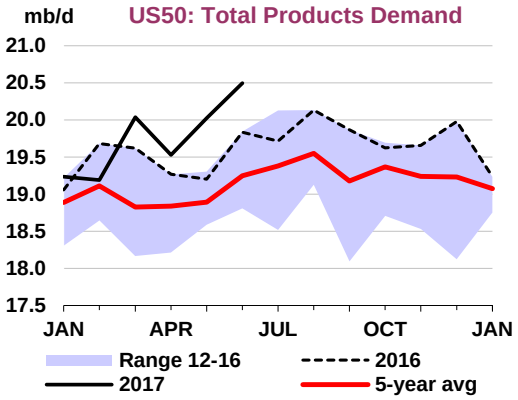
The latest monthly data for June showed solid oil demand growth in the US of 665 kb/d y-o-y, pushing up OECD Americas growth to 695 kb/d. For 2Q17 as a whole, demand in OECD Americas rose by 580 kb/d. The US was the main source of growth, increasing by 590 kb/d. By contrast, growth in Canada remained modest at 40 kb/d in the quarter, while Mexican demand continued to decline by 45 kb/d y-o-y in the same period.

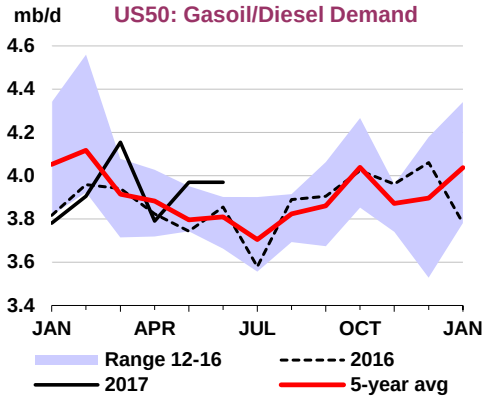




US oil demand was extremely strong in 2Q17, supported by good economic growth, high employment, increasing traffic, freight transportation and industrial activity. In addition, relatively low oil prices for more than two years have supported growth.

Department of Energy data for June show gasoline demand increasing by 100 kb/d, supported by rising traffic as reflected in Vehicle Miles Travelled (VMT). For June, the Department of Transportation reported a growth in travel demand of 1.2% y-o-y and gasoline demand rose 1.1% y-o-y. VMT growth should remain stable in the medium term, supported by gains in employment and household incomes. Hurricanes and resulting higher gasoline prices, however, are likely to take their toll on VMT and gasoline demand in the near future (at least in September).



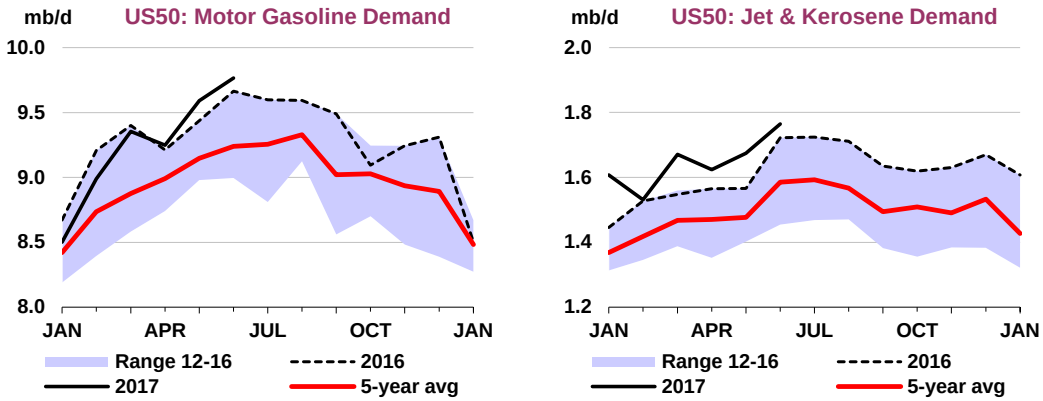


US distillates demand rose 115 kb/d in June, supported by y-o-y growth in manufacturing production and higher freight transportation. The US industrial output index posted a strong rebound in 2017 after declines in 2015 and stabilisation in 2016. Between January and July 2017, the index rose 1.9%, reversing a decline of 3.8% between end 2014 and 1Q2016. The ups and downs of oil fracking activity explain part of the evolution of the industrial production index. A rebound in trade may also have supported diesel demand. The world trade monitor published by the CPB Netherland Bureau for Economic Policy Analysis showed an increase of 4.1% y-o-y in the volume of US imports in 1H17 after 0.7% growth in 2016. Diesel demand generally benefits from higher trade volume, as a high proportion of imported goods are distributed by trucks.

US jet-fuel demand rose by 40 kb/d in June on higher air traffic. The International Air Transport Association reported an increase in revenue passenger kilometres in North America of 4% y-o-y in June and 3.8% y-o-y in 1H17.

LPG/ethane demand continues to show strong growth. In June, LPG consumption rose by a very strong 275 kb/d y-o-y. This likely reflects the start-up of new ethylene capacity supporting ethane consumption.

A joint venture between Occidental Petroleum and Mexichem reportedly commissioned its ethane cracker in February and started to produce ethylene in 1Q17. The plant was due to ramp up throughputs during 2017, reaching full capacity at end 2017. Dow Chemical completed a 1.5 mt/y ethane cracker south of Houston in April and Chevron Phillips Chemical expects the start-up of a new 1.5 mt/y cracker in Baytown in 4Q17.



Demand in 3Q17 will inevitably be impacted by the hurricanes and our initial expectation is that there will be a small y-o-y decline of 20 kb/d. A strong hurricane, such as Gustav/Ike in 2008, removed roughly 0.5 mb/d of LPG/ethane demand in the first month, 0.2 mb/d of naphtha demand and 0.2 mb/d of gasoline demand (see *Hurricanes' impact on US oil demand*). Harvey and Irma are expected to remove 0.6 to 0.8 mb/d from US oil demand in September, in addition to the seasonal drop in demand usually observed between August and September. Demand is expected to bounce back in 4Q17, in particular for gasoil, as recovery work proceeds.

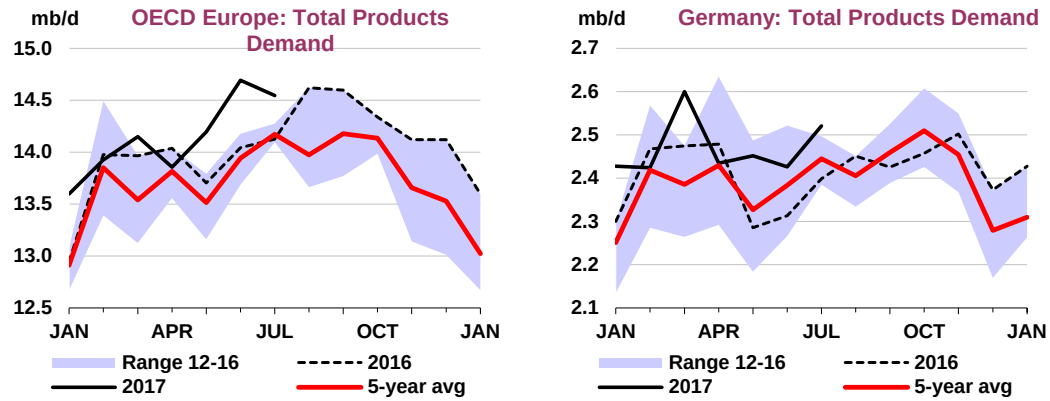
Due to demand losses in September, US oil demand in 3Q17 is expected to fall slightly below last year (20 kb/d), before bouncing back in 4Q17 with growth of 340 kb/d y-o-y. US oil demand is expected to grow by 240 kb/d in 2017 (to 20.2 mb/d) and by 115 kb/d/d in 2018 to 20.3 mb/d.

Europe

European oil demand in June has also been revised up by 360 kb/d compared to recent estimates, as revised data were particularly strong, showing an increase in demand of 650 kb/d y-o-y for the month. The y-o-y growth in June, underpinned by strong industrial and transport activity, was also supported by a base effect. Demand in June 2016 was particularly low due to strikes in France, slowing activity in many sectors and reducing fuel deliveries. At the end of May 2016, most French refineries were halted and many petrol stations ran dry. Refinery and depot blockades continued until the start of June and protests ended by the second week of June with most refineries restarting. In the meantime, strikes had spread to the electricity sector, the railways, airlines, and ports – halting oil discharges at most oil terminals. Product shortages were reported in several French regions.

Regardless of the specific June base effect, European oil demand has been exceptionally strong in recent months. May, June and July (according to preliminary indications) deliveries, in particular for gasoil, were exceptional. While German gasoil demand explains a large part of the increase other European countries – e.g. Italy, Turkey, Poland and Romania - also recorded very strong growth. Industrial production in many European countries posted a strong acceleration in 1H17 after a relatively mediocre performance in 2016. In Germany, the Ifo Business climate index for industry and trade rose to its highest level since 1991 in July 2017 while Germany's industrial production index rose 2.9% between January and May 2017. In Turkey, the index of industrial production rose 3.1% between January and April 2017 before slowing down. Poland's industrial production index rose 1.9% between January and July 2017. In addition, the CPB Netherland Bureau for Economic Policy Analysis, monitoring world trade on a monthly

basis, reported a 3.3% y-o-y increase in the volume of European imports in June and a growth of 4.7% y-o-y in exports. A part of gasoil deliveries depends on trade movements.



German oil demand rose in June by 115 kb/d y-o-y supported, once again, by very strong gasoil demand (140 kb/d). Most of the increase in German gasoil demand comes from other gasoil (125 kb/d) and we suspect that consumers, holding large storage capacity, may have filled their heating oil tanks, taking advantage of relatively low prices in June. While other gasoil deliveries were high in June 2017 by historical standards, well above the three preceding years, they were also inflated by a comparison with low deliveries in 2016, as consumers may have waited for the end of French strikes to refill their heating oil tanks. Unfortunately, data on tertiary storage in Germany are no longer available to confirm this assumption. German gasoline demand also rose 25 kb/d in June.

French data shows an increase of 195 kb/d y-o-y in June oil demand, of which 100 kb/d for gasoil, 25 kb/d for gasoline and 20 kb/d for kerosene. June 2017 demand growth has been artificially boosted by the comparison with June 2016 deliveries, which were lower due to the strikes. French diesel deliveries, in particular, were severely impacted by the 2016 strikes.

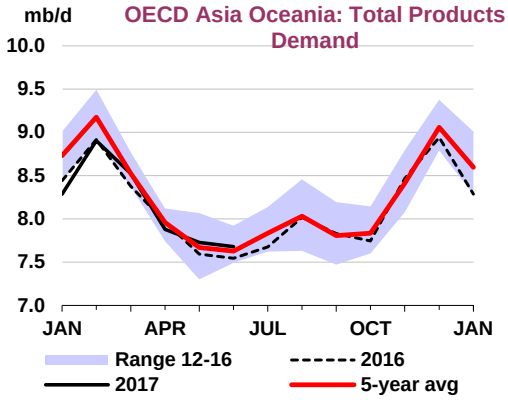
Several other European countries reported strong oil demand in June, in particular for gasoil. Italy recorded an increase of 30 kb/d y-o-y in naphtha demand, 25 kb/d y-o-y in gasoil demand and 70 kb/d y-o-y in total oil demand. Poland reported an annual increase of 70 kb/d in diesel demand in June. Spain diesel demand rose by 25 kb/d y-o-y in June while Turkey's gasoil demand rose 55 kb/d y-o-y.

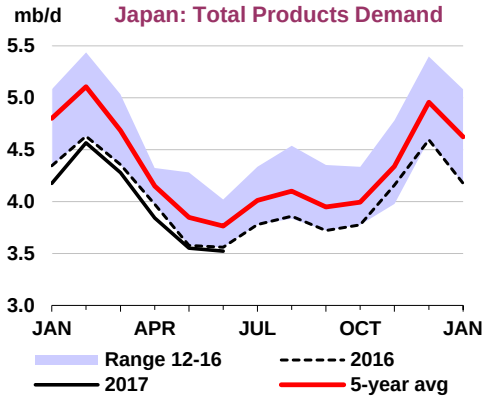
Oil demand in Europe should continue to be supported by the improved economic environment, strong industrial activity and a rebound in external trade. Our forecast for European oil demand has been raised by 45 kb/d for 2017 and by 70 kb/d for 2018 since last month's *Report*. Gasoil demand has been revised up by 20 kb/d for 2017 and by 50 kb/d for 2018.

Asia Oceania

Asia Oceania demand also ended up stronger than expected in June, posting growth of 135 kb/d y-o-y. Gasoil demand was particularly strong, rising by 200 kb/d, with gasoline growing by 25 kb/d.

In **Japan**, oil demand dropped by 65 kb/d y-o-y in 2Q17 on weaker demand for most products. South Korean demand rose slightly in 2Q17, by close to 15 kb/d. A surprise came from Australia, with gasoil demand increasing by 85 kb/d in 2Q17 and by 110 kb/d in June. Australian gasoil demand has been increasing since the start of 2017, in part supported by the restart of coal mines at the end of 2016. A strong rally in coal prices at the end of 2016 triggered the restart of projects and operations at mines that were suspended when coal prices fell close to 10 year-lows. Eight mines restarted in Queensland and New South Wales. Asia Oceania demand has been revised up by 60 kb/d for 2017 and 45 kb/d for 2018. Gasoil benefited the most from the revision.





Non-OECD

For July, non-OECD data showed a stabilisation in most major countries. China saw demand grow by 480 kb/d y-o-y after a growth of 440 kb/d in June. India continued to post relatively modest gains, 70 kb/d in July after 85 kb/d in June. Brazilian oil demand increased 30 kb/d while Russia posted strong growth of 190 kb/d in July.

Non-OECD: Demand by Product

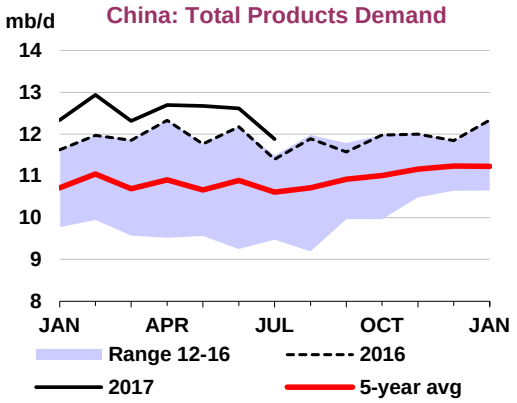
(thousand barrels per day)

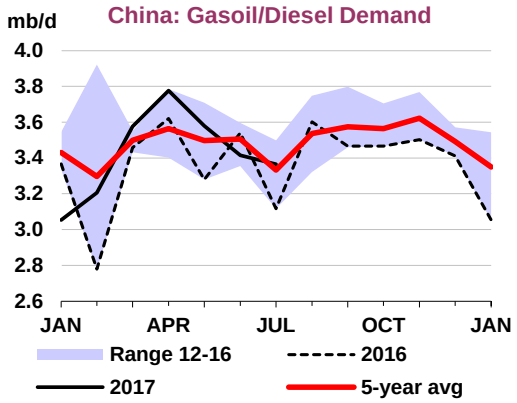
	Demand			Annual Chg (kb/d)		Annual Chg (%)	
	4Q16	1Q17	2Q17	1Q17	2Q17	1Q17	2Q17
LPG & Ethane	6,410	6,278	6,409	194	308	3.2	5.0
Naphtha	2,719	2,807	2,734	69	19	2.5	0.7
Motor Gasoline	10,982	11,139	11,293	223	384	2.0	3.5
Jet Fuel & Kerosene	2,979	3,192	3,166	125	88	4.1	2.9
Gas/Diesel Oil	14,494	14,101	14,954	40	306	0.3	2.1
Residual Fuel Oil	5,338	5,410	5,403	21	93	0.4	1.7
Other Products	6,506	6,662	6,944	257	153	4.0	2.2
Total Products	**49,428**	**49,588**	**50,904**	**929**	**1,351**	**1.9**	**2.7**

China

Chinese oil demand rose by 575 kb/d in 2Q17 following an increase of 700 kb/d in 1Q17. Demand growth decelerated further in July to 480 kb/d. The gradual deceleration in growth reflects an ongoing slowdown in economic activity. China's manufacturing production rose 6.7% y-o-y in July, the lowest growth since December 2016. Retail sales growth declined from 11% y-o-y in June to 10.4% in July. Chinese exports rose 5.5% y-o-y in August, slowing from 7.2% in July.

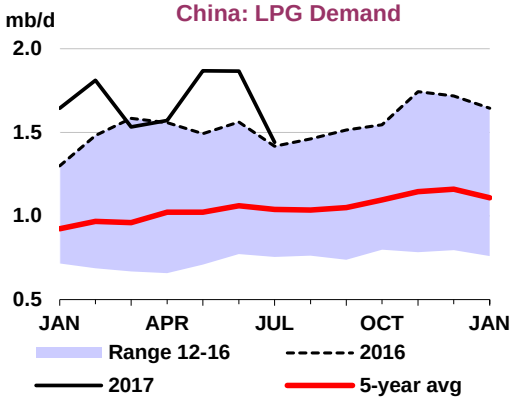
In its annual review, the International Monetary Fund revised up forecasts for Chinese growth but warned that the country's current credit trajectory is dangerous, with increasing risks of a disruptive adjustment as non-financial sector debt is set to rise to 290% of GDP in 2022 compared with 235% in 2016. China seems to have put the reduction of domestic debts as a priority and monetary tightening is slowing credit expansion in recent months. As a result of tighter credit control and the reduction of overcapacity in some sectors, economic activity and energy demand appear to be slowing recently. The property market and infrastructure spending are particularly at risk: housing sales rose 21% y-o-y in 1H17 and slowed to 2% in July. Housing starts posted their first decline in July (3% y-o-y) since September 2016.

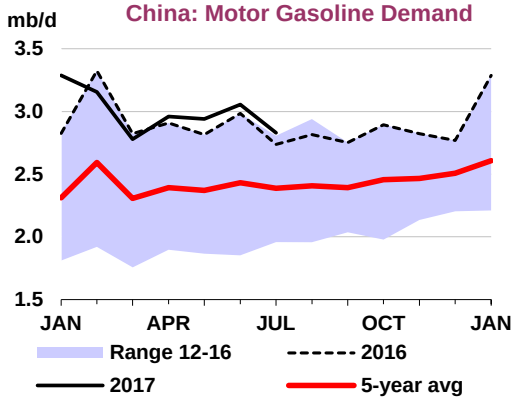




Chinese LPG demand grew by 25 kb/d y-o-y in July after posting growth of 235 kb/d in 2Q17. LPG demand in 1H17 was supported by new Propane Dehydrogenation (PDH) capacity but growth has started to slow with no new units coming online recently. In addition, existing PDH plants were reportedly running at an average utilisation rate of 80% at the beginning of June due to lower demand for propylene.

Gasoline demand increased by 85 kb/d y-o-y in 2Q17 and 90 kb/d in July. Growth slowed in 1H17, reflecting lower car sales and, possibly, lower car use. After growth of 16% in 2016, passenger car sales slowed in 2017, even falling in April and May. Sales rebounded, however, in June, increasing by 2.3% y-o-y. In July, total vehicle sales grew 6.2% to 1.97 million vehicles. In the first seven months of 2017, 15.3 million vehicles were sold, representing growth of 4.1% y-o-y. The sales of electric and hybrid vehicles ("new energy vehicles") rose 55% in July to 56,000 units. The China Association of Automobile Manufacturers expects sales of these vehicles to reach 700,000 units in 2017.





Chinese gasoil demand has been supported by industrial activity and strong freight transportation, increasing by 70 kb/d y-o-y in 1Q17 and 115 kb/d in 2Q17. Gasoil demand growth increased to 250 kb/d in July.

We expect Chinese oil demand growth to accelerate to 515 kb/d in 2017 from 300 kb/d in 2016, supported by the recent strength observed in 1H17. Oil demand growth should, however, slow to 385 kb/d in 3Q17 and 405 kb/d in 4Q17. Gasoline demand is projected to increase by 95 kb/d in 2017 and 60 kb/d in 2018. Gasoil demand should achieve a growth of 85 kb/d in 2017 and 95 kb/d in 2018. For Chinese oil demand as a whole, we expect growth of 320 kb/d in 2018.

China: Demand by Product

(thousand barrels per day)

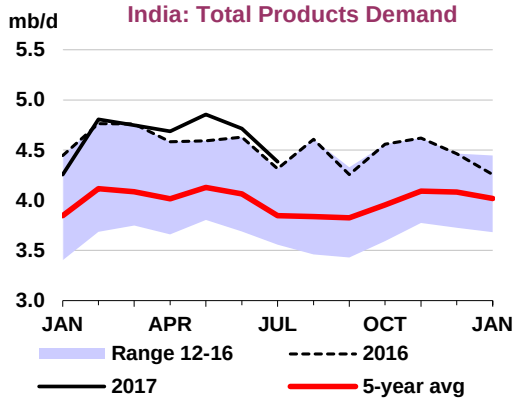
	Demand			Annual Chg (kb/d)		Annual Chg (%)	
	2016	2017	2018	2017	2018	2017	2018
LPG & Ethane	1,531	1,660	1,702	129	43	8.4	2.6
Naphtha	1,093	1,116	1,137	22	21	2.0	1.9
Motor Gasoline	2,870	2,965	3,026	95	61	3.3	2.1
Jet Fuel & Kerosene	656	701	733	46	31	7.0	4.5
Gas/Diesel Oil	3,386	3,472	3,568	86	95	2.6	2.7
Residual Fuel Oil	339	359	353	21	-6	6.1	-1.8
Other Products	1,989	2,106	2,178	117	72	5.9	3.4
Total Products	**11,863**	**12,379**	**12,697**	**516**	**318**	**4.3**	**2.6**

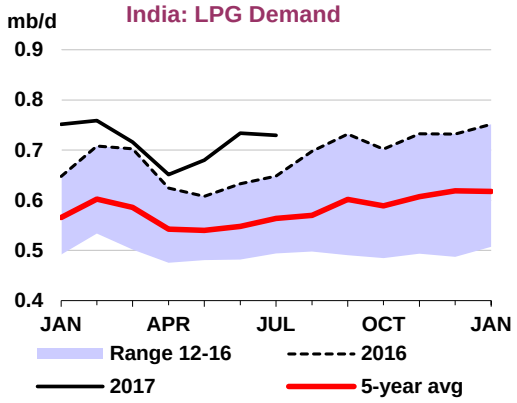
Other Non-OECD

India oil demand grew y-o-y by 70 kb/d in July, after 85 kb/d in June. Gasoil demand remained strong, increasing by 115 kb/d, in line with growth seen in May and June. LPG demand also rose by a strong 80 kb/d in July, supported by government policies of pushing LPG into the domestic sector at the expense of kerosene, which declined by 30 kb/d in July.

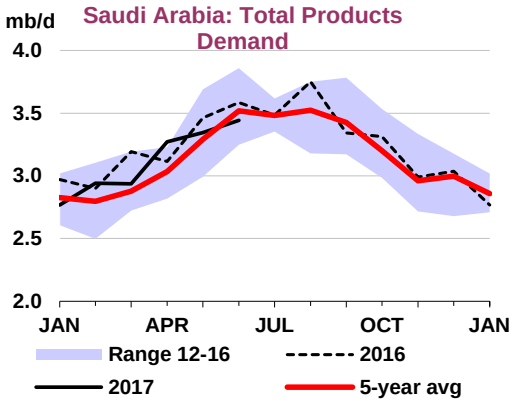
Indian GDP growth slowed to 5.7% y-o-y in 2Q17, its slowest pace in three years. The demonetisation episode and confusion over a new goods and services tax seems to have reduced economic activity. The manufacturing sector was particularly impacted, expanding by only 1.2% y-o-y in 2Q17 after growth of 10.7% last year. Service sector activity growth also slowed to 6.4% from 9.4%.

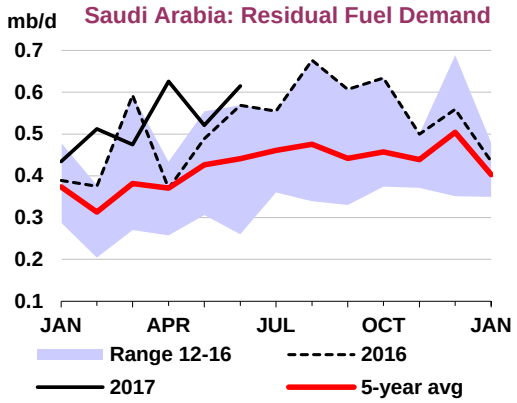
Total Indian demand growth is expected to slow to 100 kb/d in 3Q17 from 150 kb/d in 2Q17 and to bounce back to 255 kb/d in 4Q17. For 2017 as a whole, demand is projected to increase by 115 kb/d and in 2018 by 275 kb/d.



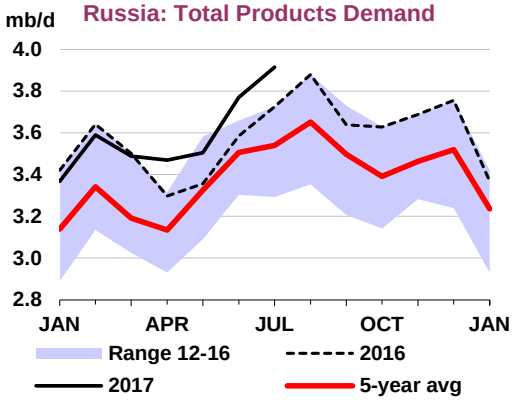


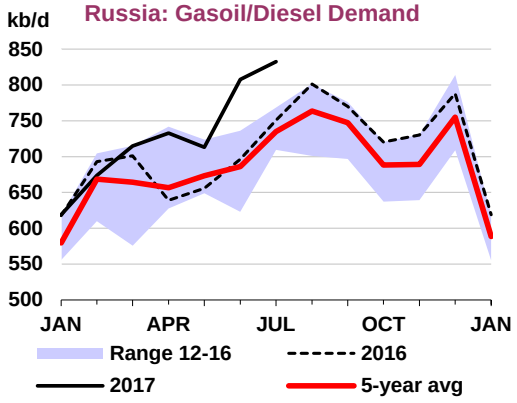
Saudi Arabian oil demand continues to post y-o-y declines. Total demand ended up 140 kb/d below the previous year in June, after a drop of 120 kb/d in May. The decrease is mostly caused by gasoil, which fell by 170 kb/d, reflecting a sharp slowdown in economic activity. Saudi GDP fell by 0.5% y-o-y in 1Q17 as the government implemented austerity measures to balance the budget. The IMF expects the Saudi economy to expand by 0.4% in 2017, the lowest growth since 2009.





Russian demand remained strong in July, with y-o-y growth of roughly 190 kb/d, supported by a strong increase in gasoil deliveries (80 kb/d), which likely reflects the better shape of the Russian industry. The economic outlook has improved in recent months but the recovery remains fragile and is at risk from any new US sanctions. The economy contracted in 2015 and 2016 but is set to grow by roughly 1.7% in 2017. Russian GDP grew by 2.5% y-o-y in 2Q17, outpacing the consensus forecast. Car sales rose 19% y-o-y in July, the highest growth since 2012.





Overall, Russian oil product demand is forecast to average 3.65 mb/d in 2017, 60 kb/d up on 2016. We expect growth of approximately 55 kb/d in 2018.

The latest **Brazilian** data showed demand in July at 3.1 mb/d, roughly 30 kb/d up on the year earlier, supported by strong gasoil deliveries (up 25 kb/d). Brazil's oil demand is expected to be stagnant in 2017 with growth of only 5 kb/d after a drop of 100 kb/d in 2016. We expect a growth to be slightly faster in 2018 at 40 kb/d.

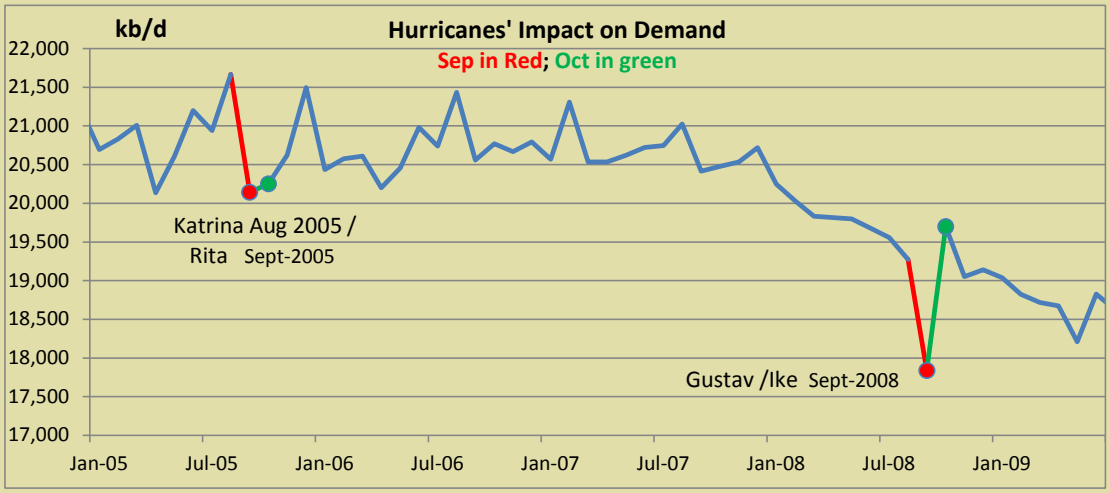
Non-OECD: Demand by Region

(thousand barrels per day)

	Demand			Annual Chg (kb/d)		Annual Chg (%)	
	4Q16	1Q17	2Q17	1Q17	2Q17	1Q17	2Q17
Africa	4,145	4,341	4,238	152	64	3.6	1.5
Asia	24,939	25,678	26,133	850	1,048	3.4	4.2
FSU	4,927	4,580	4,767	-7	207	-0.2	4.5
Latin America	6,610	6,471	6,623	-32	7	-0.5	0.1
Middle East	8,093	7,821	8,402	-39	8	-0.5	0.1
Non-OECD Europe	714	697	741	5	17	0.7	2.4
Total Products	**49,428**	**49,588**	**50,904**	**929**	**1,351**	**1.9**	**2.7**

Hurricanes' impact on US oil demand

Several hurricanes, in the past, have had a significant impact on US oil demand. The two recent episodes affecting most oil product demand were Katrina/Rita in 2005 and Gustav/Ike in 2008. Although market conditions were very different at the time, with strong demand in 2005 and falling consumption in 2008 as the US was entering in economic recession, the short term impact on demand was quite similar. In 2005, total oil product demand declined by 1.5 mb/d between August and September. In 2008, demand dropped by 1.4 mb/d m-o-m in September.



The main difference between the two episodes, however, was in the time it took demand to recover. While it took several months for oil consumption to recover in 2005, demand jumped by 1.86 mb/d in October 2008, supported by reconstruction work and a faster restart of gas processing facilities and the petrochemical industry. In 2005, demand recovery was slowed by a third hurricane, Wilma, making a landfall in Florida in October and causing major power outages in the state. More than three million customers of Florida Power and Light were impacted by power cuts. Irma had a similar impact on 10 September 2017, cutting power supply to 4 million customers in Florida during the weekend.

Changes vs. 5-year historical average

kbd	September		October	
	Katrina/Rita (2005)	Gustav/Ike (2008)	Katrina/Rita (2005)	Gustav/Ike (2008)
LPG/Ethane	-465	-524	-35	343
Naphtha	-211	-91	-48	64
Gasoline	-185	-204	13	443
Kerosene	45	-40	-36	-98
Gasoil	112	99	-175	314
Fuel	113	154	-109	33
Other	-170	-19	180	450
Total	-762	-626	-211	1,550

In order to identify the specific impact of the hurricanes, we computed the differences between changes in product demand observed during and after the 2005 and 2008 hurricanes and average historical changes over the preceding 5-years at the time. Both 2005 and 2008 hurricanes removed between 0.6 mb/d and 0.8 mb/d of demand in September. Past hurricanes have had a strong impact on the petrochemical industry, as did Harvey, reportedly shutting more than half of US ethylene production capacity. LPG/ethane consumption was the most impacted in previous hurricanes, losing roughly 0.5 mb/d in September compared to the average historical changes. Naphtha demand also lost 0.1 mb/d to 0.2 mb/d. Gasoline demand lost 0.2 mb/d in both 2005 and 2008 but gasoil demand in both cases benefited from the hurricane, gaining 0.1 mb/d in September compared to the historical average. The path of oil demand recovery was very different in 2005 and 2008. While there was a very strong rebound in demand in October 2008, it remained subdued after Katrina/Ike (in part because of Wilma) and took longer to recover. Oil consumption in the petrochemical sector recovered quicker in 2008, as did gasoline and gasoil demand.

It is difficult to assess the final impact of Harvey and Irma on US oil demand with the information currently available. We can nevertheless assume a strong impact on LPG/ethane demand in the short term (roughly 0.5 mb/d in September), some short term impact on gasoline (0.2 mb/d) and some support to gasoil demand (0.1 mb/d in September).

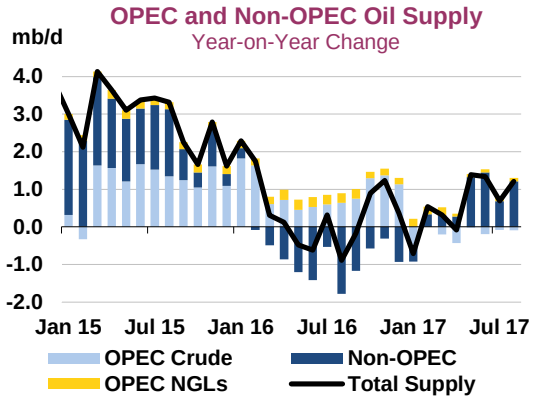
SUPPLY

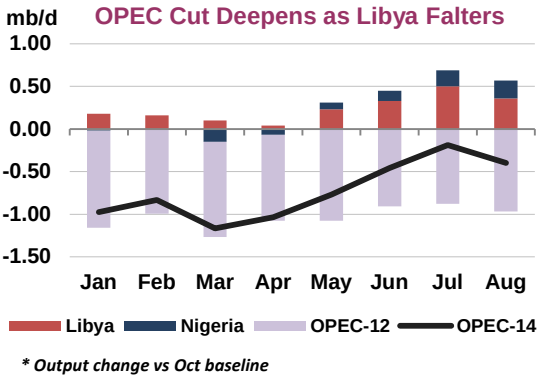
Summary

- **Global oil supply fell by 720 kb/d in August due to unplanned outages and scheduled maintenance, mainly in non-OPEC countries.** The first decline in four months cut supply to 97.7 mb/d. Compared to a year ago, output was up 1.2 mb/d as non-OPEC continued to show substantial growth.

- **OPEC crude output fell in August for the first time in five months, after renewed turmoil in Libya disrupted flows and others pumped less.** Output decreased by 210 kb/d from a 2017 high to 32.67 mb/d in August. The 12 members bound by OPEC's supply pact raised their compliance rate to 82% from 75% during July.

- A substantial drop in supply from Libya meant that **output from OPEC *as a whole* fell by 400 kb/d in August** compared to an October baseline for supply cuts.





- **Summer maintenance curbed non-OPEC supplies by more than 500 kb/d in August.** At 58 mb/d, total non-OPEC output nevertheless stood 1.2 mb/d higher than a year earlier, with growth dominated by the US, Kazakhstan, Russia, Canada and Brazil. The largest year-on-year declines came from Mexico, Azerbaijan and Oman.

- **Hurricane Harvey is estimated to have shut in roughly 200 kb/d of crude oil production in August and around 300 kb/d in September.** While lost production from the Gulf of Mexico was small compared to previous hurricanes, onshore Texas output was more severely impacted.

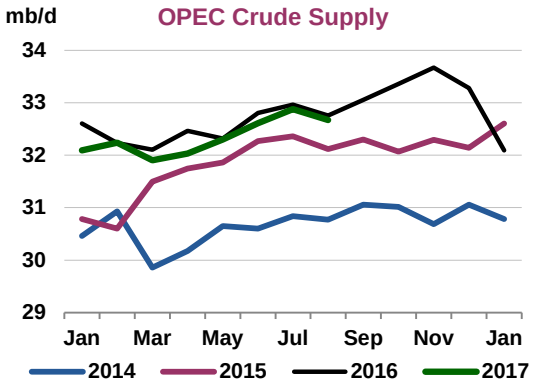
- **Forecast non-OPEC supply growth is essentially unchanged from last month's *Report*, as a higher outlook for Canada and the North Sea offset weaker US and Brazilian estimates.** Growth is forecast to average 0.7 mb/d in 2017 and nearly 1.5 mb/d in 2018.

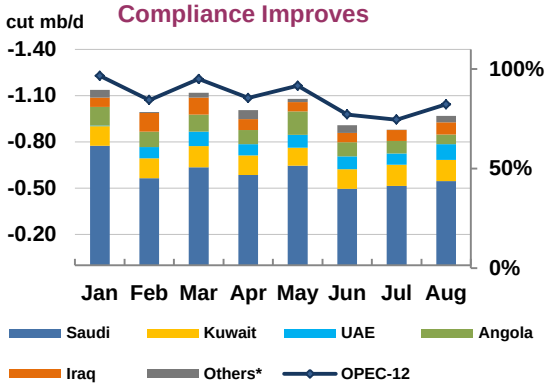
All world oil supply data for August discussed in this report are IEA estimates. Estimates for OPEC countries, Alaska, Azerbaijan, Mexico and Russia are supported by preliminary August supply data.

OPEC crude oil supply

OPEC supply fell in August by 210 kb/d from a 2017 high in July as flows from Libya faltered due to renewed unrest and output from other producers eased. The first decline since March lowered production from the 14 members to 32.67 mb/d. The 12 members who agreed to cut supply raised their compliance rate to 82% from 75% in July.

Output from Libya fell 140 kb/d after militia groups shut down vital oil fields and pipelines. The setback to Libya's dramatic recovery in July means supply from OPEC *as a whole* was down 400 kb/d in August versus an October baseline for cuts. Flows from Nigeria edged higher after *force majeure* was lifted on a key export stream. Fellow OPEC members, concerned the strong comebacks by Libya and Nigeria are diluting their rebalancing effort, are weighing whether to allocate supply targets to them. But the closure in August of major Libyan oil fields casts some doubt over the sustainability of higher production levels.





Supply eased from those bound by the output agreement, with slightly lower flows from Saudi Arabia, the UAE, Gabon, Venezuela, Iraq and Algeria. Average adherence for 2017 was 86%, robust by historical standards. Saudi Arabia turned in an eighth straight month with compliance above 100%, with supply slipping in August after a drop in oil sales to world markets. Production inched up in Angola and Iran, which received a slight increase under the OPEC agreement.

OPEC Crude Production

(million barrels per day)

	Jul 2017 Supply	Aug 2017 Supply	Supply Baseline [1]	Agreed Cut	August Actual Cut [2]	July Compliance	August Compliance	2017 Average Compliance
Algeria	1.07	1.06	1.09	-0.050	-0.03	38%	58%	63%
Angola	1.67	1.69	1.75	-0.078	-0.06	104%	78%	129%
Ecuador	0.54	0.54	0.55	-0.026	-0.01	31%	31%	69%
Equatorial Guinea	0.12	0.12	0.14	-0.012	-0.02	167%	167%	132%
Gabon	0.22	0.19	0.20	-0.009	-0.01	-200%	133%	15%
Iran[3]	3.81	3.82	3.71	0.090	0.11	NA	NA	NA
Iraq	4.49	4.48	4.56	-0.210	-0.08	34%	39%	38%
Kuwait	2.70	2.70	2.84	-0.131	-0.14	105%	105%	100%
Qatar	0.61	0.61	0.65	-0.030	-0.04	127%	127%	118%
Saudi Arabia	10.03	10.00	10.54	-0.486	-0.54	106%	112%	122%
UAE	2.94	2.91	3.01	-0.139	-0.10	53%	74%	53%
Venezuela	2.03	2.02	2.07	-0.095	-0.05	39%	49%	11%
Total OPEC 12	**30.23**	**30.14**	**31.11**	**-1.176**	**-0.97**	**75%**	**82%**	**86%**
Libya[4]	1.01	0.87						
Nigeria[4]	1.64	1.66						
Total OPEC	**32.88**	**32.67**						

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

2 From OPEC supply baseline.

3 Iran was given a slight increase.

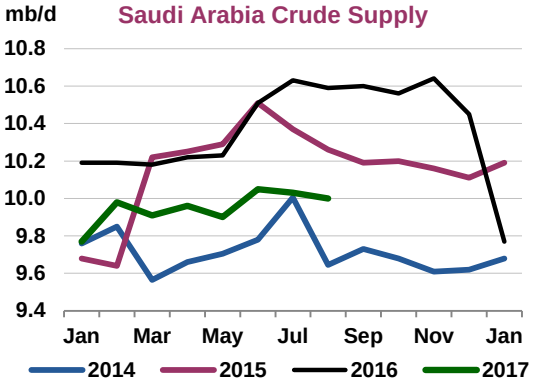
4 Libya and Nigeria are exempt from cuts.

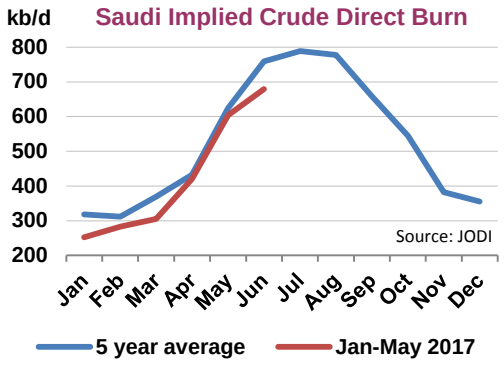
There appears to be growing support among OPEC and non-OPEC producers to extend their supply cut beyond March 2018, since their rebalancing effort is taking more time than they had hoped. The call on OPEC crude rises to 33 mb/d in 4Q17, up around 0.3 mb/d on August's output. So if OPEC were to sustain historically strong compliance rates, stocks could draw. In 2018, the call is forecast at 32.4 mb/d, around 0.2 mb/d below the group's August production.

Total OPEC crude output in August was down just 90 kb/d on a year ago. Saudi Arabia (-590 kb/d), Kuwait (-240 kb/d), the UAE (-200 kb/d) and Venezuela (-170 kb/d) showed the largest y-o-y declines. Despite its setback, Libyan production was up 590 kb/d y-o-y, Nigerian supply stood 510 kb/d higher while Iranian flows were up 150 kb/d.

Supply from **Saudi Arabia** eased by 30 kb/d in August to 10 mb/d after a decline in crude oil exports offset higher domestic consumption. Saudi Energy Minister Khalid al-Falih had previously signalled that shipments to world markets during August would be restricted to 6.6 mb/d in order to cover peak internal demand for power generation while also meeting its OPEC target. The Kingdom has pumped below its 10.06 mb/d supply target since the OPEC cut commenced in January.

Preliminary tanker tracking data suggest that Riyadh exported at lower rates near 6.6 mb/d during August. This represents a fall of 300 kb/d from June's official number of 6.9 mb/d, which was the lowest since late 2014.





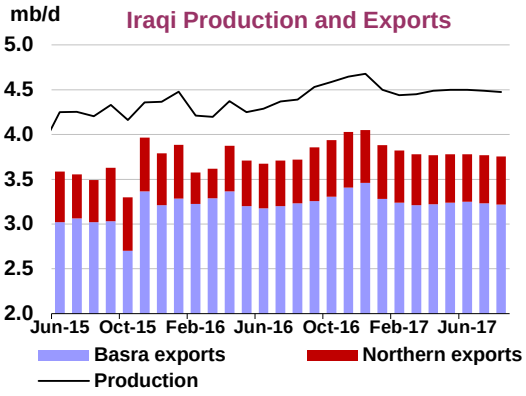
Saudi Aramco has raised its latest monthly formula price for light crude heading to Asia, possibly to reflect a stronger market for Middle East benchmark Dubai and stronger refining margins. Aramco has raised the differentials for Arab Light crude loading in October by $0.55/bbl from September.

On the domestic front, rising air conditioning use saw crude burned in power plants climb to 680 kb/d in June, up 80 kb/d month-on-month, according to the latest official data. In 2016, about 630 kb/d of crude was used in power plants during the peak 2Q-3Q period. The Kingdom is striving to provide more gas for power generation and has cut its summer crude burn from nearly 900 kb/d in the summer of 2015.

Output in the **UAE** decreased by 30 kb/d to 2.91 mb/d in August, boosting compliance to 74% - the highest this year. Production was steady in **Kuwait** and **Qatar** at 2.7 mb/d and 610 kb/d, respectively.

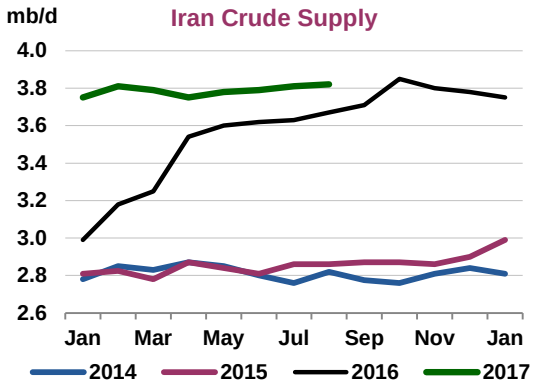
Iraqi crude production, including from the Kurdistan Regional Government (KRG), slipped 10 kb/d to 4.48 mb/d in August, but was up 90 kb/d on a year ago. Iraq's compliance with the OPEC agreement is still comparatively low, with August's rate at 39%. Crude exports inched further below the 3.8 mb/d mark, sharply down from last December's record 4.05 mb/d. Despite the dip, revenues increased from $4.4 billion to $4.6 billion after the price of oil rose. Shipments in August slipped around 10 kb/d to 3.76 mb/d, with exports of Basra crude from southern terminals inching down 10 kb/d to 3.22 mb/d. Northern exports along the KRG pipeline held steady at 540 kb/d.

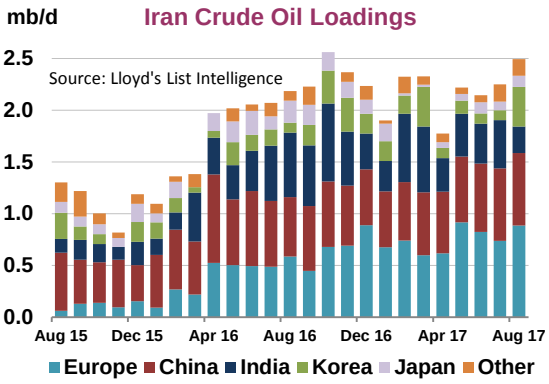
Baghdad did not sell any oil via the northern route to the Turkish port of Ceyhan in August. The KRG had been shipping a share of exports on behalf of the federal government, but no transfers have occurred since June. It is unclear why the transfers have ceased, but tension has risen over the KRG's planned independence referendum on 25 September. The semi-autonomous northern region appears to be putting its finances in order ahead of the vote. It paid out $1 billion to Dana Gas and its partners, settling a long-running case. It also signed deals to clear outstanding debts with companies operating major oil fields on its territory.



As for southern Iraq, which pumps the lion's share of exports, Lukoil has secured a deal to lower the production plateau of the core West Qurna-2 field to 800 kb/d. Under the original technical service contract (TSC), Lukoil agreed to ramp up the field to 1.8 mb/d, but the plateau level was revised down to 1.2 mb/d in early 2013. The field, which came online in 2014, is now producing only 400 kb/d. The international oil companies (IOCs) that are running the southern mega-projects requested a review of the TSCs after oil's collapse at the end of 2014 strained Baghdad's budget and impeded its ability to repay them.

Iranian supply in August crept up to a 2017 high of 3.82 mb/d and was 150 kb/d higher than a year ago. Crude exports rose to nearly 2.5 mb/d as customers in Europe and Korea lifted more oil, according to preliminary tanker tracking data. The amount of oil stored at sea was halved to 2 mb. Higher refinery demand boosted liftings to Europe by 180 kb/d to 910 kb/d, with France and the Netherlands showing the biggest increases. Shipments to key Asian customers – China, India, Korea and Japan – rose 80 kb/d from July to 1.45 mb/d on the back of particularly strong buying from Korea, which loaded 380 kb/d, up 290 kb/d from July. On the downside, 140 kb/d of condensates loaded from Assaluyeh in August compared to 160 kb/d the month before.





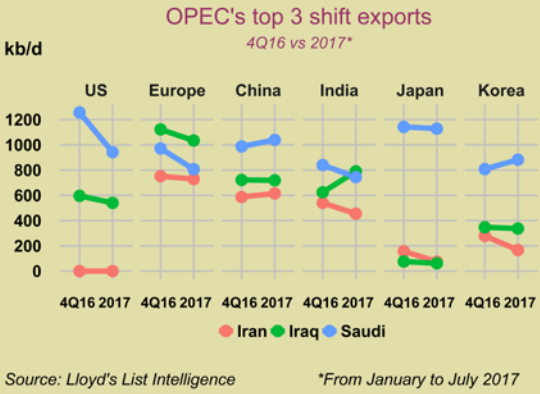
On the upstream front, just over a dozen prequalified IOCs have until the end of January to submit bids to develop the onshore Azadegan field, which straddles the border with Iraq's Majnoon. This is one of the major draws in Iran's opening to foreign investors and those on the list for the field include Royal Dutch Shell – operator of the Majnoon project – OMV, China National Petroleum Corp and Inpex. It remains to be seen whether the threat of new US sanctions will dampen interest in the project that is expected to be awarded by mid-2018. Target output from the field, which combines North and South Azadegan, is around 650 kb/d. Each section is now producing around 80 kb/d. Oil minister Bijan Zanganeh, recently approved by Iran's parliament for a second term, will be steering the effort to attract billions of dollars of foreign investment into an oil sector debilitated by sanctions.

Cut down, build up

OPEC's supply deal has shone a spotlight on wellhead production, the basis for measuring compliance, but crude oil exports from OPEC's top three - Saudi Arabia, Iraq and Iran – are also commanding attention. Shipments surged along with production during 4Q16, in the run-up to the cutback, so market participants have been watching keenly to see how many export barrels Saudi Arabia and Iraq would actually remove and from whom. For Iran, granted a slight production increase, the issue has been where the additional oil would be placed.

Producers have, for some time, targeted Asia with competitively-priced crude so the region was bound to be spared from deep cuts. It is hardly surprising then that Saudi Arabia and Iraq have increased the amount of crude they sell into Asia's big bloc of customers – China, India, Japan and Korea. Europe has become more of a destination of choice for Iran after Asia became increasingly crowded. The US, holding stocks that are at historic highs and seeing domestic production return to growth, seemed an obvious candidate for Saudi and Iraqi cutbacks. Iran is still barred from selling oil into the US.

Saudi Arabia, which is shouldering the biggest cut, signalled right from the start that it would reduce by more than was required and that the US would see the biggest cutback. That has proven to be the case. Saudi crude exports to world markets from January-July versus 4Q16 fell by 630 kb/d, closely tracking a decline in wellhead flows. Exports, which, according to Lloyd's List Intelligence data, ran at 6.9 mb/d during the first seven months of 2017, appear to have slowed further in August when the Kingdom typically burns more crude in domestic power plants. Preliminary figures show loadings dropping by 300 kb/d from July to around 6.6 mb/d – the level flagged by the Saudi energy minister.



Source: Lloyd's List Intelligence **From January to July 2017*

Shipments to the US during January-July were down by more than 300 kb/d, and - at an average 940 kb/d - were the lowest in eight years. Europe has been cut fairly hard, with exports down 160 kb/d compared to the last three months of 2016. Exports to China and Korea, however, rose by 50 kb/d and 70 kb/d, respectively, while shipments to Japan were holding strong at more than 1.1 mb/d, making it the biggest lifter of Saudi crude. Sales to India fell by 100 kb/d to 740 kb/d. The net result is that Saudi Arabia sold 55% of its crude into major Asian importers from January through July compared to 50% in the fourth quarter of last year.

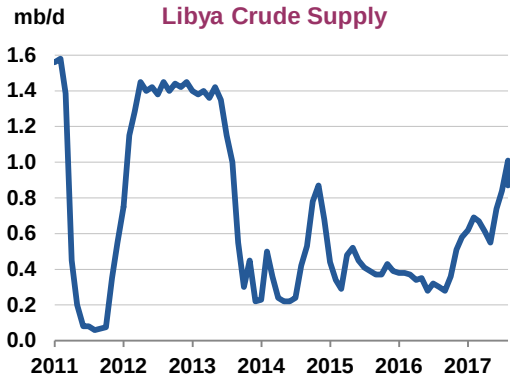
Iraqi wellhead flows slowed by roughly 80 kb/d from January-July compared to an October baseline and remain above Baghdad's supply target. Exports, however, were down 150 kb/d compared to the last three months of 2016. Europe has seen the biggest reduction, nearly 90 kb/d, but Iraqi shipments to the Continent were still outpacing Saudi Arabia and Iran. Iraqi exports to the US slowed by 70 kb/d to 530 kb/d. As for Asia, Iraqi exports to India climbed by 170 kb/d to 790 kb/d – allowing it to overtake Saudi Arabia in volume terms. Shipments to China, Korea and Japan held relatively steady versus the fourth quarter. Taken together, Iraq placed 140 kb/d more crude into these major Asian importers versus 4Q16.

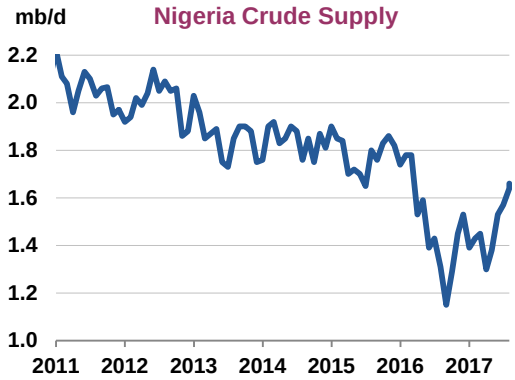
Iranian production has risen by an average 70 kb/d from an October baseline, yet exports fell by 250 kb/d versus the final quarter of last year. Shipments increased to an average 2.4 mb/d during 4Q16, but the National Iranian Oil Co may have supplemented its oil sales with several hundred thousand barrels a day from storage. In 2017, the biggest decrease in exports has been to Korea, down 110 kb/d to 170 kb/d, with sales to India (-85 kb/d) and Japan (-80 kb/d) also running lower versus 4Q16. The only slight increase was to China. In Europe, which had been off limits since 2012 due to sanctions, NIOC moved swiftly to re-connect with former customers. By 4Q16, it was delivering 750 kb/d, or about a third of overall exports, into Europe. The higher levels have been sustained, with NIOC placing 34% of its crude into Europe during the first seven months of this year compared to 31% in the last three months of 2016.

Libyan supply fell 140 kb/d in August after a militia group blockaded vital oil fields that had pushed flows above 1 mb/d the month before. A combined 360 kb/d was shut in for several weeks at Sharara,

Elephant and Hamada, which knocked average output for August to 870 kb/d. The western Sharara field and the nearby Elephant field restarted in early September. Before the closure, Elephant was pumping 70 kb/d, while Hamada had been flowing at 10 kb/d.

The August shutdowns underscore the fragility of Libya's recovery in the midst of ongoing political instability. Sharara, the country's biggest field, had been pumping around 280 kb/d before the latest closure. It restarted last December following a two-year blockade, but has been closed a number of times since June due to protests. Output had reached a four-year high of 1 mb/d during July. To reach its short-term target of 1.25 mb/d, the National Oil Corp is striving to raise output from fields in the Sirte Basin heartland. Production of 250 kb/d from the eastern oil fields could be raised by 100 kb/d, provided lingering technical issues can be overcome.





Nigeria's recovery continued, with crude supply edging up to 1.66 mb/d, the highest level since February 2016, before militants stepped up their oil sector attacks. A lull in the violence has allowed flows to rise steadily for the past five months to stand 510 kb/d above August 2016, when production slumped to a three-decade low. Militant attacks have fallen since early this year after the government intensified peace talks with leaders in the Niger Delta.

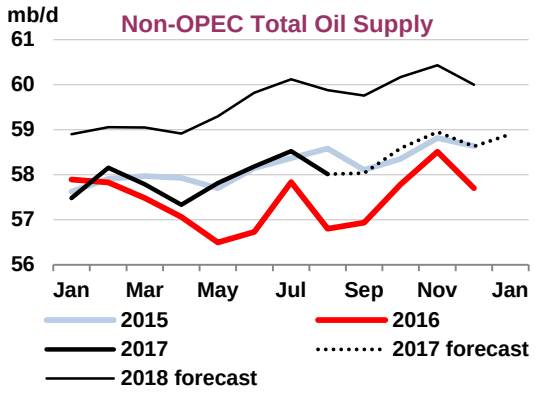
Production in **Angola** edged up to 1.69 mb/d, the highest this year. Angola has elected a new president for the first time in nearly four decades. Joao Lourenco, a former defence minister, has vowed to revive Angola's economy – battered by low oil prices - and combat corruption. Reforms and financial incentives are needed to boost the country's upstream sector, which is struggling to fend off decline. Capacity is due to get a boost next spring, when Total plans to start up the 230 kb/d Kaombo field. The offshore project has an estimated cost of $16 billion.

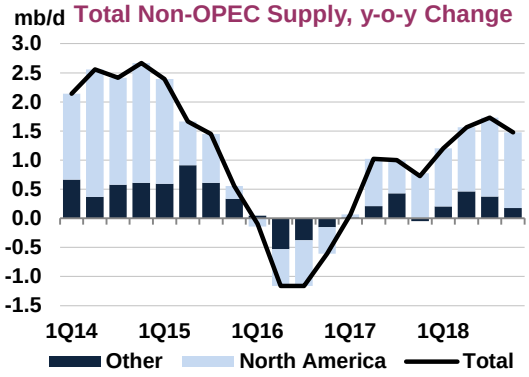
Crude oil production from **Gabon** declined by 30 kb/d in August to 190 kb/d, while supply from **Equatorial Guinea** held at 120 kb/d. **Algerian** production slipped to 1.06 mb/d. Algiers is planning to draft new hydrocarbons legislation to lure investment into its energy sector. The fourth licensing round in 2014 failed to drum up interest and prompted officials to consider whether a bid round or bilateral deals was the best investment approach.

Output from **Venezuela** eased 10 kb/d to 2.02 mb/d as the country spiralled deeper into economic and political chaos. It is growing harder to pay for goods and services required for daily operations, to repay IOCs and to import diluent that is needed to process extra heavy oil from the Orinoco Belt. During August, production was down 170 kb/d on a year ago. The prospect of a Venezuelan debt default has grown after the US enforced additional sanctions in late August that will make it more difficult for the government and Petroleos de Venezuela (PDVSA) to refinance bonds that are due imminently. Washington, for now, is not taking steps to ban imports of Venezuelan crude oil into the US. Supply from **Ecuador** held steady at 540 kb/d.

Non-OPEC overview

Scheduled and unscheduled outages cut estimated non-OPEC supply by 510 kb/d in August, to 58 mb/d. Russian, Kazakh, Azeri, Mexican and North Sea production fell as planned maintenance work – mostly at offshore installations – curbed output from a month earlier. Revised data showed weaker than expected US production in June, and the arrival of Hurricane Harvey on Gulf Coast shores on 25 August slashed US supplies of crude and natural gas liquids from end-month and into September. Estimated US total oil supply has been cut by as much as 300 kb/d for August and nearly 600 kb/d in September, curbing 2017 growth by 100 kb/d on average. While there is still considerable uncertainty over the path to recovery in onshore production, for now we assume that the disruptions to drilling and completions will be relatively short-lived.





The forecast for non-OPEC supply growth for both 2017 and 2018 is nevertheless largely unchanged since last month's *Report*, at 0.7 mb/d and 1.5 mb/d, respectively, as the outlook for both Canadian and North Sea supplies has marginally improved. US drilling activity is expected to pick up in 4Q17, so the 2018 output forecast is maintained. As such, the US remains the largest source of non-OPEC supply growth, adding 470 kb/d and 1.1 mb/d to non-OPEC output in 2017 and 2018 respectively. Canada maintains its position as the second largest, adding 290 kb/d and 200 kb/d over this year and next. Brazil and Kazakhstan remain other key sources of growth, while output in Mexico, China, Azerbaijan, Colombia and Egypt see continued declines.

Non-OPEC Supply

(million barrels per day)

	2016	1Q17	2Q17	3Q17	4Q17	2017	1Q18	2Q18	3Q18	4Q18	2018
Americas	19.5	20.0	19.8	19.9	20.4	20.0	21.0	20.9	21.2	21.7	21.2
Europe	3.5	3.7	3.5	3.4	3.6	3.5	3.7	3.6	3.5	3.6	3.6
Asia Oceania	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Total OECD	23.4	24.0	23.7	23.7	24.5	24.0	25.0	25.0	25.2	25.8	25.2
Former USSR	14.2	14.4	14.3	14.3	14.5	14.4	14.5	14.4	14.4	14.4	14.4
Europe	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
China	4.0	4.0	4.0	3.9	3.9	3.9	3.8	3.8	3.8	3.7	3.8
Other Asia	3.6	3.5	3.5	3.5	3.5	3.5	3.4	3.4	3.4	3.3	3.4
Latin America	4.5	4.6	4.5	4.6	4.7	4.6	4.7	4.7	4.8	4.9	4.8
Middle East	1.3	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.3	1.3	1.2
Africa	1.7	1.7	1.7	1.8	1.7	1.7	1.8	1.8	1.8	1.8	1.8
Total Non-OECD	29.4	29.5	29.3	29.4	29.5	29.4	29.6	29.5	29.5	29.5	29.5
Processing Gains	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
Global Biofuels	2.3	2.0	2.5	2.8	2.5	2.4	2.1	2.5	2.9	2.6	2.5
Total Non-OPEC	57.4	57.8	57.8	58.2	58.7	58.1	59.0	59.3	59.9	60.2	59.6
Annual Chg (mb/d)	-0.8	0.1	1.0	1.0	0.7	0.7	1.2	1.6	1.7	1.5	1.5
Changes from last OMR (mb/d)	0.0	0.0	0.0	-0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0

For the 10 non-OPEC producers that are part of the supply cut agreement, output is estimated to have fallen by nearly 270 kb/d in August versus July, to stand 640 kb/d below the agreed baseline. As such, compliance exceeded the target for the first time. Planned maintenance at Arctic and Eastern Siberia fields lowered Russia crude and condensate output by 40 kb/d from July. Works at the ACG complex took Azeri output 60 kb/d lower m-o-m, while lower Tengiz production meant that Kazakhstan also met its obligation for the first time since the deal was put in place. Meanwhile, Mexican supply fell to its lowest level since 1980. No new information was available for Malaysia since last month's *Report*, though output is estimated near June's level of 730 kb/d, 40 kb/d above its reported October production. Compliance for the 10 countries surged to 118% and averages 68% since January.

Non-OPEC Supply Reduction Commitments

thousand barrels per day (kb/d)

Country	IEA July Oil Output[2]	IEA August Oil Output[2]	IEA Supply Baseline[3]	Agreed Cut	Actual Cut[3]	July Compliance	August Compliance	2017 Average Compliance
Azerbaijan	796	736	815	-35	-78	53%	223%	103%
Kazakhstan	1,826	1,725	1,778	-20	-54	N/A	268%	N/A
Mexico	2,287	2,230	2,400	-100	-170	112%	170%	94%
Oman	975	977	1,020	-45	-43	100%	95%	96%
Russia	11,321	11,281	11,597	-300	-316	92%	105%	74%
Others[1]	1,239	1,225	1,207	-46	18	-69%	-39%	-8%
Total	**18,444**	**18,174**	**18,816**	**-546**	**-642**	**68%**	**118%**	**68%**

1 Bahrain, Brunei, Malaysia, Sudan and South Sudan

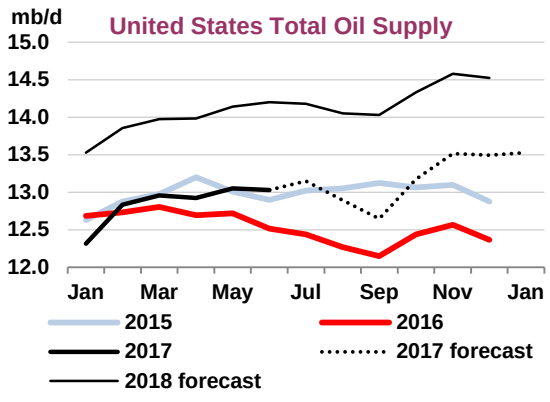
2 August total oil supply, based on market intelligence sources and tanker tracking data. Azerbaijan, Mexico and Russia based on preliminary country statistics.

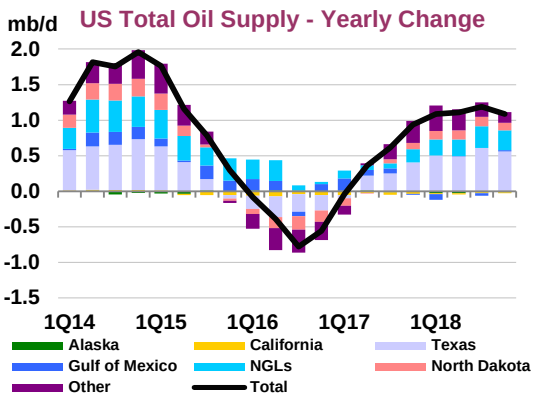
3 Based on IEA October total supply estimates. Kazkahstan November estimate.

OECD

North America

US – June actual, Alaska August actual: US oil production came in 75 kb/d lower than expected in June, posting a surprising 20 kb/d decline rather than an expected increase. Crude output fell 73 kb/d m-o-m, led by seasonal field maintenance in Alaska (-45 kb/d) and shut-ins in the Gulf of Mexico (-23 kb/d) due to the passing of tropical storm Cindy. Output also fell in New Mexico (-22 kb/d) and North Dakota (-8 kb/d), while gains in Texas (+13 kb/d) and Oklahoma (+13 kb/d) were smaller than expected. While new rig additions came to an abrupt halt in July, the surge in new drilling activity since mid-2016 is expected to translate into strong growth during the second half of the year and into 2018 despite the near-term disruption caused by Hurricane Harvey. Breaking a 14-month drilling recovery, US oil companies have slowed additions since mid-July. Producers even cut seven oil rigs in August following oil's decline to around $42/bbl at the end of June. Since then, WTI has recovered to around $49/bbl, a level likely to prevent further declines. US crude oil production is forecast to grow by an average 360 kb/d this year and 850 kb/d in 2018. Additional NGLs output takes total supplies 470 kb/d and 1.1 mb/d higher, respectively.

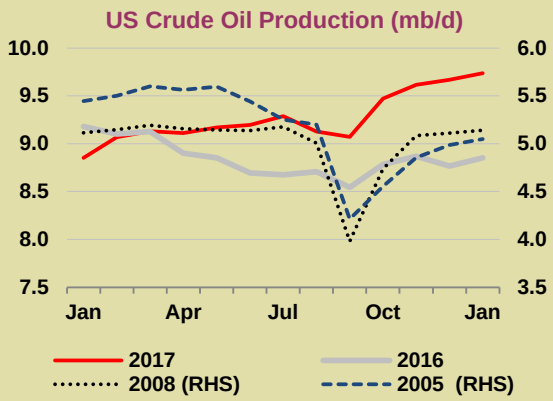


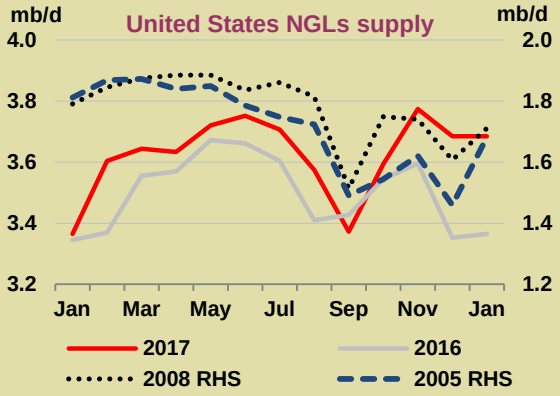


Hurricane Harvey cuts production

Oil production is resuming following extensive outages in the immediate aftermath of Hurricane Harvey. We estimate that the storm cut US crude production by roughly 200 kb/d on average in August (and more than 700 kb/d during the week from 25 August to 31 August). Our preliminary assessment for September is that crude oil production was nearly 300 kb/d lower than our previous estimate. NGL output estimates have been cut by 50 kb/d for August and 300 kb/d for September.

In contrast to previous hurricane events, Harvey impacted not only offshore production but also a significant share of onshore output. With the rise of LTO, Texas onshore output has increased from just under 1.1 mb/d in 2005, to 3.4 mb/d currently – twice as much as offshore output. Logistical issues mean that onshore production is likely to take longer than offshore production to return to pre-storm levels.





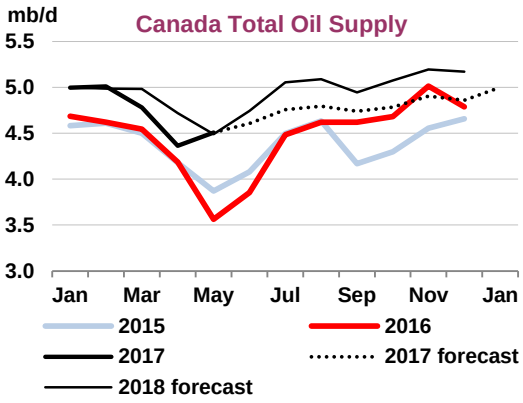
While firm data for onshore production outages are not yet readily available, some estimates suggest that more than 500 kb/d could have been shut in at Eagle Ford where normal production is around 1.35 mb/d. Onshore production is picking up, however, after the storm and subsequent flooding forced companies to evacuate staff, halt drilling and shut in output. Independent producers ConocoPhillips and Chesapeake Energy announced in early September that output was resuming but that 20% of their respective production remained offline (25 kb/d and 20 kb/d respectively). EOG estimated that the hurricane would cut its Eagle Ford production by an average 15 kb/d over 3Q17, to 325 kb/d.

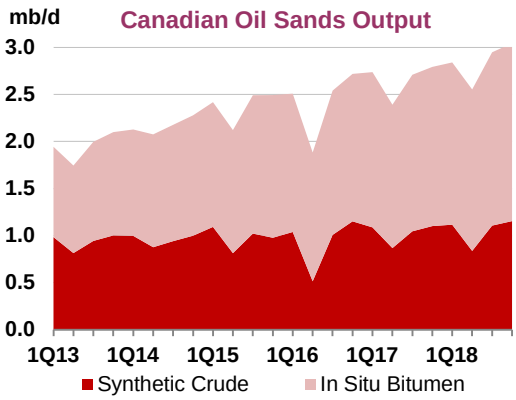
As for the offshore, shut in capacity in the Gulf of Mexico was reduced from a peak of 430 kb/d on 26 August to around 100 kb/d (or 5.5% of total GoM) at the time of writing. For August as a whole, output is estimated to have been cut by 80 kb/d and, while September production is estimated 60 kb/d lower.

In addition to crude supply outages, the hurricane also wreaked havoc on NGL operations. The US has become a very important producer and exporter of NGLs, with production currently around 3.7 mb/d and exports hitting a record 1.5 mb/d in March; 75% of which came from the Gulf Coast. According to reports, heavy rainfall around the key NGL hub of Mont Belvieu and in southeast Texas forced the closure of four of Enterprise Product Partners' eight Mont Belvieu NGL fractionators as well as key export and transport infrastructure, including all the major export terminals and ports and the vital Houston Ship Channel. Targa Resources closed its Cedar Bayou fractionator in Mont Belvieu due to flooding and its Galena Park marine terminal due to the closure of the Houston Ship Channel. Disruption to LPG exports and local demand from petrochemical plants that were forced to close meant that unfractionated NGLs had to move to facilities near Conway, Kansas rather than to the coast or had to be shut in due to the restrictions to market outlets.

While having a major impact on regional crude supplies, supply disruptions from Hurricane Harvey fade in comparison to the capacity shut at Gulf Coast refineries. 0.6 mb/d and 1.6 mb/d of refinery crude demand was lost during August and September, respectively (see *Refining*). The drop in demand from petrochemical plants for NGL products is also estimated to have eclipsed supply losses. Compared to previous major hurricanes, the impact of Harvey is thought to have been less significant on crude production, as offshore installations were largely spared. During both 2005 and 2008, US crude oil production declined by roughly 1 mb/d, almost entirely from the GoM, while NGL output fell by 200-300 kb/d from a much lower base.

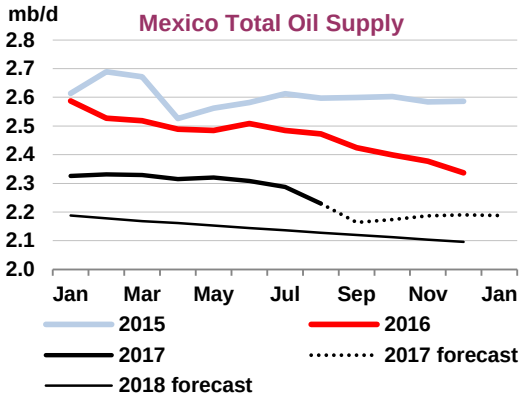
Canada – Newfoundland, Alberta June actual, others May actual: Canadian oil supply rose by 140 kb/d in May, to stand nearly a million barrels a day above last year's fire-affected low of only 3.6 mb/d. Data released by the Alberta Energy Regulator show crude output rising by another 100 kb/d in June, to just shy of 3 mb/d. Offshore output from Newfoundland and Labrador held steady around 240 kb/d. Robust production has led us to revise up our forecast for total Canadian oil production, with output now expected to grow by 285 kb/d this year and a further 200 kb/d in 2018, to reach 4.95 mb/d.





While annual gains in 2017 largely stem from the rebound effect from last year's wildfires, gains in 2018 will come from the start-up of the Fort Hills oil sands project and the heavy crude oil Hebron project. Suncor, operator of Fort Hills, aims to speed up work and raised capital spending plans to between C$5.4-5.6 billion for this year from an earlier estimate of C$4.8-5.2 billion. The construction of Fort Hills was 90% complete at the end of the second quarter, and the project remains on target to start up at the end of this year. The offshore Hebron project also remains on track for a 2017 start up with the platform towed out to its final location during 2Q17. The cost of Fort Hills has increased to be between C$16.5 billion and C$17 billion, compared to previous estimates of C$15.1 billion. However, the project's nameplate capacity has also been raised to 194 kb/d from 180 kb/d.

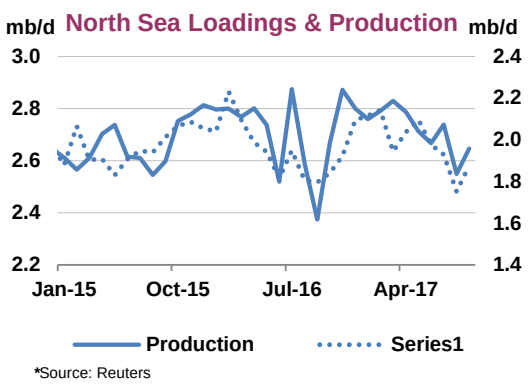
Mexico – July actual, August preliminary: Mexican crude and condensate output fell by 57 kb/d in August according to preliminary weekly data published by Pemex through 20 August. Output fell most sharply in the 'other fields' category (-45 kb/d) although production was also marginally lower at major production systems such as Cantarell, Ku-Maloob-Zaap and Chuc. Including 295 kb/d of NGLs, total supply averaged 2 230 kb/d, 243 kb/d below a year earlier and 170 kb/d less than in October. Mexico had pledged to cut output by 100 kb/d, alongside other non-OPEC and OPEC producers. Production is likely to see further declines in September as Pemex decided to move up maintenance plans for the Ku-Maloob-Zaap field, its biggest producer, located in shallow waters of the Bay of Campeche. Pemex said maintenance would be concluded by 11 September, causing production to temporarily dip by some 330 kb/d. Pemex also said that the maintenance plans are not expected to impact the production forecast for this year, which is for crude oil output to decline to 1 944 kb/d, from 2 154 kb/d last year.

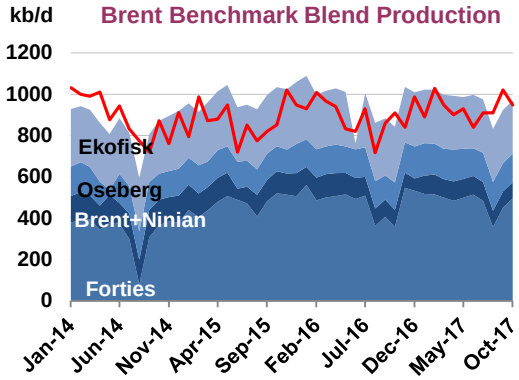


North Sea

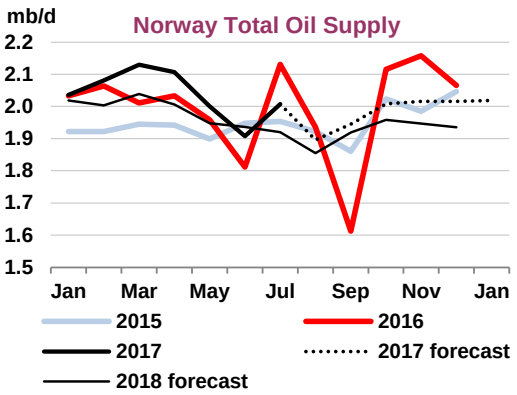
After declining by nearly 180 kb/d in August, a heavier schedule for North Sea crude oil loadings indicates higher output for September. A 125 kb/d planned increase comes mostly from the Forties stream, which had been cut to a three-year low of 270 kb/d in August due to field maintenance. Loadings of BFOE

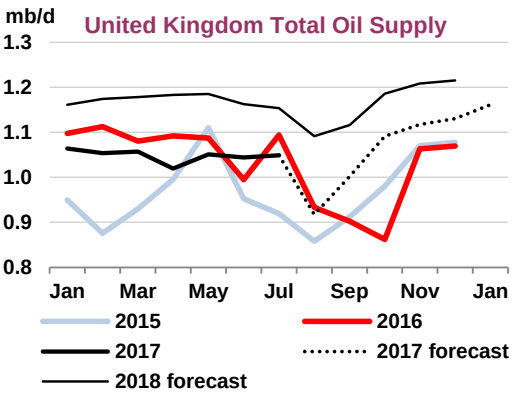
crudes were set to rise by another 75 kb/d in October, to 870 kb/d – from 720 kb/d in August and 790 kb/d in September.





Norway – June actual, July provisional: Norwegian oil production bounced back by 100 kb/d in July, to 2 mb/d, after outages at the Visund, Gullfaks, Goliat and Knarr fields had curbed output a month earlier. Final field level data for June shows that, despite a monthly drop of 93 kb/d, output stood 95 kb/d above a year earlier on the back of new field start-ups and as the Ekofisk and Eldfisk fields were shut for a three year maintenance cycle last June.





UK – June actual, July preliminary: For a third straight month, UK oil production held steady at around 1.05 mb/d in July. North Sea loading schedules suggest output fell sharply in August, however. Shipments of the Forties crude stream were scheduled to drop by 130 kb/d in August to a three year low of 270 kb/d. Trade reports said that actual volumes were even lower than expected as the Total-operated Elgin-Franklin field returned to normal operations later than anticipated.

Following average annual gains of 100 kb/d and 60 kb/d in 2015 and 2016, respectively, total UK oil supply declined by an average of 30 kb/d over the first seven months of 2017. Output is nevertheless expected to get a boost towards year-end as new fields ramp up. BP fired up its 120 kb/d Quad 204 project in May and EnQuest started pumping from its Kraken oil development project in June. Premier Oil is expected to bring on stream its Catcher project in December. Next year, BP's Clair Ridge project west of Shetland will further add to production, helping underpin gains of 120 kb/d on average, from 20 kb/d this year.

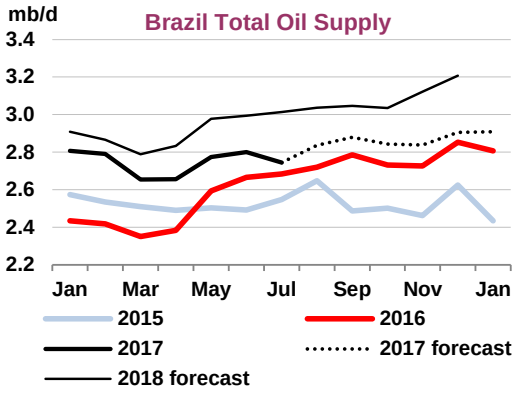
Non-OECD

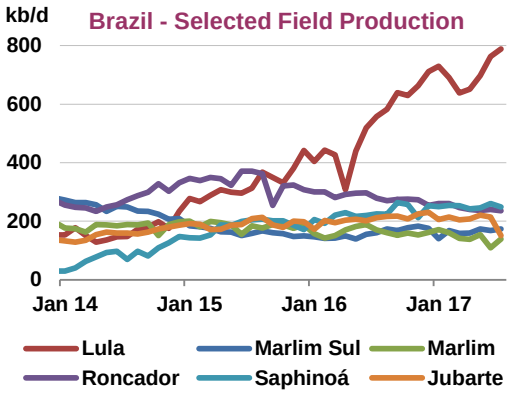
Latin America

Brazil – July actual: Brazilian oil production fell by 50 kb/d in July, to 2.7 mb/d, due to a scheduled shutdown on the P-58 platform, which operates in the Jubarte, Baleia Anã, Baleia Azul, and Baleia Franca

fields in the Campos Basin. Output at Jubarte dropped to 150 kb/d in July, from 215 kb/d a month earlier. Production was also marginally lower at Saphinoá, which fell by 12 kb/d to 250 kb/d. In contrast, output at Lula continued to rise (+25 kb/d), to another new record just shy of 790 kb/d, or 230 kb/d above a year ago. Supplies from the Marlim fields (Marlim, Marlim Leste and Marlim Sul) rose by a combined 33 kb/d m-o-m to 378 kb/d, but nevertheless stood 44 kb/d below a year ago.

The outlook for Brazilian production for 2018 has been slightly lowered since last month's *Report* following the delay to the start-up of Lula North and Tartaruga Verde fields into next year. Petrobras had targeted output from Lula North, in the Santos basin, and Tartaruga Verde, in the Campos basin, before the end of the year via the P-67 and Cidade de Campos dos Goytacazes floating production, storage and offloading vessels (FPSO), respectively. The two FPSOs, both of which are designed to produce 150 kb/d of oil, are now scheduled to enter operations by the first half of 2018. Brazilian production is still expected to increase towards the end of the year as the P-66 FPSO that started producing from Lula South in May continues to ramp up. According to Petrobras, the unit is currently producing about 26 kb/d of oil and 1.4 million cubic metres per day of natural gas from a single well. Two more wells will be connected before the end of the year. Petrobras is also expected to start extended well tests at the Libra pre-salt field by late September or early October using the Pioneiro de Libra FPSO after technical problems delayed the original July start-up. Total Brazilian oil production is forecast to grow by 180 kb/d this year and 190 kb/d in 2018, to reach 3.2 mb/d by end of 2018 (and 3.0 mb/d on average for the year).



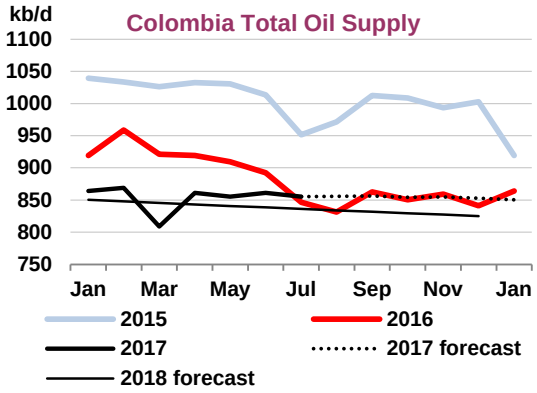


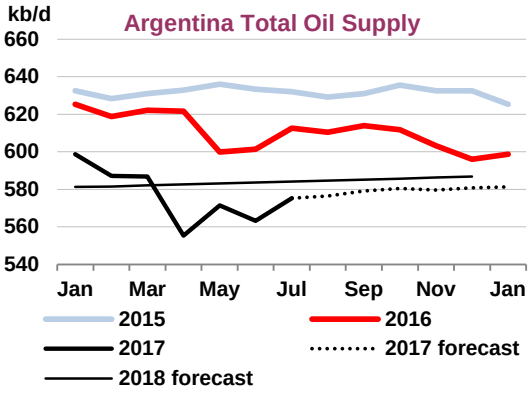
Colombia – July actual: Colombian oil production was largely unchanged from a month earlier in July, at around 850 kb/d. Output nevertheless stood above a year earlier for the first time in nearly two years, albeit from a low level last year. Production hit a six-year low of 830 kb/d last August, after upstream players slashed spending and development drilling. In its 2Q17 earnings update, Ecopetrol cut its 2017 capex budget by 28% from a previously announced target of $3.5 billion, to $2.6-$2.9 billion. While slightly lower than 2016 overall capex, the new target still implies a significant increase for production and exploration spending, as investments on refining projects were set to fall $775 million, or 70%.

Meanwhile, oil field protests continue to hamper output in Latin America's third largest oil producer. Ecopetrol said that ongoing "sabotage and vandalism" at the Castilla and Chichimene heavy crude oil fields, taken over by protesters in August, caused the company to lose nearly 20 kb/d. Protests cut volumes at the La Cira Infantas oil field by as much as 35 kb/d in June, and ongoing shutdowns of the 220 kb/d Cano Limon Covenas pipeline has also restricted flows. Ecopetrol resumed operation of the pipeline on 9 August after a closure that lasted more than 70 days.

Argentina – July actual: Argentinian oil output saw a modest recovery in July, increasing by 12 kb/d from June, to 575 kb/d. Like Colombia, Argentina saw its oil output decline precipitously during 2016 and the first half of 2017, dropping 20 kb/d y-o-y on average in 2016 and 38 kb/d so far this year. Since hitting a low of only 555 kb/d in April, when strike activity cut output at the Neuquen, Santa Cruz and Chubut

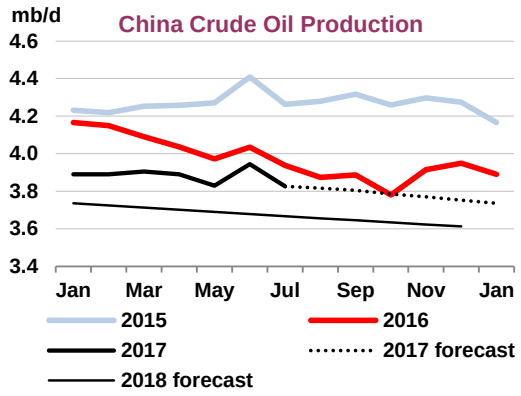
provinces, output seems to have stabilised somewhat. A number of international oil companies, including Shell, ExxonMobil, Statoil, BP and Total have, along with national producer YPF, announced higher spending this year to stem declines and increase output at the Vaca Muerta tight oil play.

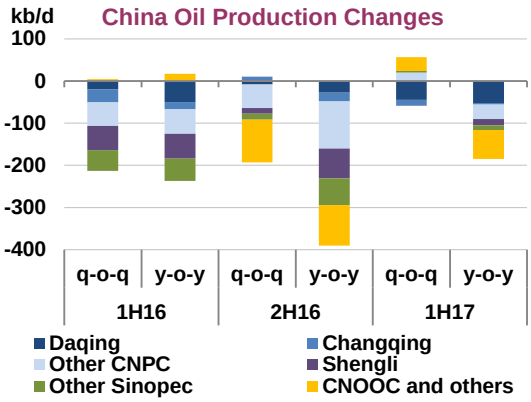




Asia

China – July actual: After posting a slight recovery in June, Chinese crude and condensate output dropped once again in July. At 3.83 mb/d, production stood 120 kb/d below a month earlier and 110 kb/d lower than a year ago. Following a 295 kb/d annual decline last year, output so far this year has declined 170 kb/d, y-o-y. Field level data through June show that the steepest output declines over 1H17 came from Daqing, which lost another 44 kb/d, to stand 50 kb/d below the previous year at 680 kb/d. CNPC's Changqing field also declined by 14 kb/d to 470 kb/d, so that total CNPC production was nearly 100 kb/d below a year earlier. Output at Sinopec's Shengli field stabilised around 470 kb/d, 15 kb/d below a year earlier but 75 kb/d less than during 1H15. CNOOC's domestic production rose 33 kb/d compared with 2H16 to 930 kb/d, 70 kb/d below a year earlier and 50 kb/d below 1H15.

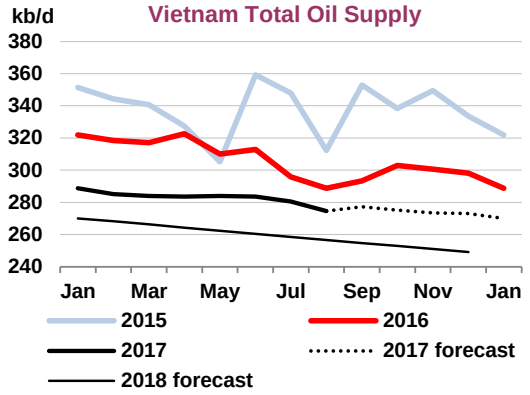


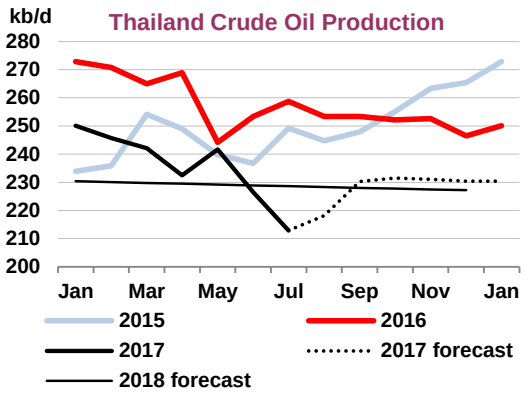


Output at CNOOC could see renewed declines in the coming months, however, as the company was forced to shut in four fields in the Pearl River Mouth basin in the eastern part of the South China Sea in August due to a leak at the Nanhai Shengkai FPSO. Lufeng 3-1, Lufeng 13-2, Lufeng 13-2B and Lufeng 7-2, account for a significant contribution to CNOOC's oil and gas output in the basin. In 2016, the basin accounted for 78.3 million boe of production, or about 25% of CNOOC's total offshore output.

Elsewhere in Asia, **Indian** oil production, including NGLs from fractionation plants, was largely unchanged at 870 kb/d in July. Output was 13 kb/d higher than a year earlier. Thailand's crude and condensate production dropped by 15 kb/d in June, following a ruling by the Supreme Administrative Court regarding the use of designated agricultural land for other activities resulting in the immediate shutdown of onshore oil and gas production by at least six operators. At 226 kb/d, crude and condensate output was at its lowest since the start of 2014. Vietnam's crude production dropped another 6 kb/d in August,

to average 270 kb/d, a 5% decline from the previous year. No new monthly production data was available for Malaysia or Indonesia since last month's *Report*, with both countries' output estimated steady at around 680 kb/d and 840 kb/d, respectively.

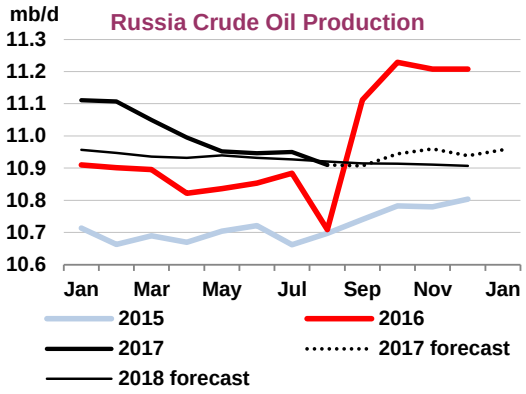




Former Soviet Union

Russia – July actual, August provisional: Russian crude and condensate production dropped to a 12-month low of 10.91 mb/d in August, as Gazprom Neft shut in offshore Arctic production due to maintenance. Despite the 40 kb/d decline from July and a 320 kb/d reduction from October, output stood 200 kb/d higher than a year ago.

According to the Energy Ministry data, Gazprom Neft reduced its output last month by almost 5% as it suspended production at the offshore Arctic Prirazlomnoye oil field for maintenance. The local press has said the maintenance work at Russia's only producing offshore Arctic oilfield is due to be completed in October. Oil production also declined at Bashneft, by 12 kb/d. Projects led by foreign majors under production sharing agreements (PSA) cut output by almost 15% last month to 324 kb/d on lower production at Exxon Neftegas' Sakhalin field.

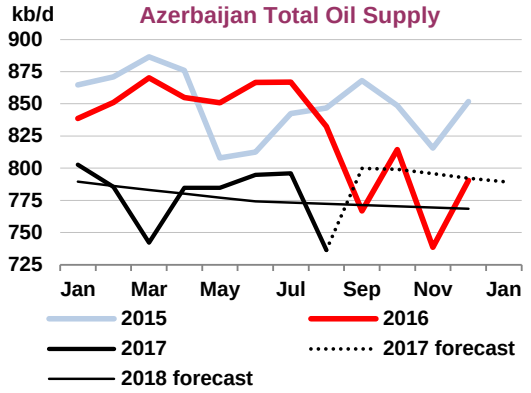


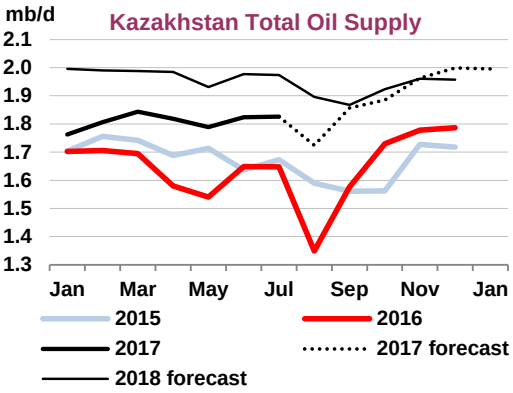
Russian energy minister Alexander Novak said in early September that it is still premature to decide on extending the global deal to reduce oil production as the oil market has been rebalancing, but added that if the market struggles to reach balance, "we would discuss the option of the deal extension" after it expires after March 31. Novak also said that the current oil price of over $54/bbl is "optimal" for both producers and consumers and allows companies to make investments.

Azerbaijan – July actual, August preliminary: According to preliminary data released by the energy ministry, Azeri oil production fell by a sharp 60 kb/d in August, to 736 kb/d. As such, output stood 78 kb/d below October, compared with a pledged output cut of 35 kb/d. The decline likely came from the BP-operated ACG complex, which accounts for three quarters of Azerbaijan's output. ACG production averaged 585 kb/d during the first half of 2017, compared with 655 kb/d a year earlier – or an 11% decline. Since peaking at 830 kb/d in 2009/2010, the consortium is trying to stem natural declines at the field, adding 10 new oil wells over the past 12 months and five new gas or water injection wells. At the end of June, there were 112 oil wells producing, while 48 wells were used for gas or water injection.

Kazakhstan – July actual: Kazakhstan's crude oil production was 1.74 mb/d in July, unchanged from a month earlier but up 175 kb/d from a year ago. Maintenance also curbed Kazakh production in August so

that compliance with agreed output cuts was exceeded for the first time. Output at Tengiz, Kazakhstan's largest oil field, was reported to be lower in August, supported by reduced loadings through the CPC pipeline in July and August.





Kazakhstan's production was set to rebound in September, however, with CPC Blend exports from the Black Sea port of Novorossiysk scheduled to rise to an all-time high of 1.27 mb/d. The North Caspian Operating Company has started to test reinjection of gas into the reservoir, enabling the consortium to lift production towards its 370 kb/d plateau by the end of the year. Kashagan output stood around 180 kb/d in July, and loading programmes suggest production increased only marginally in August before surging 60%, to 295 kb/d in September. But loadings by Chevron-led Tengizchevroil — the main exporter of CPC Blend — were scheduled to fall by 4% from August to 630 kb/d in September. Exports of Karachaganak field condensates were also scheduled to drop from August, to just under 200 kb/d.

FSU net exports:

FSU Net Exports of Crude & Petroleum Products

(million barrels per day)

	2015	2016	2Q16	3Q16	4Q16	1Q17	2Q17	May 17	Jun 17	Jul 17	Aug 17	Latest month vs Month-1	Latest month vs Year-1
Crude													
Black Sea	1.64	1.68	1.60	1.53	1.77	1.80	2.00	2.04	1.97	1.79	1.83	0.04	0.58
Baltic	1.45	1.62	1.65	1.58	1.69	1.67	1.60	1.60	1.37	1.32	1.39	0.07	-0.21
Arctic/FarEast	1.41	1.60	1.63	1.50	1.70	1.66	1.74	1.74	1.69	1.76	1.61	-0.15	0.37
BTC	0.62	0.67	0.70	0.66	0.61	0.67	0.70	0.74	0.70	0.69	0.78	0.09	0.13
Crude Seaborne	**5.12**	**5.56**	**5.59**	**5.28**	**5.77**	**5.80**	**6.04**	**6.12**	**5.73**	**5.57**	**5.62**	**0.06**	**0.88**
Druzhba Pipeline	1.07	1.07	1.05	1.10	1.10	0.99	0.99	0.97	0.99	0.94	1.06	0.12	-0.02
Other Routes	0.23	0.19	0.18	0.20	0.20	0.23	0.28	0.29	0.27	0.25	0.25	0.00	0.07
Total Crude Exports	**6.42**	**6.83**	**6.82**	**6.57**	**7.07**	**7.02**	**7.31**	**7.38**	**6.98**	**6.76**	**6.94**	**0.18**	**0.92**
of which: Transneft [1]	4.19	4.39	4.44	4.35	4.45	4.34	4.42	4.47	4.09	4.06	4.30	0.24	0.10
of which: Russian crude	4.42	4.76	4.92	4.64	4.90	4.86	4.91	5.00	4.58	4.59	4.60	0.01	0.41
Products													
Fuel oil[2]	1.51	1.41	1.36	1.40	1.42	1.53	1.40	1.46	1.32	1.35		0.02	0.00
of which: VGO	0.25	0.33	0.29	0.35	0.36	0.36	0.31	0.26	0.29	0.33		0.05	-0.01
Gasoil	0.97	0.98	0.98	0.86	0.88	1.12	1.02	0.96	1.04	0.90		-0.14	0.07
Other Products	0.65	0.72	0.72	0.71	0.69	0.77	0.78	0.83	0.80	0.69		-0.11	0.02
Total Product	**3.14**	**3.10**	**3.06**	**2.97**	**2.99**	**3.43**	**3.20**	**3.25**	**3.17**	**2.95**		**-0.22**	**0.09**
Total Exports	**9.48**	**9.93**	**9.88**	**9.54**	**10.06**	**10.45**	**10.51**	**10.63**	**10.15**	**9.70**		**-0.45**	**0.04**
Imports	0.07	0.07	0.06	0.08	0.07	0.07	0.08	0.09	0.08	0.08		0.00	0.00
Net Exports	**9.41**	**9.87**	**9.82**	**9.46**	**9.98**	**10.38**	**10.43**	**10.54**	**10.07**	**9.62**		**-0.45**	**0.04**

Source: Argus Media Ltd, IEA Estimates, Bloomberg, Lloys's List Intelligence

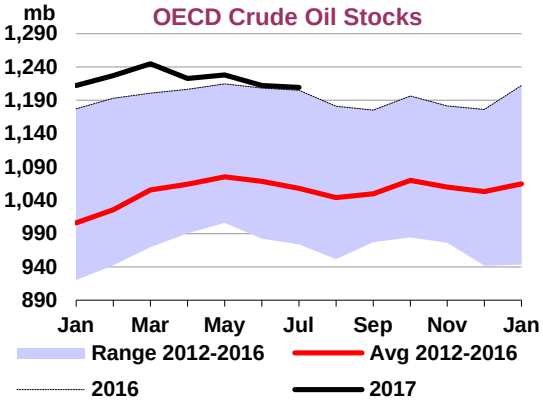
[1]Transneft data exclude Russian CPC volumes.

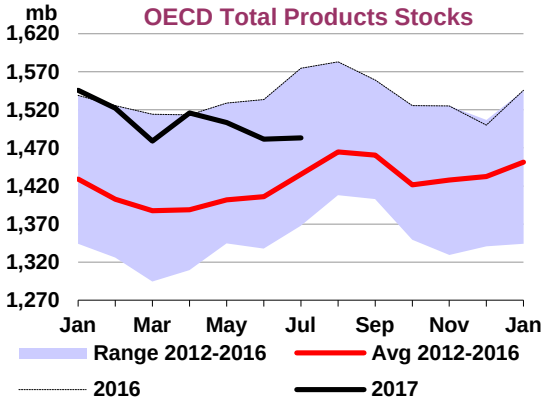
[2]Includes Vacuum Gas Oil

STOCKS

Summary

- **OECD commercial stocks were unchanged in July at 3 016 mb but they continued to fall against the five-year average** on higher demand, exports to non-OECD countries and refinery outages.
- **Oil product stocks in the OECD were only 35 mb above the five-year average at the end of July and could fall further** when August and September data are released.
- **Hurricane Harvey has reduced oil product stocks and had the opposite effect on crude holdings.** It will take several weeks before its full impact on stocks is understood.
- **Preliminary data for August show reduced stocks in Fujairah, Japan, the US and lower floating storage volumes.** Stocks in Europe and Singapore, by contrast, increased.





Global Overview

OECD commercial stocks stood at 3 016 mb at the end of July, unchanged from the end of June. Government stocks fell 0.1 mb as the US Department of Energy continued to auction crude volumes, bringing total OECD commercial and government stockpiles down marginally on the month. The OECD surplus to the five-year average fell sharply, however, as commercial stocks typically build at this time of year due to the combined effect of higher crude imports for refiners and higher oil product throughput. The surplus to the five-year average stood at 190 mb at the end of July, down from 214 mb in June. What's more, OECD oil product stocks are now only 35 mb above their five-year average, raising the possibility that they will fall below it before the end of the year (See *OECD oil product stocks, floating storage, head towards five-year average*). Preliminary data for August point to a further fall in stocks in Fujairah, Japan, the US and floating storage, whereas stocks in Europe and Singapore increased for the second straight month. At the end of August, Hurricane Harvey shut a significant portion of US refining capacity, putting upward pressure on crude stocks and reducing oil product inventories. With cargoes chartered from Europe plus the drawdown of stocks in places like Mexico, the impact of the hurricane was also felt outside of the US.

Jul17 v Jun17 Stock Estimate

	mb	mb/d
Americas Commercial	-25.0	-0.8
Asia Oceania Commercial	13.7	0.4
Europe Commercial	11.3	0.4
Government Stocks	-0.1	0.0
Total OECD	**-0.1**	**0.0**
Floating Storage	-8.1	-0.3
Oil in Transit	-19.0	-0.6
Fujairah (FEDCom/S&P Global Platts)	-1.7	-0.1
Singapore (International Enterprise)	6.5	0.2
China Commercial Stocks (OGP)	-6.1	-0.2
Total	**-28.5**	**-0.9**

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

OECD industry stocks in July remained unchanged from June at 3 016 mb. There was a significant draw of 25 mb in the OECD Americas and builds of 11.3 mb in Europe and 13.7 mb in Asia Pacific. Stocks in the OECD typically build strongly at this time of year due to the combined effect of higher crude imports for refiners and higher oil product throughput, so this was in fact a significant departure from the trend. The surplus to the five-year average – taking into account baseline stock adjustments in Sweden and Australia made at the start of 2017 – declined for the fourth straight month by 23.4 mb to 190 mb in July. On the basis of days of forward demand, commercial stocks covered 63.5 days at the end of the month, unchanged from June.

Crude stockpiles continued to fall in the OECD Americas owing to stellar refining margins and high run rates, whereas in Europe and Asia Pacific high imports boosted stocks. In all, crude stocks fell 3.2 mb in the OECD to 1 209 mb. OECD oil product stocks rose by 1.7 mb on the month, to 1 483 mb, but this was far below the typical build of 29.2 mb seen over the last five years. This was driven by higher demand, exports to non-OECD countries and refinery outages. The departure from trend was such that OECD oil product stocks are now merely 35 mb above the five-year average and could breach it when final data for August and September encompassing the effect of Hurricane Harvey on product stockpiles is released (See *OECD oil product stocks, floating storage, head towards five-year average*).

Preliminary Industry Stock Change in June 2017 and Second Quarter 2017

	June 2017 (preliminary) *(million barrels)*				June 2017 (preliminary) *(million barrels per day)*				Second Quarter 2017 *(million barrels per day)*			
	Am	Europe	As. Ocean	Total	Am	Europe	As. Ocean	Total	Am	Europe	As. Ocean	Total
Crude Oil	**-17.2**	**6.6**	**7.4**	**-3.2**	**-0.56**	**0.21**	**0.24**	**-0.10**	**-0.42**	**0.05**	**0.01**	**-0.36**
Gasoline	-7.8	-3.5	-1.2	-12.5	-0.25	-0.11	-0.04	-0.40	-0.03	-0.09	0.02	-0.10
Middle Distillates	-7.1	3.3	2.1	-1.6	-0.23	0.11	0.07	-0.05	-0.04	-0.14	0.04	-0.13
Residual Fuel Oil	-1.4	-0.6	0.3	-1.7	-0.05	-0.02	0.01	-0.06	-0.08	-0.01	0.03	-0.06
Other Products	8.4	3.1	6.0	17.5	0.27	0.10	0.19	0.57	0.32	-0.06	0.06	0.32
Total Products	**-8.0**	**2.4**	**7.3**	**1.7**	**-0.26**	**0.08**	**0.23**	**0.05**	**0.18**	**-0.31**	**0.16**	**0.03**
Other Oils[1]	0.2	2.3	-0.9	1.6	0.01	0.07	-0.03	0.05	0.11	0.01	0.06	0.18
Total Oil	**-25.0**	**11.3**	**13.7**	**0.0**	**-0.81**	**0.36**	**0.44**	**0.00**	**-0.13**	**-0.25**	**0.23**	**-0.15**

1 Other oils includes NGLs, feedstocks and other hydrocarbons.

Preliminary data for August show oil stocks drawing moderately in Fujairah (-1.7 mb), Japan (-0.3 mb), the US (-5 mb) as well as a further fall in floating storage (-25.4 mb). The drop was largely due to increasing crude refining across the OECD, but it came to a sudden halt in the US in late August as Hurricane Harvey closed many refineries. Singaporean stocks increased 1.5 mb during August due to a fall in shipping activity and less bunker fuel demand. Europe's stocks also increased by 4 mb overall during the month with lower crude holdings and gains registered in gasoline and diesel, as refiners increased runs.

Revisions versus July 2017 Oil Market Report

(million barrels)

	Americas		*Europe*		*Asia Oceania*		*OECD*	
	May-17	Jun-17	May-17	Jun-17	May-17	Jun-17	May-17	Jun-17
Crude Oil	**2.0**	**5.3**	**1.3**	**3.9**	**15.1**	**9.0**	**18.3**	**18.2**
Gasoline	0.0	-1.0	-1.5	-2.9	-0.1	-0.4	-1.6	-4.2
Middle Distillates	-0.2	-5.4	0.0	-3.5	0.0	-1.5	-0.3	-10.4
Residual Fuel Oil	0.0	0.2	0.0	-0.5	0.1	0.2	0.1	-0.1
Other Products	0.4	-14.9	0.0	0.2	0.0	0.0	0.4	-14.7
Total Products	**0.1**	**-21.0**	**-1.6**	**-6.7**	**0.0**	**-1.7**	**-1.4**	**-29.4**
Other Oils[1]	0.2	5.2	0.1	1.5	0.0	-0.1	0.3	6.6
Total Oil	**2.4**	**-10.6**	**-0.2**	**-1.3**	**15.1**	**7.2**	**17.3**	**-4.6**

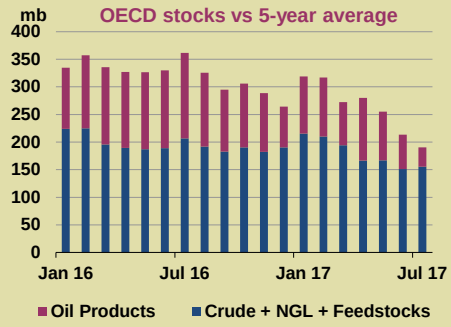
1 Other oils includes NGLs, feedstocks and other hydrocarbons.

OECD oil inventories were revised up 17.3 mb in May and down 4.6 mb in June. For May, the revision was large and linked to a methodology adjustment in Japan to include cargoes awaiting discharge. It also applied to Japan's June number, but this was offset by larger downward revisions elsewhere, including in US LPG and ethylene stocks.

OECD oil product stocks, floating storage, head towards five-year average

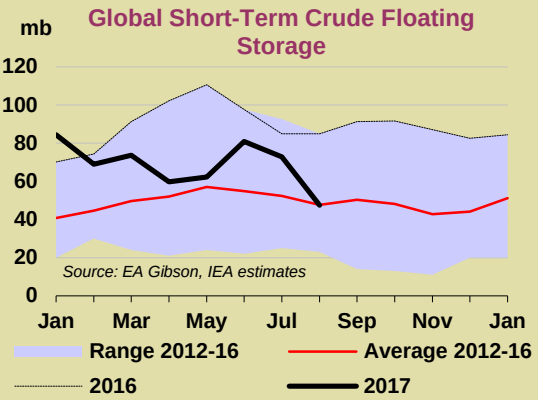
Oil product stocks held in the OECD have drawn in the last few months to such an extent that they are now very close to the five-year average metric. At the end of July, they stood at 1 483 mb, down from 1 546 mb at the start of 2017. After adjusting for baseline stock changes in Sweden and Australia, they were 35 mb above the five-year average, down from 103 mb at the start of 2017. Product stocks represented less than a fifth of the overall OECD surplus at end-July. So, what has happened to product stocks and why have they drawn faster than crude oil?

There are several possible explanations: first, products demand in the OECD has surprised to the upside in recent months (see *Demand* section) thanks to robust economic growth in Europe, the US and Asia. This has in turn led commercial operators to release stocks of middle distillates and gasoline to meet requirements. We estimate that global demand growth accelerated in 2Q17 just as product stockpiles started falling and will remain high seasonally in 3Q17; second, product exports to non-OECD countries, including to Latin America and West Africa, have increased since March due to refinery outages and higher demand in those regions. Germany, Greece, Mexico and the Netherlands – all part of the OECD – suffered their own refinery problems recently, likely exacerbating the shortfall.



Hurricane Harvey is likely to have a significant downward impact on oil product stocks during August-September due to the closure of a large amount of refining capacity on the US Gulf Coast and the temporary shutdown of the Colonial pipeline to the US Northeast. The question, then, is whether OECD oil product stocks are likely to reach the five-year average anytime soon. We think it is possible that will happen before the end of the year given the scale of disruptions to energy infrastructure caused by the hurricane and the fact the five-year average metric will increase by 29 mb in August due to the effect of stock gains in previous years driven by higher refinery output.

Crude, NGL and feedstock inventories, by contrast, remained 155 mb above the five-year average at the end of July, despite steep draws in the US before the hurricane hit. The crude surplus will be harder to eliminate as it started from a higher base than products and because of the expected increase in production in some OECD countries (e.g. the US) over the next few months. Even so, the fact that product stocks are approaching the five-year average shows that market rebalancing is under way and sends a signal for refiners to increase crude runs, which could in turn reduce commercial crude stockpiles. This same incentive has been at work in the US over the last few months due to a product shortfall in Latin America and higher demand nationally.

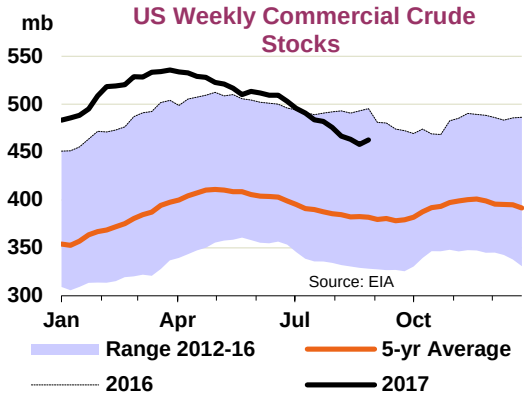


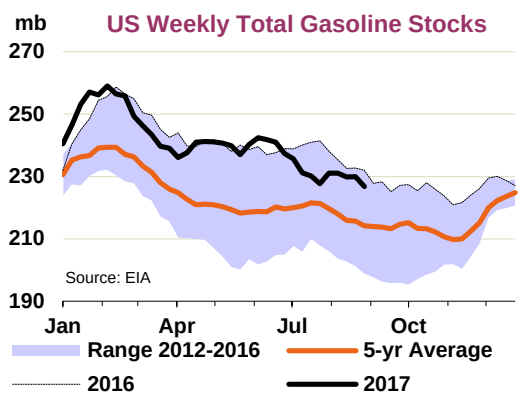
Additionally, oil held in floating storage dropped in July and August following the increase seen in 2Q17, data from EA Gibson and Kpler showed, as European and Asian refiners consumed the surplus of crude accumulated previously. At 47.4 mb for August, according to Gibson, floating storage was at its lowest level since December 2014 and 0.3 mb below the five-year average. As discussed in last month's *Report*, major Atlantic Basin crude and oil product benchmarks were in backwardation at the time of writing, a sign it was no longer profitable to store barrels offshore, or indeed on land.

Recent OECD industry stock changes

OECD Americas

Commercial stocks in the OECD Americas dropped significantly by 25 mb in July to reach 1 571 mb, their lowest level since December 2015. By end-month, they stood 128 mb above the five-year average, the lowest surplus in over two years. As in previous months, higher runs at US refineries pressured crude stocks. However, unlike in previous months, oil products also drew because of higher demand and exports from the US to non-OECD countries. Crude stocks stood 17.2 mb lower by end-July, at 641 mb, their lowest since September 2016. Imports remained stable, while exports rose by 110 kb/d as US crudes were priced at an increasing discount to global benchmarks. Product stockpiles drew counter-seasonally, by 8 mb to 745 mb. Gasoline (-7.8 mb) and middle distillates (-7.1 mb) both contributed heavily as a result of higher seasonal demand and steady exports to Latin America, which remained affected by refinery shutdowns, and Europe. Fuel oil stocks drew 1.4 mb on the month whereas other product stocks (largely US LPG) continued to build seasonally.





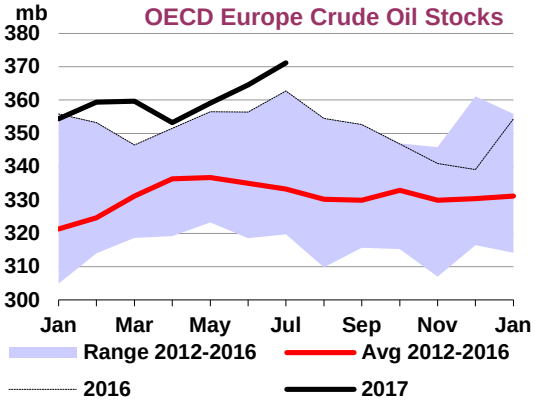
Preliminary data from the US *Energy Information Administration* (EIA) show stocks continued to decline through the week ending 25 August, before Hurricane Harvey arrived. As in previous months, crude stocks fell most, by 21.4 mb between the end of July and 25 August, however this started to reverse in late August with extensive shutdowns of refining capacity at the peak of the storm. Figures released through to 1 September showed that commercial crude stocks rose 4.6 mb after the hurricane hit, breaking a run of 10 weeks of falling levels linked to stellar refinery margins. PADD 3 crude stocks were most affected, rising by 1.7 mb week-on-week. Crude stocks are likely to rise further over the coming weeks, but they will struggle to return to the very high levels seen earlier this year: US commercial crude stocks had declined by a significant 77.8 mb (530 kb/d) between end-March and 25 August.

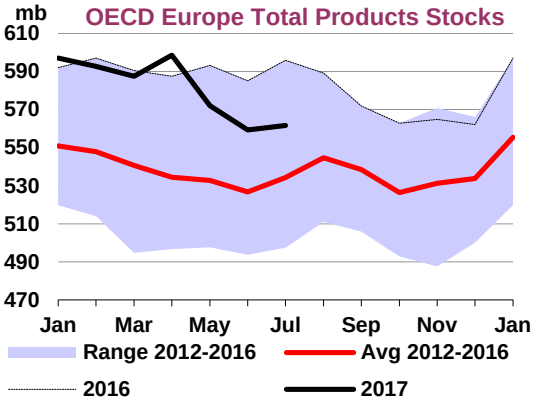
An increase in refinery runs registered before the storm helped to boost oil product stocks through to 25 August, but this also started to reverse after the hurricane appeared. US gasoline stocks fell 3.2 mb in the following week; PADD 3 stocks were almost unchanged at 82 mb, while PADD 1 stockpiles fell 2.2 mb to 60 mb. PADD 3 middle distillate stocks rose 0.8 mb, to 49 mb, whereas PADD 1 stocks declined 2 mb to 52 mb. The Secretary of Energy authorised emergency exchange agreements with four refiners to provide 5.3 mb of crude oil. So far, authorised drawdowns have been much smaller than the 16.5 mb of SPR crude sold by the Department of Energy since the start of the year as part of a programme to fund refurbishment of the infrastructure and medical research. The SPR drew 0.3 mb in the week ended 1 September, to 679 mb.

OECD Europe

OECD Europe industry stocks built seasonally by 11.3 mb to 1 008 mb in July. When taking into account the upward revision made to Swedish baseline stock figures in January, oil stocks stood 56 mb above the

five-year average. Total stocks covered 69.3 days of forward demand, up 0.7 days on the month. Crude stockpiles built by 6.6 mb to 371 mb, reaching their highest ever, despite higher refinery throughputs, as imports increased substantially. Figures available from *Kpler*, the ship-tracking tool, showed crude imports into Europe at 351 mb for July, up 23 mb from June and at their highest in several years, with a pickup from countries including Russia (+7 mb on the month), Nigeria (+7 mb), Libya (+5.3 mb) and Iran (+5.1 mb). European refinery runs increased 470 kb/d in July to 12.5 mb/d.





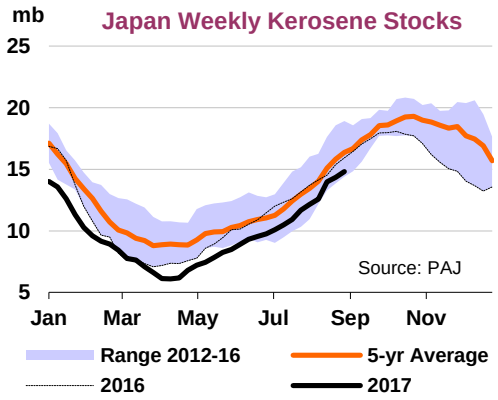
Oil product stocks also increased seasonally, by 2.4 mb to 562 mb, during July. However, unlike crude, they are in a deficit versus 2016 levels and are heading towards the five-year average metric. Higher exports to West Africa and the Middle East led to a 3.5 mb reduction in European gasoline stocks, which stood at 88 mb by end month, their lowest level in nearly two years. A string of exports to the US in late August and September linked to Hurricane Harvey could further pressure Europe's gasoline stockpiles. Fuel oil stocks fell 0.6 mb to 65 mb, whereas middle distillates (+3.3 mb) and other products (+3.1 mb) both gained on the month.

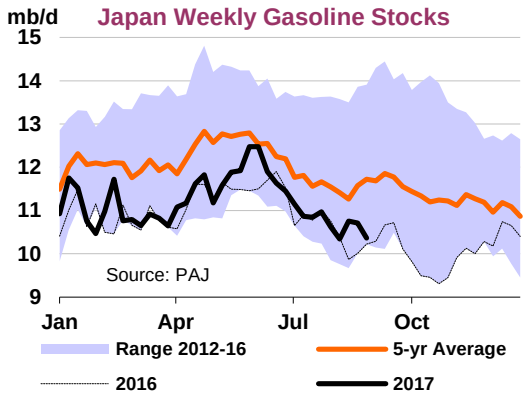
A fall in bunker demand in Asia closed the arbitrage window between Europe and Singapore temporarily in August, thus backing out additional volumes of fuel oil in the Amsterdam-Rotterdam-Antwerp refining hub. This led to an increase in fuel oil held at independent storage facilities in Northwest Europe. Data from Euroilstock for Europe showed oil stocks increased in August by 4 mb as refiners increased runs. Crude stocks fell 2.2 mb, but this was more than offset by higher gasoline (+2.9 mb) and middle distillate stocks (+4.8 mb). Fuel oil (-0.1 mb) and naphtha stocks (-1.3 mb) fell.

OECD Asia Oceania

Commercial stocks in OECD Asia Oceania rose 13.7 mb in July to 438 mb and stood 6 mb above the five-year average at end month. Crude stocks rose 7.4 mb from June to 197 mb, as imports into South Korea, Japan and Australia from OPEC countries picked up noticeably. Total imports into these three countries amounted to 220 mb in July, up 40 mb from June, according to *Kpler*. Oil product stockpiles increased seasonally by 7.3 mb to 177 mb, thereby reaching their highest level of the year. Other product stocks gained 6 mb to 66 mb with higher imports of naphtha and LPG, while middle distillates rose 2.1 mb to 65 mb and fuel oil gained 0.3 mb to 21 mb. Oil product stocks typically build during the March-August period in the region in anticipation of higher demand during the winter.

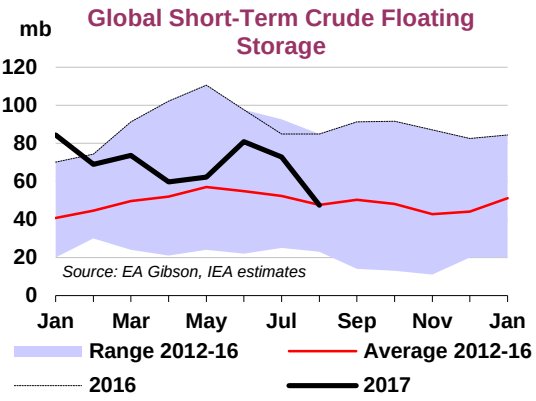
Preliminary weekly data from the *Petroleum Association of Japan* (PAJ) show total oil stocks remaining broadly unchanged in August with a small 0.3 mb overall decline. Refineries increased runs moderately, leading to a 3.3 mb decline in crude stocks and a 3 mb build in oil products. Kerosene stocks continued to increase seasonally by 2.9 mb on the month, but they remain at the bottom of the five-year range. This is also the case for most other oil products, including gasoil and gasoline, and can be attributed to the decision to close refining capacity.

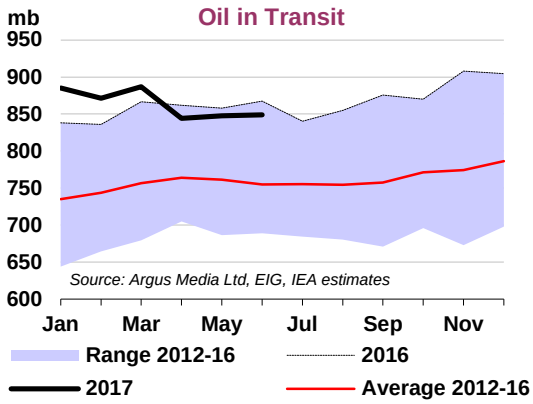




Other stock developments

Total stocks in the 16 non-OECD countries that have submitted figures to JODI for the month of June rose 5.8 mb from May. The largest gains were seen in Nigeria (+4.4 mb) as its Forcados and Bonny Light fields returned to production following lengthy shutdowns, while stocks also increased in Chinese Taipei (+2.5 mb), Hong Kong (+1.6 mb) among others. Stocks fell in India (-2.8 mb), Iraq (-1.2 mb) and Saudi Arabia (-0.9 mb), and elsewhere. Overall, stocks have fallen by a combined 15.5 mb in those countries in the first six months of 2017. The largest stock falls were seen among OPEC members such as Saudi Arabia (-16.5 mb), Qatar (-9.5 mb) and Algeria (-7.4 mb) – likely part of a strategy to prop up exports amid falling production – as well as India (-11.3 mb). The largest gains were in Nigeria (+18.9 mb), Thailand (+4.1 mb) and Iraq (+2.1 mb), the same data showed.

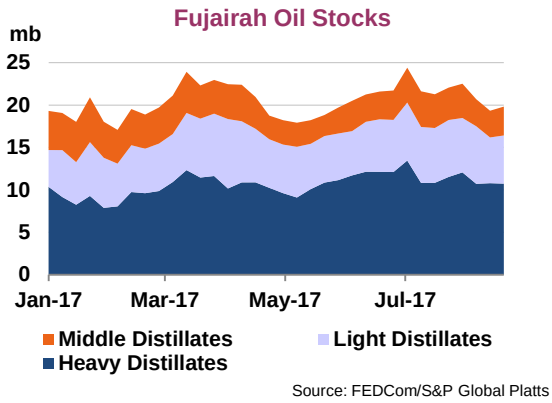




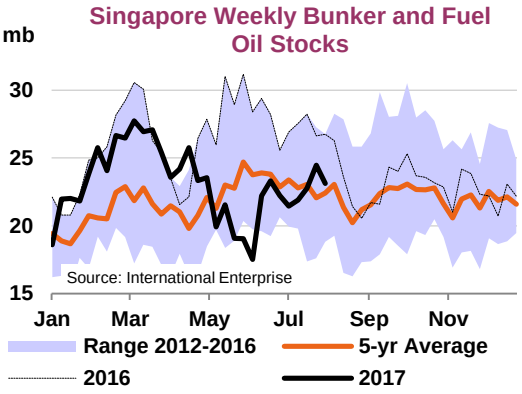
Oil held in floating storage dropped in July (-8.1 mb) and August (-25.4 mb) following the increase seen in 2Q17, data from *EA Gibson* showed, as European and Asian refiners consumed the surplus accumulated previously. At 47.4 mb for the month of August, floating storage was at its lowest level since December 2014. Other estimates, including from *Kpler*, show a comparable 31.1 mb fall in August. This, in turn, means that floating storage levels are likely back to the five-year average metric, after spending 2016 and most of 2017 above it. ICE Brent futures were in backwardation in August and the early part of September due to field maintenance in the North Sea, a sign it was not profitable to store barrels on vessels in the Atlantic Basin. In addition, estimates for volumes of oil in transit available at the time of writing showed a further decrease in crude transiting between exporters and refiners during August. OPEC cuts, which have reduced tanker movements, and lower freight rates since the start of the year, point in the same direction.

Data from *China Oil, Gas and Petrochemicals* (China OGP) indicate that commercial oil stocks fell 6.1 mb in July to an estimated 375 mb. There were falls in gasoline (-4.7 mb) and gasoil (4.4 mb) stocks prompted by lower refinery production, while gasoil demand was also down. Crude (+2 mb) and

kerosene (+1 mb) stocks increased from June. Crude net imports fell on the month in July, but remained significantly above last year. When net imports are added to Chinese crude production and compared with refinery intake, the net balance, or implied net stock build, stood at 1 mb/d in July. We estimate that net imports increased in August and that the overall build was closer to 1.1 mb/d. These figures are significant and likely due to a combination of unreported increases in commercial and strategic stocks, misreported refinery runs and overall data errors.



Source: FEDCom/S&P Global Platts

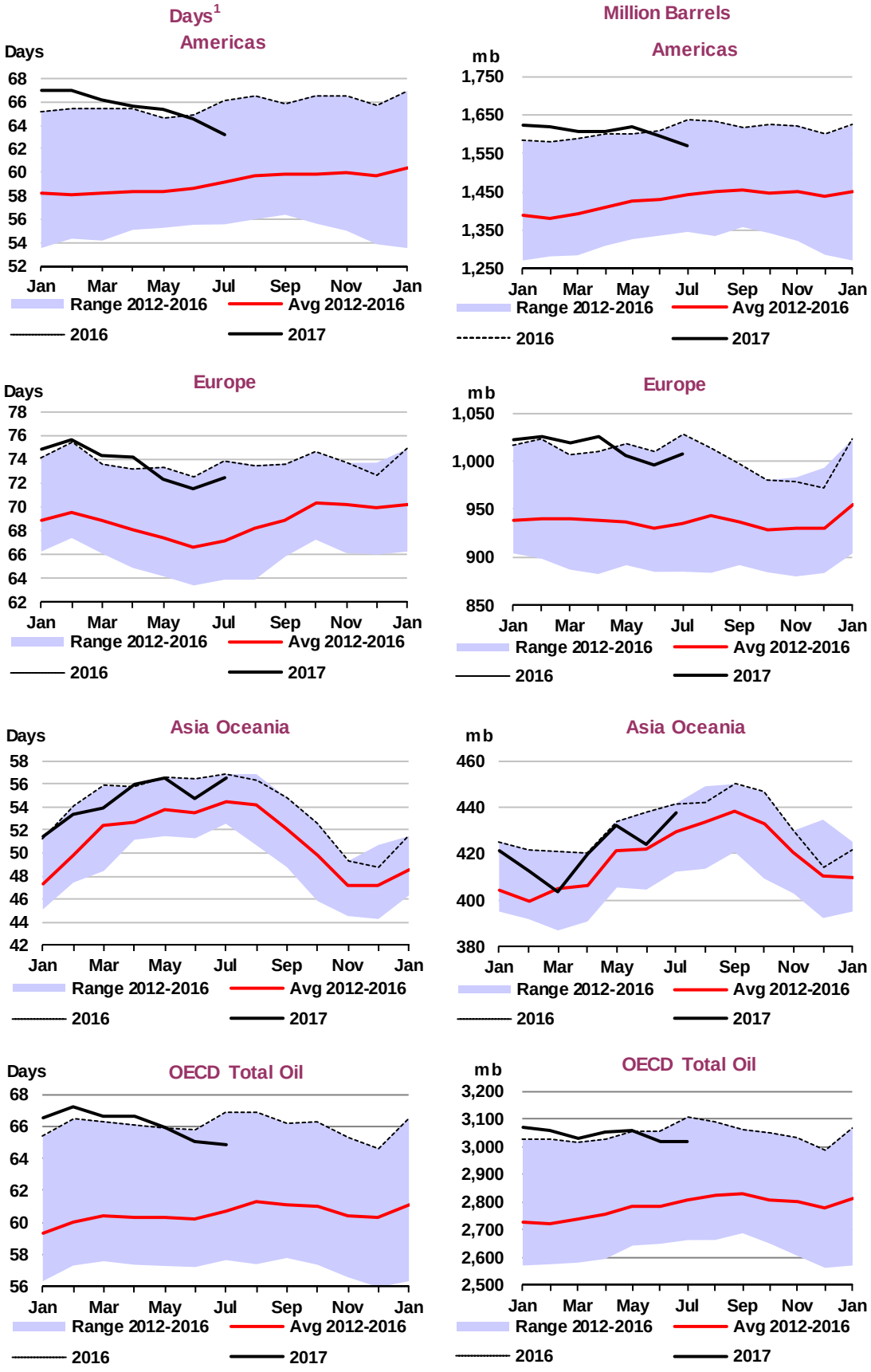


Oil inventories in Fujairah fell in August by 1.7 mb to 20 mb, as demand for light and middle distillates increased in the Middle East, data released by *FEDCom* and *S&P Global Platts* showed. Light distillate stocks fell 0.9 mb to 5.6 mb and middle distillates reduced 0.7 mb to 3.3 mb. Heavy distillate stocks were also down 0.1 mb to 10.8 mb. The figures for Fujairah have been published since January and so far show inventories moving within a relatively tight range of 17-24 mb on a weekly basis and no overwhelming downward or upward trend over the last few months.

By contrast, Singaporean stocks continued to rise in August thanks to a further increase in fuel oil and bunker fuel stocks that is linked to a slowdown in shipping activity in Southeast Asia. Fuel oil and bunker fuel stocks reached 26.3 mb at the end of August, up 2.8 mb on the month and at their highest level since February, according to *International Enterprise*. Light and middle distillate stocks both fell on the month. Overall, oil product stocks in Singapore are now above their level this time last year.

Regional OECD End-of-Month Industry Stocks

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



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

PRICES

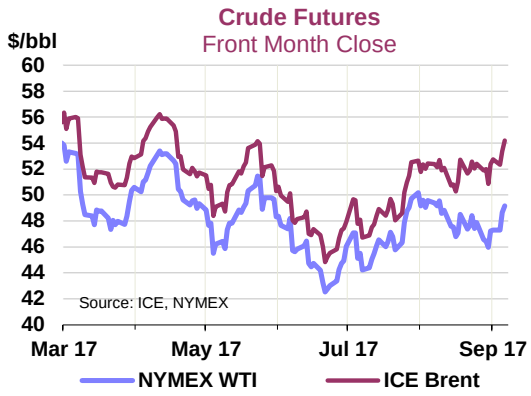
Summary

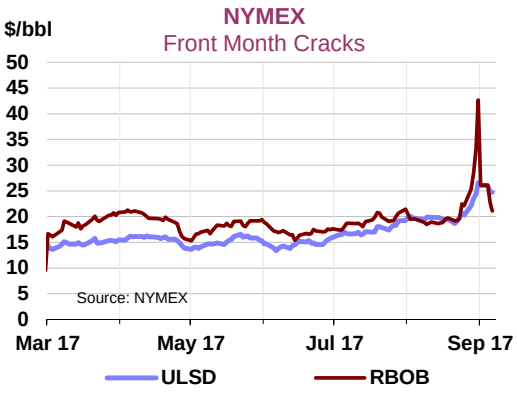
- **Benchmark crude prices rose by $1-3/bbl in August** versus July. Higher oil product demand in the northern hemisphere was an important factor.

- **Money managers increased net long positions in crude futures by 150 mb until 22 August, a remarkable about-turn** since the lows registered in June. The appearance of Hurricane Harvey, brought about a sharp reversal for WTI futures.

- **Hurricane Harvey pressured US crude prices and, conversely, boosted oil product prices** in the Gulf Coast region and beyond. Markets adjusted quickly and by early September crude prices had started to recover and oil product prices were down.

- **Major crude and oil product benchmarks were in backwardation at the time of writing**, where prompt prices are higher than future ones, highlighting tighter fundamentals in the global oil market.





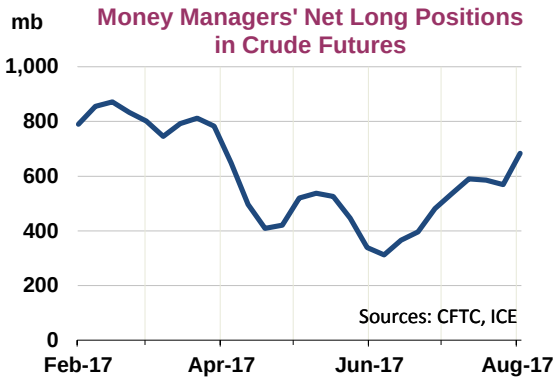
Market overview

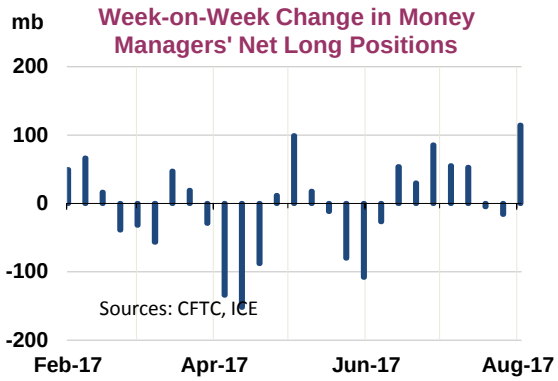
Outright benchmark crude prices gained in August, reflecting higher demand in the northern hemisphere and tight physical markets for oil products. Prices are now firmly above their level before the OPEC output cut agreement in late 2016. In parallel, money managers built impressive long positions in crude futures contracts, signifying their optimism, even if this reversed sharply in late August. Hurricane Harvey had far-reaching consequences on crude and product markets that are likely to last through September and beyond. The price of US crude fell in relation to other benchmarks and international crude prices also moderated, as refiners in the Gulf Coast curbed their crude intake. By early September, however, ICE Brent futures were trading above their pre-Harvey levels and were in backwardation, pointing to firmer fundamentals in the global oil market. Oil product prices in the US and internationally raced higher following the hurricane, but they had started to fall in early September.

Futures markets

Crude futures in August were supported by strong seasonal demand for oil products in the northern hemisphere and production outages in Libya. Price volatility was limited amid lower trading activity. Front-month Brent futures ended July at $52.65/bbl and traded during most of August close to $52/bbl, except for a brief dip to $50.27/bbl in mid-month. At the time of writing, futures had climbed to $54/bbl. In parallel, money managers built net long positions in Brent and WTI futures by some 150 mb until 22 August, a remarkable about-turn since the lows registered at the end of June. Net long positions held by money managers stood at 684 mb on 22 August, their highest since mid-April and more than double

their level in late June. This rise was mainly driven by money managers taking more outright bullish long positions rather than reducing bearish short positions, suggesting that they have become more optimistic about the outlook for oil prices over the next few months. Outright crude prices moved little during this build up in positions. Net long positions in crude fell considerably in the week ending 29 August as Hurricane Harvey pressured crude demand from US refiners. Conversely, net long positions in product futures increased after Harvey.





The Month 1-Month 2 ICE Brent futures spread strengthened throughout August, trading in sustained backwardation for the first time since July 2014 when oil prices were still comfortably above $100/bbl. While increasing demand for light sweet crude from refiners contributed, the main reason was seasonal maintenance work at North Sea oil fields, which curtailed production. The significance of this rise should not therefore be overstated, but it is nonetheless a sign that oil markets have started to rebalance. After a brief dip in early September following the expiry of the October contract, the Month 1-Month 2 spread returned to backwardation. Longer-dated monthly Brent spreads remained stable in a contango of less than $0.20/bbl during August and are generally firmer than in June, showing that traders see a stronger outlook for oil prices.

The Brent-WTI futures spread widened considerably in August due to the temporary impact of lower output at North Sea oil fields. At the end of the month, Hurricane Harvey pushed the spread above $5/bbl, its highest in two years, as US refiners reduced crude purchases because of the storm. The Brent-Dubai Exchange of Futures for Physical (EFP) spread also widened from around $1/bbl at the end of July towards $2/bbl at the end of August. In early September, it was down again as the impact of North Sea maintenance faded. The EFP remains narrower than it has been historically due to tight sour crude fundamentals and lower production from OPEC members.

In oil products, the Month 1-Month 2 ICE low sulphur gasoil futures curve traded between contango and backwardation for most of August. It was supported by stronger seasonal demand from European motorists and refinery outages, but supplies remained adequate. Planned maintenance and unplanned shutdowns at Europe's refineries and lower refinery output in the Gulf Coast kept the spread in positive territory at the end of August and in early September. The Month 1-Month 2 NYMEX Reformulated Gasoline Blendstock for Oxygen Blending (RBOB) spread was stable at a high level due to strong seasonal demand. Then, the closure of the Colonial pipeline due to flooding and lower production at Gulf refineries pushed it to a five-year high of $15.15/bbl on 31 August. It is worth bearing in mind that the annual switch to the cheaper winter specification made it seem even larger than it was. The spread receded in early September and was trading at $2.25/bbl on 11 September, lower than its pre-Harvey level. Hurricane Irma, which hit Florida over the weekend of 9-11 September, weighed on gasoline prices in early September due to the possible impact on consumption in the areas affected.

Prompt Month Oil Futures Prices

(monthly and weekly averages, $/bbl)

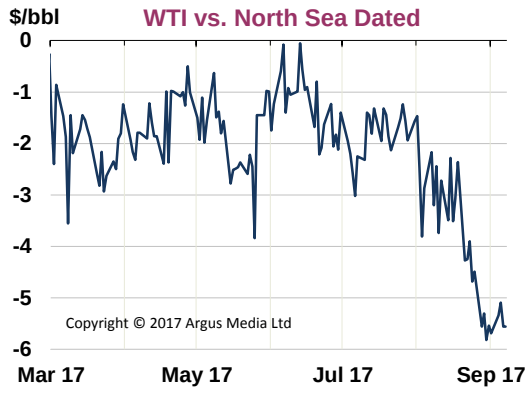
	Jun	Jul	Aug	Aug-Jul Avg Chg	% Chg	Week Commencing: 07 Aug	14 Aug	21 Aug	28 Aug	04 Sep
NYMEX										
Light Sweet Crude Oil	45.20	46.68	48.06	1.38	3.0	49.11	47.50	47.74	46.70	48.07
RBOB	62.24	65.96	69.84	3.88	5.9	67.93	66.62	68.25	77.85	68.65
ULSD	59.89	64.11	68.51	4.41	6.9	68.78	67.05	67.45	71.22	73.19
ULSD ($/mmbtu)	10.56	11.31	12.08	0.78	6.9	12.13	11.83	11.90	12.56	12.91
Henry Hub Natural Gas ($/mmbtu)	2.99	2.96	2.91	-0.05	-1.7	2.90	2.92	2.93	2.99	2.95
ICE										
Brent	47.55	49.15	51.87	2.72	5.5	52.24	51.11	52.11	51.98	53.84
Gasoil	56.97	60.77	64.68	3.90	6.4	64.68	63.42	64.06	66.57	69.83
Prompt Month Differentials										
NYMEX WTI - ICE Brent	-2.35	-2.47	-3.81	-1.34		-3.13	-3.61	-4.37	-5.28	-5.77
NYMEX ULSD - WTI	14.69	17.43	20.45	3.03		19.67	19.55	19.71	24.52	25.12
NYMEX RBOB - WTI	17.04	19.28	21.78	2.50		18.82	19.12	20.51	31.15	20.58
NYMEX 3-2-1 Crack (RBOB)	16.26	18.66	21.34	2.68		19.10	19.26	20.24	28.94	22.09
NYMEX ULSD - Natural Gas ($/mmbtu)	7.57	8.35	9.18	0.83		9.24	8.90	8.96	9.57	9.96
ICE Gasoil - ICE Brent	9.42	11.62	12.81	1.18		12.44	12.31	11.95	14.59	15.99

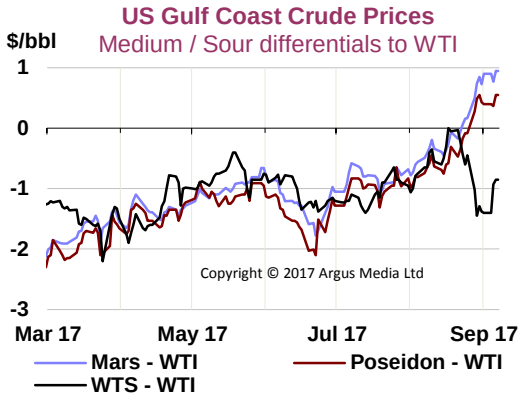
Source: ICE, NYMEX.

Spot crude oil prices

Light sweet crudes gained across the board in August with higher margins for diesel and gasoline. The price spread between sweet and sour crudes widened as a result, but remained low by historical standards following OPEC's decision to curb output. In late August, Hurricane Harvey wreaked havoc on the US refining industry, thus weighing on the price of US and Canadian crudes. The hurricane's impact on international crude benchmarks was temporary and limited in its nature.

North Sea Dated crude prices rose $3.13/bbl during August to $51.64/bbl, supported by scheduled maintenance work at oil fields and good demand for light sweet grades from refiners amid higher diesel and gasoline prices. Brent, Forties Oseberg and Ekofisk (BFOE) cargo loadings are forecast to increase in September and again in October as fields progressively resume output, but will remain relatively low by historical standards at under 900 kb/d. Floating storage, which increased in Northwest Europe during June-July, drew sharply in August. Increased demand from European refiners and higher exports to Asia were largely responsible. The Forties differential to North Sea Dated rose from -$0.20/bbl in mid-August to +$0.75/bbl on 31 August, it's highest since January 2016. It pushed higher in early September. Oseberg and Ekofisk gained even more and were assessed at premiums to Dated of +$1.70/bbl and +$1.37/bbl by end month, respectively.





Maintenance work in the North Sea helped to widen the price spread between European and US crudes in August. North American crude grades gained by $1-2/bbl from July, compared with $3/bbl or more in Europe and West Africa. A wider Brent-WTI spread boosted the incentive to export US crude and differentials for WTI Midland, Light Louisiana Sweet, Poseidon and Mars gained accordingly. At the end of August, Hurricane Harvey had a profound impact on US crude markets, likely to last through September and beyond. Outright WTI prices fell $2/bbl and the Month 1-Month 2 contango widened to its largest since March, as Gulf Coast refiners reduced their crude intake. WTI also weakened further in relation to North Sea Dated. It was $5.39/bbl below Dated at end month, down from a discount of $2.44/bbl on 1 August and $4.42/bbl on 24 August, before the hurricane hit the Texas coastline.

Logistical constraints drove the relative fate of North American crude grades. The price of grades native to Texas, such as WTI Midland – typically produced in the Permian basin and shipped to the Gulf Coast for refining – fell even more than WTI Cushing due to the shutdown of key pipelines. The same fate awaited West Canadian Select (WCS), which fell $11.85/bbl below WTI on 31 August, its lowest since March, due to reduced export prospects to the Gulf Coast. However, the price of sour grades Mars and Poseidon produced in the Gulf of Mexico rose in relation to WTI in the days following the disaster as offshore fields were shut in as a precaution. By early September, the price of WTI Midland and WCS had recovered a touch with the reopening of pipelines and refinery capacity.

West African crudes were some of the largest gainers amongst global crudes in August, boosted by strong margins for motor fuels and steady demand from Asian refiners. Forcados gained significantly by $4.17/bbl to $53.21/bbl with increased certainty about its cargo-loading programme following the return to production in June. Qua Iboe was up $3.78/bbl to $52.92/bbl and Bonny Light increased $3.49/bbl to $52.51/bbl. Differentials to North Sea Dated rose across the board. Loadings for Bonny Light, Brass River and Qua Iboe were scheduled to fall in October, partly explaining the price gains. The price differential between Atlantic Basin and Middle Eastern grades (Brent-Dubai) widened further during the month, increasing the cost to Asian refiners who nevertheless maintained purchases of Nigerian and Angolan crude as more refineries returned from maintenance. At the time of writing, reduced demand from US refiners in the aftermath of hurricane Harvey had not affected grade differentials.

Spot Crude Oil Prices and Differentials

(monthly and weekly averages, $/bbl)

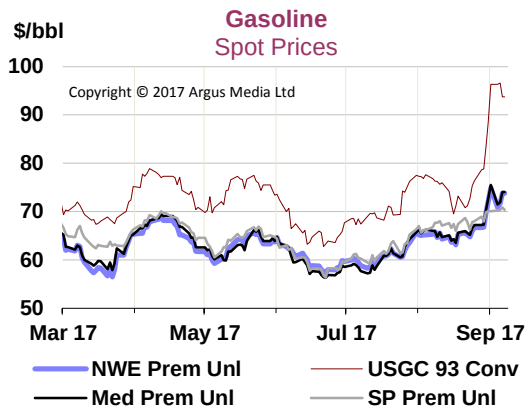
	Jun	Jul	Aug	Aug-Jul		Week Commencing:				
				Avg Chg	%	07 Aug	14 Aug	21 Aug	28 Aug	04 Sep
Crudes										
North Sea Dated	46.42	48.51	51.64	3.13	6.5	51.96	50.45	51.94	52.32	53.94
Brent (Asia) Mth 1	47.57	48.85	52.08	3.23	6.6	52.44	51.30	52.62	52.01	53.62
WTI (Cushing) Mth 1	45.17	46.65	48.03	1.38	3.0	49.11	47.50	47.62	46.70	48.60
Urals (Mediterranean)	45.52	47.82	51.29	3.47	7.3	51.83	50.20	51.44	51.37	52.85
Dubai	46.48	47.59	50.24	2.65	5.6	50.91	49.41	50.31	50.04	52.07
Tapis (Dated)	48.16	50.15	53.54	3.39	6.8	53.55	52.30	54.09	54.32	56.09
Differential to North Sea Dated										
WTI (Cushing)	-1.25	-1.85	-3.61	-1.75		-2.85	-2.94	-4.32	-5.62	-5.34
Urals (Mediterranean)	-0.91	-0.68	-0.34	0.34		-0.13	-0.25	-0.50	-0.95	-1.09
Dubai	0.06	-0.91	-1.40	-0.48		-1.05	-1.04	-1.62	-2.28	-1.87
Tapis (Dated)	1.73	1.64	1.90	0.26		1.59	1.85	2.15	2.00	2.15
Prompt Month Differential										
Forward Cash Brent Mth1-Mth2	-0.28	-0.17	0.16	0.33		0.08	0.20	0.30	0.15	0.11
Forward WTI Cushing Mth1-Mth2	-0.22	-0.17	-0.23	-0.07		-0.17	-0.15	-0.20	-0.59	-0.49
Forward Dubai Mth1-Mth2	-0.34	-0.29	-0.07	0.22		-0.10	-0.04	-0.03	-0.02	0.15

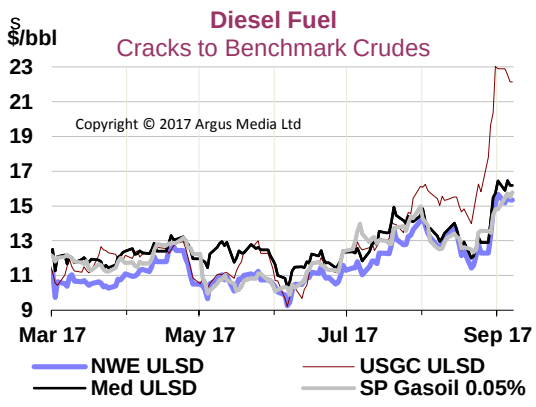
Reduced exports linked to maintenance on a pipeline in northern Russia maintained the price of sour Urals crude high in the first part of August, before evidence of higher cargo loadings for the month of September brought it down. Urals for delivery in Northwest Europe was trading $1.30/bbl below North Sea Dated in late August, down from -$0.15/bbl on 9 August. To a large extent, robust runs at European refineries kept demand for the grade high in August, offsetting reduced exports to Asia following the widening of the Brent-Dubai price spread. Light sweet crudes delivered into the Mediterranean such as Azeri Light, Saharan Blend and Es Sider rose in line with a general increase for similar grades in the North Sea and West Africa amid higher diesel and gasoline cracks, as well as a fresh production outage at the Sharara field in Libya. By contrast, CPC Blend fell in relation to North Sea Dated as the arbitrage to Asia shut and with loadings expected to hit an all-time high in September thanks to increased production.

Middle Eastern sour crude grades rose by $2-3/bbl on average in August as Asian refiners increased purchases in line with the end of the maintenance period. Dubai crude averaged $50.24/bbl, up $2.65/bbl on the month, and physical cargoes gained progressively relative to swaps, even temporarily trading at a premium in late August for the first time since February. Grades such as Al Shaheen, Murban, Oman and Upper Zakum traded at higher premiums to Dubai assessments. In other developments, Iraq announced it would switch the pricing of its crude from *S&P Global Platts* Dubai to the Dubai Mercantile Exchange, likely due to concerns about the influence gained by Chinese refiners in the pricing process in recent years. But in mid-September it said it would review customer feedback and delay the switch.

Spot product prices

Global product prices rose faster than crude in August for the second straight month due to higher demand for fuels and as refinery output issues remained. Hurricane Harvey affected US refinery output and the rest of the global product supply chain, and sent prices higher.





Diesel, gasoil and jet fuel prices remained supported due to a seasonal uptake in demand in the US and Europe, and previous refinery production issues. Rotterdam diesel barge prices went up $3.80/bbl from July to $64.70/bbl and Singapore 500 ppm gasoil cargoes rose $2.46/bbl to $63.51/bbl. Prices in Europe gained strongly in the early part of the month on the back of refinery outages, but eased afterwards with a significant amount of diesel headed to Europe. Rotterdam diesel barges increased to a $0.17/bbl premium over ICE front-month gasoil futures on 31 July following news of a fire at the Netherlands' Pernis refinery, before falling to a $0.24/bbl discount by 21 August. The differential recovered a touch afterwards. In Asia, diesel cargoes traded below corresponding swap contracts throughout the month as the Monsoon season reduced demand. At the end of August, Hurricane Harvey at one point shut 5 mb/d of US refining capacity, boosting prices in the US and around the world. Cargoes of diesel and jet fuel were diverted away from Europe and Asia towards the US to plug the supply gap. Lower exports of diesel from Russia scheduled for September also helped to support European prices.

Gasoline markets were buoyant in August and gained more than any other oil products. Rotterdam premium unleaded barges rose sharply by $4.86/bbl to $65.64/bbl and US Gulf Coast super unleaded pipeline prices went up $5.20/bbl to $75.90/bbl. Physical cargo prices crept up through the month in both Europe and Asia due to higher seasonal demand, and Hurricane Harvey propelled them higher still. In the Gulf Coast, gasoline prices moved up significantly after Harvey, and were $14-20/bbl higher than prices in the Northeast by end-August, depending on the grade. A total of 13 mb of European gasoline blending components was booked for loading in the first half of September and seen headed to the US, with several more cargoes likely going to Mexico. Gasoline refining margins in Europe and Asia pushed to their highest in nearly two years. In early September, prices came off as refineries restarted, but they were likely to remain high for several more weeks.

Naphtha recovered from its July lows as petrochemical crackers stepped up purchases and with strong demand for blending with gasoline. Asian naphtha cargoes returned above their corresponding swap in late July and traded at a $0.14-0.28/bbl premium throughout August, with lower supplies from the West expected over October. Prices in Europe also went higher. Hurricane Harvey incentivised exports of European naphtha to Brazil, rather than Asia, and pushed propane prices above naphtha in Europe. This, in turn, was expected to further incentivise naphtha rather than LPG cracking in Europe.

Spot Product Prices

(monthly and weekly averages, $/bbl)

	Jun	Jul	Aug	Aug-Jul		Week Commencing:					Jun	Jul	Aug	Chg
				Chg	%	07 Aug	14 Aug	21 Aug	28 Aug	04 Sep				
Rotterdam, Barges FOB											**Differential to North Sea Dated**			
Premium Unl 10 ppm	60.04	60.78	65.64	4.86	8.0	65.15	64.16	65.66	70.89	72.51	13.61	12.27	14.00	1.73
Naphtha	45.19	47.83	51.57	3.75	7.8	51.07	50.43	51.61	53.94	55.42	-1.24	-0.68	-0.06	0.62
Jet/Kerosene	57.30	60.98	64.93	3.95	6.5	64.85	63.87	64.59	67.10	68.87	10.88	12.47	13.29	0.82
ULSD 10ppm	57.06	60.90	64.70	3.80	6.2	64.83	63.37	63.99	67.01	69.75	10.64	12.39	13.06	0.67
Gasoil 0.1%	55.65	59.09	62.25	3.16	5.3	62.10	60.95	61.66	64.57	67.68	9.22	10.58	10.61	0.03
LSFO 1%	44.45	45.07	46.75	1.68	3.7	47.15	45.42	46.76	47.67	48.98	-1.97	-3.44	-4.89	-1.45
HSFO 3.5%	40.90	43.52	45.40	1.89	4.3	46.03	44.49	45.04	45.77	47.54	-5.53	-4.99	-6.23	-1.24
Mediterranean, FOB Cargoes											**Differential to Urals**			
Premium Unl 10 ppm	59.08	60.37	66.13	5.76	9.5	65.44	64.51	66.10	71.48	71.84	13.57	12.54	14.84	2.29
Naphtha	43.57	46.31	50.46	4.14	8.9	49.94	49.29	50.48	52.94	54.36	-1.95	-1.51	-0.84	0.67
Jet Aviation fuel	56.53	60.30	64.36	4.06	6.7	64.27	63.28	63.98	66.65	68.28	11.02	12.47	13.06	0.59
ULSD 10ppm	57.12	61.22	64.79	3.57	5.8	65.10	63.42	63.99	66.80	69.47	11.61	13.40	13.50	0.10
Gasoil 0.1%	55.56	58.89	62.38	3.48	5.9	62.41	61.09	61.66	64.79	66.92	10.05	11.07	11.08	0.01
LSFO 1%	45.95	45.73	47.09	1.37	3.0	47.51	45.84	47.08	47.88	49.20	0.43	-2.10	-4.20	-2.10
HSFO 3.5%	43.12	44.62	45.99	1.37	3.1	46.63	45.16	45.60	46.24	48.08	-2.40	-3.20	-5.30	-2.10
US Gulf, FOB Pipeline											**Differential to LLS**			
Super Unleaded	66.34	70.70	75.90	5.20	7.4	76.21	71.95	73.28	85.16	95.44	19.12	21.69	24.82	3.13
Unleaded	61.83	65.79	70.77	4.98	7.6	69.08	67.17	69.15	80.41	76.58	14.61	16.78	19.68	2.91
Jet/Kerosene	54.46	60.07	66.44	6.36	10.6	64.60	63.47	65.18	75.96	78.53	7.24	11.06	15.35	4.29
ULSD 10ppm	58.18	62.55	67.31	4.76	7.6	67.18	65.58	66.21	71.39	75.76	10.97	13.54	16.23	2.69
Heating Oil	52.05	55.85	59.51	3.67	6.6	59.64	57.33	58.75	63.01	65.80	4.84	6.84	8.43	1.59
No. 6 3%*	41.01	43.89	44.85	0.96	2.2	45.65	43.93	44.73	45.35	47.34	-6.21	-5.12	-6.23	-1.11
Singapore, FOB Cargoes											**Differential to Dubai**			
Premium Unleaded	59.78	61.76	67.51	5.75	9.3	67.39	67.04	67.74	69.20	70.52	13.30	14.17	17.27	3.10
Naphtha	44.94	45.92	50.58	4.66	10.1	50.49	49.66	50.66	51.59	53.64	-1.54	-1.67	0.34	2.01
Jet/Kerosene	57.03	59.77	63.11	3.34	5.6	63.31	62.03	62.74	64.11	66.82	10.55	12.18	12.87	0.69
Gasoil 0.05%	57.54	61.05	63.51	2.46	4.0	63.70	62.40	63.18	64.11	67.78	11.06	13.46	13.27	-0.19
LSWR Cracked	48.33	48.26	49.28	1.02	2.1	49.95	48.70	49.15	49.14	51.26	1.85	0.67	-0.96	-1.63
HSFO 180 CST	46.42	47.23	48.35	1.12	2.4	48.95	47.69	48.28	48.49	50.45	-0.06	-0.36	-1.89	-1.53
HSFO 380 CST 4%	45.33	46.32	47.84	1.53	3.3	48.42	47.19	47.91	47.92	49.95	-1.15	-1.28	-2.40	-1.12

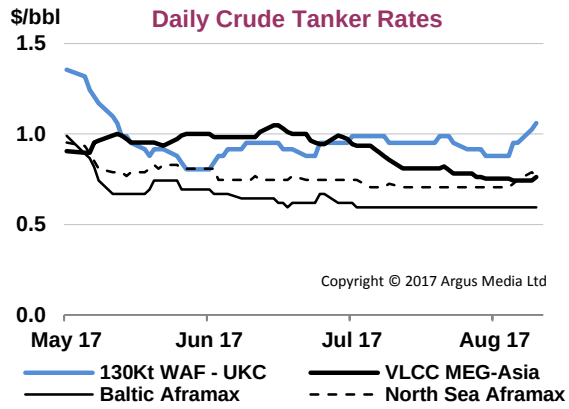
 * Waterborne

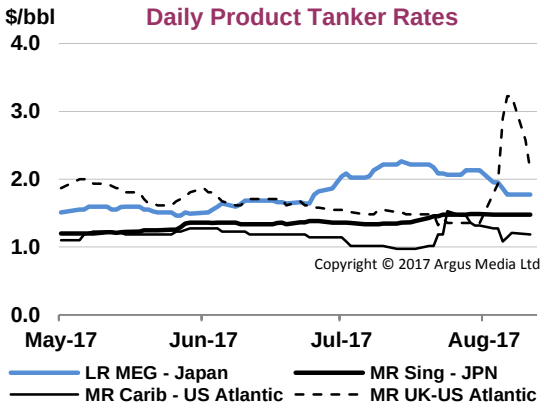
Fuel oil prices rose in August, but they lagged behind gains in crude and other oil products. Rotterdam 3.5% fuel oil barge prices were up $1.89/bbl to $45.40/bbl and Singapore 380-centistoke cargo prices rose $1.53/bbl to $47.84/bbl. Fuel oil inventories rose in both Europe and Singapore, reflecting lower demand. At the end of August, prices in Asia rose faster than in Europe, tentatively opening the arbitrage to ship fuel oil to Asia. Hurricane Harvey impacted little on the fuel oil complex.

Freight

Freight for **VLCCs** on the Middle East Gulf (MEG) to Asia route averaged $0.81/bbl in August, down from $0.98/bbl in July and at its lowest since assessments began. Refinery maintenance in Asia and consequently an oversupply of vessels weighed on prices. There was an uptick in demand for VLCCs in West Africa in the second part of the month, but it was not enough to support rates. VLCC rates have been low since the start of the year as new ships were built and due to lower exports from OPEC countries.

Suezmax rates on the West Africa to Northwest Europe route were unchanged, despite higher loadings from Nigeria and Angola. Cheap freight for VLCCs kept this segment under pressure. **Aframax** rates fell $0.04/bbl to $0.59/bbl with plentiful tonnage available. Rates rose in the Caribbean with increased loadings from Venezuela and as poor weather – including Hurricane Harvey – delayed ships.





Clean product freight on the UK Continent-US Atlantic Coast route was under pressure for most of the month with poor opportunities to send gasoline from Europe to the US. However, the rate more than doubled from $1.35/bbl on 25 August to $2.90/bbl on 30 August, as Hurricane Harvey increased the need for gasoline imports to the Northeast. It fell in early September, but remained higher than at the start of August. Freight on the return route between the US Gulf and Europe also rose substantially.

East of Suez, Medium Range tanker rates were also supported by firm demand for diesel in countries such as Australia and the rare opening of arbitrage routes from Asia to the US following Hurricane Harvey. The Long Range MEG-Japan rate averaged $2.10/bbl, up from $1.77/bbl in July, with higher demand to move naphtha cargoes to Asia and a generally supportive environment for clean freight.

REFINING

Summary

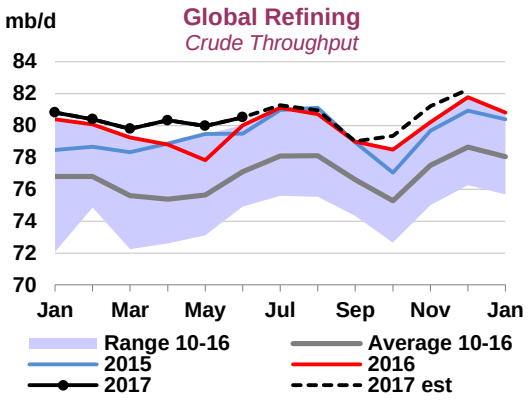
- **Forecast 3Q17 global throughput has been revised down by 0.7 mb/d to 80.4 mb/d**, largely due to Hurricane Harvey's impact on the US Gulf Coast. Year-on-year (y-o-y) growth is just 0.2 mb/d.

- **In 4Q17, global throughput is expected to buck seasonal trends and climb 0.5 mb/d quarter-on-quarter (q-o-q) to 80.9 mb/d, up 0.8 mb/d y-o-y**.

- **Our first forecast for the whole of 2017 shows throughput growth slightly faster than in 2016 (0.7 mb/d vs 0.5 mb/d),** but this is well below the growth in refined product demand, which implies large product stock draws (See *Global crude oil and refined product balances – where is the tightness?*).

Global refinery overview

With June data largely finalised, our estimate for 2Q17 global throughput is revised down by 0.1 mb/d to 80.2 mb/d. The OECD accounted for all of the observed global growth of 1.4 mb/d, while non-OECD throughput was slightly lower y-o-y. In 3Q17, global throughput is forecast to grow by only 0.2 mb/d both y-o-y and q-o-q, due to a downward revision of 0.7 mb/d. Hurricane Harvey's impact on the US Gulf Coast refining system accounts for most of this revision (0.5 mb/d), with lower than expected July data for China and Brazil also contributing.



In 4Q17, refinery intake increases counter-seasonally from 3Q17, rising by 0.5 mb/d to 80.9 mb/d, as runs respond to higher margins. Global refined product stocks have been drawing since 2Q17 even before Harvey shuttered a sizeable fraction of US refining capacity from the end of August. Refinery runs are forecast to grow by 0.7 mb/d in 2017, slightly faster than 2016's 0.5 mb/d, but much slower than the 1.6 mb/d observed in 2014 and 2015.

Global Refinery Crude Throughput[1]

(million barrels per day)

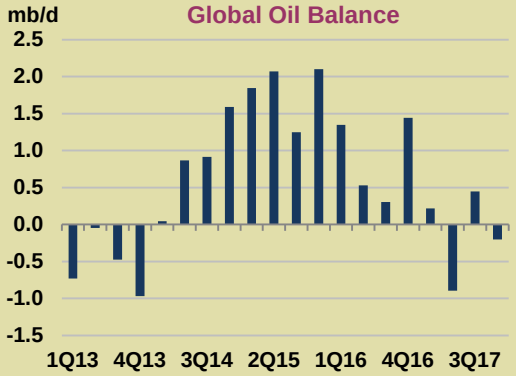
	2016	2Q17	Jul 17	Aug 17	Sep 17	3Q17	Oct 17	Nov 17	Dec 17	4Q17	2017
Americas	**18.9**	**20.0**	19.9	19.6	17.7	**19.1**	17.8	19.2	19.5	**18.8**	**19.2**
Europe	**11.9**	**12.0**	12.5	12.1	12.2	**12.3**	12.3	12.4	12.6	**12.4**	**12.2**
Asia Oceania	**6.9**	**6.6**	6.9	6.8	6.6	**6.8**	6.6	7.0	7.3	**7.0**	**6.9**
Total OECD	**37.8**	**38.6**	39.3	38.5	36.5	**38.1**	36.7	38.6	39.4	**38.2**	**38.2**
FSU	**6.8**	**6.7**	7.0	7.0	6.9	**7.0**	6.9	7.0	7.0	**7.0**	**6.9**
Non-OECD Europe	**0.5**	**0.5**	0.5	0.5	0.5	**0.5**	0.5	0.5	0.5	**0.5**	**0.5**
China	**10.8**	**11.0**	10.7	11.2	11.1	**11.0**	11.3	11.3	11.2	**11.3**	**11.1**
Other Asia	**10.4**	**10.3**	10.3	10.5	10.5	**10.4**	10.5	10.5	10.7	**10.6**	**10.4**
Latin America	**4.2**	**3.8**	3.7	3.8	3.9	**3.8**	4.0	4.0	4.0	**4.0**	**3.9**
Middle East	**7.2**	**7.2**	7.5	7.5	7.4	**7.5**	7.3	7.4	7.4	**7.4**	**7.3**
Africa	**2.0**	**2.0**	2.0	2.1	2.0	**2.0**	2.0	2.0	2.1	**2.0**	**2.0**
Total Non-OECD	**41.9**	**41.6**	41.9	42.6	42.5	**42.3**	42.6	42.7	42.8	**42.7**	**42.2**
Total	**79.7**	**80.2**	81.2	81.0	79.0	**80.4**	79.2	81.3	82.2	**80.9**	**80.4**
Year-on-year change	*0.5*	*1.4*	*0.2*	*0.4*	*0.1*	*0.2*	*0.8*	*1.2*	*0.5*	*0.8*	*0.7*

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

Global crude oil and refined product balances – where is the tightness?

The global oil balance is the headline number from our Table 1 that is the net difference between total supply and total demand. It shows a small build in global inventories in 1Q17 (0.2 mb/d), a significant draw in 2Q17 (-0.9 mb/d) and a modest build in 3Q17 (0.4 mb/d). Assuming OPEC crude oil output staying flat from August to the end of the year, global inventories are forecast to draw 0.3 mb/d in 4Q17.

The global oil market is an amalgamation of crude oil and product markets, but it is essential to segregate the two to understand what is driving benchmark oil prices. Oil market statistics that the IEA gathers allow us to split global crude oil and refined product balances to have a clearer view of market developments.



Crude Oil and Refined Product Balances

(million barrels per day)

	2015	1Q16	2Q16	3Q16	4Q16	2016	1Q17	2Q17	3Q17	4Q17	2017
World total demand	**94.8**	95.3	95.6	96.7	96.8	**96.1**	96.5	97.9	97.8	98.7	**97.7**
World total supply	**96.6**	96.7	96.1	97.0	98.3	**97.0**	96.7	97.0	98.2	98.4	**97.6**
World balance[1]	**1.8**	1.3	0.5	0.3	1.4	**0.9**	0.2	-0.9	0.4	-0.3	**-0.1**
Refined product demand	**80.9**	81.4	81.3	82.4	82.4	**81.9**	82.0	83.4	83.1	83.9	**83.1**
Refined product supply	**81.5**	82.1	81.0	82.5	82.3	**82.0**	82.5	82.5	82.7	83.2	**82.7**
Refined product balance	**0.6**	0.7	-0.3	0.1	0.0	**0.1**	0.5	-1.0	-0.4	-0.7	**-0.4**
Memo											
OECD refined product actual stock change	*0.3*	*0.4*	*-0.3*	*0.0*	*-0.1*	***0.0***	*0.1*	*-0.3*			
Non-OECD refined product implied stock change	*0.3*	*0.3*	*0.0*	*0.1*	*0.1*	***0.1***	*0.5*	*-0.6*			
Crude oil demand[2]	**80.5**	80.8	80.1	81.5	81.1	**80.9**	81.2	81.5	81.7	81.9	**81.6**
Crude and condensate supply[3]	**81.6**	82.0	80.6	81.4	82.9	**81.7**	81.5	81.2	82.2	82.6	**81.9**
Crude oil balance	**1.1**	1.2	0.5	-0.1	1.8	**0.8**	0.3	-0.2	0.5	0.7	**0.3**
Crude oil balance ex-China implied balance	**0.9**	0.6	-0.2	-0.8	1.6	**0.2**	-0.5	-1.5			
Memo											
OECD crude oil stock change	***0.4***	0.3	0.1	-0.3	0.0	***0.0***	0.5	-0.7			
Non-OECD implied crude oil stock change	***0.7***	*0.9*	*0.4*	*0.2*	*1.8*	***0.8***	*-0.2*	*0.4*			
China crude oil balance	***0.3***	0.6	0.6	0.7	0.1	***0.6***	0.8	1.3			
Non-OECD ex-China[4]	***0.4***	0.3	-0.3	-0.4	1.6	***0.2***	-1.0	-0.8			

[1] Sum of refined product and crude oil balances does not add up to world balance as the latter also includes non-refined product balance, not shown in this table

[2] Includes direct use of crude oil and condensate in power generation and petrochemical industry

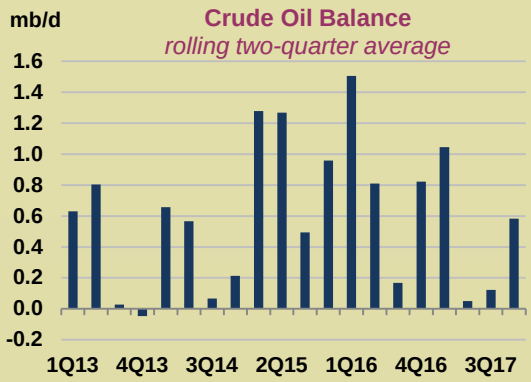
[3] OPEC crude oil output assumed flat from August to the end of 2017

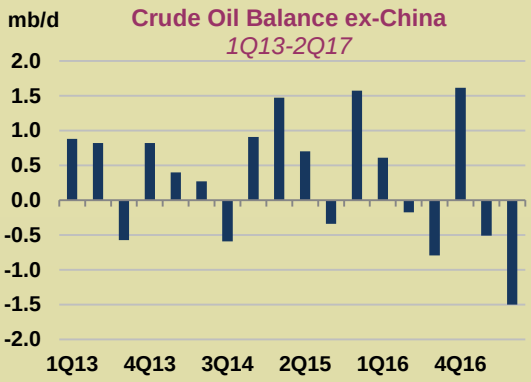
[4] Mathematically, this includes also oil in transit and floating storage

Our crude oil balance is constructed as the net difference between world crude oil and condensate supply and crude oil demand, which includes refinery throughput and direct use of crude oil and condensate. In analysing crude oil balances, it makes sense to look at rolling average for two quarters to remove refinery maintenance-related seasonal swings in order to see the underlying trend.

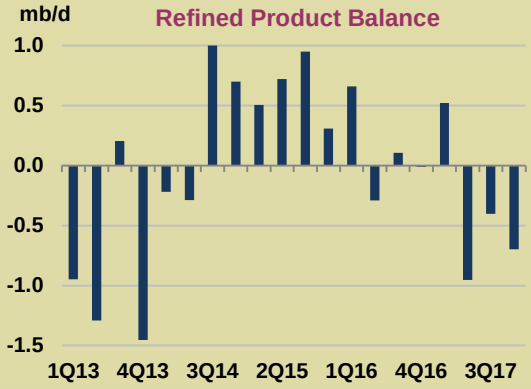
Crude oil has been significantly oversupplied in the last three years, but if Chinese implied stockbuilds are excluded from global balances, the extent of oversupply goes down in 2015-2016. In 2017, crude oil shows draws. In other words, crude oil inventories outside China have drawn by 1 mb/d in average in the first half of 2017 to feed the Chinese stock builds. OECD crude stocks end-June were essentially unchanged from December. This means that in non-OECD, excluding China, crude inventories must have drawn 0.9 mb/d, or some 160 mb. Based on our analysis of JODI-reported stock data, and the movement in floating storage and oil in transit, we can identify most of this stockdraw (see *Stocks*).

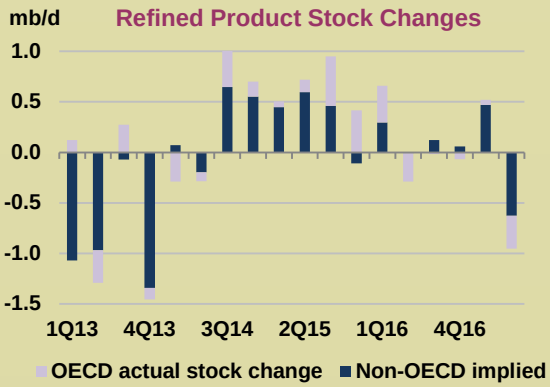
Global crude oil and refined product balances– where is the tightness? (continued)





Refined product balance calculation is more complicated. It follows a top-down approach. From global total demand, we subtract all the supply coming outside the refining sector (fractionated natural gas liquids, seasonally adjusted; biofuels; oil products from gas to liquids and coal to liquids processes; additives).





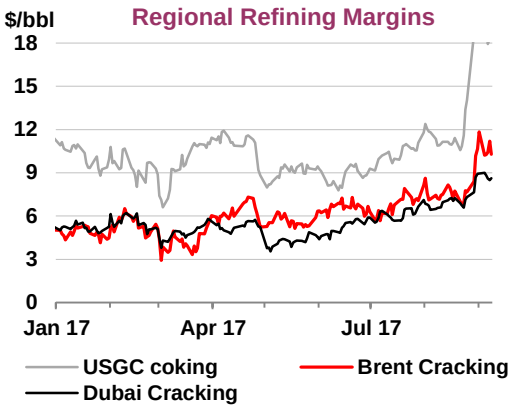
Our calculated refined product balances show persistent oversupply from 3Q14-1Q16, as refinery runs ramped up more than required to supply the growth in demand for refined products. In 2016 refining activity growth slowed down, as margins deteriorated. However, due to 1Q16 oversupply, 2016 as a whole saw an average product stockbuild of 0.1 mb/d.

In 2017, with refining growth again falling behind demand growth, refined product stocks started drawing in earnest in 2Q17. Forecasts of refinery runs and demand for 3Q17 and 4Q17 imply continued refined product stock draws. Even in 3Q17, when global headline oil balances show an oversupply of 0.4 mb/d, refined products are forecast to draw by a counter-seasonal 0.4 mb/d – in part due to the hurricane outages in the US Gulf Coast.

Using OECD product stocks data through to end-2Q17, we can derive implied refined product stock changes for non-OECD. These calculations show that non-OECD refined product stock changes can easily exceed OECD stock swings in magnitude. In 1Q17 non-OECD refined product inventories built more than OECD's, and in 2Q17, they are estimated to have drawn more than OECD stocks. Overall, in 2017, non-OECD is forecast to account for three quarters of global demand growth, but its share in refining activity growth is only one third.

Margins

Refinery margins in August were trending higher than in July, even before the product supply disruption caused by hurricane Harvey saw gasoline and middle distillates cracks surging globally. Margins in Europe – the nearest source for additional product supply for the affected regions - gained $2-3/bbl in the last week of August, with smaller gains in Singapore's more distant hub. In the US midcontinent, the margins surged by $7/bbl. Our calculations show a large draw in global refined product stocks in 2Q17, when the refining throughput growth failed to catch up with demand growth. Largely due to Harvey's impact, refined product stocks are expected to draw in 3Q17 as well, breaking the seasonal trend of pre-4Q inventory build.



IEA/KBC Global Indicator Refining Margins[1]

($/bbl)

	Monthly Average				Change	Average for week ending:				
	May 17	Jun 17	Jul 17	Aug 17	Aug 17-Jul 17	11 Aug	18 Aug	25 Aug	01 Sep	08 Sep
NW Europe										
Brent (Cracking)	5.64	6.57	6.80	7.79	↑ 0.99	7.36	7.73	7.24	10.27	10.48
Urals (Cracking)	6.11	6.77	6.90	7.54	↑ 0.64	6.83	7.34	7.42	10.27	10.63
Brent (Hydroskimming)	2.14	3.37	3.30	3.57	↑ 0.27	3.31	3.51	3.05	5.29	5.41
Urals (Hydroskimming)	1.48	2.69	2.98	2.95	↓ -0.03	2.45	2.86	2.78	4.76	5.10
Mediterranean										
Es Sider (Cracking)	7.28	8.00	8.33	8.66	↑ 0.33	8.33	8.59	8.01	10.60	10.44
Urals (Cracking)	6.75	6.96	7.54	7.80	↑ 0.26	7.33	7.72	7.22	10.10	10.47
Es Sider (Hydroskimming)	4.50	5.69	5.28	4.98	↓ -0.30	4.75	4.91	4.41	6.48	6.20
Urals (Hydroskimming)	2.52	3.53	3.63	3.17	↓ -0.47	2.87	3.20	2.61	4.82	5.17
US Gulf Coast										
50/50 HLS/LLS (Cracking)	8.92	8.24	10.48	13.37	↑ 2.89	11.47	11.27	12.54	23.02	19.66
Mars (Cracking)	6.00	6.17	7.98	9.56	↑ 1.57	8.01	7.94	9.01	17.33	14.29
ASCI (Cracking)	5.76	5.91	7.63	9.14	↑ 1.51	7.61	7.53	8.63	16.74	13.77
50/50 HLS/LLS (Coking)	10.56	9.68	12.00	15.30	↑ 3.30	13.22	13.05	14.39	25.79	22.21
50/50 Maya/Mars (Coking)	9.03	8.77	10.40	12.90	↑ 2.50	11.06	11.12	12.08	21.70	18.55
ASCI (Coking)	9.98	9.64	11.65	14.21	↑ 2.57	12.25	12.27	13.44	23.63	20.42
US Midcon										
WTI (Cracking)	12.29	12.28	14.43	16.84	↑ 2.41	15.08	15.15	16.23	23.34	20.67
30/70 WCS/Bakken (Cracking)	10.99	11.64	12.92	15.09	↑ 2.17	13.62	13.53	14.36	20.90	17.96
Bakken (Cracking)	13.11	13.28	14.72	17.30	↑ 2.57	15.70	15.69	16.48	23.59	20.10
WTI (Coking)	14.11	13.94	16.15	18.92	↑ 2.77	17.03	17.13	18.24	25.86	23.01
30/70 WCS/Bakken (Coking)	13.68	14.07	15.54	18.40	↑ 2.86	16.69	16.68	17.50	24.87	21.68
Bakken (Coking)	13.84	13.95	15.41	18.16	↑ 2.75	16.50	16.50	17.30	24.65	21.04
Singapore										
Dubai (Hydroskimming)	0.45	2.05	2.58	2.89	↑ 0.31	2.55	2.98	2.77	3.91	4.04
Tapis (Hydroskimming)	3.41	4.19	3.97	3.96	↓ -0.01	3.91	4.38	3.48	4.29	4.85
Dubai (Hydrocracking)	4.22	5.23	6.12	7.11	↑ 0.99	6.66	7.17	6.93	8.43	8.71
Tapis (Hydrocracking)	6.01	6.32	6.52	7.28	↑ 0.76	7.12	7.68	6.81	7.90	8.57

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

Source: IEA, KBC Advanced Technologies (KBC)

OECD refinery throughput

OECD refinery throughput in 2Q17 was finalised at 38.6 mb/d, the highest level since 3Q15. The 1.5 mb/d y-o-y growth was the largest in our quarterly records. The US and Europe showed impressive y-o-y gains of 0.9 mb/d and 0.6 mb/d respectively, while OECD Asia and Mexico were down y-o-y. Although July preliminary data came in 0.3 mb/d higher than our forecast, 3Q17 overall data is revised down by 0.5 mb/d due to sharply lower US runs in August-September. This turned the y-o-y change negative, as runs now decline 0.2 mb/d vs 3Q16. The growth resumes in 4Q17, at 0.4 mb/d. After 2016's y-o-y decline of about 0.2 mb/d, OECD runs are expected to finalise 2017 with a 0.5 mb/d growth, the lion's share of the global total.

Refinery Crude Throughput and Utilisation in OECD Countries

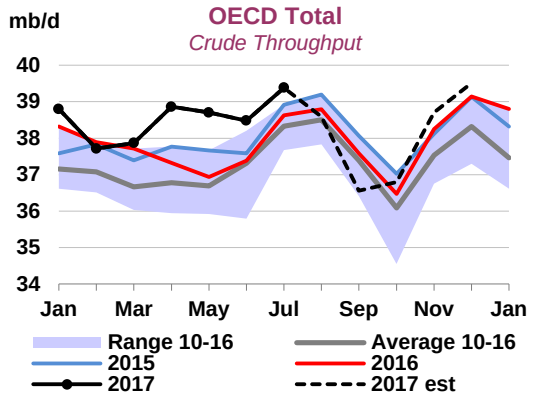
(million barrels per day)

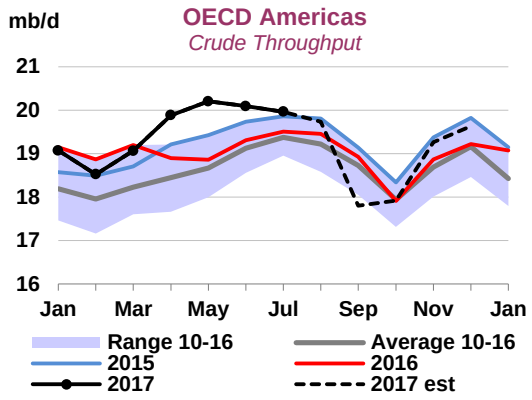
							Change from		Utilisation rate[1]	
	Feb 17	Mar 17	Apr 17	May 17	Jun 17	Jul 17	*Jun 17*	*Jul 16*	Jul 17	Jul 16
US[2]	15.55	16.03	16.97	17.21	17.21	17.31	0.10	0.75	0.95	0.92
Canada	1.70	1.77	1.68	1.77	1.78	1.73	-0.05	-0.04	0.89	0.92
Chile	0.20	0.18	0.16	0.19	0.20	0.17	-0.03	0.02	0.74	0.64
Mexico	0.98	0.98	0.98	0.94	0.81	0.67	-0.15	-0.27	0.40	0.56
OECD Americas[3]	**18.42**	**18.96**	**19.78**	**20.10**	**19.99**	**19.86**	**-0.13**	**0.46**	**0.90**	**0.89**
France	1.06	1.05	1.15	1.11	1.16	1.18	0.02	-0.02	0.95	0.86
Germany	1.84	1.84	1.95	1.74	1.77	1.95	0.18	-0.03	0.97	0.98
Italy	1.34	1.31	1.33	1.29	1.41	1.33	-0.08	-0.01	0.76	0.77
Netherlands	1.12	1.13	1.19	1.13	1.03	1.09	0.06	0.05	0.84	0.81
Spain	1.21	1.28	1.36	1.25	1.23	1.39	0.17	0.04	0.97	0.94
United Kingdom	1.03	1.09	1.12	1.08	1.13	1.09	-0.04	0.01	0.86	0.79
Other OECD Europe	4.17	4.22	4.05	4.24	4.31	4.46	0.15	0.15	0.92	0.89
OECD Europe	**11.77**	**11.92**	**12.14**	**11.83**	**12.04**	**12.50**	**0.47**	**0.18**	**0.90**	**0.87**
Japan	3.51	3.21	3.18	2.91	2.76	3.08	0.32	0.05	0.89	0.82
South Korea	3.16	3.03	2.88	2.95	2.79	3.10	0.31	0.12	0.98	0.97
Other Asia Oceania	0.75	0.64	0.78	0.81	0.80	0.74	-0.06	-0.04	0.85	0.90
OECD Asia Oceania	**7.42**	**6.88**	**6.84**	**6.67**	**6.35**	**6.92**	**0.57**	**0.12**	**0.92**	**0.89**
OECD Total	**37.62**	**37.77**	**38.76**	**38.61**	**38.38**	**39.28**	**0.90**	**0.76**	**0.91**	**0.88**

[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



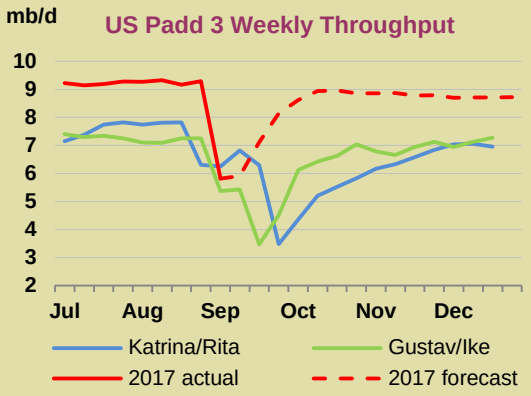


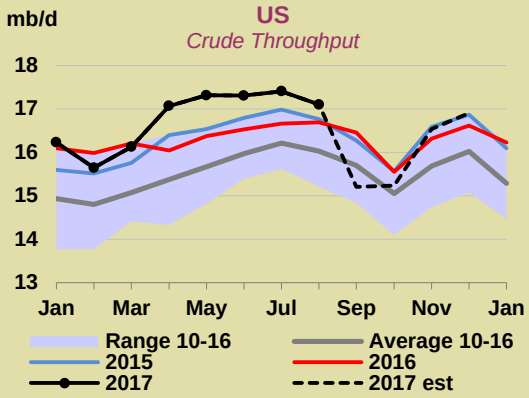
Harvey's impact on US Gulf Coast refining

In August, US refiners were ramping up further from already high rates seen since April. Data for the first four reporting weeks in August show runs breaking consecutive weekly records, rising from 17,564 kb/d in the beginning of August to 17,725 kb/d in the week before Hurricane Harvey's landfall. High utilisation rates in PADD 3, or the Gulf Coast, which accounts for half of the US installed capacity, were the major reason for record throughputs this summer. PADD 3 includes six southern states, but Texas and Louisiana together account for 80% of the total 9.7 mb/d capacity. Almost 5 mb/d of Texas refining capacity is clustered in a few areas, most of which are situated along the Gulf of Mexico coastline: Corpus Christi, Texas City/Galveston Bay, Houston and Port Arthur. Port Arthur is adjacent to Louisiana's Lake Charles cluster with a total capacity of 800 kb/d.

In previous major hurricane occurrences, Louisiana was hit first (by Katrina in 2005 and Gustav in 2008), with a relatively small loss in throughput (up to 2 mb/d), and half of the capacity came back within a week. It was the subsequent hurricanes of the season– Rita in 2005 and Ike in 2008 that, by targeting Texas refining clusters, shut more capacity (about 4 mb/d) and inflicted more long-lasting physical damage on the facilities. The impact of Rita was the most severe, and it took over four months for operations to normalise.

Unlike previous hurricanes, Harvey's landfall started in west Texas, shutting down the Corpus Christi cluster first and then moving on to temporarily paralyse most of the refineries in Houston, Galveston Bay and Port Arthur. Only one Louisiana refinery was directly affected, but it did not shut down completely. In terms of a single hurricane impact, Harvey has surpassed all its predecessors, triggering a shutdown of over 5 mb/d capacity at its daily peak. The average throughput loss for the first week, ending September 1, was over 3 mb/d, according to weekly DOE data. We estimate the impact for the week ending September 8 at similar levels.



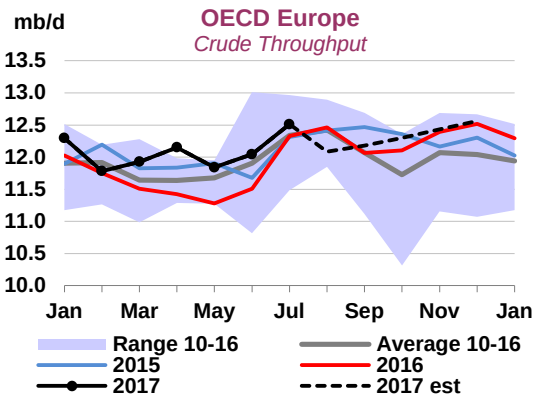


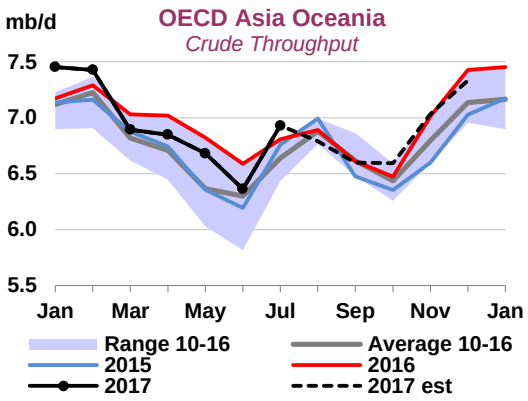
However, no serious physical damage has been reported by the operators, and most refineries are in the process of restarting. Some have already reached normal operating levels. When they will be able to, Texas refiners are likely to run at maximum levels. The 0.6 mb/d throughput loss in August and our assumption of a 1.6 mb/d loss in September results in refined product undersupply of about 60 mb, with gasoline and diesel affected most. At the same time, our estimate of demand loss is minimal for gasoline (-0.2 mb/d), and the reconstruction efforts are likely to increase diesel demand. Most of the oil demand loss is concentrated in the LPG/ethane segment as Texas also has the world's largest concentration of petrochemical facilities, some of which were shut during the hurricane. In Texas, LPG/ethane is primarily supplied from natural gas fractionation plants.

The US Gulf Coast is the world's biggest exporter of refined products. More than half of the region's product output is exported, either to other PADDs in the US, or abroad. In PADD 1, the US North East, 60% of gasoline and 80% of diesel consumed comes from the Gulf Coast. Half of gasoline and diesel consumed in Mexico are also imported from the US Gulf Coast (360 kb/d and 200 kb/d respectively), while Europe imports about 250 kb/d of diesel, a quarter of its total imports. The affected regions will have to rely on inventories and imports from new sources before output is fully restored in the Gulf Coast. In the meantime, operating refineries elsewhere in the world are enjoying the margin bonanza.

In OECD Americas, 2Q17 throughput reached a record high, at just under 20 mb/d, up by 1 mb/d y-o-y. The annual growth rate halved in July as **Mexican** throughput continued to deteriorate, with utilisation rates tumbling to 40%. Pemex began shutting down the 190 kb/d Ciudad Madero refinery for maintenance the day before Harvey hit the US Gulf Coast, which is the main fuels supplier to the increasingly short Mexican market. The 330 kb/d Salina Cruz facility, the largest refinery, was shut for several days after an earthquake hit Mexico's south in September. The facility reportedly did not suffer structural damage and was being restarted by the time of writing. Maintenance work is planned in two more refineries in 4Q17, implying lower runs until year-end. **Canada** is the only country in the region to see an upward revision to the forecast as its refiners are expected to benefit from post-hurricane product supply tightness (see "*Harvey's impact on US Gulf Coast refining*").

OECD Europe's 2Q17 throughput bounced back from maintenance, gaining 0.6 mb/d y-o-y, to reach 12 mb/d, although it should be noted that last year saw disruption from strikes in France. July preliminary data were 0.3 mb/d higher than our forecast, but we expect the finalised numbers to be lower. Europe's largest refinery, Shell's Pernis facility in Netherlands, was reportedly back to normal operations after an accident in late July that shut the whole site. The seasonal increase into 3Q17 is minimal, with runs expected to increase by a minor 250 kb/d from 2Q17, while annual growth disappears altogether. In 4Q17, throughput is expected to ramp up by another 170 kb/d thanks to better margins.



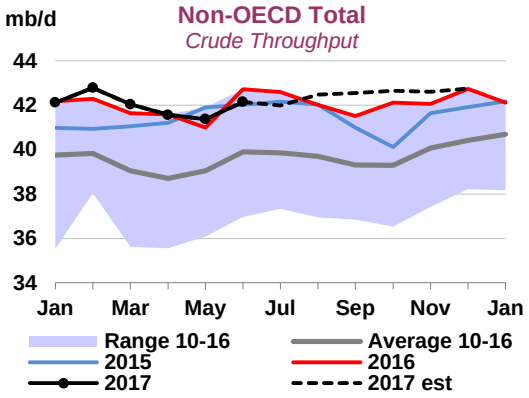


In **OECD Asia,** 2Q17 throughput declined y-o-y for the first time since 4Q14 due to a heavy maintenance season. Preliminary July data indicate more robust activity, with runs up 120 kb/d y-o-y, at just under 7 mb/d, but planned maintenance in September brings the average quarterly rate down to 6.8 mb/d. 4Q17 sees throughput ramping up 200 kb/d, staying flat y-o-y.

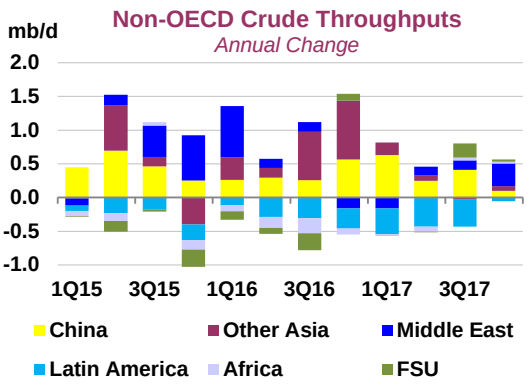
Non-OECD refinery throughput

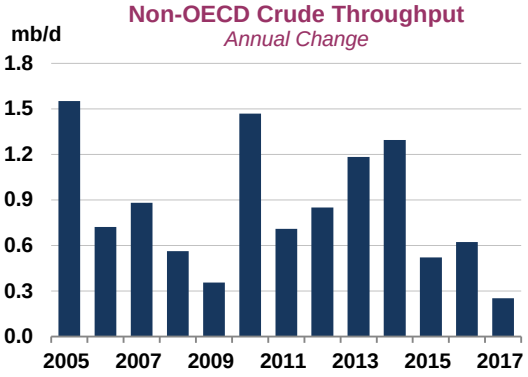
Lower than expected actual data for June throughput in a number of Asian and Middle Eastern countries resulted in a 100 kb/d downward revision to 2Q17 non-OECD runs. Throughput declined as lower Latin American activity was not compensated for by growth elsewhere. However, 3Q17 refinery intake is forecast to reach a new record high, at 42.3 mb/d, up 0.4 mb/d y-o-y, with growth mostly in China, the FSU and the Middle East.

In 4Q17, growth essentially disappears in all regions except for the Middle East and China, but stabilisation of Latin American throughput helps total non-OECD runs ramp up further to 42.7 mb/d. In 4Q17, intake growth is forecast to be the strongest this year, at about 0.4 mb/d.

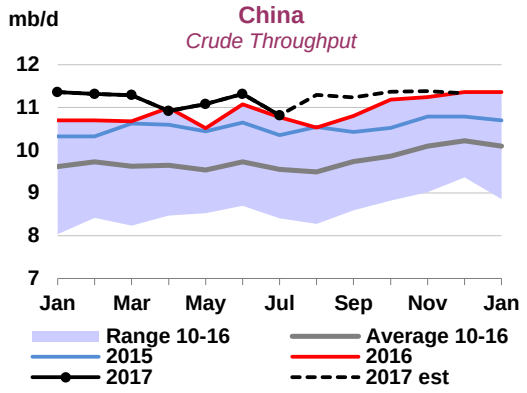


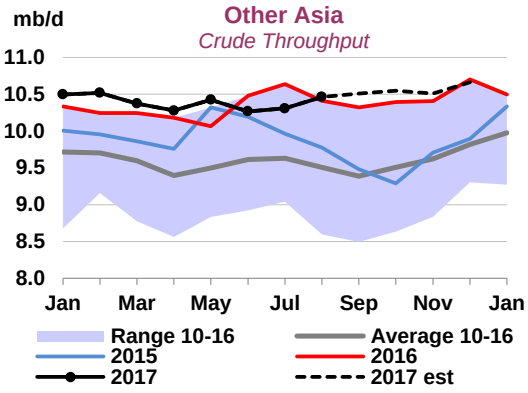
Annual growth in 2017 for non-OECD refining activity is expected to be just 0.3 mb/d, the lowest rate in almost two decades. Non-OECD refiners managed to increase throughput at a faster rate even during the Great Recession of 2007-2009. A flattening of Indian growth, declines in Venezuela and Brazil, and a capacity shutdown Kuwait are some of the main reasons for the slowdown this year.





Chinese throughput in July slipped 500 kb/d m-o-m on major maintenance works, and was almost flat versus a year ago. August throughput, however, is expected to bounce back as the start-up of PetroChina's Yunnan refinery was confirmed by press reports. CNOOC's Huizhou plant expansion is reportedly on trial runs. Shandong independent refiners will get a boost to their margins with the start-up of a 600 kb/d pipeline linking Dongjiakou VLCC port in the south of Shandong with the Weifang district in the north of the province. In 3Q17, throughput in China is expected to average 11 mb/d, up 410 kb/d y-o-y. In 4Q17, activity will climb 250 kb/d from the previous quarter, up 100 kb/d y-o-y.

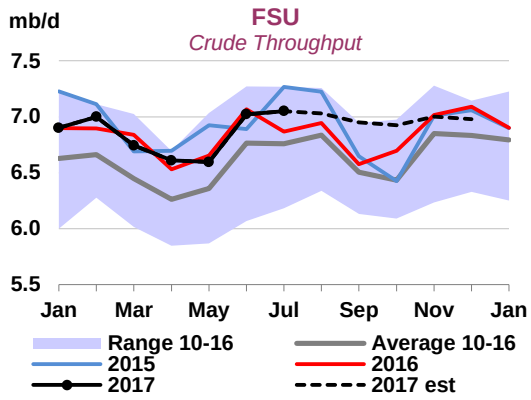


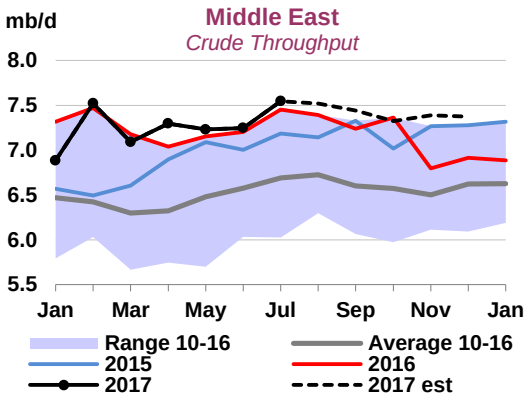


Indian throughput in July was 4.8 mb/d, 160 kb/d lower y-o-y on maintenance, but throughput is expected to pick up by 4Q17 to average 5 mb/d, the first time quarterly runs will reach this level. Still, growth for the year as a whole, at just 50 kb/d, will be a small fraction of last year's 350 kb/d. June updates for other Asian countries showed notably lower runs in **Thailand** and the **Philippines**, both due to refinery maintenance. We have also updated our estimates for Pakistan throughput, based on new indications, resulting in an average of 60 kb/d downward revision since January 2016.

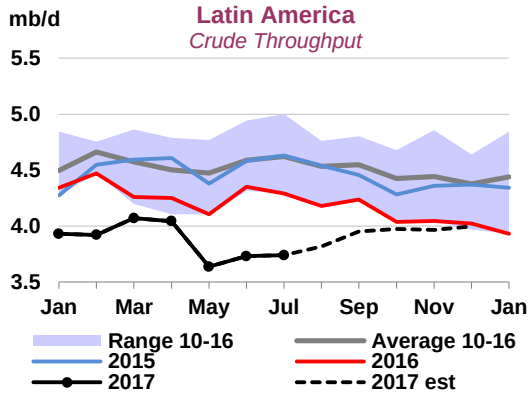
Russian refiners operated at above 5.7 mb/d for the third consecutive month in August, but also registered their first y-o-y decline in a year. **Belarus** reported May-June runs restored at normal historical levels after the Russian dispute ended. Overall, FSU throughput is expected to ramp up 270 kb/d to 7 mb/d in 3Q17, and remain flat in 4Q17.

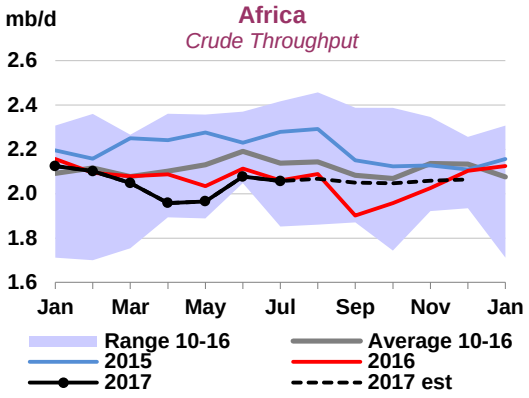
June updates for **Middle Eastern** country data were 130 kb/d below our forecast, but throughput was still 44 kb/d higher y-o-y. Runs are forecast to seasonally increase to 7.5 mb/d, a record high rate, in 3Q17, before a slight seasonal decline in 4Q17.





For the first time in six years, **Brazil** throughput fell below 1.7 mb/d in July, down 160 kb/d y-o-y. Annual growth is not expected to resume this year. In 2015-2017 Brazil has lost a cumulative 350 kb/d of refining throughput. **Venezuela**, although facing a different set of problems, is also struggling, with throughput down 400 kb/d since 2014. The country's refineries are operating at less than half of capacity, with throughput having fallen below levels seen in Argentina, about 500 kb/d. Overall, for Latin America, 3Q17 throughput s expected to fall 400 kb/d from a year earlier, after a 430 kb/d decline in 2Q17. While the region's throughput is forecast to increase towards 4Q17, the y-o-y change will remain negative. In 2017 as a whole, refinery intake will decline by 320 kb/d y-o-y.





African throughput in 2Q17 was the lowest in four years and in 3Q17 it is estimated to increase by 100 kb/d to 2.05 mb/d. Runs will see a small y-o-y growth in both 3Q17 and 4Q17, 30 kb/d on average, but for the year as a whole there is no change. This is still a positive development given the previous two years of declines.

Table 1
WORLD OIL SUPPLY AND DEMAND
(million barrels per day)

	2014	2015	1Q16	2Q16	3Q16	4Q16	2016	1Q17	2Q17	3Q17	4Q17	2017	1Q18	2Q18	3Q18	4Q18	2018
OECD DEMAND																	
Americas	24.2	24.6	24.5	24.4	25.0	24.8	24.7	24.5	25.0	25.0	25.2	24.9	24.6	25.1	25.3	25.1	25.0
Europe	13.5	13.8	13.6	13.9	14.4	14.2	14.0	13.9	14.2	14.6	14.3	14.2	13.8	14.3	14.7	14.4	14.3
Asia Oceania	8.1	8.1	8.6	7.7	7.8	8.4	8.1	8.6	7.8	7.9	8.3	8.1	8.5	7.6	7.8	8.3	8.0
Total OECD	45.8	46.4	46.7	46.0	47.3	47.4	46.9	46.9	47.0	47.4	47.8	47.3	46.9	46.9	47.8	47.8	47.4
NON-OECD DEMAND																	
FSU	4.6	4.5	4.6	4.6	4.9	4.9	4.8	4.6	4.8	5.0	5.0	4.8	4.7	4.8	5.1	5.0	4.9
Europe	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.8	0.8	0.7
China	10.8	11.6	11.8	12.1	11.6	11.9	11.9	12.5	12.7	12.0	12.3	12.4	12.8	12.9	12.4	12.7	12.7
Other Asia	11.8	12.4	13.0	13.0	12.7	13.0	12.9	13.2	13.5	13.0	13.7	13.3	13.7	14.0	13.5	14.2	13.9
Americas	6.8	6.7	6.5	6.6	6.7	6.6	6.6	6.5	6.6	6.7	6.7	6.6	6.5	6.7	6.8	6.7	6.7
Middle East	8.4	8.4	7.9	8.4	8.7	8.1	8.3	7.8	8.4	8.7	8.3	8.3	8.1	8.6	8.9	8.4	8.5
Africa	3.9	4.1	4.2	4.2	4.0	4.1	4.1	4.3	4.2	4.1	4.2	4.2	4.4	4.3	4.2	4.4	4.3
Total Non-OECD	47.1	48.4	48.7	49.6	49.4	49.4	49.3	49.6	50.9	50.4	50.9	50.4	50.9	52.1	51.7	52.2	51.7
Total Demand[1]	**92.9**	**94.8**	**95.3**	**95.6**	**96.7**	**96.8**	**96.1**	**96.5**	**97.9**	**97.8**	**98.7**	**97.7**	**97.9**	**99.0**	**99.4**	**100.0**	**99.1**
OECD SUPPLY																	
Americas[4]	19.1	20.0	19.9	19.0	19.3	19.7	19.5	20.0	19.8	19.9	20.4	20.0	21.0	20.9	21.2	21.7	21.2
Europe	3.3	3.5	3.6	3.4	3.3	3.6	3.5	3.7	3.5	3.4	3.6	3.5	3.7	3.6	3.5	3.6	3.6
Asia Oceania	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Total OECD	22.9	23.9	24.0	22.9	23.1	23.7	23.4	24.0	23.7	23.7	24.5	24.0	25.0	25.0	25.2	25.8	25.2
NON-OECD SUPPLY																	
FSU	13.9	14.0	14.3	14.1	14.0	14.5	14.2	14.4	14.3	14.3	14.5	14.4	14.5	14.4	14.4	14.4	14.4
Europe	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
China	4.2	4.3	4.2	4.1	4.0	3.9	4.0	4.0	4.0	3.9	3.9	3.9	3.8	3.8	3.8	3.7	3.8
Other Asia[2]	3.5	3.6	3.7	3.6	3.5	3.5	3.6	3.5	3.5	3.5	3.5	3.5	3.4	3.4	3.4	3.3	3.4
Americas[2,4]	4.4	4.6	4.3	4.4	4.6	4.6	4.5	4.6	4.5	4.6	4.7	4.6	4.7	4.7	4.8	4.9	4.8
Middle East	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.3	1.3	1.2
Africa[2]	1.8	1.8	1.7	1.6	1.7	1.7	1.7	1.7	1.7	1.8	1.7	1.7	1.8	1.8	1.8	1.8	1.8
Total Non-OECD	29.3	29.7	29.5	29.2	29.1	29.7	29.4	29.5	29.3	29.4	29.5	29.4	29.6	29.5	29.5	29.5	29.5
Processing gains[3]	2.2	2.2	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
Global Biofuels	2.2	2.3	1.9	2.5	2.7	2.3	2.3	2.0	2.5	2.8	2.5	2.4	2.1	2.5	2.9	2.6	2.5
Total Non-OPEC Supply	56.7	58.2	57.7	56.8	57.2	58.0	57.4	57.8	57.8	58.2	58.7	58.1	59.0	59.3	59.9	60.2	59.6
OPEC																	
Crude	30.7	31.8	32.3	32.5	32.9	33.4	32.8	32.1	32.3								
NGLs	6.4	6.6	6.7	6.8	6.9	6.9	6.8	6.9	6.9	7.0	7.0	6.9	7.0	7.1	7.0	7.0	7.0
Total OPEC	37.1	38.4	39.0	39.3	39.8	40.3	39.6	38.9	39.2								
Total Supply[4]	**93.7**	**96.6**	**96.7**	**96.1**	**97.0**	**98.3**	**97.0**	**96.7**	**97.0**								
STOCK CHANGES AND MISCELLANEOUS																	
Reported OECD																	
Industry	0.4	0.8	0.3	0.4	0.1	-0.8	0.0	0.3	-0.2								
Government	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	-0.1								
Total	0.4	0.8	0.4	0.4	0.1	-0.8	0.0	0.3	-0.3								
Floating storage/Oil in transit	0.0	0.3	0.2	0.3	-0.2	0.2	0.1	-0.3	-0.3								
Miscellaneous to balance[5]	0.5	0.7	0.8	-0.2	0.4	2.0	0.7	0.2	-0.3								
Total Stock Ch. & Misc	**0.9**	**1.8**	**1.3**	**0.5**	**0.3**	**1.4**	**0.9**	**0.2**	**-0.9**								
Memo items:																	
Call on OPEC crude + Stock ch.[6]	29.8	30.0	31.0	32.0	32.6	32.0	31.9	31.9	33.2	32.6	33.0	32.7	31.8	32.6	32.5	32.8	32.4

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

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

(million barrels per day)

	2014	2015	1Q16	2Q16	3Q16	4Q16	2016	1Q17	2Q17	3Q17	4Q17	2017	1Q18	2Q18	3Q18	4Q18	2018
OECD DEMAND																	
Americas	-	-	-	-	-	-	-	-	0.2	-0.2	0.1	-	-	0.2	0.1	-	-
Europe	-	-	-	-	-	-	-	-	0.1	-	-	-	0.1	0.1	0.1	-	0.1
Asia Oceania	-	-	-	-	-	-	-	-	0.1	0.1	-	0.1	-	0.1	0.1	-	-
Total OECD	-	-	-	-	-	-	-	-	0.4	-0.1	0.2	0.1	-	0.4	0.2	-	0.2
NON-OECD DEMAND																	
FSU	-	-	-	-	-	-	-	-	-	0.1	-	-	-	-	-	-	-
Europe	-	-	-	-	-	-	-	-	0.1	-	-	-	-	-	-	-	-
China	-	-	-	-	-	-	-	-	-	-	-0.1	-	-	-	-	-	-
Other Asia	-	-	-	-	-	-	-	-	-	-0.1	-	-	-	-	-	-	-
Americas	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Middle East	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Africa	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Non-OECD	-	-	-	-	-	-	-	-0.1	-	-	-0.1	-	-	-0.1	-	-0.1	-0.1
Total Demand	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**0.5**	**-0.1**	**-**	**0.1**	**-**	**0.3**	**0.2**	**-0.1**	**0.1**
OECD SUPPLY																	
Americas	-	-	-	0.1	-	-	-	-	-	-0.2	-	-0.1	0.1	0.1	-	-	-
Europe	-	-	-	-	-	-	-	-	-	0.1	-	-	-	-	0.1	-	-
Asia Oceania	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total OECD	-	-	-	0.1	-	-	-	-	0.1	-0.2	-0.1	-	0.1	0.1	-	-	0.1
NON-OECD SUPPLY																	
FSU	-	-	-	-	-	-	-	-	-	-	0.1	-	-	-	-	-	-
Europe	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
China	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Asia	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Americas	-	-	-	-	-	-	-	-	-	-	-	-	-	-0.1	-	-	-
Middle East	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Africa	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Non-OECD	-	-	-	-	-	-	-	-	-	-	0.1	-	-	-	-	-0.1	-
Processing gains	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Global Biofuels	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Non-OPEC Supply	-	-	-	-	-	-	-	-	-	-0.1	-	-	0.1	0.1	-	-	-
OPEC																	
Crude	-	-	-	-	-	-	-	-	-								
NGLs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total OPEC	-	-	-	-	-	-	-	-	-								
Total Supply	**-**	**-**	**0.1**	**0.1**	**-**	**-**	**-**	**-**	**-**								
STOCK CHANGES AND MISCELLANEOUS																	
REPORTED OECD																	
Industry	-	-	-	-	-	-	-	-	-								
Government	-	-	-	-	-	-	-	-	-								
Total	-	-	-	-	-	-	-	-	-								
Floating storage/Oil in transit	-	-	-	-	-	-	-	-	-								
Miscellaneous to balance	-	-	0.1	0.1	-	-	-	-	-0.4								
Total Stock Ch. & Misc	**-**	**-**	**0.1**	**0.1**	**-**	**-**	**-**	**-**	**-0.4**								
Memo items:																	
Call on OPEC crude + Stock ch.	-	-	-	-0.1	-	-	-	-	0.4	-	-	0.1	-0.1	0.2	0.2	-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

	2015	1Q16	2Q16	3Q16	4Q16	2016	1Q17	2Q17	3Q17	4Q17	2017	1Q18	2Q18	3Q18	4Q18	2018
Demand (mb/d)																
Americas	24.55	24.50	24.40	25.02	24.83	24.69	24.47	24.98	24.97	25.18	24.91	24.63	25.05	25.32	25.14	25.04
Europe	13.83	13.62	13.93	14.45	14.19	14.05	13.89	14.25	14.56	14.29	14.25	13.82	14.29	14.69	14.38	14.29
Asia Oceania	8.06	8.57	7.70	7.84	8.38	8.12	8.56	7.76	7.85	8.32	8.12	8.47	7.61	7.76	8.27	8.03
Total OECD	46.44	46.69	46.03	47.30	47.41	46.86	46.92	46.99	47.38	47.80	47.28	46.93	46.95	47.77	47.79	47.36
Asia	23.96	24.83	25.09	24.33	24.94	24.80	25.68	26.13	25.04	26.00	25.71	26.51	26.91	25.89	26.93	26.56
Middle East	8.37	7.86	8.39	8.69	8.09	8.26	7.82	8.40	8.74	8.32	8.32	8.06	8.58	8.93	8.44	8.50
Americas	6.70	6.50	6.62	6.72	6.61	6.61	6.47	6.62	6.73	6.66	6.62	6.54	6.70	6.83	6.75	6.71
FSU	4.55	4.59	4.56	4.92	4.93	4.75	4.58	4.77	5.03	4.96	4.84	4.67	4.82	5.10	5.01	4.90
Africa	4.09	4.19	4.17	4.02	4.14	4.13	4.34	4.24	4.10	4.23	4.23	4.45	4.33	4.18	4.36	4.33
Europe	0.69	0.69	0.72	0.72	0.71	0.71	0.70	0.74	0.74	0.74	0.73	0.72	0.75	0.75	0.76	0.74
Total Non-OECD	48.36	48.66	49.55	49.41	49.43	49.26	49.59	50.90	50.38	50.92	50.45	50.94	52.09	51.67	52.24	51.74
World	**94.80**	**95.35**	**95.58**	**96.71**	**96.84**	**96.12**	**96.51**	**97.90**	**97.77**	**98.71**	**97.73**	**97.87**	**99.04**	**99.44**	**100.03**	**99.10**
of which: US50	19.53	19.45	19.43	19.90	19.75	19.63	19.49	20.01	19.88	20.09	19.87	19.65	20.06	20.20	20.04	19.99
Europe 5*	8.13	8.09	8.14	8.35	8.21	8.20	8.24	8.28	8.37	8.26	8.29	8.12	8.24	8.42	8.29	8.27
China	11.56	11.81	12.08	11.62	11.94	11.86	12.51	12.66	12.00	12.34	12.38	12.78	12.92	12.36	12.73	12.70
Japan	4.12	4.44	3.70	3.79	4.18	4.03	4.33	3.64	3.72	4.06	3.93	4.24	3.46	3.63	3.99	3.83
India	4.24	4.65	4.60	4.39	4.55	4.55	4.60	4.75	4.50	4.80	4.66	4.87	5.03	4.75	5.09	4.94
Russia	3.41	3.52	3.41	3.75	3.69	3.59	3.48	3.58	3.83	3.73	3.66	3.54	3.63	3.88	3.79	3.71
Brazil	3.18	3.02	3.07	3.13	3.07	3.07	3.01	3.05	3.15	3.11	3.08	3.02	3.10	3.19	3.16	3.12
Saudi Arabia	3.42	3.02	3.39	3.53	3.11	3.26	2.88	3.35	3.54	3.13	3.23	2.94	3.36	3.54	3.16	3.25
Canada	2.37	2.33	2.32	2.46	2.40	2.38	2.35	2.36	2.47	2.41	2.40	2.35	2.38	2.49	2.42	2.41
Korea	2.47	2.66	2.55	2.60	2.72	2.63	2.69	2.56	2.64	2.72	2.65	2.69	2.58	2.61	2.72	2.65
Mexico	2.01	2.05	2.02	2.01	2.03	2.03	1.96	1.98	1.97	2.02	1.98	1.96	1.97	1.98	2.03	1.99
Iran	1.84	1.84	1.82	1.80	1.82	1.82	1.76	1.77	1.76	1.89	1.80	1.85	1.88	1.88	1.91	1.88
Total	**66.27**	**66.89**	**66.53**	**67.33**	**67.47**	**67.06**	**67.30**	**67.99**	**67.83**	**68.56**	**67.92**	**68.00**	**68.61**	**68.92**	**69.31**	**68.72**
% of World	69.9%	70.2%	69.6%	69.6%	69.7%	69.8%	69.7%	69.4%	69.4%	69.5%	69.5%	69.5%	69.3%	69.3%	69.3%	69.3%
Annual Change (% per annum)																
Americas	1.6	0.4	0.2	0.3	1.4	0.6	-0.1	2.4	-0.2	1.4	0.9	0.6	0.3	1.4	-0.1	0.5
Europe	2.2	0.7	1.9	1.2	2.6	1.6	2.0	2.3	0.8	0.7	1.4	-0.5	0.3	0.9	0.6	0.3
Asia Oceania	0.1	-1.3	1.1	1.2	2.1	0.8	-0.1	0.8	0.1	-0.7	0.0	-1.0	-1.9	-1.2	-0.6	-1.2
Total OECD	1.5	0.2	0.8	0.7	1.9	0.9	0.5	2.1	0.2	0.8	0.9	0.0	-0.1	0.8	0.0	0.2
Asia	5.9	6.0	3.8	1.4	2.9	3.5	3.4	4.2	2.9	4.3	3.7	3.2	3.0	3.4	3.6	3.3
Middle East	-0.6	1.0	-1.5	-1.6	-3.0	-1.3	-0.5	0.1	0.6	2.8	0.8	3.0	2.1	2.1	1.4	2.2
Americas	-2.1	-1.2	-1.3	-0.8	-1.8	-1.3	-0.5	0.1	0.1	0.8	0.1	1.1	1.2	1.5	1.3	1.3
FSU	-1.9	7.7	-0.1	4.3	6.2	4.4	-0.2	4.5	2.2	0.6	1.8	1.9	1.0	1.3	1.0	1.3
Africa	4.0	2.1	2.2	0.1	-0.5	0.9	3.6	1.5	2.0	2.1	2.3	2.5	2.3	2.0	3.0	2.4
Europe	3.9	4.2	5.9	2.9	2.0	3.7	0.7	2.4	2.6	3.6	2.3	2.7	1.1	1.7	3.0	1.9
Total Non-OECD	2.6	4.0	1.7	0.7	1.3	1.9	1.9	2.7	2.0	3.0	2.4	2.7	2.3	2.6	2.6	2.6
World	**2.1**	**2.1**	**1.3**	**0.7**	**1.6**	**1.4**	**1.2**	**2.4**	**1.1**	**1.9**	**1.7**	**1.4**	**1.2**	**1.7**	**1.3**	**1.4**
Annual Change (mb/d)																
Americas	0.39	0.09	0.04	0.07	0.35	0.14	-0.02	0.58	-0.04	0.35	0.22	0.16	0.07	0.35	-0.04	0.13
Europe	0.29	0.10	0.26	0.16	0.36	0.22	0.27	0.32	0.11	0.10	0.20	-0.07	0.04	0.13	0.08	0.05
Asia Oceania	0.01	-0.11	0.09	0.09	0.17	0.06	-0.01	0.06	0.01	-0.06	0.00	-0.09	-0.15	-0.09	-0.05	-0.10
Total OECD	0.69	0.07	0.39	0.33	0.88	0.42	0.23	0.96	0.08	0.39	0.42	0.00	-0.04	0.38	-0.01	0.08
Asia	1.33	1.42	0.91	0.33	0.70	0.84	0.85	1.05	0.70	1.06	0.92	0.83	0.78	0.85	0.93	0.85
Middle East	-0.05	0.08	-0.13	-0.14	-0.25	-0.11	-0.04	0.01	0.05	0.23	0.06	0.24	0.18	0.19	0.11	0.18
Americas	-0.14	-0.08	-0.08	-0.05	-0.12	-0.09	-0.03	0.01	0.01	0.05	0.01	0.07	0.08	0.10	0.08	0.08
FSU	-0.09	0.33	0.00	0.20	0.29	0.20	-0.01	0.21	0.11	0.03	0.09	0.09	0.05	0.06	0.05	0.07
Africa	0.16	0.09	0.09	0.01	-0.02	0.04	0.15	0.06	0.08	0.09	0.10	0.11	0.10	0.08	0.12	0.10
Europe	0.03	0.03	0.04	0.02	0.01	0.03	0.00	0.02	0.02	0.03	0.02	0.02	0.01	0.01	0.02	0.01
Total Non-OECD	1.23	1.86	0.82	0.37	0.61	0.91	0.93	1.35	0.97	1.49	1.19	1.36	1.18	1.29	1.32	1.29
World	**1.92**	**1.93**	**1.21**	**0.70**	**1.49**	**1.32**	**1.16**	**2.32**	**1.05**	**1.87**	**1.60**	**1.36**	**1.14**	**1.67**	**1.32**	**1.38**
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	0.21	-0.24	0.11	0.02	-0.03	0.17	0.06	-0.03	0.04
Europe	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.12	0.04	0.01	0.05	0.06	0.14	0.09	0.01	0.07
Asia Oceania	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.11	0.03	0.06	0.01	0.07	0.07	0.03	0.05
Total OECD	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.43	-0.09	0.15	0.13	0.04	0.37	0.22	0.01	0.16
Asia	0.00	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	0.00	-0.07	-0.08	-0.04	0.03	-0.07	-0.07	-0.08	-0.05
Middle East	0.00	0.00	0.00	0.00	0.00	0.00	-0.04	-0.01	0.02	-0.04	-0.02	-0.03	-0.01	0.01	-0.01	-0.01
Americas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	-0.03	0.00	0.00	0.00	0.00	-0.01	0.00	0.00
FSU	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.07	0.00	0.02	0.00	0.02	0.04	0.00	0.02
Africa	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.04	0.00	0.00	-0.01	-0.01	-0.03	-0.01	0.00	-0.01
Europe	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00
Total Non-OECD	0.00	-0.01	-0.01	-0.01	-0.01	-0.01	-0.05	0.03	0.00	-0.12	-0.04	-0.01	-0.09	-0.04	-0.09	-0.06
World	**0.00**	**-0.01**	**-0.01**	**-0.01**	**-0.01**	**-0.01**	**-0.03**	**0.46**	**-0.10**	**0.03**	**0.09**	**0.03**	**0.28**	**0.17**	**-0.08**	**0.10**
Revisions to Oil Demand Growth from Last Month's Report (mb/d)																
World	0.00	-0.01	-0.01	-0.01	-0.01	-0.01	-0.02	0.47	-0.09	0.04	0.10	0.06	-0.18	0.27	-0.11	0.01

* France, Germany, Italy, Spain and UK

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

	2015	2016	3Q16	4Q16	1Q17	2Q17	Apr 17	May 17	Jun 17 [2]	Latest month vs. May 17	Latest month vs. Jun 16
Americas											
LPG and ethane	3.25	3.23	3.10	3.28	3.50	3.09	3.05	3.03	3.18	0.15	0.27
Naphtha	0.34	0.35	0.34	0.34	0.35	0.36	0.35	0.34	0.37	0.03	0.02
Motor gasoline	10.89	11.11	11.38	11.01	10.64	11.30	10.92	11.39	11.60	0.21	0.10
Jet and kerosene	1.82	1.89	1.98	1.91	1.89	1.97	1.89	1.96	2.06	0.10	0.03
Gasoil/diesel oil	5.22	5.08	5.00	5.22	5.14	5.10	4.88	5.20	5.22	0.01	0.14
Residual fuel oil	0.55	0.64	0.64	0.63	0.67	0.68	0.59	0.71	0.74	0.03	0.04
Other products	2.47	2.40	2.57	2.43	2.28	2.48	2.49	2.46	2.49	0.02	0.08
Total	**24.55**	**24.69**	**25.02**	**24.83**	**24.47**	**24.98**	**24.18**	**25.10**	**25.66**	**0.55**	**0.69**
Europe											
LPG and ethane	1.17	1.20	1.19	1.24	1.25	1.14	1.20	1.13	1.08	-0.04	-0.08
Naphtha	1.11	1.12	1.13	1.10	1.27	1.11	1.12	1.09	1.11	0.01	0.08
Motor gasoline	1.89	1.90	2.01	1.86	1.79	1.99	1.91	1.98	2.07	0.10	0.07
Jet and kerosene	1.33	1.37	1.54	1.33	1.29	1.45	1.40	1.42	1.54	0.11	0.10
Gasoil/diesel oil	6.21	6.29	6.30	6.52	6.32	6.42	6.19	6.45	6.62	0.17	0.45
Residual fuel oil	0.89	0.88	0.90	0.87	0.89	0.87	0.85	0.86	0.89	0.02	-0.01
Other products	1.24	1.28	1.38	1.29	1.09	1.28	1.19	1.27	1.39	0.12	0.03
Total	**13.83**	**14.05**	**14.45**	**14.19**	**13.89**	**14.25**	**13.86**	**14.19**	**14.69**	**0.50**	**0.65**
Asia Oceania											
LPG and ethane	0.77	0.83	0.83	0.85	0.89	0.77	0.79	0.77	0.74	-0.03	-0.01
Naphtha	1.98	1.96	1.91	2.04	2.14	1.98	1.98	1.99	1.97	-0.02	0.08
Motor gasoline	1.54	1.55	1.63	1.56	1.47	1.53	1.50	1.54	1.53	-0.01	0.02
Jet and kerosene	0.86	0.90	0.69	1.02	1.17	0.73	0.80	0.69	0.69	0.01	0.02
Gasoil/diesel oil	1.81	1.84	1.78	1.92	1.90	1.90	1.85	1.90	1.96	0.06	0.20
Residual fuel oil	0.64	0.65	0.60	0.65	0.64	0.51	0.56	0.50	0.48	-0.02	-0.11
Other products	0.46	0.40	0.40	0.34	0.35	0.34	0.38	0.35	0.31	-0.04	-0.07
Total	**8.06**	**8.12**	**7.84**	**8.38**	**8.56**	**7.76**	**7.88**	**7.73**	**7.68**	**-0.05**	**0.14**
OECD											
LPG and ethane	5.19	5.26	5.12	5.37	5.64	4.99	5.05	4.92	5.01	0.09	0.19
Naphtha	3.43	3.42	3.38	3.48	3.76	3.44	3.46	3.42	3.44	0.02	0.19
Motor gasoline	14.32	14.56	15.03	14.43	13.90	14.82	14.33	14.91	15.21	0.29	0.20
Jet and kerosene	4.01	4.16	4.21	4.26	4.34	4.15	4.09	4.07	4.29	0.22	0.15
Gasoil/diesel oil	13.24	13.20	13.08	13.66	13.36	13.42	12.92	13.55	13.80	0.25	0.79
Residual fuel oil	2.09	2.17	2.14	2.15	2.20	2.06	2.01	2.07	2.11	0.04	-0.08
Other products	4.17	4.08	4.34	4.06	3.72	4.11	4.06	4.08	4.18	0.10	0.04
Total	**46.44**	**46.86**	**47.30**	**47.41**	**46.92**	**46.99**	**45.91**	**47.03**	**48.03**	**1.00**	**1.48**

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)

	2015	2016	3Q16	4Q16	1Q17	2Q17	Apr 17	May 17	Jun 17 [2]	Latest month vs. May 17	Latest month vs. Jun 16
United States[3]											
LPG and ethane	2.45	2.43	2.33	2.48	2.69	2.36	2.38	2.29	2.42	0.13	0.28
Naphtha	0.22	0.22	0.22	0.22	0.24	0.24	0.23	0.24	0.25	0.01	0.03
Motor gasoline	9.18	9.33	9.56	9.22	8.95	9.54	9.25	9.59	9.77	0.18	0.10
Jet and kerosene	1.55	1.61	1.69	1.64	1.61	1.69	1.62	1.67	1.76	0.09	0.04
Gasoil/diesel oil	4.00	3.88	3.79	4.02	3.95	3.91	3.79	3.97	3.97	0.00	0.11
Residual fuel oil	0.26	0.36	0.36	0.35	0.37	0.37	0.32	0.37	0.42	0.05	0.01
Other products	1.87	1.81	1.95	1.84	1.69	1.91	1.94	1.89	1.91	0.02	0.09
Total	**19.53**	**19.63**	**19.90**	**19.75**	**19.49**	**20.01**	**19.53**	**20.02**	**20.49**	**0.47**	**0.66**
Japan											
LPG and ethane	0.44	0.44	0.43	0.44	0.50	0.40	0.44	0.40	0.37	-0.04	0.00
Naphtha	0.79	0.76	0.71	0.80	0.83	0.75	0.78	0.74	0.73	-0.01	0.02
Motor gasoline	0.89	0.90	0.96	0.90	0.82	0.87	0.86	0.87	0.87	-0.01	0.00
Jet and kerosene	0.49	0.50	0.32	0.59	0.73	0.36	0.42	0.33	0.32	-0.01	0.00
Diesel	0.43	0.43	0.43	0.45	0.43	0.41	0.40	0.39	0.42	0.03	0.01
Other gasoil	0.34	0.35	0.30	0.37	0.39	0.32	0.33	0.31	0.33	0.02	0.02
Residual fuel oil	0.37	0.34	0.32	0.34	0.33	0.27	0.32	0.24	0.24	0.00	-0.07
Other products	0.37	0.31	0.31	0.30	0.30	0.27	0.28	0.27	0.25	-0.01	-0.02
Total	**4.12**	**4.03**	**3.79**	**4.18**	**4.33**	**3.64**	**3.84**	**3.55**	**3.52**	**-0.03**	**-0.04**
Germany											
LPG and ethane	0.10	0.10	0.10	0.09	0.11	0.10	0.11	0.11	0.08	-0.04	-0.03
Naphtha	0.39	0.38	0.39	0.39	0.44	0.36	0.39	0.36	0.32	-0.04	-0.02
Motor gasoline	0.42	0.42	0.44	0.42	0.41	0.45	0.43	0.45	0.46	0.01	0.02
Jet and kerosene	0.18	0.20	0.23	0.20	0.20	0.21	0.22	0.19	0.22	0.03	0.01
Diesel	0.74	0.76	0.80	0.76	0.75	0.78	0.76	0.78	0.81	0.03	0.01
Other gasoil	0.36	0.36	0.27	0.39	0.39	0.36	0.32	0.39	0.36	-0.03	0.13
Residual fuel oil	0.11	0.09	0.09	0.10	0.10	0.07	0.10	0.05	0.07	0.02	-0.02
Other products	0.06	0.10	0.11	0.10	0.08	0.11	0.11	0.11	0.11	0.00	0.01
Total	**2.37**	**2.41**	**2.42**	**2.44**	**2.49**	**2.44**	**2.43**	**2.45**	**2.43**	**-0.03**	**0.11**
Italy											
LPG and ethane	0.11	0.11	0.10	0.12	0.13	0.10	0.11	0.10	0.09	-0.01	0.00
Naphtha	0.08	0.09	0.09	0.08	0.11	0.11	0.09	0.10	0.13	0.03	0.03
Motor gasoline	0.18	0.18	0.19	0.17	0.16	0.18	0.18	0.17	0.20	0.02	0.01
Jet and kerosene	0.09	0.10	0.11	0.09	0.08	0.11	0.11	0.11	0.13	0.02	0.02
Diesel	0.47	0.46	0.47	0.45	0.45	0.47	0.44	0.48	0.50	0.01	0.02
Other gasoil	0.09	0.09	0.10	0.10	0.08	0.08	0.07	0.08	0.09	0.01	0.00
Residual fuel oil	0.08	0.06	0.07	0.06	0.07	0.06	0.06	0.06	0.07	0.00	0.00
Other products	0.18	0.16	0.16	0.18	0.15	0.16	0.15	0.16	0.16	0.00	-0.01
Total	**1.27**	**1.25**	**1.29**	**1.24**	**1.23**	**1.28**	**1.20**	**1.28**	**1.37**	**0.09**	**0.07**
France											
LPG and ethane	0.13	0.12	0.10	0.11	0.14	0.10	0.10	0.10	0.09	-0.01	-0.01
Naphtha	0.12	0.11	0.12	0.08	0.12	0.10	0.11	0.10	0.10	0.00	0.01
Motor gasoline	0.16	0.17	0.19	0.17	0.16	0.19	0.18	0.19	0.20	0.01	0.02
Jet and kerosene	0.15	0.15	0.17	0.15	0.15	0.16	0.16	0.16	0.17	0.01	0.02
Diesel	0.71	0.70	0.72	0.71	0.71	0.73	0.70	0.73	0.75	0.02	0.06
Other gasoil	0.26	0.25	0.24	0.28	0.28	0.21	0.21	0.20	0.21	0.01	0.04
Residual fuel oil	0.04	0.04	0.04	0.05	0.06	0.05	0.05	0.06	0.05	-0.01	0.02
Other products	0.12	0.12	0.13	0.10	0.09	0.14	0.11	0.13	0.17	0.04	0.03
Total	**1.69**	**1.66**	**1.71**	**1.63**	**1.72**	**1.68**	**1.63**	**1.67**	**1.75**	**0.08**	**0.19**
United Kingdom											
LPG and ethane	0.14	0.16	0.16	0.16	0.16	0.14	0.15	0.13	0.15	0.01	-0.03
Naphtha	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.04	0.04	0.00	0.00
Motor gasoline	0.29	0.29	0.29	0.29	0.28	0.30	0.30	0.29	0.30	0.02	-0.01
Jet and kerosene	0.31	0.31	0.32	0.31	0.32	0.31	0.31	0.30	0.31	0.01	0.02
Diesel	0.50	0.52	0.51	0.53	0.49	0.53	0.56	0.49	0.53	0.05	-0.01
Other gasoil	0.13	0.13	0.15	0.12	0.12	0.14	0.15	0.13	0.15	0.02	0.00
Residual fuel oil	0.03	0.03	0.03	0.03	0.03	0.02	0.02	0.02	0.03	0.00	0.00
Other products	0.11	0.11	0.11	0.11	0.11	0.12	0.12	0.11	0.12	0.01	0.00
Total	**1.55**	**1.59**	**1.60**	**1.58**	**1.53**	**1.59**	**1.63**	**1.52**	**1.63**	**0.11**	**-0.02**
Canada											
LPG and ethane	0.35	0.37	0.36	0.39	0.39	0.34	0.29	0.36	0.37	0.01	0.02
Naphtha	0.09	0.10	0.10	0.10	0.09	0.09	0.10	0.07	0.10	0.02	-0.01
Motor gasoline	0.81	0.85	0.88	0.84	0.80	0.86	0.80	0.87	0.91	0.03	0.02
Jet and kerosene	0.13	0.14	0.15	0.13	0.13	0.14	0.13	0.14	0.14	0.00	-0.02
Diesel	0.31	0.30	0.30	0.29	0.30	0.29	0.29	0.29	0.29	0.00	-0.03
Other gasoil	0.26	0.24	0.26	0.27	0.26	0.26	0.19	0.28	0.30	0.02	0.09
Residual fuel oil	0.05	0.04	0.04	0.04	0.05	0.06	0.04	0.08	0.06	-0.02	0.03
Other products	0.36	0.34	0.36	0.35	0.33	0.32	0.32	0.32	0.33	0.01	0.01
Total	**2.37**	**2.38**	**2.46**	**2.40**	**2.35**	**2.36**	**2.16**	**2.41**	**2.50**	**0.08**	**0.11**

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

Table 3
WORLD OIL PRODUCTION
(million barrels per day)

	2016	2017	2018	1Q17	2Q17	3Q17	4Q17	1Q18	Jun 17	Jul 17	Aug 17
OPEC											
Crude Oil											
Saudi Arabia	10.42			9.88	9.97				10.05	10.03	10.00
Iran	3.55			3.78	3.77				3.79	3.81	3.82
Iraq	4.42			4.46	4.50				4.50	4.49	4.48
UAE	3.05			2.96	2.93				2.93	2.94	2.91
Kuwait	2.88			2.71	2.71				2.71	2.70	2.70
Neutral Zone	0.00			0.00	0.00				0.00	0.00	0.00
Qatar	0.65			0.60	0.62				0.62	0.61	0.61
Angola	1.71			1.64	1.64				1.66	1.67	1.69
Nigeria	1.47			1.39	1.49				1.57	1.64	1.66
Libya	0.39			0.66	0.71				0.84	1.01	0.87
Algeria	1.11			1.05	1.06				1.06	1.07	1.06
Equatorial Guinea	0.14			0.13	0.12				0.11	0.12	0.12
Ecuador	0.55			0.52	0.53				0.53	0.54	0.54
Venezuela	2.24			2.08	2.05				2.04	2.03	2.02
Gabon	0.23			0.20	0.20				0.20	0.22	0.19
Total Crude Oil	32.80			32.07	32.31				32.61	32.88	32.67
Total NGLs[1]	6.81	6.93	7.04	6.86	6.90	6.99	6.99	7.02	6.90	6.99	6.99
Total OPEC[2]	**39.61**			**38.93**	**39.22**				**39.51**	**39.87**	**39.66**
NON-OPEC[2,3]											
OECD											
Americas	19.47	20.03	21.22	19.96	19.81	19.89	20.43	20.96	19.95	20.20	19.92
United States	12.53	13.00	14.12	12.70	13.00	12.90	13.39	13.78	13.03	13.15	12.89
Mexico	2.47	2.26	2.14	2.33	2.31	2.23	2.18	2.18	2.31	2.29	2.23
Canada	4.47	4.76	4.95	4.93	4.49	4.76	4.85	4.99	4.61	4.76	4.79
Chile	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Europe	3.52	3.54	3.59	3.66	3.49	3.41	3.61	3.67	3.37	3.50	3.30
UK	1.03	1.05	1.17	1.06	1.04	0.99	1.11	1.17	1.04	1.05	0.92
Norway	1.99	2.01	1.96	2.08	2.00	1.95	2.01	2.02	1.91	2.01	1.90
Others	0.49	0.48	0.47	0.52	0.45	0.47	0.48	0.48	0.42	0.44	0.49
Asia Oceania	0.43	0.40	0.43	0.39	0.40	0.41	0.42	0.42	0.41	0.41	0.41
Australia	0.35	0.33	0.36	0.31	0.32	0.34	0.34	0.34	0.33	0.34	0.34
Others	0.08	0.07	0.07	0.07	0.08	0.07	0.07	0.07	0.07	0.08	0.07
Total OECD	**23.42**	**23.97**	**25.24**	**24.00**	**23.70**	**23.72**	**24.46**	**25.04**	**23.73**	**24.11**	**23.63**
NON-OECD											
Former USSR	14.21	14.37	14.43	14.43	14.33	14.27	14.46	14.49	14.33	14.34	14.14
Russia	11.34	11.35	11.30	11.46	11.34	11.29	11.32	11.32	11.32	11.32	11.28
Others	2.87	3.02	3.13	2.98	2.99	2.97	3.14	3.17	3.01	3.02	2.86
Asia[2]	7.62	7.41	7.15	7.50	7.42	7.39	7.33	7.26	7.52	7.40	7.38
China	4.04	3.92	3.77	3.96	3.96	3.90	3.86	3.82	4.02	3.91	3.90
Malaysia	0.71	0.71	0.70	0.71	0.69	0.73	0.72	0.71	0.73	0.73	0.73
India	0.85	0.86	0.84	0.87	0.85	0.86	0.85	0.85	0.87	0.87	0.85
Indonesia	0.88	0.85	0.80	0.86	0.85	0.84	0.83	0.82	0.85	0.84	0.84
Others	1.15	1.07	1.04	1.11	1.07	1.06	1.06	1.05	1.05	1.06	1.05
Europe	0.14	0.13	0.12	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
Americas[2]	4.49	4.60	4.77	4.56	4.54	4.63	4.67	4.65	4.60	4.55	4.65
Brazil	2.61	2.79	2.99	2.75	2.74	2.82	2.86	2.85	2.80	2.74	2.84
Argentina	0.61	0.58	0.58	0.59	0.56	0.58	0.58	0.58	0.56	0.58	0.58
Colombia	0.88	0.85	0.84	0.85	0.86	0.86	0.85	0.85	0.86	0.86	0.86
Others	0.38	0.37	0.36	0.37	0.37	0.38	0.37	0.37	0.38	0.37	0.38
Middle East[2,4]	1.26	1.23	1.25	1.23	1.23	1.23	1.23	1.23	1.23	1.22	1.23
Oman	1.01	0.98	0.99	0.98	0.98	0.98	0.98	0.98	0.98	0.97	0.98
Syria	0.03	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Yemen	0.02	0.03	0.02	0.03	0.03	0.03	0.03	0.02	0.03	0.03	0.03
Others	0.21	0.20	0.22	0.20	0.20	0.20	0.20	0.21	0.20	0.20	0.20
Africa	1.67	1.70	1.81	1.65	1.68	1.75	1.71	1.83	1.69	1.75	1.75
Egypt	0.67	0.63	0.61	0.63	0.64	0.63	0.63	0.62	0.64	0.63	0.63
Others	1.00	1.07	1.20	1.02	1.05	1.12	1.08	1.21	1.05	1.11	1.12
Total Non-OECD	**29.39**	**29.44**	**29.53**	**29.51**	**29.33**	**29.39**	**29.52**	**29.59**	**29.50**	**29.39**	**29.28**
Processing gains[5]	2.27	2.29	2.32	2.29	2.29	2.29	2.29	2.32	2.29	2.29	2.29
Global Biofuels	2.35	2.43	2.53	1.99	2.45	2.79	2.45	2.05	2.66	2.73	2.81
TOTAL NON-OPEC	**57.42**	**58.13**	**59.62**	**57.80**	**57.78**	**58.19**	**58.72**	**59.00**	**58.19**	**58.52**	**58.01**
TOTAL SUPPLY	**97.03**			**96.73**	**97.00**				**97.70**	**98.39**	**97.67**

1 Includes condensates reported by OPEC countries, oil from non-conventional sources, e.g. Venezuelan Orimulsion (but not Orinoco extra-heavy oil), and non-oil inputs to Saudi Arabian MTBE.
2 Latin America excludes Ecuador throughout. Africa excludes Angola, Gabon and Equatorial Guinea throughout. Asia includes Indonesia throughout.
3 Comprises crude oil, condensates, NGLs and oil from non-conventional sources
4 Includes small amounts of production from Jordan and Bahrain.
5 Net volumetric gains and losses in refining and marine transportation losses.

Table 4
OECD INDUSTRY 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			
	Mar2017	Apr2017	May2017	Jun2017	Jul2017*	Jul2014	Jul2015	Jul2016	3Q2016	4Q2016	1Q2017	2Q2017
OECD Americas												
Crude	696.7	676.2	670.5	658.1	640.9	489.3	586.6	646.3	-0.31	0.26	0.57	-0.42
Motor Gasoline	271.0	275.9	275.0	268.6	260.8	252.4	248.0	272.2	-0.15	0.10	0.03	-0.03
Middle Distillate	226.5	233.2	230.3	222.9	215.8	195.0	215.8	229.6	0.18	0.01	-0.12	-0.04
Residual Fuel Oil	48.1	46.8	45.9	41.1	39.7	44.5	47.4	44.8	-0.02	0.03	0.00	-0.08
Total Products[3]	736.3	752.4	761.9	752.5	744.6	704.6	739.2	794.5	0.30	-0.27	-0.44	0.18
Total[4]	1607.5	1607.8	1619.3	1595.7	1570.7	1368.2	1513.7	1635.7	0.10	-0.19	0.09	-0.13
OECD Europe												
Crude	359.8	353.4	359.3	364.7	371.3	319.9	339.3	362.8	-0.04	-0.15	0.18	0.05
Motor Gasoline	100.7	99.8	94.5	92.0	88.5	84.4	83.9	97.0	-0.07	0.09	0.02	-0.09
Middle Distillate	310.9	320.9	308.4	298.3	301.7	254.9	284.4	324.6	0.01	-0.22	0.06	-0.14
Residual Fuel Oil	66.9	64.9	63.7	65.6	65.0	65.2	68.3	72.0	-0.05	-0.01	-0.03	-0.01
Total Products[3]	587.6	598.6	572.1	559.5	561.8	497.6	528.8	596.1	-0.15	-0.11	0.16	-0.31
Total[4]	1018.8	1026.2	1005.5	996.4	1007.6	885.1	936.4	1027.6	-0.15	-0.27	0.33	-0.25
OECD Asia Oceania												
Crude	188.6	193.4	198.4	189.7	197.1	176.6	204.9	196.2	-0.01	-0.11	-0.03	0.01
Motor Gasoline	23.0	24.4	26.2	25.1	23.9	23.2	24.7	24.9	-0.03	0.00	-0.01	0.02
Middle Distillate	59.4	66.1	66.6	63.3	65.4	58.7	65.6	71.7	0.07	-0.11	-0.05	0.04
Residual Fuel Oil	18.4	18.8	20.6	20.9	21.2	23.1	19.8	19.4	0.00	-0.02	0.01	0.03
Total Products[3]	155.3	165.1	169.5	169.7	176.9	165.8	170.2	184.2	0.13	-0.27	-0.08	0.16
Total[4]	403.5	420.3	432.4	424.1	437.8	412.3	438.6	441.6	0.13	-0.39	-0.13	0.23
Total OECD												
Crude	1245.0	1223.0	1228.2	1212.5	1209.3	985.8	1130.8	1205.3	-0.36	0.01	0.71	-0.36
Motor Gasoline	394.7	400.1	395.7	385.7	373.2	360.0	356.6	394.0	-0.25	0.20	0.04	-0.10
Middle Distillate	596.7	620.2	605.3	584.5	582.9	508.6	565.8	625.8	0.27	-0.32	-0.11	-0.13
Residual Fuel Oil	133.3	130.5	130.2	127.7	126.0	132.8	135.5	136.2	-0.06	0.01	-0.02	-0.06
Total Products[3]	1479.1	1516.1	1503.6	1481.7	1483.3	1368.0	1438.2	1574.8	0.28	-0.64	-0.36	0.03
Total[4]	3029.9	3054.3	3057.2	3016.1	3016.1	2665.5	2888.7	3104.9	0.08	-0.85	0.29	-0.15

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			
	Mar2017	Apr2017	May2017	Jun2017	Jul2017*	Jul2014	Jul2015	Jul2016	3Q2016	4Q2016	1Q2017	2Q2017
OECD Americas												
Crude	691.5	688.8	684.5	679.2	678.7	691.0	695.1	695.1	0.00	0.00	-0.04	-0.14
Products	2.0	2.0	2.0	2.0	2.0	1.0	2.0	2.0	0.00	0.00	0.00	0.00
OECD Europe												
Crude	205.3	206.1	206.2	208.4	208.3	208.2	207.8	205.7	0.01	-0.01	0.00	0.03
Products	275.0	275.7	273.0	272.3	273.0	258.5	257.6	268.7	0.03	0.05	0.02	-0.03
OECD Asia Oceania												
Crude	384.1	385.1	385.0	385.0	385.0	387.7	384.4	385.4	0.00	-0.01	0.00	0.01
Products	38.0	38.0	38.3	38.0	38.0	31.0	33.4	35.5	0.00	0.01	0.01	0.00
Total OECD												
Crude	1280.9	1280.0	1275.7	1272.6	1272.1	1286.9	1287.3	1286.2	0.01	-0.02	-0.04	-0.09
Products	315.0	315.6	313.3	312.2	313.0	290.4	293.0	306.2	0.03	0.06	0.03	-0.03
Total[4]	1599.5	1598.1	1592.9	1588.5	1588.4	1581.6	1584.5	1594.9	0.04	0.04	0.00	-0.12

* estimated

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

2 Closing stock levels.

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

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

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

Table 5
TOTAL STOCKS ON LAND IN OECD COUNTRIES[1]
('millions of barrels' and 'days')

	End June 2016		End September 2016		End December 2016		End March 2017		End June 2017 [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	175.2	71	184.8	77	183.3	78	184.9	78	183.1	-
Chile	10.7	32	12.2	37	11.2	33	11.9	35	11.2	-
Mexico	48.8	24	45.7	23	47.3	24	47.5	24	49.2	-
United States[4]	2048.9	103	2049.6	104	2032.7	104	2034.5	102	2011.2	-
Total[4]	2305.7	92	2314.4	93	2296.6	94	2301.0	92	2276.8	92
OECD Asia Oceania										
Australia	38.2	35	36.7	33	33.9	30	33.3	28	35.4	-
Israel	-	-	-	-	-	-	-	-	-	-
Japan	573.5	151	586.6	140	562.5	130	546.3	150	566.3	-
Korea	238.0	92	239.3	88	230.3	86	237.8	93	236.4	-
New Zealand	9.2	57	8.7	50	8.9	48	8.2	48	9.0	-
Total	859.0	110	871.3	104	835.6	98	825.6	106	847.1	109
OECD Europe[5]										
Austria	22.5	81	21.6	81	22.8	88	24.3	93	21.9	-
Belgium	52.4	81	50.5	74	47.4	72	45.5	72	44.2	-
Czech Republic	22.8	123	22.9	111	21.9	117	22.5	102	21.4	-
Denmark	30.7	187	29.7	187	30.5	201	27.2	171	28.0	-
Estonia	2.6	84	2.4	81	2.4	72	2.6	94	2.7	-
Finland	45.4	219	44.9	219	42.3	220	44.8	224	43.4	-
France	167.5	98	166.9	102	162.2	94	167.7	100	165.4	-
Germany	288.2	119	285.0	117	285.4	115	280.7	115	277.1	-
Greece	32.6	102	30.8	99	33.9	115	35.1	118	32.4	-
Hungary	22.7	137	23.6	148	24.5	151	24.3	144	25.2	-
Ireland	12.3	84	11.7	74	11.8	78	12.8	86	12.1	-
Italy	120.9	94	127.4	102	124.3	101	134.4	105	133.7	-
Latvia	3.9	90	4.4	118	2.4	69	2.4	58	3.3	-
Luxembourg	0.8	15	0.7	12	0.7	12	0.7	12	0.7	-
Netherlands	159.6	158	154.2	158	152.6	155	154.7	157	154.5	-
Norway	26.5	116	23.2	96	22.9	113	22.9	107	22.0	-
Poland	65.4	106	68.4	113	67.4	116	69.8	110	69.5	-
Portugal	24.9	100	23.2	101	21.9	98	26.5	110	24.0	-
Slovak Republic	12.4	134	11.3	138	12.1	147	12.8	151	13.0	-
Slovenia	4.7	86	4.4	81	4.5	96	4.9	94	5.1	-
Spain	135.9	103	139.4	107	129.0	101	136.5	106	128.7	-
Sweden	33.3	101	35.7	109	33.5	107	51.5	159	52.3	-
Switzerland	35.8	166	36.5	156	35.2	158	35.5	162	34.5	-
Turkey	78.0	76	76.5	81	79.1	100	81.4	83	84.0	-
United Kingdom	82.4	51	78.1	49	82.3	54	81.2	51	81.8	-
Total	1484.1	103	1473.5	104	1452.9	105	1502.8	105	1480.7	106
Total OECD	**4648.7**	**98**	**4659.2**	**98**	**4585.1**	**98**	**4629.4**	**99**	**4604.6**	**99**
DAYS OF IEA Net Imports[6]	**-**	**202**	**-**	**202**	**-**	**200**	**-**	**203**	**-**	**197**

1 Total Stocks are industry and government-controlled stocks (see breakdown in table below). Stocks are primary national territory stocks on land (excluding utility stocks and including pipeline and 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 June 2017 forward demand figures are IEA Secretariat forecasts.
4 US figures exclude US territories. Total includes US territories.
5 Data not available for Iceland.
6 Reflects stock levels and prior calendar year's net imports adjusted according to IEA emergency reserve definitions (see www.iea.org/netimports.asp). Net exporting IEA countries are excluded.

TOTAL OECD STOCKS

CLOSING STOCKS	Total	Government[1] controlled	Industry	Total	Government[1] controlled	Industry
	Millions of Barrels			*Days of Fwd. Demand*[2]		
2Q2014	4232	1581	2651	92	34	58
3Q2014	4300	1580	2719	93	34	59
4Q2014	4288	1582	2706	92	34	58
1Q2015	4377	1584	2792	96	35	61
2Q2015	4467	1587	2880	95	34	61
3Q2015	4538	1581	2957	98	34	64
4Q2015	4577	1588	2989	98	34	64
1Q2016	4612	1595	3017	100	35	66
2Q2016	4649	1592	3056	98	34	65
3Q2016	4659	1596	3063	98	34	65
4Q2016	4585	1600	2985	98	34	64
1Q2017	4629	1600	3030	99	34	64
2Q2017	4605	1588	3016	99	34	65

1 Includes government-owned stocks and stock holding organisation stocks held for emergency purposes.
2 Days of forward demand calculated using actual demand except in 2Q2017 (when latest forecasts are used).

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

											Year Earlier	
	2014	2015	2016	3Q16	4Q16	1Q17	2Q17	Apr 17	May 17	Jun 17	Jun 16	change
Saudi Light & Extra Light												
Americas	0.65	0.63	0.69	0.69	0.62	0.70	0.74	0.65	0.86	0.71	0.59	0.12
Europe	0.84	0.78	0.79	0.78	0.87	0.64	0.78	0.87	0.75	0.74	0.80	-0.06
Asia Oceania	1.17	1.25	1.40	1.22	1.56	1.65	1.49	1.71	1.48	1.27	1.39	-0.11
Saudi Medium												
Americas	0.36	0.37	0.44	0.44	0.48	0.43	0.35	0.43	0.30	0.31	0.45	-0.14
Europe	0.03	0.03	0.01	0.03	0.01	0.01	0.00	0.00	-	-	0.02	-
Asia Oceania	0.45	0.44	0.41	0.42	0.34	0.33	0.33	0.34	0.31	0.35	0.38	-0.03
Canada Heavy												
Americas	1.71	1.90	2.04	2.12	2.07	2.31	2.25	2.26	2.22	2.28	1.88	0.40
Europe	0.00	0.01	0.01	0.02	0.01	0.01	-	-	-	-	-	-
Asia Oceania	0.00	-	-	-	-	-	-	-	-	-	-	-
Iraqi Basrah Light[2]												
Americas	0.35	0.17	0.42	0.47	0.55	0.53	0.67	0.73	0.65	0.63	0.44	0.19
Europe	0.50	0.72	0.81	0.90	0.67	0.76	0.84	0.78	0.86	0.87	0.80	0.07
Asia Oceania	0.24	0.41	0.46	0.44	0.41	0.42	0.39	0.43	0.29	0.46	0.53	-0.07
Kuwait Blend												
Americas	0.27	0.13	0.14	0.18	0.14	0.19	0.18	-	0.23	0.30	0.21	0.09
Europe	0.09	0.13	0.19	0.22	0.26	0.20	0.22	0.24	0.21	0.22	0.08	0.14
Asia Oceania	0.62	0.65	0.66	0.68	0.60	0.71	0.68	0.67	0.75	0.61	0.59	0.01
Iranian Light												
Americas	-	-	-	-	-	-	-	-	-	-	-	-
Europe	0.10	0.09	0.21	0.33	0.24	0.38	0.25	0.28	0.26	0.21	0.24	-0.03
Asia Oceania	0.01	0.01	0.01	0.01	0.01	0.01	0.00	-	0.01	0.01	0.02	-0.01
Iranian Heavy[3]												
Americas	-	-	-	-	-	-	-	-	-	-	-	-
Europe	0.01	0.02	0.21	0.27	0.38	0.41	0.52	0.41	0.45	0.71	0.12	0.59
Asia Oceania	0.28	0.27	0.52	0.58	0.59	0.73	0.43	0.45	0.42	0.44	0.54	-0.10
BFOE												
Americas	0.01	0.01	0.02	0.02	0.03	0.02	0.01	-	0.04	0.00	0.02	-0.02
Europe	0.56	0.49	0.44	0.48	0.42	0.39	0.41	0.40	0.37	0.47	0.23	0.24
Asia Oceania	0.07	0.06	0.05	-	0.08	0.09	0.06	0.03	-	0.14	-	-
Kazakhstan												
Americas	0.01	0.00	0.01	0.02	-	-	-	-	-	-	-	-
Europe	0.64	0.64	0.70	0.70	0.62	0.76	0.78	0.90	0.70	0.76	0.65	0.11
Asia Oceania	0.02	0.06	0.03	0.01	0.04	0.05	0.09	0.11	0.08	0.07	-	-
Venezuelan 22 API and heavier												
Americas	0.64	0.67	0.63	0.65	0.66	0.52	0.61	0.68	0.53	0.61	0.57	0.04
Europe	0.08	0.09	0.05	0.04	0.05	0.06	0.04	0.05	0.02	0.05	0.02	0.02
Asia Oceania	-	-	-	-	-	-	-	-	-	-	-	-
Mexican Maya												
Americas	0.66	0.50	0.53	0.52	0.53	0.54	0.63	0.53	0.67	0.68	0.58	0.10
Europe	0.14	0.15	0.17	0.17	0.20	0.20	0.18	0.23	0.18	0.12	0.13	-0.01
Asia Oceania	-	0.01	0.05	0.06	0.07	0.06	0.07	0.11	0.04	0.06	0.04	0.02
Russian Urals												
Americas	-	-	-	-	-	-	-	-	-	-	-	-
Europe	1.58	1.61	1.72	1.73	1.77	1.64	1.57	1.57	1.50	1.65	1.72	-0.07
Asia Oceania	-	-	-	-	-	-	0.02	0.03	-	0.02	-	-
Cabinda and Other Angola												
North America	0.04	0.06	0.16	0.20	0.13	0.04	-	-	-	-	-	-
Europe	0.33	0.42	0.27	0.43	0.16	0.09	0.07	0.08	0.03	0.10	0.14	-0.04
Pacific	0.01	0.02	0.01	-	-	-	0.01	-	0.03	-	-	-
Nigerian Light[4]												
Americas	0.00	0.02	0.07	0.08	0.07	0.02	0.04	-	0.13	-	0.06	-
Europe	0.55	0.57	0.39	0.33	0.31	0.36	0.46	0.47	0.49	0.41	0.50	-0.10
Asia Oceania	0.02	-	0.01	0.01	0.03	0.02	0.03	0.01	0.06	0.03	-	-
Libya Light and Medium												
Americas	-	-	-	-	-	-	-	-	-	-	-	-
Europe	0.31	0.22	0.20	0.17	0.30	0.41	0.37	0.28	0.41	0.43	0.16	0.28
Asia Oceania	0.02	0.01	0.02	0.03	0.01	0.04	0.04	0.03	0.06	0.04	0.02	0.02

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

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

	2014	2015	2016	3Q16	4Q16	1Q17	2Q17	Apr 17	May 17	Jun 17	Year Earlier Jun 16	Year Earlier % change
Crude Oil												
Americas	4201	4026	4542	4867	4288	4558	4670	4630	4637	4743	4565	4%
Europe	8679	9505	9253	9647	9566	9462	9635	9477	9642	9785	8907	10%
Asia Oceania	6366	6573	6669	6599	6664	7006	6449	6660	6745	5932	6382	-7%
Total OECD	19246	20103	20464	21112	20518	21026	20753	20767	21024	20460	19855	3%
LPG												
Americas	12	10	20	23	18	23	16	14	25	11	6	87%
Europe	433	418	444	469	468	499	418	385	465	401	423	-5%
Asia Oceania	531	518	566	547	551	603	586	616	558	584	624	-6%
Total OECD	975	947	1030	1039	1036	1126	1020	1015	1048	996	1053	-5%
Naphtha												
Americas	20	14	10	4	18	19	19	21	22	14	16	-12%
Europe	352	345	348	388	354	392	365	360	396	340	322	6%
Asia Oceania	952	950	905	945	893	980	976	980	967	983	740	33%
Total OECD	1324	1309	1263	1337	1265	1391	1361	1361	1384	1337	1078	24%
Gasoline[3]												
Americas	665	670	735	918	689	575	891	822	972	877	1016	-14%
Europe	117	105	100	41	208	150	134	63	165	173	16	1002%
Asia Oceania	75	93	84	72	107	119	97	85	104	101	78	29%
Total OECD	857	868	919	1031	1004	844	1122	970	1241	1151	1110	4%
Jet & Kerosene												
Americas	100	141	169	180	190	148	145	191	121	122	174	-30%
Europe	455	445	502	569	466	460	480	411	510	517	608	-15%
Asia Oceania	60	66	74	49	89	112	68	84	66	53	59	-10%
Total OECD	615	651	745	797	746	719	692	687	697	693	841	-18%
Gasoil/Diesel												
Americas	95	76	67	84	84	81	37	24	43	43	45	-5%
Europe	1043	1161	1338	1277	1275	1390	1358	1276	1421	1374	1486	-7%
Asia Oceania	152	158	195	166	219	204	206	236	189	192	205	-6%
Total OECD	1291	1395	1600	1528	1578	1675	1601	1537	1654	1610	1736	-7%
Heavy Fuel Oil												
Americas	132	116	149	158	147	141	103	77	98	133	195	-32%
Europe	596	537	469	460	416	261	305	234	195	490	384	27%
Asia Oceania	200	173	153	155	123	145	180	185	189	167	157	6%
Total OECD	928	826	770	774	687	546	588	496	482	790	737	7%
Other Products												
Americas	671	675	652	663	605	705	694	608	687	785	737	6%
Europe	692	701	770	743	775	1111	981	1152	1014	776	754	3%
Asia Oceania	399	343	344	351	320	301	244	226	265	242	336	-28%
Total OECD	1762	1719	1766	1757	1701	2117	1919	1986	1967	1803	1828	-1%
Total Products												
Americas	1695	1702	1802	2031	1751	1692	1905	1758	1968	1986	2190	-9%
Europe	3687	3712	3972	3947	3962	4263	4041	3881	4167	4071	3993	2%
Asia Oceania	2369	2301	2321	2285	2303	2464	2357	2412	2338	2322	2199	6%
Total OECD	7751	7715	8094	8263	8016	8419	8303	8051	8472	8379	8382	0%
Total Oil												
Americas	5896	5728	6344	6898	6039	6250	6574	6388	6605	6729	6755	0%
Europe	12366	13216	13225	13593	13528	13725	13676	13358	13808	13856	12900	7%
Asia Oceania	8735	8874	8990	8884	8967	9471	8806	9072	9083	8255	8582	-4%
Total OECD	26997	27818	28559	29376	28533	29445	29056	28818	29496	28840	28237	2%

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

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

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

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