

Oil Market Report

14 December 2021

- A surge in new Covid cases is expected to slow the recovery in global oil demand, with air travel and jet fuel most affected. On average, oil demand has been revised down by around 100 kb/d since last month's *Report* for both 2021 and 2022. Global oil demand is now set to rise by 5.4 mb/d in 2021 and by 3.3 mb/d in 2022, when it returns to pre-pandemic levels at 99.5 mb/d.
- Global oil production is poised to outpace demand from December, led by growth in the US and OPEC+ countries. As this upward trend extends into 2022, the US, Canada and Brazil look set to pump at their highest ever annual levels, lifting overall non-OPEC+ output by 1.8 mb/d in 2022. Saudi Arabia and Russia could also hit records if remaining OPEC+ cuts are fully unwound. In that case, global supply would soar by 6.4 mb/d next year compared with a 1.5 mb/d rise in 2021.
- Refinery throughput surged by a hefty 1.9 mb/d in November and is forecast to rise by another 660 kb/d this month, when it is set to breach the 80 mb/d threshold for the first time since the start of 2020. For 2021 as a whole, refinery runs are forecast to rise by 3.1 mb/d on average, recovering just 42% of 2020's decline. Another 3.7 mb/d increase in throughputs is expected in 2022.
- OECD total industry stocks fell by 21.2 mb in October, as a build in crude oil inventories was more than offset by sharply lower product stocks. At 2 737 mb, total stocks were 243 mb below the 2016-2020 average. Preliminary data for November show industry stocks decreased by a further 23 mb, and crude oil held in short-term floating storage rose by 8.4 mb to 134.5 mb.
- Benchmark crude oil prices plunged by \$15-17/bbl over the course of November, as concerns over Covid-19, inflation and economic growth weighed on the market. North Sea Dated prices were down \$2.17/bbl for the month on average to \$81.37, but hit a low of \$68.87/bbl on 1 December before recovering to around \$75/bbl at the time of writing.



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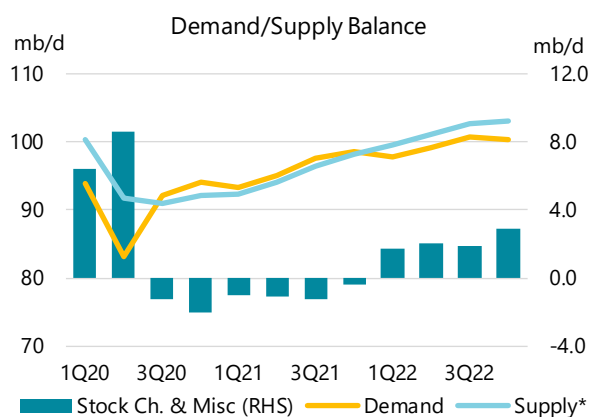
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Closing in comfort?

As 2021 draws to a close, the oil market appears to stand on a better footing than it has for some time. Much needed relief for tight markets is on the way, with world oil supply set to overtake demand starting this month. The emergence of the Covid-19 Omicron variant at the end of November sparked a steep sell-off in oil, but initial pessimism has now given way to a more measured response. Even so, at the time of writing Brent crude was trading roughly \$10/bbl lower than at the start of November, at around \$75/bbl.

The surge in new Covid-19 cases is expected to temporarily slow, but not upend, the recovery in oil demand that is underway. Global oil demand is forecast to grow by 5.4 mb/d in 2021 and a further 3.3 mb/d next year, when it rebounds to pre-Covid levels at 99.5 mb/d. New containment measures put in place to halt the spread of the virus are likely to have a more muted impact on the economy versus previous Covid waves, not least because of widespread vaccination campaigns. As a result, we expect demand for road transport fuels and petrochemical feedstocks to continue to post healthy growth. However, due to new restrictions on international travel, we have revised down our global oil demand forecast for 2021 and 2022 by 100 kb/d on average, primarily to account for reduced jet fuel use.



At the same time, oil supplies are on the rise with world oil output up by a further 970 kb/d in November. For a second month running, the biggest single increase came from the US, where drilling activity is picking up. OPEC+ production rose by 450 kb/d. As the upward supply trend extends into 2022, the US, Canada and Brazil are set to pump at their highest ever annual levels, lifting output from non-OPEC+ by 1.8 mb/d in 2022 overall. Saudi Arabia and Russia could also set records, if remaining OPEC+ cuts are fully unwound. In that case, global supply would soar by 6.4 mb/d next year compared with a 1.5 mb/d rise in 2021.

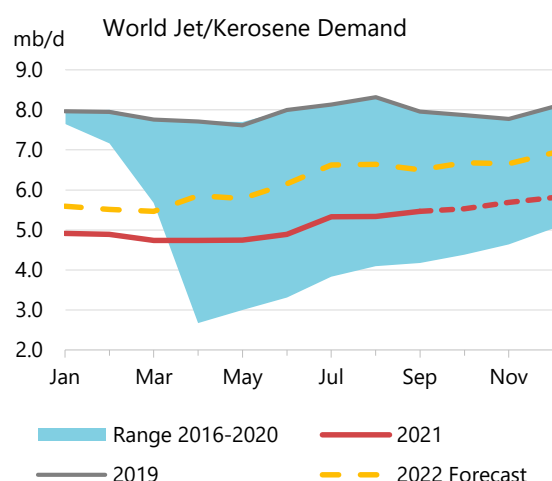
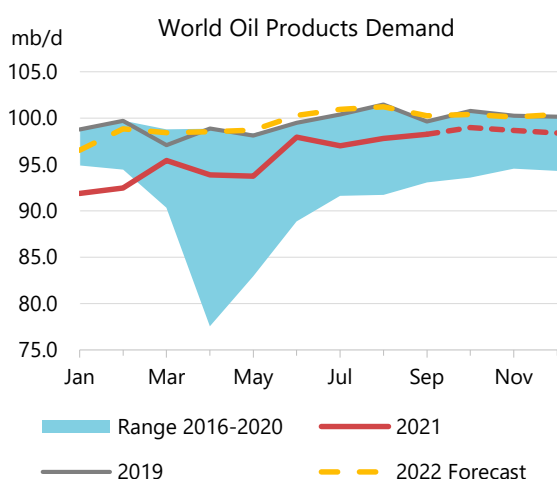
In the near term, additional barrels could come from strategic petroleum reserves (SPRs). The US announced on 23 November a release of up to 50 mb of oil from its SPR, with parallel actions by China, India, South Korea, Japan and the UK, in an effort to ease energy prices. While details on volumes and timings are still sparse, the combined SPR releases could potentially amount to as much as 70 mb. Those volumes, if taken up by the market, could help replenish depleted industry inventories. OECD industry stocks fell by 21 mb in October to 2 737 mb, some 240 mb below the most recent five-year average. Preliminary data point to another 23 mb decline in November.

The steady rise in supply combined with easing demand has considerably loosened our balances for 1Q22 compared to last month's *Report*. Assuming OPEC+ continues to unwind its cuts, a surplus of 1.7 mb/d could materialise in 1Q22 and 2 mb/d in 2Q22. If that were to happen, 2022 could indeed shape up to be more comfortable.

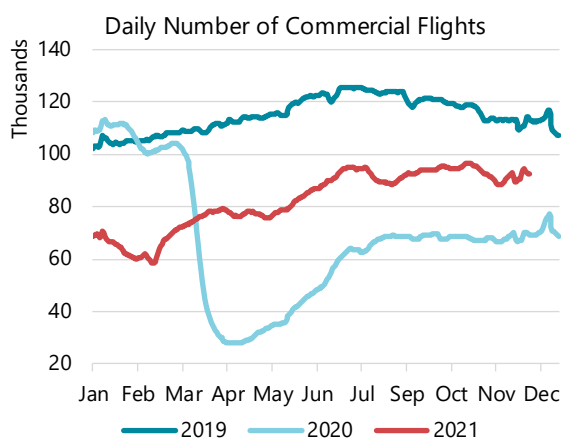
Demand

Overview

A new surge in Covid cases is expected to slow, but not derail, the recovery in oil demand that is underway. World oil demand is on track to rise by nearly 1 mb/d in 4Q21 to 98.6 mb/d before falling seasonally by 740 kb/d in 1Q22. New containment measures put in place to halt the spread of the virus are projected to have an immediate impact on air travel and jet fuel consumption, resulting in a downward revision to our forecast for both 2021 and 2022 of around 100 kb/d since last month's *Report*. Global oil demand is now set to rise by 5.4 mb/d in 2021 and a further 3.3 mb/d in 2022.



While significantly lower than previous projections, world jet fuel demand is expected to continue to recover from last year's slump. New travel restrictions are likely to remain milder than during previous Covid waves in countries where a large share of the population is vaccinated. Following a quarter-on-quarter (q-o-q) increase of 580 kb/d in 3Q21, jet/kerosene demand for 4Q21 is pegged 300 kb/d higher at 5.7 mb/d. Revised flight schedules and reported booking cancellations have led us to lower our forecast for 1Q22 by nearly 600 kb/d and by 210 kb/d for 2Q22. We now expect jet/kerosene demand to fall by 150 kb/d on average from 4Q21 to 1Q22 and to recover thereafter. Overall, jet/kerosene demand is forecast to increase by 530 kb/d in 2021 and 1 mb/d in 2022 when it reaches 6.2 mb/d, still 1.7 mb/d below pre-Covid levels.



Source: Flightradar 24, data to 8 Dec 2021.

The resurgence of the pandemic and the latest variant, Omicron, have sharply increased uncertainty around global economic prospects, yet the baseline GDP forecasts that underpin

this analysis are largely unchanged since last month's *Report*. World GDP is expected to expand by 5.7% in 2021 and 4.5% in 2022, which should support a continued recovery in oil demand going forward. More recent waves of Covid have so far had a diminishing impact on economic activity, due in part to higher vaccination rates. The emergence of the new Omicron variant nevertheless poses a significant risk to the economic outlook.

Lower oil prices, if sustained, could also provide some support to the 2022 forecast. Our oil price assumption (based on the forward curve) is roughly 15% lower for 2022 than in last month's *Report*. Brent prices average \$70.80/bbl in 2021 and \$67.60/bbl in 2022.

The latest Covid wave has led some governments to encourage increased work from home, yet mobility indicators suggest little impact on road traffic so far. Barring renewed lockdowns and more stringent mobility restrictions, an easing of gasoline prices and reluctance to use public transport are expected to offset the impact of teleworking on demand going forward. While world gasoline demand is projected to continue to recover from its sharp fall in 2020, rising by nearly 2 mb/d in 2021 and a further 820 kb/d in 2022, it is expected to remain below pre-Covid levels through the end of the forecast.

Global Demand by Product								
(thousand barrels per day)								
	Demand				Annual Chg (kb/d)		Annual Chg (%)	
	2019	2020	2021	2022	2021	2022	2021	2022
LPG & Ethane	12 648	12 681	13 289	13 687	607	398	4.8	3.0
Naphtha	6 306	6 322	6 848	7 010	526	162	8.3	2.4
Motor Gasoline	26 636	23 479	25 443	26 259	1 964	816	8.4	3.2
Jet Fuel & Kerosene	7 926	4 644	5 174	6 204	530	1 029	11.4	19.9
Gas/Diesel Oil	28 230	26 395	27 537	28 123	1 142	586	4.3	2.1
Residual Fuel Oil	6 144	5 692	6 006	6 192	314	186	5.5	3.1
Other Products	11 660	11 612	11 896	12 060	284	164	2.4	1.4
Total Products	99 549	90 826	96 193	99 534	5 367	3 341	5.9	3.5

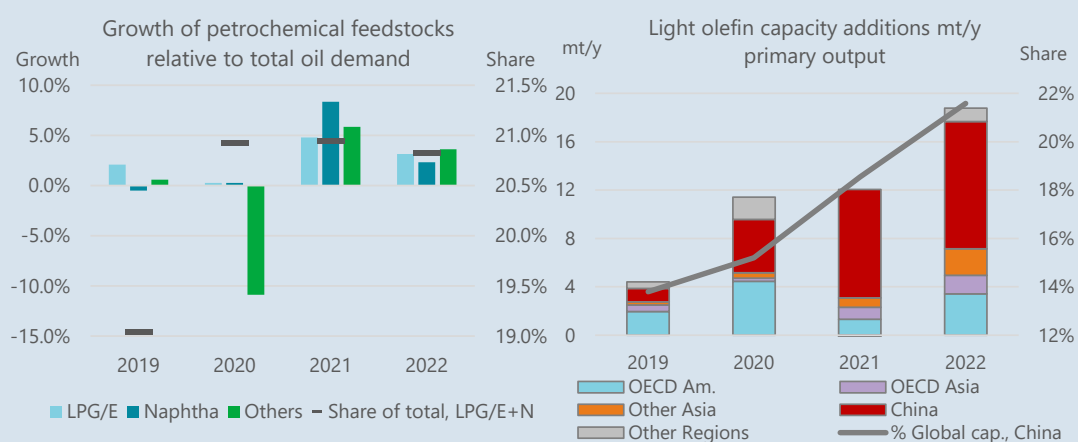
Gasoil demand was also left unchanged. The continued phasing out of gasoil in electricity generation in some countries (Saudi Arabia) is offset by additional consumption of the fuel due to power shortages and to high natural gas prices in others. Petrochemical feedstocks use of LPG and naphtha has been revised up by 40 kb/d in 2022 (see *Petrochemical pivot to Asia accelerates*) reflecting plant activity and new start-ups.

Global Demand by Region								
(thousand barrels per day)								
	Demand				Annual Chg (kb/d)		Annual Chg (%)	
	2019	2020	2021	2022	2021	2022	2021	2022
Africa	4 250	3 797	4 005	4 066	208	62	5.5	1.5
Americas	31 767	28 037	30 148	31 103	2 111	955	7.5	3.2
Asia/Pacific	35 472	33 606	35 618	37 169	2 012	1 550	6.0	4.4
Europe	15 094	13 174	13 717	14 263	543	546	4.1	4.0
FSU	4 723	4 487	4 768	4 913	281	145	6.3	3.0
Middle East	8 243	7 725	7 936	8 020	211	83	2.7	1.1
World	99 549	90 826	96 193	99 534	5 367	3 341	5.9	3.5
OECD	47 721	42 021	44 513	46 129	2 492	1 615	5.9	3.6
Non-OECD	51 828	48 805	51 679	53 405	2 875	1 726	5.9	3.3

Box 1. Petrochemical pivot to Asia accelerates

The petrochemical sector has long been a pillar of oil demand growth, and during the Covid-19 pandemic demand for naphtha, LPG and ethane, used in large part as feedstocks for light olefins plants, bucked the trend of declines seen in other oil products. Fuelled by exceptional polymer demand related to the production of medical equipment and protective gear, and in response to a strong rebound in manufacturing amid the global economic recovery, demand for these products edged up by 0.3% in 2020 and is on track to rise by a robust 6%, or +1.1 mb/d, to 20.1 mb/d in 2021.

At the same time, an unprecedented large wave of new light olefin (ethylene and propylene) producing plants are coming on stream more quickly than expected in China, helping to drag the petrochemical industry's centre of gravity further to the East.



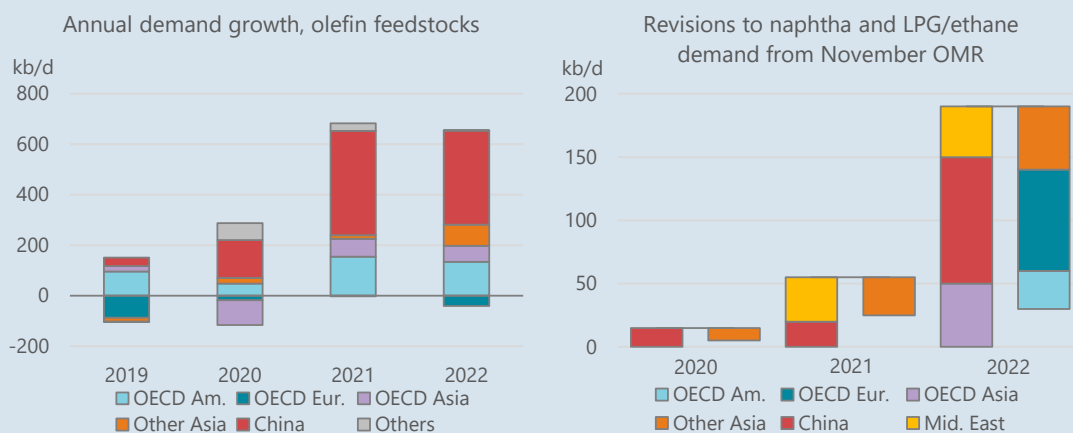
Sources: IEA data analysis and S&P Global Platts.

Over the period 2019-2021, China accounted for 61% of the growth in total naphtha, LPG and ethane demand (+720 kb/d of +1.2 mb/d). We estimate that by 2022, China will account for 20% of all oil consumed in light olefin production (2.4 mb/d of 12.3 mb/d), up from 14% in 2019. This change results from an unparalleled wave of petrochemical plant construction currently underway across the country. Together, the new units commissioned in China during 2019-2022 will alone have a capacity greater than all those currently existing in Europe.

Having grown by about 6% year-on-year (y-o-y) in each of 2020 and 2021, we expect available olefins capacity to expand by a further 8.8% in 2022, putting average global operating rates under pressure. In this more competitive environment, significant regional shifts in production toward the most feedstock-advantaged or highly-integrated plants are possible. The share of olefin feedstock consumed in Asia will continue to increase to 43% of the global total in 2022, up from 39% in 2019.

The new plants coming into operation are expected to have a considerable impact on the global distribution of petrochemical activity. We have modified our outlook for 2022 feedstock consumption to reflect these developments and have lowered projected operating rates in Europe, North America and Other Asian economies. Demand estimates for 2020 and 2021 have also been adjusted to better reflect the operations of new plants in Malaysia, Oman and China. All in all,

overall feedstock demand is now forecast to reach 12.3 mb/d in 2022 (+5.2% y-o-y) out of 20.7 mb/d (+2.9%) of total naphtha, LPG and ethane consumption.



Sources: IEA data analysis and S&P Global Platts.

OECD

OECD oil demand rose by 490 kb/d month-on-month (m-o-m) in September (the last month for which we have complete data) contrary to a normal seasonal decline of 700 kb/d. Strong September data reflect high gasoil and naphtha demand in Asia and Europe. In the US, gasoline demand posted a smaller than usual decline of 150 kb/d versus -375 kb/d normally. OECD September oil demand was 3.5 mb/d higher than a year earlier, but 1.4 mb/d below pre-Covid levels.

In October, OECD demand is estimated to have decreased by 40 kb/d. According to estimates based on preliminary data, demand increased by 360 kb/d m-o-m in the Americas and 45 kb/d in Asia Oceania but decreased by 445 kb/d in Europe. Gasoil demand fell by 290 kb/d but gasoline and jet/kerosene demand rose by 250 kb/d and 45 kb/d, respectively. OECD October oil demand was 3.4 mb/d higher than a year earlier, but 1.9 mb/d below pre-Covid levels.

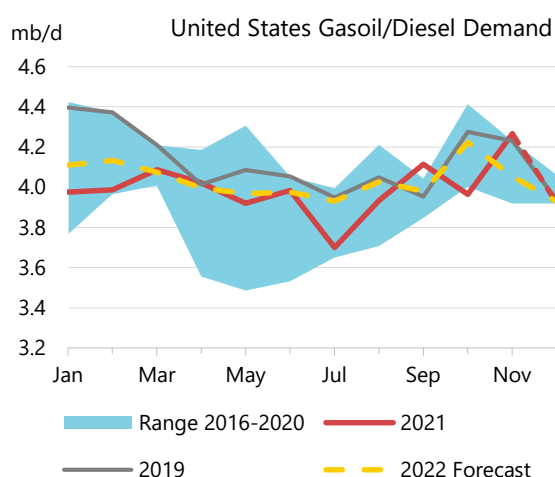
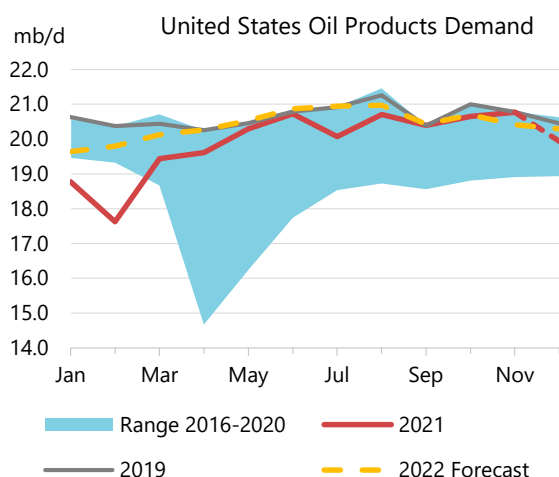
OECD oil demand averaged 45.7 mb/d in 3Q21, up 1.7 mb/d q-o-q but 2.7 mb/d lower than in 3Q19. We project this gap versus the 2019 level to narrow to 1.9 mb/d in 4Q21 (3.2 mb/d on average for 2021), with gasoline and jet/kerosene demand reducing their deficit versus pre-Covid levels in key OECD countries. OECD oil demand is projected to increase by 1.6 mb/d in 2022, narrowing its gap versus pre-pandemic levels to 1.6 mb/d. Transport fuel demand will remain well below 2019 levels, while petrochemical feedstocks demand will rise above pre-pandemic levels.

OECD Demand based on Adjusted Preliminary Submissions - October 21																
(million barrels per day)																
	Gasoline		Jet/Kerosene		Diesel		Other Gasoil		LPG/Ethane		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	mb/d	% pa
OECD Americas	10.89	10.7	1.72	51.0	4.55	-3.4	0.61	2.6	3.80	11.4	0.46	-0.7	3.05	8.6	24.98	9.3
US*	9.30	11.2	1.52	47.5	3.86	-2.8	0.19	-5.0	3.02	11.3	0.33	7.9	2.51	8.3	20.65	9.8
Canada	0.90	18.6	0.11	85.0	0.25	-3.2	0.40	15.7	0.43	35.5	0.03	-0.3	0.35	17.8	2.46	19.5
Mexico	0.62	-1.1	0.07	117.6	0.26	-5.2	0.02	-58.5	0.30	0.6	0.09	-25.2	0.17	2.8	1.53	-2.2
OECD Europe	2.01	5.4	0.97	45.8	5.20	3.6	1.72	16.6	1.01	-5.4	0.77	9.5	2.34	0.5	13.79	6.5
Germany	0.48	-1.4	0.15	85.9	0.75	-2.1	0.42	27.3	0.09	-2.3	0.05	-9.9	0.39	-6.5	2.32	4.4
United Kingdom	0.27	5.6	0.21	30.0	0.48	4.7	0.16	15.2	0.09	-34.2	0.02	22.4	0.12	6.2	1.32	5.6
France	0.22	11.7	0.11	38.9	0.79	2.9	0.19	54.5	0.10	-2.2	0.04	14.9	0.25	-4.9	1.70	8.6
Italy	0.18	11.9	0.06	66.1	0.51	5.5	0.10	12.3	0.10	-2.6	0.07	11.8	0.26	-5.0	1.27	5.9
Spain	0.12	6.7	0.10	153.9	0.45	3.0	0.22	-2.5	0.04	-43.9	0.12	9.6	0.18	2.6	1.19	5.5
OECD Asia & Oceania	1.36	1.0	0.55	14.4	1.32	-2.1	0.55	10.3	0.71	-3.0	0.49	15.0	2.43	16.0	7.35	6.8
Japan	0.74	-2.0	0.29	7.7	0.41	1.1	0.31	2.6	0.36	0.4	0.26	12.9	1.02	17.1	3.39	6.2
Korea	0.21	1.4	0.17	20.5	0.32	-5.2	0.17	27.3	0.29	-7.8	0.20	17.3	1.22	18.0	2.54	9.9
Australia	0.29	6.2	0.08	60.2	0.52	-3.0	-	-	0.05	-1.1	0.01	1.6	0.11	-2.1	1.05	2.9
OECD Total	14.26	8.9	3.24	41.8	11.07	-0.1	2.88	12.1	5.51	6.0	1.72	8.0	7.82	8.1	46.11	8.0

* Including US territories

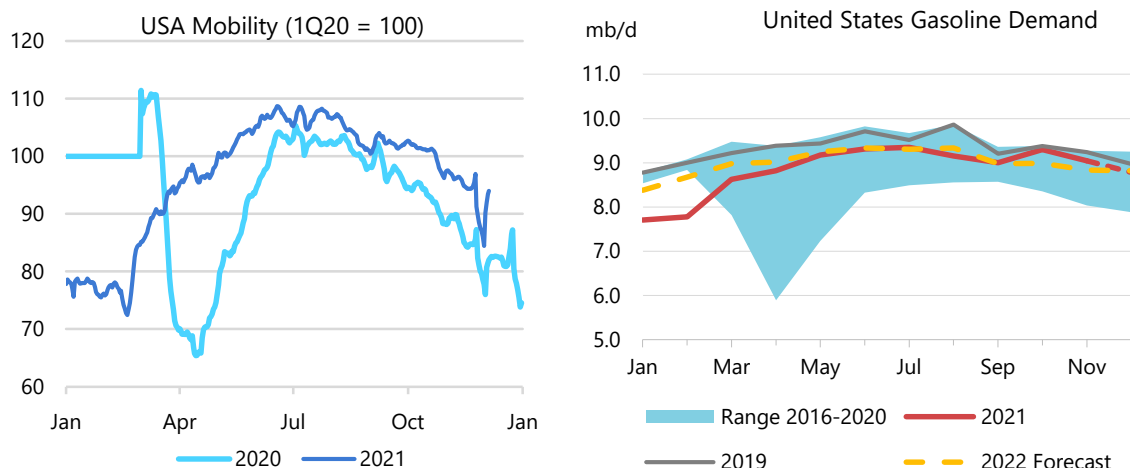
OECD Americas

Provisional data show an increase of 360 kb/d m-o-m in OECD Americas in October, more or less in line with seasonal trends. However, the gasoline demand increase was stronger than usual due to high deliveries in the US.



In the US, final September demand was eventually reported 90 kb/d lower than expected last month, with gasoline use revised down by 220 kb/d. Our estimates for October gasoline demand remains strong, up 300 kb/d m-o-m, supported by various mobility indicators.

One element explaining the strength in gasoline demand is more use of private cars with the reluctance to use public transportation due to Covid. For example, in the region of New York City and Connecticut, the Metropolitan Transportation Authority (North America's largest transportation network serving a population of 15.3 million people) reported a fall of 44% in November subway ridership compared to pre-Covid levels. Other factors include high savings accumulated during the pandemic and pent up demand for transportation.



US deliveries of jet/kerosene in September declined seasonally by 80 kb/d m-o-m and remained unchanged in October before a small rebound (60 kb/d m-o-m) in November. The US (and North America in general) recovered very rapidly from the massive drop in air transport in 2020. According to *Official Aviation Guide (OAG)* data, the number of scheduled flights in November was only 10% below pre-Covid levels, and 56% higher than in November 2020. Jet/kerosene consumption levels were only 160 kb/d (9.2%) below 2019 in November. The spreading of the new Omicron variant triggered some additional constraints for international travellers to the US, which is expected to slow the jet fuel demand recovery in the next few months.

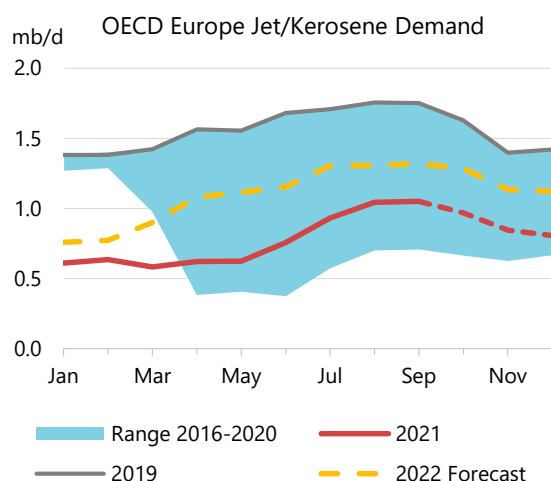
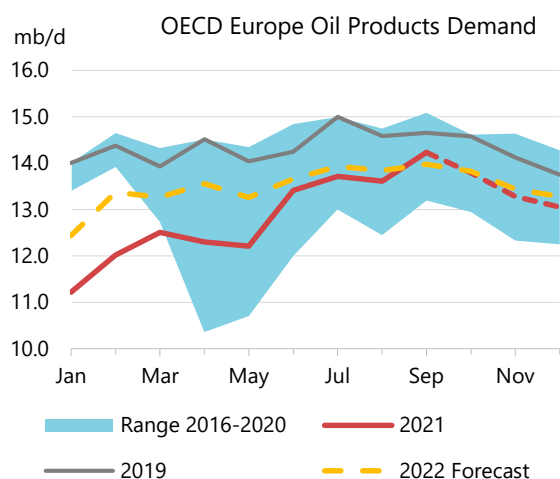
One big surprise in the latest *Petroleum Supply Monthly (PSM)* data reported by the US Department of Energy was the level of ethane deliveries for September. While we were expecting a relatively sharp drop in ethane consumption following Hurricane Ida, ethane demand in September rose slightly versus August to 1.8 mb/d.

Elsewhere in OECD Americas, Canadian deliveries decreased by 80 kb/d in September, in line with seasonal trends. Gasoline demand remained 14% below pre-Covid levels, while total deliveries were 12% lower than in 2019. Mexican deliveries also remained weak in October, 18% below pre-Covid levels.

Overall, 3Q21 OECD Americas demand was about 380 kb/d higher q-o-q and 2.1 mb/d stronger y-o-y. Nevertheless, it remains 1.2 mb/d lower than 3Q19. In 4Q21, we forecast that demand will increase by 170 kb/d q-o-q, supported by rising gasoil and LPG/ethane requirements, narrowing the gap to pre-Covid levels to 750 kb/d. Demand is set to increase overall by 1.7 mb/d in 2021 and 880 kb/d in 2022, reducing the gap in demand versus pre-Covid levels from 1.3 mb/d in 2021 to 430 kb/d in 2022.

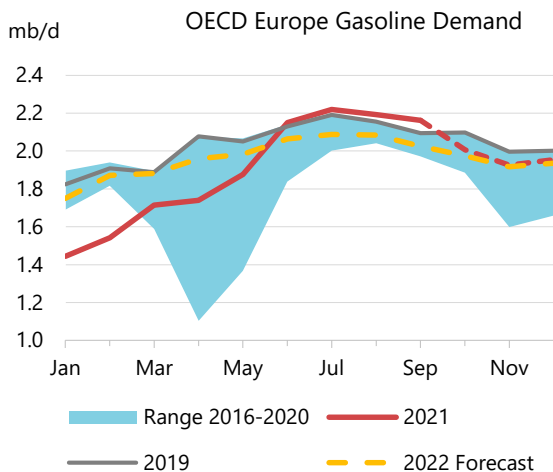
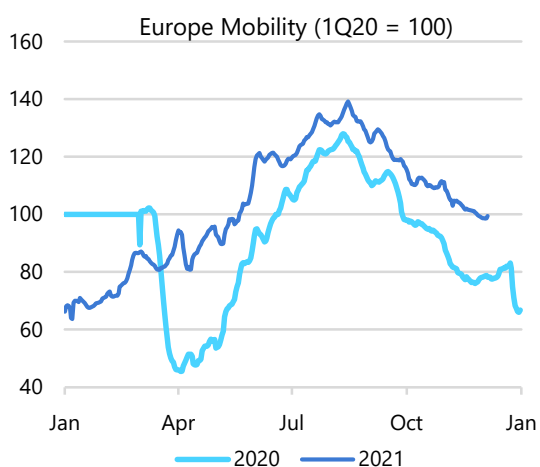
OECD Europe

European demand rose by 630 kb/d m-o-m in September, supported by strong growth in gasoil. Total demand is estimated to have fallen by 440 kb/d m-o-m in October. Both the rise in September and the fall in October slightly exceed the seasonal trend.



European gasoil demand rose by 530 kb/d m-o-m in September but dropped by 160 kb/d in October, according to provisional data. This put Gasoil demand 180 kb/d higher than its 2019 levels in September and 85 kb/d below pre-Covid levels in October. European manufacturing activity slowed in recent months due to supply chain disruptions affecting the transportation of industrial goods. In November, the *IHS Markit Eurozone PMI* remained unchanged versus October, pointing to a stabilisation in manufacturing activity.

Europe currently suffers from a sharp rebound of Covid cases, but mobility seems to be little affected so far. Our mobility indicator (based on *Google* data) shows a normal seasonal decline with a modest impact - if any - from responses to the spread of the virus.



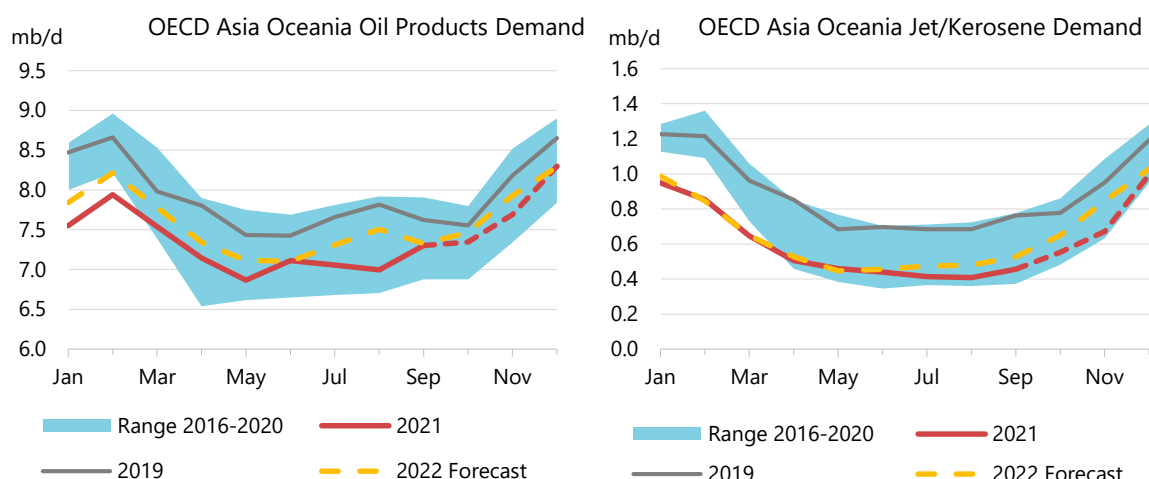
The situation is more difficult for jet/kerosene demand, as new outbreaks of the Delta variant have triggered multiple constraints and restrictions for air travel. The number of scheduled flights, according to *OAG*, remained below pre-Covid levels in November by 39% in the UK (-13% m-o-m), 24% in France, 40% in Germany and 21% in Spain. Jet fuel demand in OECD Europe fell 700 kb/d (40%) versus 2019 in September and is projected to remain below pre-Covid levels by 660 kb/d in October and 550 kb/d in November (39%). The emergence of the Omicron variant is already triggering further restrictions on air travel involving Europe as many countries closed their frontiers to travellers from mostly African destinations or tightened the entry rules. These measures will slow the recovery of air transport demand by 150 kb/d in the first quarter of 2022.

OECD Europe deliveries are projected to seasonally decrease by 475 kb/d in 4Q21 on lower transport fuel demand. However, on an annual basis, oil demand is set to increase by 510 kb/d in 2021 and 540 kb/d in 2022, reducing the gap versus pre-Covid levels from 1.4 mb/d in 2021 to 830 kb/d in 2022.

OECD Asia Oceania

OECD Asia oil demand rose by 300 kb/d m-o-m in September, on strong gasoil and naphtha uptake, compared with the usual seasonal drop of 170 kb/d. In October, preliminary data show an increase of 45 kb/d m-o-m. Total September demand remained 320 kb/d below pre-Covid levels, while October is estimated 210 kb/d below 2019.

OECD Asia gasoil demand was slightly above pre-Covid levels in September and only 100 kb/d below 2019 in October 2021, according to preliminary data. *Japan IHS Markit PMI* manufacturing indicator pointed to growth for the tenth consecutive month, with an improvement in manufacturing conditions in November despite supply chain constraints.



Jet/kerosene demand in September and October remained 310 kb/d and 230 kb/d below 2019 levels, respectively. *OAG* data show a drop of 42% in the number of scheduled flights versus pre-Covid levels in Japan, 51% in South Korea and 64% in Australia. The outbreak of the Omicron variant triggered drastic restrictions to international air travel in most of OECD Asia, likely to remain in place over the next few months. Jet/kerosene demand in OECD Asia (a large share of which is for heating oil demand during the winter) is projected to remain 230 kb/d below 2019 in 4Q21 and 310 kb/d below 2019 in 1Q22.

OECD Asia Oceania demand is projected to increase seasonally by 660 kb/d q-o-q in 4Q21 on higher kerosene and gasoil demand. Overall, oil demand is set to increase by 260 kb/d in 2021 and 200 kb/d in 2022, reducing the gap in demand versus pre-Covid levels from 530 kb/d in 2021 to 340 kb/d in 2022.

Non-OECD

October 2021 demand climbed by 770 kb/d m-o-m, outpacing the typical seasonal increase to move 100 kb/d ahead of 2019 levels. The average September to October increase from 2015 to 2019 was 110 kb/d. October was the first month since June when non-OECD deliveries rose

above the same month in pre-pandemic 2019. In the intervening months, non-OECD demand had been substantially impacted by public health measures in response to renewed Covid-19 outbreaks, especially in Asia.

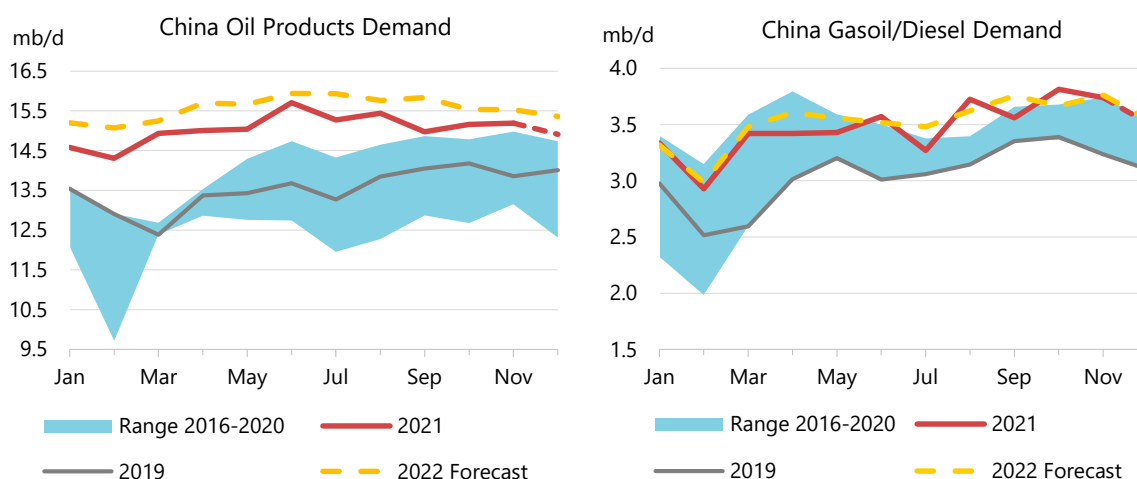
In October, non-OECD demand was close to our expectations from last month's *Report*. Russian deliveries over-performed our previous outlook by 110 kb/d but this was balanced by other countries that underperformed.

Overall demand growth is expected reach +620 kb/d q-o-q in 4Q21. Demand growth slows in 1Q22 to +60kb/d q-o-q as various governments impose increased travel restrictions in response to the Omicron variant of Covid-19. Quarterly growth recovers in 2Q22 (+670 kb/d) and 3Q22 (+550 kb/d). On an annual basis, non-OECD oil demand is projected to increase in 2022 by 1.7 mb/d to 53.4 mb/d, reaching 1.6 mb/d above 2019.

Jet/kerosene demand falls 70 kb/d q-o-q in 1Q22 (-330 kb/d below the November Report), but still posts 380 kb/d growth for 2022 as a whole. Jet/kerosene is the only fuel still below 2019 levels in 2022 (-840 kb/d), while petrochemical feedstocks will post the strongest growth.

China

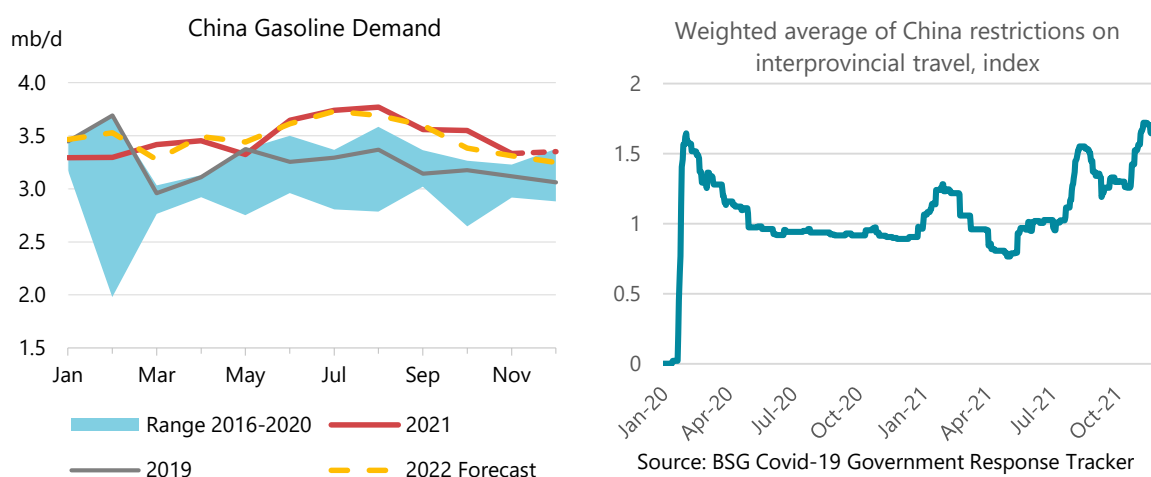
Chinese apparent oil demand increased by 180 kb/d m-o-m in October, a partial rebound from a decline in September (-460 kb/d m-o-m), reflecting a modest improvement in manufacturing indicators and additional oil use in response to coal and electricity supply problems. The *Caixin Manufacturing PMI* rose to 50.6 in October (from 50 in September), mirroring the slight increase in activity, but fell to 49.9 in November. We expect that this contraction in manufacturing, combined with the impact of debt problems in the property sector, higher prices, supply chain difficulties and continued Covid outbreaks, will weaken m-o-m demand growth to only 30 kb/d in November.



Rather than declining seasonally, gasoil demand rose by 250 kb/d m-o-m in October. Widespread tightness in diesel markets had been reported, as consumption for back-up generators spiked in response to restrictions on electricity use driven by coal shortages. While coal markets remain tight, domestic prices have fallen from their historical peak and coal stockpiles reached more comfortable levels by the end of November. We expect the additional demand for gasoil seen in October to ease through the remainder of 2021, with overall deliveries for the product falling by 70 kb/d m-o-m in November.

October jet/kerosene demand was almost unchanged m-o-m, defying our previous expectations of a continuation of its recent recovery. OAG flight capacity data reveals that the resurgence in airline operations stalled in November, falling by 17.6% m-o-m. Based on the recent weakness, combined with the anticipated negative impact of the Omicron variant in December, we have reduced our 4Q21 growth rates to 20 kb/d q-o-q (-190 kb/d y-o-y). We project a further 20 kb/d q-o-q rise in Chinese jet/kerosene consumption in 1Q22.

Naphtha demand rose by 60 kb/d for October, to 290 kb/d above 2020 levels. This reflects the start-up of several large naphtha-based steam crackers this year and a recent shift by flexible operators from LPG consumption in favour of naphtha, due to superior economics. LPG demand decreased by 140 kb/d m-o-m.



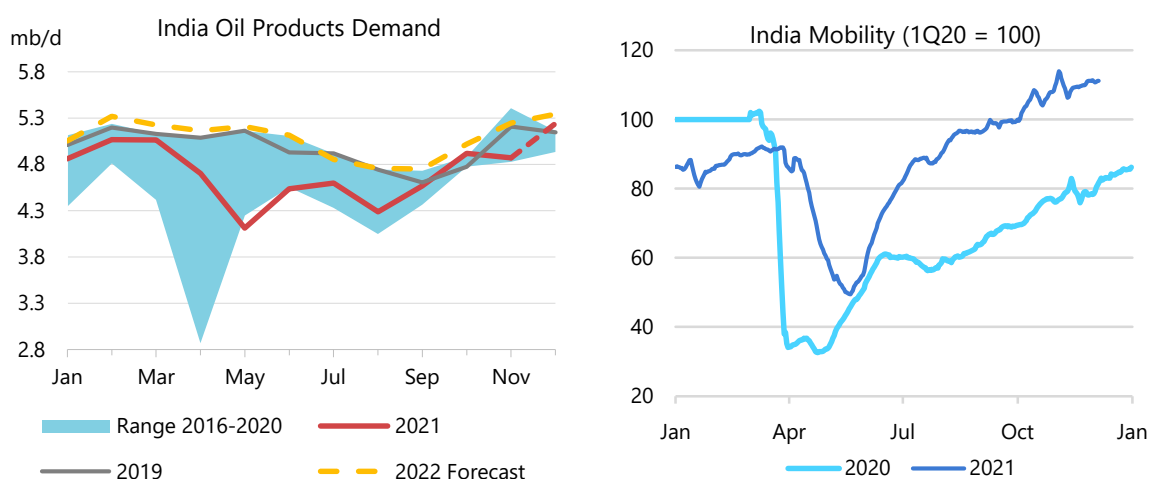
China's total 4Q21 apparent oil demand is set to fall 150 kb/d q-o-q (+250 kb/d y-o-y). Increases for naphtha (+200 kb/d) and gasoil (+170 kb/d) will be outweighed by declines in gasoline (-280 kb/d) and other products (-170 kb/d). Gasoline demand has suffered as Covid-related restrictions on internal movement have tightened significantly since the middle of 2021. According to an analysis of data for Chinese government restrictions on movement from the *Blavatnik School of Government (BSG)* at the University of Oxford, a provincial GDP-weighted average of these restrictions has reached a comparable level to February 2020.

China: Demand by Product								
(thousand barrels per day)								
	Demand				Annual Chg (kb/d)		Annual Chg (%)	
	2019	2020	2021	2022	2021	2022	2021	2022
LPG & Ethane	1 737	1 852	2 151	2 275	299	124	16.1	5.8
Naphtha	1 338	1 444	1 643	1 812	199	169	13.8	10.3
Motor Gasoline	3 248	3 200	3 480	3 482	279	2	8.7	0.1
Jet Fuel & Kerosene	857	702	730	782	28	52	4.0	7.1
Gas/Diesel Oil	3 052	3 161	3 480	3 528	319	47	10.1	1.4
Residual Fuel Oil	432	429	455	475	26	20	6.0	4.3
Other Products	2 881	3 088	3 108	3 212	20	104	0.7	3.4
Total Products	13 546	13 877	15 047	15 565	1 170	518	8.4	3.4

Average 2021 demand is now forecast at 15 mb/d (+1.2 mb/d y-o-y) with 2022 climbing to 15.6 mb/d (+520 kb/d y-o-y). We expect demand for all oil products to increase in 2022, with petrochemical feedstocks – naphtha (+170 kb/d y-o-y) and LPG/Ethane (+120 kb/d y-o-y) – accounting for more than half of Chinese growth.

India

Economic conditions in India appear to have improved in November, with the *IHS Markit Manufacturing PMI* for the country rising to 57.6 from 55.9 in October and mobility data showing activity continuing to increase (+3.2% m-o-m) to levels well above 2020 (+39.6% y-o-y). Additionally, the Indian Power Ministry reports that coal inventories at power plants doubled from 11.4 mt at the end of September to 21 mt in early December (10 days of consumption), easing the prospect of a prolonged electricity supply crisis.

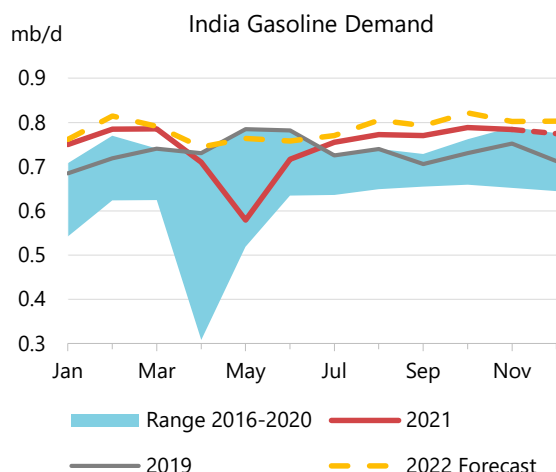
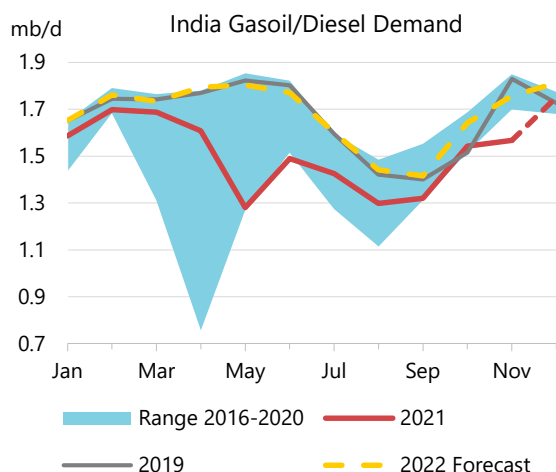


Despite this improvement in fundamentals, average Indian deliveries dropped by 50 kb/d m-o-m in November (-540 kb/d y-o-y). The average October to November change during 2015-19 was +130 kb/d. In particular, November gasoil demand was much weaker than expected, rising by only +20 kb/d (170 kb/d less than forecast in last month's *Report*), compared with an average 2015-19 change of +150 kb/d. Naphtha (-30 kb/d), LPG/ethane (-25 kb/d), gasoline (-5 kb/d), fuel oil (-5 kb/d) and other products (-20 kb/d) all declined m-o-m.

Part of the reason for the weaker than expected growth in gasoil deliveries was likely the improvement of the electricity supply situation. We had previously expected some additional volumes to be required for off-grid, back-up generators in response to shortages or restrictions on usage. However, this does not account for the extent of the y-o-y fall for gasoil demand (-130 kb/d).

Data from *OAG* show a 7.9% increase in air traffic in November (slower than the 10.5% m-o-m gain seen in October). This is reflected in the continued steady increase in jet/kerosene demand, which edged up by 10 kb/d m-o-m in both October and November. We expect a further increase in jet/kerosene demand in December (+20 kb/d) before losing ground in January (-30 kb/d) due to the response to the Omicron variant. November jet/kerosene demand remains 70 kb/d below pre-pandemic levels.

Our outlook for overall demand in 4Q21 is for a strong 530 kb/d q-o-q increase, with demand lagging 4Q19 by 30 kb/d and 4Q20 by 90 kb/d. On a q-o-q basis, demand for every product group is expected to rise, with gasoil (+270 kb/d) contributing a little more than half the overall increase. Average 2021 deliveries will be +190 kb/d higher than 2020, but 260 kb/d lower than 2019.

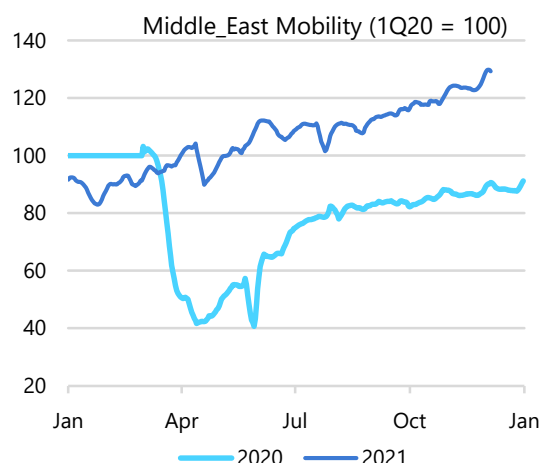
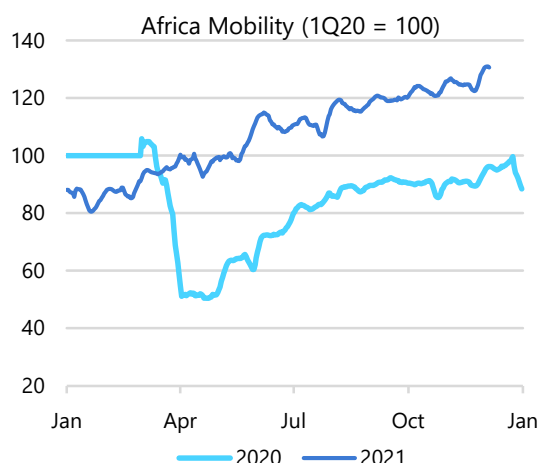


Forecast gains of 350 kb/d in 2022 should take annual demand 90 kb/d above pre-pandemic levels. We expect gasoline demand to rise by 40 kb/d y-o-y. Gasoil demand is forecast to recover versus weak 2021 growth, rising by 160 kb/d y-o-y to marginally surpass pre-pandemic levels. In 2022, Jet/kerosene demand is projected to remain 70 kb/d below 2019 levels on average.

India: Demand by Product								
(thousand barrels per day)								
	Demand				Annual Chg (kb/d)		Annual Chg (%)	
	2019	2020	2021	2022	2021	2022	2021	2022
LPG & Ethane	837	869	890	899	21	9	2.4	1.0
Naphtha	308	318	321	346	3	25	1.0	7.7
Motor Gasoline	734	667	747	786	80	38	12.0	5.1
Jet Fuel & Kerosene	225	120	129	151	10	22	8.0	16.8
Gas/Diesel Oil	1 667	1 414	1 520	1 681	106	161	7.5	10.6
Residual Fuel Oil	145	136	141	146	5	5	3.9	3.3
Other Products	1 076	1 016	984	1 077	- 33	93	-3.2	9.5
Total Products	4 991	4 540	4 733	5 085	192	353	4.2	7.4

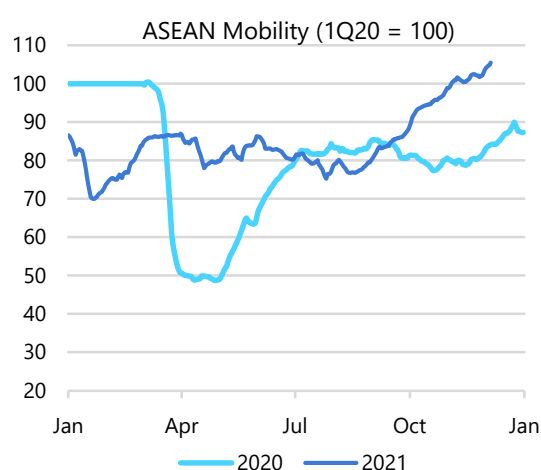
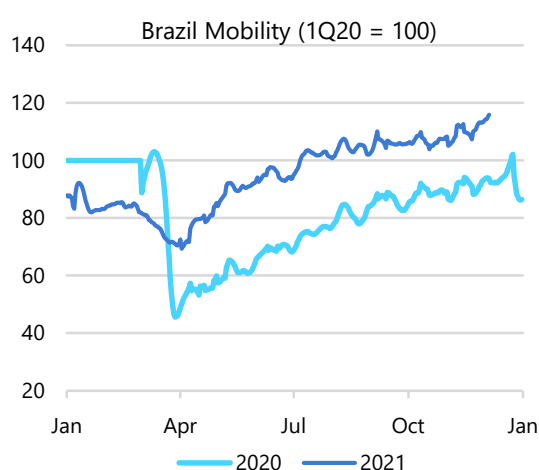
Other Non-OECD

In **Africa**, our 4Q21 projections are for a 110 kb/d rise in deliveries, leaving consumption 230 kb/d below 4Q19 levels. Recent mobility data suggest that the recovery in regional activity gathered pace in November, standing 37% higher than in 2020. We expect a strong negative impact on jet/kerosene consumption (in December 2021 and in 1Q22) due to the Omicron Covid-19 variant, which has resulted in restrictions being applied to trips from several African countries by governments around the world. Jet/kerosene demand is forecast to fall by 20 kb/d q-o-q in each of 4Q21 and 1Q22. In 2022, new Covid restrictions are likely to be implemented due to low vaccination rates in the continent. Oil demand growth is projected to increase by 60 kb/d y-o-y, remaining 180 kb/d below pre-pandemic levels on average.



In the **Middle East**, we now estimate that 3Q21 demand was 500 kb/d higher q-o-q, and that deliveries will fall by 450 kb/d q-o-q in 4Q21, primarily on seasonal changes in power generation requirements. Overall, 2021 demand is expected to be 310 kb/d below pre-pandemic levels, with jet/kerosene (-260 kb/d) and gasoline (-130 kb/d) having lost the most ground. In 2022, Middle East oil demand is projected to increase by only 80 kb/d, as oil use in the power sector will be largely displaced by natural gas and renewables in several countries. We forecast that a 150 kb/d y-o-y drop in other product demand (which includes the direct use of crude oil) will be more than offset by strong growth in gasoline and jet/kerosene demand.

Russian deliveries fell by 90 kb/d m-o-m in October, but were 110 kb/d stronger than anticipated. Gasoline fell by less than the 2015-19 seasonal trend. In a counter-seasonal move, gasoil demand increased marginally. In 4Q21, overall Russian demand will be 120 kb/d lower q-o-q but 170 kb/d higher y-o-y and 50 kb/d above 4Q19. Most notably, jet/kerosene demand is marginally above the level of 2019, based on the strength of domestic aviation. Our expectation is that Russia's jet/kerosene demand will be much less impacted by Omicron than in other countries because of this unusually high domestic share. In 2022, Russian oil demand is projected to increase by 120 kb/d y-o-y and to exceed pre-pandemic levels by 190 kb/d.



Brazilian oil deliveries dropped by 20 kb/d in October, when typical seasonality would indicate a small rise. Gasoline deliveries fell, counter-seasonally, by 15 kb/d. This seems to reflect plateauing mobility indicators during the month. The same data suggest a renewed increase in activity in November when we expect gasoline demand to rise by 30 kb/d. Average 4Q21

demand is expected to be 60 kb/d lower q-o-q and 20 kb/d below 2019 levels. Overall, 2021 deliveries are projected to be only 10 kb/d lower than in 2019. Total 2022 demand is forecast to be 40 kb/d lower y-o-y. Gasoil deliveries will decline by 70 kb/d y-o-y, in the absence of exceptional drought-related support, but will still remain 10 kb/d above 2019 levels.

In **Argentina**, demand remains close to 2019 levels, as it has throughout 2H21. We expect 4Q21 deliveries to be within 5 kb/d of their pre-pandemic equivalent and for this pattern to apply throughout 2022.

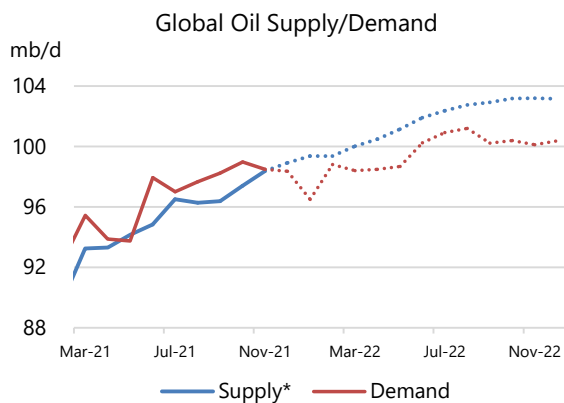
Latin American oil demand growth is projected to slow to 80 kb/d in 2022, as the return to normal levels of rainfall will reduce the need to use gasoil for irrigation and in the power sector. Latin American oil demand will reduce its gap versus pre-Covid levels from 320 kb/d in 2021 to 240 kb/d in 2022. Gasoline and jet/kerosene will post the strongest growth.

Non-OECD: Demand by Region								
(thousand barrels per day)								
	Demand				Annual Chg (kb/d)		Annual Chg (%)	
	3Q19	1Q21	2Q21	3Q21	2Q21	3Q21	2Q21	3Q21
Africa	4 142	4 077	3 992	3 923	574	197	16.8	5.3
Asia	27 271	28 103	28 076	27 778	2 646	947	10.4	3.5
FSU	4 902	4 558	4 681	4 933	629	280	15.5	6.0
Latin America	6 384	5 787	5 848	6 182	861	483	17.3	8.5
Middle East	8 659	7 705	7 828	8 328	743	152	10.5	1.9
Non-OECD Europe	797	743	739	826	59	60	8.7	7.9
Total Products	52 155	50 971	51 164	51 970	5 513	2 120	12.1	4.3

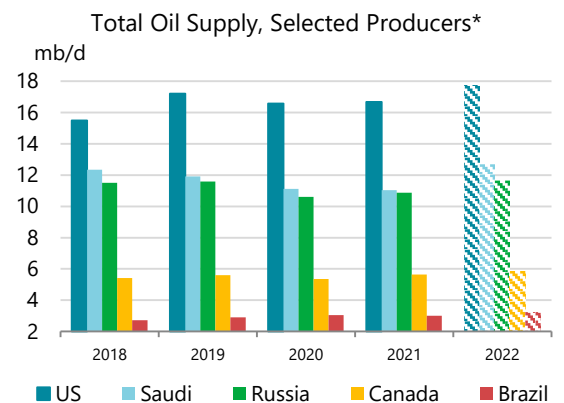
Supply

Overview

Global oil production is poised to outpace demand starting from December, as the US and OPEC+ led by Saudi and Russia ramp up more and provide relief to a tight oil market. As this upward supply trend extends into 2022, the US, Canada and Brazil look set to pump at their highest ever annual levels next year. Saudi Arabia and Russia could also smash yearly records, but that depends entirely upon a full unwinding of remaining OPEC+ cuts. In that case, global supply would rise by a massive 6.4 mb/d next year compared with an increase of 1.5 mb/d in 2021, with OPEC+ output alone up by 4.6 mb/d versus a gain of 1 mb/d in 2021. Production from outside the producer alliance (non-OPEC+) is forecast to expand by 1.8 mb/d in 2022 after an increase of 450 kb/d in 2021, with the US accounting for 56% of the growth.



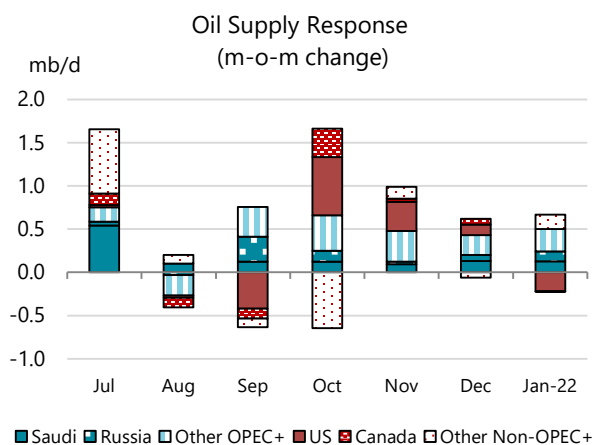
* Assumes OPEC+ aims for 400 kb/d monthly increase, Iran remains under sanctions.



* Includes condensates and NGLs. Assumes OPEC+ aims for monthly 400 kb/d increase.

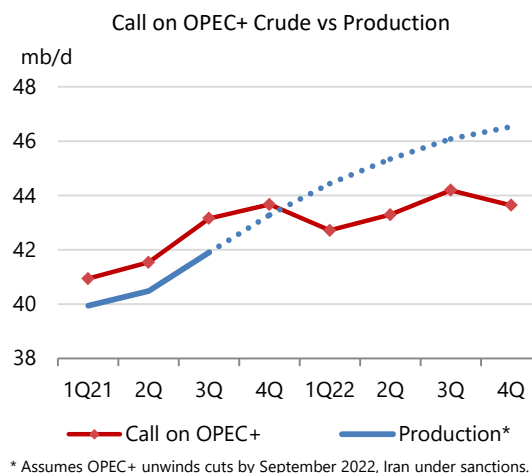
So far, OPEC+ is sticking with its existing policy to increase production by 400 kb/d every month. Despite a sharp drop in oil prices sparked by the new Omicron Covid-19 variant, the group opted at its early December meeting to proceed with its planned rise for January. Ministers are due to meet again on 4 January but, having left their last meeting “in session”, they are able to make “immediate adjustments” in production if required before then.

A substantial boost is on the way in December, with world supply nearing 99 mb/d to stand 6.2 mb/d up y-o-y. The US is expected to deliver a third straight month of significant gains in December. If Saudi Arabia and Russia increase in line with allocated OPEC+ targets, each will pump over 10 mb/d of crude, the highest since April 2020.



Already in November, supply was closing the gap with demand after the US, Canada, Saudi Arabia and Iraq led world oil production up to 98.4 mb/d, a rise of 970 kb/d m-o-m. The US delivered the single largest increase, lifting oil output from non OPEC+ to 47.4 mb/d, up 510 kb/d m-o-m. Total oil supply from OPEC+ rose 450 kb/d after the bloc further eased record 2020 curbs.

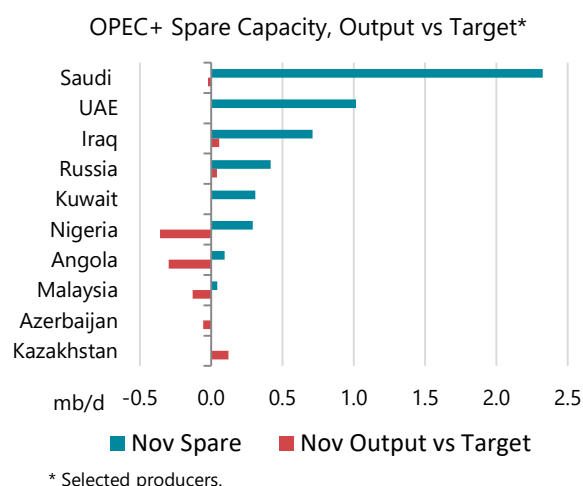
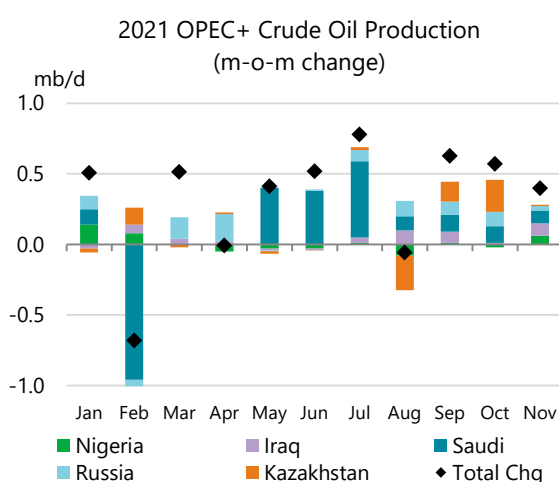
The steady rise in supply, combined with easing demand, has considerably loosened our balances for 1Q22 compared to last month's *Report*. We expect OPEC+ to pump 1.7 mb/d above the call on its crude (versus a previous 1.1 mb/d), provided it continues to unwind its cuts and assuming Iran remains under sanctions. By 2Q22, OPEC+ crude oil output could rise to 2 mb/d above the call.



Saudi, Iraq lead OPEC+ gains

OPEC+ crude oil supply rose 400 kb/d in November to 43.3 mb/d, after Saudi Arabia ramped up in line with its OPEC+ allocation, Iraq overshot its target and Nigerian output rebounded (see *Nigeria's tenuous recovery*). Venezuela, exempt from supply cuts, saw a further gain in November as upgraders in the Orinoco belt cranked up.

Nonetheless output remained far below the overall OPEC+ target as producers such as Nigeria, Angola, Malaysia and Azerbaijan struggle against operational issues and natural decline rates. As a group, the 19 members subject to supply quotas pumped 650 kb/d below target in November to turn in a compliance rate of 116%. Effective OPEC+ spare capacity, excluding Iranian crude shut in by sanctions, stood at 5.5 mb/d.



Production of crude from OPEC members increased by 310 kb/d during November to 27.75 mb/d, with Saudi Arabia and Iraq leading the gains. Flows of crude from the alliance's non-OPEC countries rose 90 kb/d to 15.53 mb/d, with Russia pumping slightly more for the

month. In line with its agreement, OPEC+ is further easing curbs in December, with cuts versus baseline production at 3.8 mb/d, down from the record 9.7 mb/d when they were adopted in May 2020.

OPEC+ Crude Oil Production ¹							
(million barrels per day)							
	Oct 2021 Supply	Nov 2021 Supply	November Compliance	Oct 2021 Target	Nov 2021 Target	Sustainable Capacity ²	Spare Cap vs Nov
Algeria	0.95	0.96	92%	0.94	0.95	1.01	0.05
Angola	1.11	1.08	297%	1.36	1.38	1.17	0.09
Congo	0.28	0.27	172%	0.29	0.29	0.29	0.02
Equatorial Guinea	0.08	0.09	308%	0.11	0.12	0.12	0.03
Gabon	0.17	0.19	-16%	0.17	0.17	0.21	0.02
Iraq	4.16	4.25	88%	4.15	4.19	4.96	0.71
Kuwait	2.50	2.53	101%	2.51	2.53	2.84	0.31
Nigeria	1.23	1.29	299%	1.63	1.65	1.58	0.29
Saudi Arabia	9.80	9.89	102%	9.81	9.91	12.22	2.33
UAE	2.83	2.86	98%	2.83	2.86	3.88	1.02
Total OPEC-10	23.11	23.41	124%	23.79	24.05	28.27	4.86
Iran ³	2.46	2.45				3.80	1.35
Libya ³	1.16	1.14				1.20	0.06
Venezuela ³	0.71	0.75				0.75	0.00
Total OPEC	27.44	27.75				34.03	6.28
Azerbaijan	0.59	0.59	178%	0.64	0.65	0.59	0.00
Kazakhstan	1.65	1.66	28%	1.52	1.54	1.66	0.00
Mexico ⁴	1.67	1.65		1.75	1.75	1.67	0.02
Oman	0.77	0.78	123%	0.79	0.80	0.87	0.09
Russia	9.92	9.95	96%	9.81	9.91	10.37	0.42
Others ⁵	0.84	0.90	195%	0.99	1.00	0.95	0.06
Total Non-OPEC	15.44	15.53	101%	15.50	15.65	16.11	0.59
OPEC+-19 in cut deal⁶	36.88	37.29	116%	37.54	37.94	42.71	5.43
Total OPEC+	42.88	43.28				50.14	6.87

1 Excludes condensates.

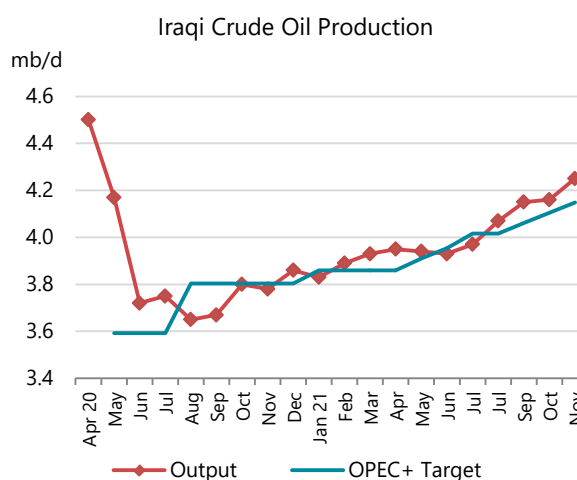
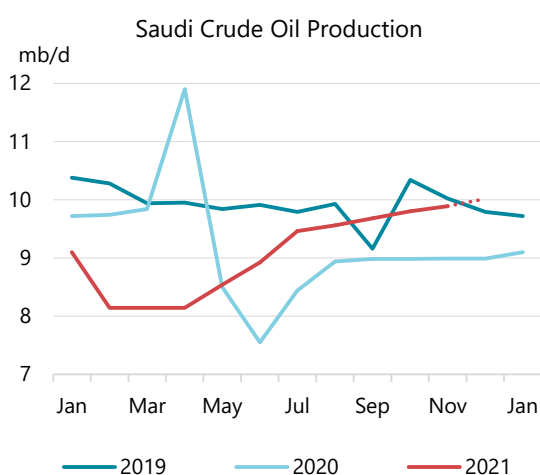
4 Mexico excluded from OPEC+ compliance. Only cut in May, June 2020.

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

5 Bahrain, Brunei, Malaysia, Sudan and South Sudan.

3 Iran, Libya, Venezuela exempt from cuts.

Saudi Arabia pumped 9.89 mb/d during November (+90 kb/d m-o-m and +900 kb/d y-o-y), just below its higher quota. Shipments of crude to world markets were relatively steady, but Riyadh appeared to be building up domestic stocks. As per the new OPEC+ deal, the kingdom's supply target in December will rise to 10.02 mb/d, which would leave 2.2 mb/d to spare.



Supply from **Iraq**, including the Kurdistan Regional Government, increased 90 kb/d to 4.25 mb/d, leaving it 60 kb/d above its November quota. Total Iraqi shipments of crude were up by 180 kb/d to 3.65 mb/d, the highest level since April 2020, as exports climbed in the south due

to maintenance at some refineries. On the upstream front, the Iraq Drilling Co has signed a contract with Schlumberger for a 37-well drilling program at the Eni-operated Zubair oil field in the south, which now has capacity of roughly 500 kb/d.

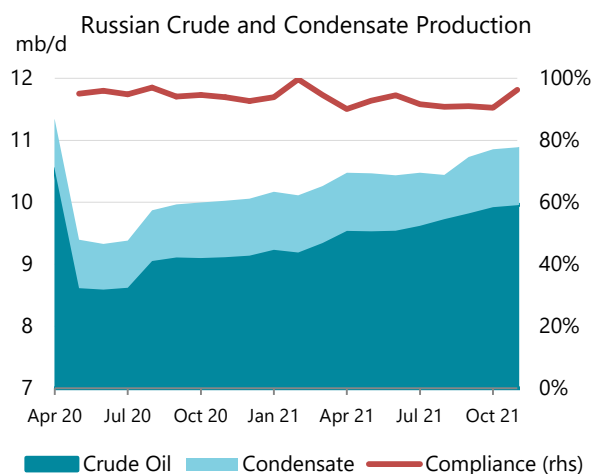
Production rose modestly elsewhere in the Gulf during November. In **Kuwait**, crude oil output increased to 2.53 mb/d and production edged up in the **UAE** to 2.86 mb/d. As it pushes on with an ambitious plan to boost production capacity, the Abu Dhabi National Oil Co will acquire up to \$6 billion worth of drilling equipment. Output in **Bahrain** bumped up to 190 kb/d while production from **Oman** increased slightly to 780 kb/d. In early December, Oman started up the Yibal Khuff oil and gas project which is expected to pump around 20 kb/d of crude along with 5 million cubic meters of gas per day.

Crude oil supply from **Iran**, exempt from output cuts, dipped in November to 2.45 mb/d (+400 kb/d y-o-y). Talks to revive its 2015 nuclear deal with world powers resumed on 29 November in Vienna. If sanctions are eased, we believe Iran will be able to ramp up swiftly towards sustainable production capacity of 3.8 mb/d.

Crude supply from **Russia** rose 30 kb/d in November to 9.95 mb/d, with compliance rising to 96%. Total supply, including condensates and NGLs, edged up 30 kb/d m-o-m to 11.2 mb/d. Lukoil and Gazprom Neft drove the overall increase. Total condensate output for November held steady at 930 kb/d.

Though still above its OPEC+ target, Russian crude supply is growing at a slower pace than the past few months. The country's three largest producers - Rosneft, Lukoil and Gazprom Neft - say they have restarted most of their production that had been shut in by OPEC+ cuts. Further growth

will depend on new drilling activity and potential tax breaks. Current OPEC+ plans allow Russia to increase its supply by slightly more than 100 kb/d each month. **Kazakhstan's** crude oil output crept up to 1.66 mb/d in November, while condensate rose by 60 kb/d. **Azeri** crude oil production held steady at 590 kb/d.

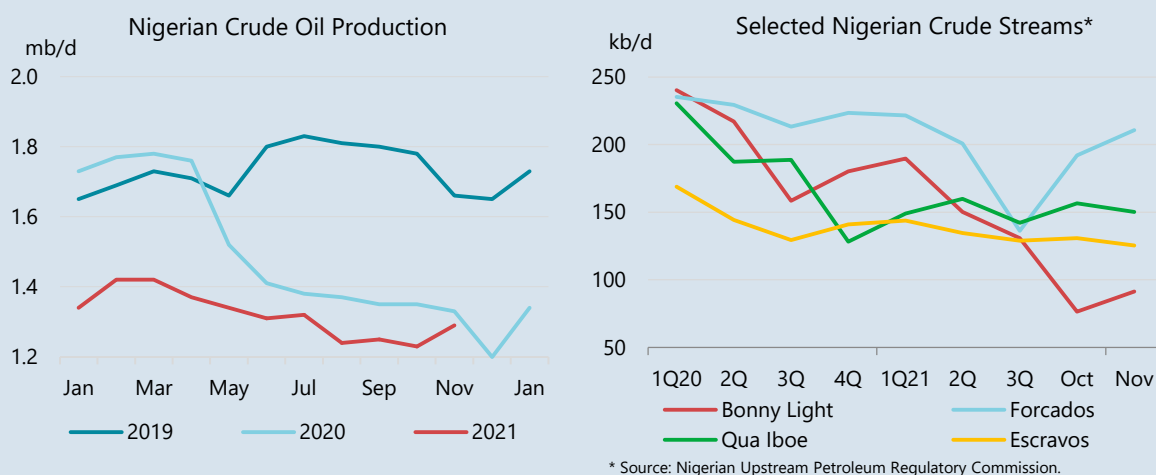


Box 2. Nigeria's tenuous recovery

Africa's top producer Nigeria has seen a rebound in production, but persistent technical and operational issues, sabotage and pipeline leaks may continue to prevent a full recovery. Crude oil output rose in November to 1.29 mb/d (+60 kb/d m-o-m) after *force majeure* was lifted on Bonny Light and the Erha field returned from maintenance. This was, however, still 360 kb/d below its November quota, which includes Agbami supply that the IEA classifies as condensate.

Nigerian oil officials say the country is striving to overcome production issues by the end of December. Operators have been urged to re-open wells as quickly as they can. Nonetheless, it's proving a challenge to restore output at brownfields in mid- to late-life decline, even using special

optimisation techniques. And judging by the recent performance of major crude streams, the extent of the recovery remains to be seen. Crude oil production from Bonny Light edged up 15 kb/d in November to 90 kb/d, but that was just half the average level in the first quarter of this year. Forcados is showing more promise: output in November rose 20 kb/d to 210 kb/d – up from an average 140 kb/d during the third quarter. Qua Iboe has been hovering around 150 kb/d this year, but that is far below rates of around 200 kb/d in the first nine months of 2020. The most stable stream is Escravos, which has been running at around 130 kb/d.



The battle to reverse declines and repair aging infrastructure underscores the chronic underinvestment in Nigeria's crucial oil sector. A poor regulatory framework, sabotage and vandalization of oil facilities along with growing threats by Niger Delta militants are deterring needed spending. Additionally, new discoveries in other African countries are offering viable alternatives to investors whose decisions now incorporate emissions intensity and swift returns as critical metrics. The high emission intensity that is characteristic of Nigeria's oil industry and renewed militant activity that continues to increase the cost of operations are major deterrents for investment. The government's failure to conduct major bid rounds since 2007 has also prevented further reserve growth and new capital injection that could have helped fend off recent declines.

For many, the future of the Nigerian oil industry hinges on the success of the Petroleum Industry Act (PIA) to galvanize new investment. The new law has established regulatory bodies both in the upstream and downstream sectors and the incorporation of NNPC Limited. The law also offers improved fiscal terms to investors that the government believes will attract substantial new investment into its faltering oil sector. However, recent signals from international oil companies do not look promising. Shell and ExxonMobil, for instance, have announced divestment plans.

In **Angola**, crude oil output in November slipped versus the previous month to 1.08 mb/d (-130 kb/d y-o-y). Nagging technical issues and lack of investment have seen production slump to 17-year lows. But the recent start-up of new oil fields may help stem some of the declines. TotalEnergies has started up Phase 2 of its CLOV development which is expected to reach a 40 kb/d peak in mid-2022. Phase 1 of CLOV is pumping around 100 kb/d. Additionally, BP has brought the 30 kb/d Platina deepwater field on line. Apart from the two new oil fields, recent

months have seen Eni start up the 15 kb/d Cabaca North and 10 kb/d Cuica fields, while TotalEnergies brought on-stream its 40 kb/d Zinia Phase 2 project.

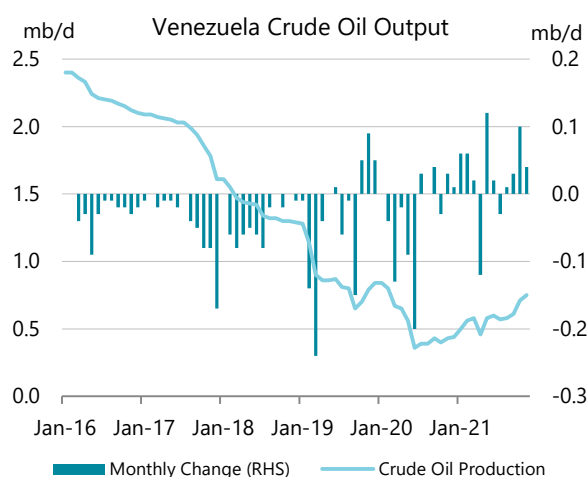
Supply held steady in **Sudan**, eased in **Congo** and edged up in **Gabon, Algeria, South Sudan** and **Equatorial Guinea**. Chevron has meanwhile signed a production-sharing contract with Equatorial Guinea to develop an offshore block in the Douala Basin, bolstering its upstream position. The agreement grants Chevron an 80% stake in Block EG-09, which is situated along the country's northern border with Cameroon and south of the Aseng and Alen oil fields. The remaining 20% is assigned to national oil company GE Petrol. Chevron has a 38% stake and a 45% stake in two other offshore blocks that it acquired during its \$4.1 billion purchase of Noble Energy last year.

Output in **Libya**, exempt from official OPEC+ cuts, eased in November to 1.14 mb/d (+100 kb/d y-o-y), after maintenance on a pipeline that delivers crude to the Es Sider export terminal briefly lowered flows. The country's oil sector is suffering from a lack of funding to rebuild infrastructure that has been hit hard by a prolonged civil war, but there is some outside interest in the upstream. Libya has approved a restructuring of Waha Oil Co under which TotalEnergies and ConocoPhillips will jointly acquire the 8.16% interest held by US independent Hess. Total and Conoco will each see their stake rise from 16.33% to 20.41%. National Oil Corp (NOC) will retain its 59.18% holding. TotalEnergies is prepared to invest up to \$2 billion to develop the Waha concessions – especially to boost the North Gialo field to 100 kb/d and restore 40 kb/d of output at the Mabruk oil field after it was targeted by Islamic State in 2016. Waha Oil Co now has production capacity of nearly 400 kb/d.

For Latin American members, spared from OPEC+ curbs, **Venezuela** saw a solid increase while **Mexico's** total oil production eased to 1.94 mb/d, down 30 kb/d m-o-m on lower condensates. Supply increases of 50 kb/d are expected through 2022 in Mexico as new fields offset existing declines; including production ramping up from Ichalkil-Pokoch, brought online in November, and Hokchi. Additionally, Eni's Area 1 second phase FPSO is still on track to start up in 2022.

Crude supply in **Venezuela** rose 40 kb/d in November to 750 kb/d (+320 kb/d y-o-y). Output rose to its highest since February 2020 after more barrels of Iranian condensate arrived to dilute extra heavy Orinoco crude. The region's upgraders are pumping above 400 kb/d and are set to crank out more going forward. In November, the Petrolera Sinovensa joint venture (PDVSA 60%, CNPC 40%) operated at an average 90 kb/d, Petromonagas (PDVSA 60%, Russia 40%) processed 90 kb/d. Petropiar, a joint venture between PDVSA and Chevron operated at an average 75 kb/d.

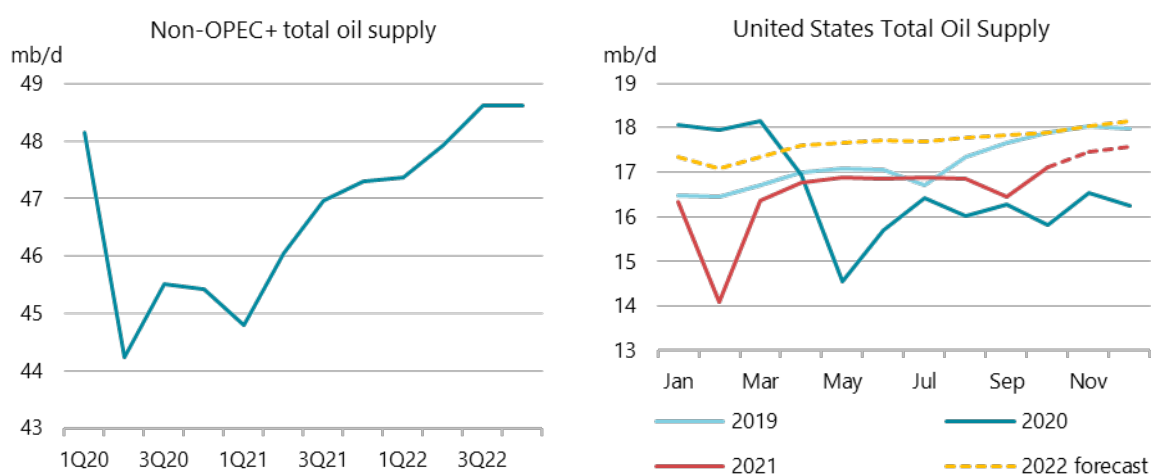
In Asia, **Malaysian** crude oil production edged up to 410 kb/d during November. In **Brunei**, crude supply inched up.



US, North Sea boost non-OPEC+ supply

Supply from non-OPEC+ countries grew by 510 kb/d m-o-m in November on continued gains in US offshore production, increased drilling activity in the US shale patch and on higher flows from the North Sea. At 47.4 mb/d, production was at its highest since March 2020. Compared to our previous *Report*, non-OPEC+'s exit rate for the year is 100 kb/d lower at 47.6 mb/d with gains in the US offset by reductions in the outlook for biofuels and Brazil.

The 2022 forecast has not materially changed since last month's *Report*, even as increases from US light tight oil (LTO) and Brazil offshore have been moderated slightly. Growth is expected to average 1.8 mb/d, assuming continued strength in the US, Canada, Brazil, the North Sea and Guyana.



US supply rose again in November, by an estimated 340 kb/d to 17.5 mb/d. Gains were primarily driven by a return of US Gulf of Mexico (GoM) crude oil production (+220 kb/d) from Hurricane Ida and by higher US LTO output (+110 kb/d). US oil production is forecast to exit the year 180 kb/d higher than in our previous *Report* following a strong drawdown of US LTO drilled but uncompleted (DUCs) wells and higher than expected activity data in recent months. The outlook for LTO for 2022 has been reduced by 40 kb/d since last month's *Report*, to 8.1 mb/d, on faster cost escalation expectations, as well as hedging indicators and movement of the forward price curve.

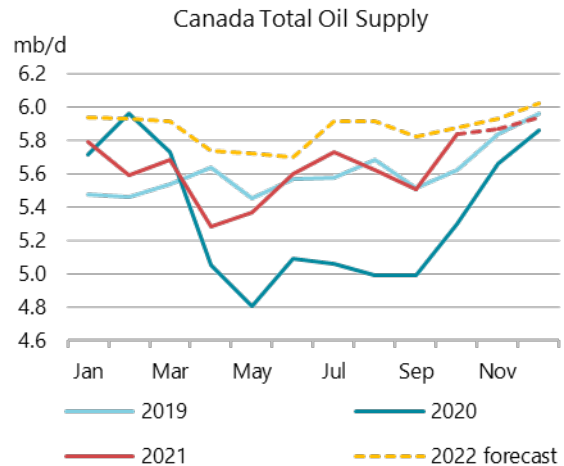
September data from the Energy Information Administration (EIA) show total US supply at 16.5 mb/d, down 420 kb/d m-o-m, with Hurricane Ida losses in the GoM partially offset by Alaska and LTO. Alaskan production increased in September by 20 kb/d and is expected to increase further through the remainder of 2021 with ConocoPhillips' Greater Mooses Tooth 2 expected to come online and Prudhoe Bay base decline arrested through well remediation and facility debottlenecking.

The latest round of federal offshore oil leasing that concluded on 17 November generated \$192 million of revenues with 1.7 million acres sold at an average price of \$112 per acre compared to the 2020 auction price of \$233 per acre and total revenue of \$121 million. Chevron, Occidental Petroleum and BP were the largest spenders. On 26 November, a report ordered by the Biden administration was released, recommending changes to the US concession structure including smaller areas of offshore leases, stricter financial and regulatory requirements, limited time frames to begin exploration and increases in royalty rates. If enacted by Congress, a

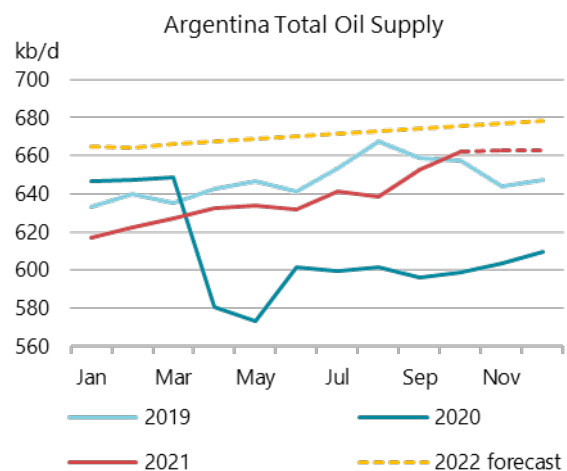
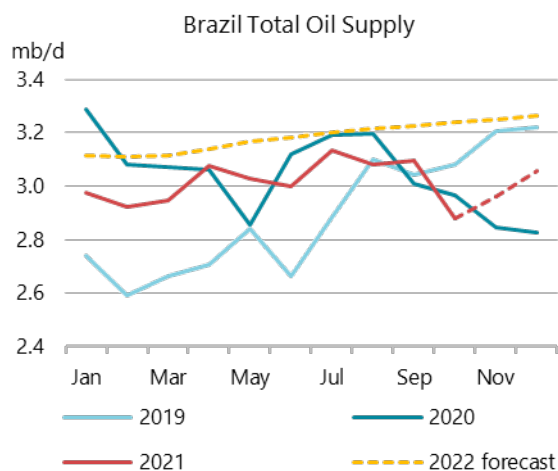
royalty rate increase to 18.75% from the current 12.5% for onshore leases could bring about \$1 billion in additional annual revenues for the US federal government. If both offshore and onshore royalty rates were increased to 25%, \$2 billion per year in incremental revenue would be expected. Currently 7% of US oil production is from federal onshore lands while 16% of the country's supply is from federal offshore acreage.

Canadian supply is estimated to have increased 40 kb/d in November to 5.9 mb/d, on the return of Atlantic Canada offshore barrels. This would mark the highest monthly production value since before Covid-19 and is in line with our 2022 forecast, which sees supply 220 kb/d higher than 2021 and above pre-pandemic levels on an annual basis.

In October, Canadian production jumped by 330 kb/d, according to data from the Alberta Energy Regulator, reversing multi-month declines. Upgraders pushed up supply with the return of oil sands facilities from maintenance. The increase in production came just before heavy rains in British Columbia shut down the Trans Mountain Pipeline from 14 November to 5 December. Transportation bottlenecks have eased with the pipeline back in service and should loosen further in late 2022 as the Trans Mountain Expansion is slated to come online.



Brazilian supply rose to around 3 mb/d in November (+80 kb/d m-o-m) according to daily data from the Agencia Nacional do Petroleo (ANP), mainly on higher volumes from Buzios. Petrobras unveiled their annual strategic plan in late November, outlining plans for \$8.8 billion of upstream investments in 2022 and an oil production target of 2.1 mb/d. While Sepia is expected to ramp up and new flows are still slated for Mero and Peregrino, Brazil's 2022 production gains have been tempered, to 170 kb/d, from 220 kb/d expected previously. If achieved, this will more than offset the declines seen in 2021, lifting Brazilian supply to its highest levels ever at around 3.2 mb/d.

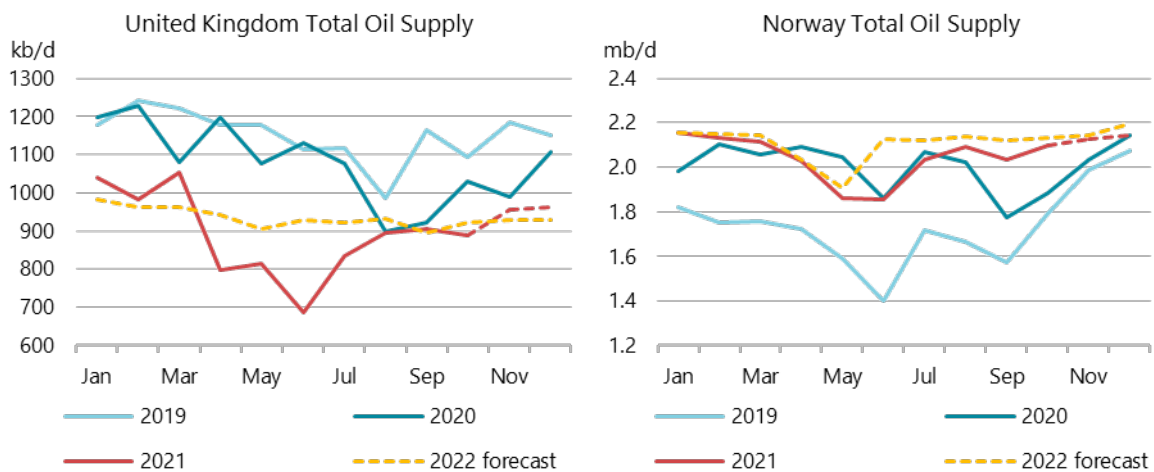


Argentinean production improved by 10 kb/d in October to 660 kb/d led by a 9% increase in light tight oil, most of which came from the Neuquén basin. Argentinean supply is expected to

increase by 30 kb/d in 2022. The Neuquén governor announced that the Trans-Andean Pipeline revamp will be completed in 2022, tripling the effective export capacity and opening up the Asian market to Argentina.

Elsewhere in Latin America, **Ecuadorian** production held flat in November at 490 kb/d. The government unveiled plans to hold at least four auctions in 2022 as part of a plan to raise \$19 billion in investment and increase domestic supply. **Peru's** November production is estimated at 130 kb/d, flat m-o-m. The restart of operations at Block 67 and gains from Blocks 95, 10 and Z-2B were offset by shut-ins in the northern jungle area's Marañon Basin due to community protests.

Following steady gains since June, data from the **UK's** Department of Business, Energy and Industry shows production easing 20 kb/d m-o-m to 890 kb/d in October. Output is forecast to rise to 960 kb/d by year-end. The China National Offshore Oil Co (CNOOC) brought online Buzzard Phase 2 at the end of November, raising the field's overall capacity by 12 kb/d to 80 kb/d. Shell's exit from the Cambo development, which had been slated to start up in 2025, led the operator, Siccar Point, to suspend development plans.



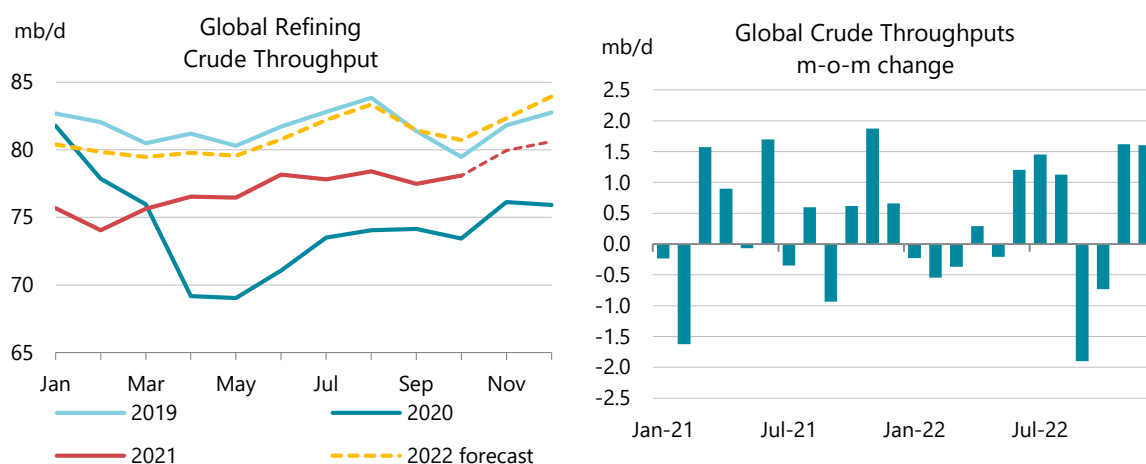
Data from the **Norwegian** Petroleum Directorate indicate that production increased m-o-m in October by 70 kb/d to 2.1 mb/d, in-line with last month's *Report* and up 10% y-o-y. Volumes are expected to rise by 50 kb/d through the end of the year. Less optimistically, Repsol's Yme project briefly came online before shutting down due to process related challenges of a high oil cut in the produced water stream. Additionally, there is pending legislation in the Norwegian parliament that may postpone the 2022 26th licensing round and increase the CO₂ tax by 28% to \$77.70/mtCO₂e.

Chinese production held steady around 4.1 mb/d in November and is projected to remain at that level through 2022. CNOOC saw production commence at the Lufeng regional oil field development project, a shallow water development consisting of 26 production wells expected to reach peak production of 45 kb/d in 2023. The rest of non-OPEC+ Asia Pacific region was also flat m-o-m. In **India**, the Oil and Natural Gas Corp's (ONGC) KG-D5 deepwater project has been pushed back further with first oil now slated for 3Q22 versus the previous revised target of November 2021. Originally delayed due to Covid-19, the latest setback is due to major work package interface compatibility problems between different sub-contractors.

Refining

Overview

Global refinery throughputs are scaling new post-pandemic highs, up by a hefty 1.9 mb/d in November and forecast to rise by another 660 kb/d this month to 80.5 mb/d. Overall, 4Q21 runs are estimated 1.7 mb/d up q-o-q. Nevertheless, given the low base in 3Q21, and higher demand, implied draws in global refined product stocks have continued for the sixth consecutive quarter. The monthly dynamics of refinery throughputs are expected to turn negative from January, but 1Q22 runs overall are still forecast up 350 kb/d q-o-q. This would allow depleted product stocks to be replenished ahead of the 2Q22 spring maintenance season.



Global Refinery Crude Throughput ¹														
	(million barrels per day)													
	2019	2020	1Q21	2Q21	Sep-21	3Q21	Oct-21	Nov-21	Dec-21	4Q21	2021	Jan-22	1Q22	2022
Americas	19.1	16.5	16.5	18.1	17.8	18.2	17.6	18.2	18.5	18.1	17.7	18.0	18.0	18.8
Europe	12.2	10.7	10.2	10.7	11.4	11.4	11.1	11.4	11.3	11.3	10.9	11.4	11.3	11.3
Asia Oceania	6.8	5.9	5.8	5.5	5.8	5.8	6.0	6.1	6.1	6.1	5.8	6.0	5.8	5.8
Total OECD	38.0	33.1	32.5	34.2	35.1	35.4	34.7	35.7	35.8	35.4	34.4	35.4	35.1	35.8
FSU	6.8	6.4	6.6	6.6	6.7	6.7	6.7	7.0	7.1	6.9	6.7	7.0	7.0	6.9
Non-OECD Europe	0.5	0.4	0.4	0.5	0.4	0.4	0.3	0.4	0.4	0.4	0.4	0.6	0.5	0.5
China	13.0	13.4	14.0	14.3	13.6	13.7	13.7	14.0	14.1	13.9	14.0	14.1	14.1	14.3
Other Asia	10.3	9.2	9.5	9.4	9.1	9.2	9.8	10.0	10.0	9.9	9.5	10.3	10.3	10.2
Latin America	3.2	3.0	3.2	3.1	3.2	3.3	3.4	3.3	3.3	3.3	3.2	3.4	3.4	3.4
Middle East	7.8	6.8	7.1	7.1	7.4	7.4	7.6	7.6	7.8	7.6	7.3	7.7	7.6	7.9
Africa	2.0	1.9	1.8	1.8	1.8	1.8	1.9	1.9	1.9	1.9	1.8	1.9	1.9	2.0
Total Non-OECD	43.6	41.1	42.5	42.7	42.3	42.4	43.3	44.2	44.7	44.1	42.9	44.9	44.7	45.2
Total	81.6	74.2	75.1	76.9	77.4	77.8	78.0	79.9	80.5	79.5	77.3	80.3	79.8	81.1
Year-on-year change	-0.5	-7.4	-3.4	7.3	3.3	4.0	4.7	3.8	4.7	4.4	3.1	4.7	4.7	3.7

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

For 2021 as a whole, refinery runs are estimated to rise by 3.1 mb/d on average, recovering just 42% of 2020's decline. In 2022, the growth is forecast to accelerate to 3.7 mb/d, but global refinery throughputs remain significantly below pre-pandemic highs. In contrast to oil demand, historical peak refining activity was not recorded in 2019, but in 2018. Next year, runs are expected to be on average 1 mb/d below their peak rate in 2018. While headline oil demand is

expected to fully recover to pre-Covid levels next year, refined product demand is estimate to still be 1.1 mb/d lower than in 2019.

Product cracks and refinery margins

Crude prices declined by about \$2.15/bbl on average in November but demand weakness and a strong uptick in refining activity drove product prices down faster than crude prices. Product cracks narrowed over the month, driving refinery margins lower. Seasonal factors for some of the products, as well as concerns about the new Covid-19 variants, provided further downside.

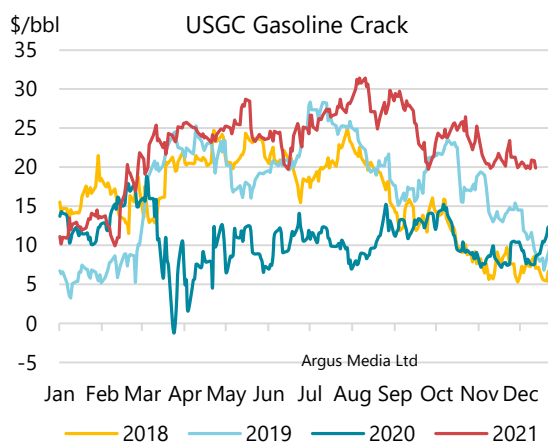
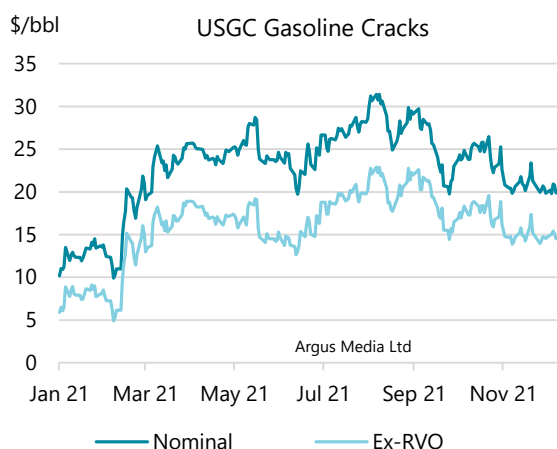
Spot Product Prices														
(monthly and weekly averages, \$/bbl)														
	Sep	Oct	Nov	Nov-Oct Chg	%	12 Nov	19 Nov	26 Nov	03 Dec	10 Dec	Sep	Oct	Nov	Chg
Rotterdam, Barges FOB											Differential to North Sea Dated			
Gasoline EBOB oxy	86.31	95.92	93.21	-2.71	-2.8	98.38	93.69	86.65	77.63	82.45	11.91	12.38	11.84	-0.54
Naphtha	76.04	85.37	82.33	-3.04	-3.6	84.65	81.91	80.56	74.10	77.88	1.64	1.82	0.96	-0.86
Jet/Kerosene	82.07	94.81	90.46	-4.35	-4.6	93.99	89.76	87.78	80.95	84.94	7.67	11.27	9.09	-2.18
ULSD 10ppm	84.35	96.92	92.83	-4.09	-4.2	97.08	92.33	89.87	82.49	86.51	9.95	13.38	11.46	-1.92
Gasoil 0.1%	82.90	95.22	90.67	-4.56	-4.8	94.47	90.47	88.42	80.84	84.58	8.51	11.68	9.30	-2.38
VGO 2.0%	78.18	85.81	83.71	-2.10	-2.4	86.07	83.86	82.54	75.01	77.63	3.78	2.27	2.34	0.07
Fuel Oil 0.5%	81.33	90.22	86.70	-3.52	-3.9	88.65	86.45	86.04	80.44	82.96	6.94	6.68	5.33	-1.35
LSFO 1%	74.86	82.72	78.61	-4.11	-5.0	79.91	78.68	77.96	71.54	74.90	0.47	-0.82	-2.76	-1.94
HSFO 3.5%	66.05	74.26	67.40	-6.87	-9.2	68.55	67.27	66.89	60.67	63.87	-8.35	-9.28	-13.97	-4.69
Mediterranean, FOB Cargoes											Differential to Urals			
Premium Unl 10 ppm	87.66	96.59	91.68	-4.91	-5.1	94.71	89.38	88.47	80.15	85.06	15.01	14.66	11.60	-3.06
Naphtha	74.92	83.83	80.76	-3.06	-3.7	82.99	80.30	79.04	72.60	75.31	2.27	1.90	0.69	-1.21
Jet Aviation fuel	81.21	93.58	89.29	-4.29	-4.6	92.65	88.53	86.73	79.99	82.97	8.56	11.64	9.21	-2.43
ULSD 10ppm	84.05	96.44	91.96	-4.48	-4.6	95.59	91.39	89.51	81.91	85.24	11.40	14.51	11.88	-2.63
Gasoil 0.1%	82.81	95.03	90.64	-4.39	-4.6	94.32	90.30	88.26	80.40	83.91	10.16	13.09	10.57	-2.53
LSFO 1%	75.89	84.08	80.30	-3.78	-4.5	82.05	80.29	79.49	72.97	76.16	3.24	2.15	0.23	-1.92
HSFO 3.5%	65.26	73.08	66.01	-7.06	-9.7	67.28	65.91	65.28	59.12	62.03	-7.39	-8.86	-14.07	-5.21
US Gulf, FOB Pipeline											Differential to WTI Houston			
Super Unleaded	97.86	106.50	101.25	-5.25	-4.9	102.90	100.65	101.16	88.31	92.87	25.26	24.40	21.33	-3.07
Jet/Kerosene	84.05	96.22	92.43	-3.79	-3.9	95.21	91.78	91.78	80.89	87.68	11.46	14.12	12.51	-1.61
ULSD 10ppm	90.38	103.07	97.70	-5.36	-5.2	100.60	97.01	96.44	85.77	91.22	17.79	20.96	17.78	-3.18
Heating Oil	78.52	92.43	86.21	-6.22	-6.7	87.81	86.11	85.11	72.95	78.62	5.93	10.33	6.29	-4.04
No. 6 3%*	65.20	72.89	66.25	-6.64	-9.1	67.76	66.00	66.27	56.71	62.29	-7.40	-9.22	-13.67	-4.45
Singapore, FOB Cargoes											Differential to Dubai			
Premium Unleaded	84.06	98.48	95.01	-3.47	-3.5	99.01	94.72	90.36	82.73	87.04	11.49	17.03	14.80	-2.22
Naphtha	75.15	84.45	84.21	-0.24	-0.3	86.75	84.50	81.75	75.57	76.85	2.59	2.99	4.00	1.00
Jet/Kerosene	79.88	93.09	89.09	-4.00	-4.3	92.82	88.80	86.73	79.23	82.74	7.32	11.64	8.88	-2.75
Gasoil 0.001%	82.92	95.49	91.49	-4.00	-4.2	95.40	91.42	88.80	81.38	84.98	10.35	14.04	11.28	-2.76
Fuel Oil 0.5%	83.94	91.94	92.51	0.57	0.6	94.50	92.29	92.54	87.90	88.11	11.38	10.48	12.30	1.82
HSFO 180 CST	73.48	77.52	71.15	-6.38	-8.2	72.37	71.79	70.39	63.42	64.72	0.91	-3.93	-9.07	-5.13
HSFO 380 CST 4%	70.30	76.02	69.87	-6.15	-8.1	71.01	70.78	69.18	62.21	63.52	-2.27	-5.43	-10.34	-4.91

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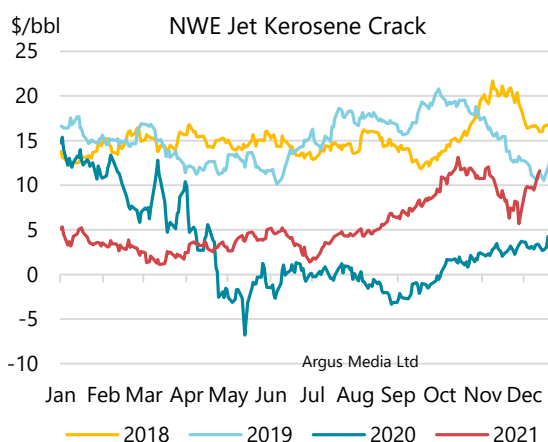
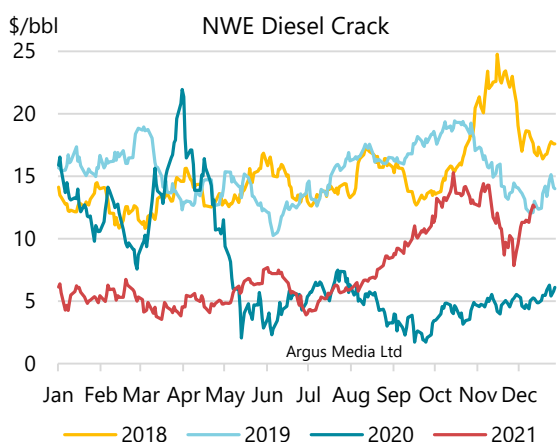
* Waterborne

US Gulf Coast gasoline cracks fell \$3/bbl m-o-m on seasonally lower demand and cheaper winter blendstocks, including lower renewable fuel prices. In early December, the Environmental Protection Agency (EPA) announced its proposals concerning 2020-22 blending mandates. It lowered the 2020 mandate from previously set 20.1 bn gallons to 17.1 bn gallons, which will alleviate the financial burden for those refiners that needed to purchase additional Renewable Identification Numbers (RINs) to meet their outstanding obligations for previous years. In 2019, the blending mandate was set at 19.9 bn gallons. The resulting 14% y-o-y reduction in 2020 is in line with the fall in gasoline demand due to the Covid-19 impact. For 2021, the blending requirement is set at 18.5 bn gallons, up 8% y-o-y, similar to the expected recovery in gasoline demand this year. The proposed 12% increase in 2022 blending volumes to 20.8 bn gallons, however, will outpace our forecast gasoline demand growth of less than 2%,

implying higher biofuel blending proportions, and potentially, a repeat of the highly volatile RINs price market seen in the first half of this year.



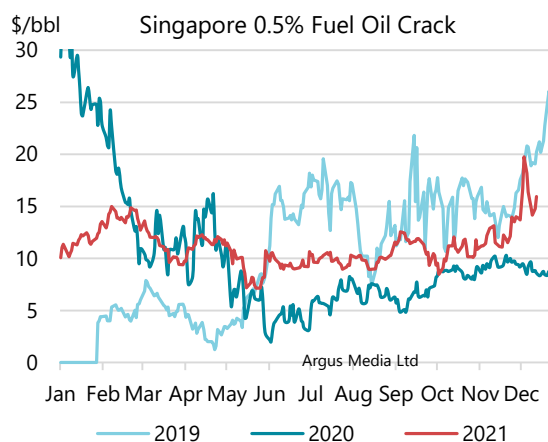
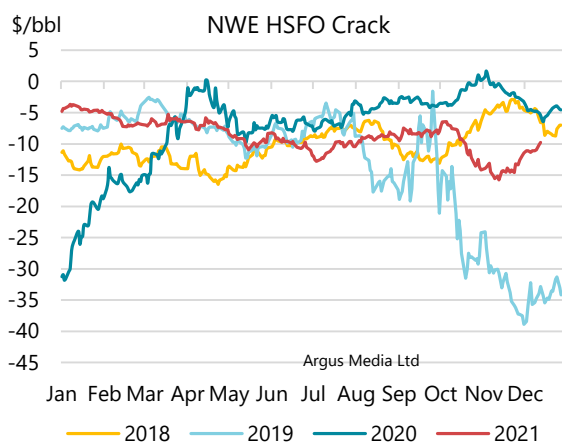
In Europe, gasoline cracks spiked to \$18/bbl in early November, the highest daily value since Hurricane Harvey hit the US Gulf Coast in 2017. Cracks fell to just \$5/bbl at the end of the month, however, as refiners ramped up supply while demand continued to slow. Naphtha cracks in Europe were slightly lower m-o-m, but maintained their premium to crude oil for the fifth consecutive month. In Singapore, gasoline cracks were down \$2.20/bbl in November, while naphtha cracks increased by \$1/bbl on higher petrochemical demand.



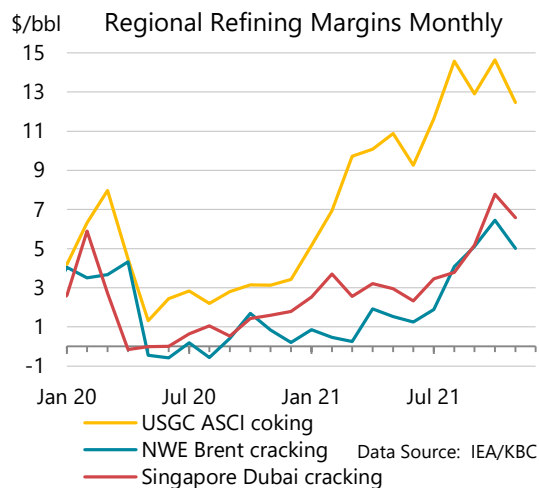
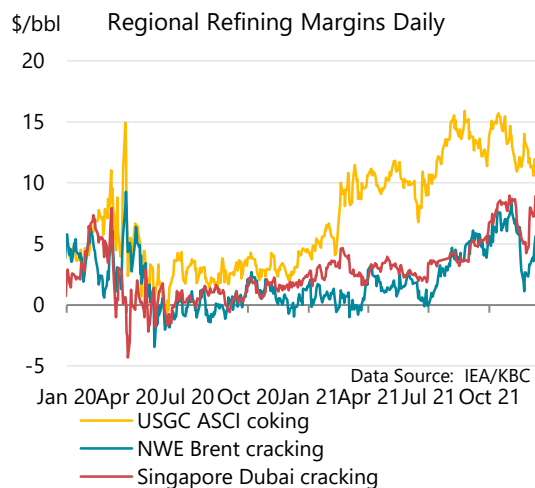
Middle distillates were not spared by the product crack rout. Northwest Europe diesel cracks fell by around \$2/bbl m-o-m, even dipping to single-digits before the precipitous end-month fall in crude prices lifted them back above \$10/bbl. The Omicron variant fears emerged too late in the month to explain the decrease in jet cracks, but higher supply and a slower than expected recovery in international travel were already strong bearish drivers. Jet cracks were lower even in Asia where kerosene remains an important heating fuel for the countries in the northeast.

The trends in the fuel oil complex diverged, with high sulphur fuel oil cracks falling steeply m-o-m, but the 0.5% sulphur bunker fuel cracks surging to their highest daily values since early 2020. In Northwest Europe and Singapore, HSFO cracks were at their lowest since early 2020. This discrepancy is also supported by higher natural gas prices, which have a double impact on the market of lower sulphur fuel oils. On one hand they increase the costs of desulphurisation,

and thus, the premiums for lower-sulphur blending components. On the other hand, they drive demand for oil use in power generation, that primarily concerns the low sulphur fuels.



With major product cracks falling m-o-m, all observed refinery margins were significantly lower in November. Sour hydroskimming margins in Europe and Singapore suffered the largest decreases and turned negative for the first time since July. Despite the falls, complex margins held at relatively high levels compared to the trajectory since the start of the Covid-19 pandemic, but this is before accounting for higher natural gas prices, and, for European refineries, higher emission allowance prices (see *The double whammy of higher natural gas prices for refiners*).

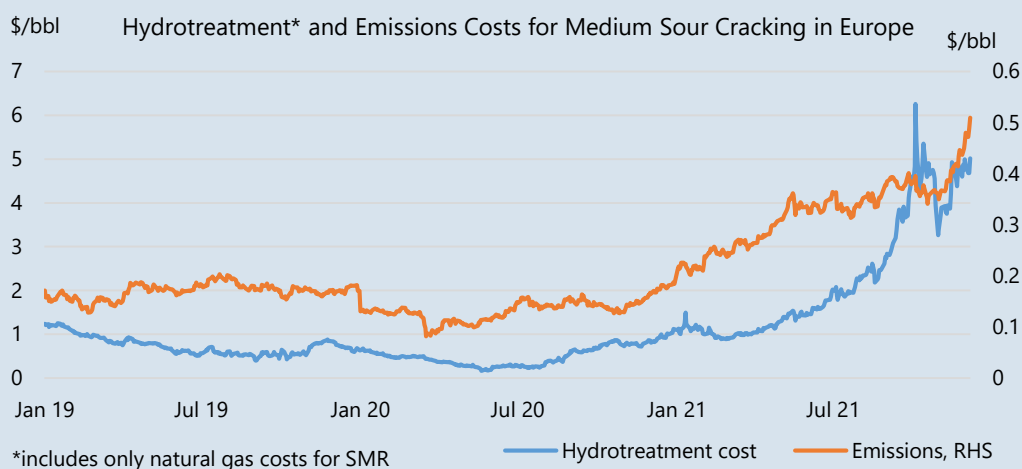


Box 3. The double whammy of higher natural gas prices for refiners

The prices of allowances for complying with emission reduction targets within the Emissions Trading Scheme (ETS) of the European Union (EUA allowances) have almost tripled since the start of the year to around 85 euros/tonne in the first week of December. One of the factors has been the higher prices of natural gas, that incentivise the use of cheaper but more carbon-intensive fuels, resulting in a surge in demand for allowances to offset higher emissions from the sectors regulated by the European Environment Agency (EEA)

We estimate that in the European Union, refineries produce about 30 kg/bbl of CO₂ emissions, using sectoral emissions data from the EEA and crude throughput statistics. Apart from refinery fuel use, on-site production of hydrogen from natural gas via steam reforming of methane (SMR) also entails carbon emissions. Hydroskimming refineries running sweet crude grades on average emit under 10 kg/bbl. Our models show that cracking refineries, when processing sweet grades, require little or no incremental hydrogen, with the reformer by-product largely sufficient for hydrotreatment needs. Currently, the hydrotreatment costs for medium-sour grade crudes, based on spot natural gas prices, are in the range of \$4-5/bbl, even when taking into account the by-product hydrogen available from the reformer unit. Two-thirds of these costs come from hydrotreating diesel fractions, which naturally accumulate more sulphur during the distillation process than gasoline blendstocks. For sour grades, the required H₂ production may effectively double a refinery's emissions to a range of 25-65 kg/bbl.

Emissions allowances represent another cost item for refiners that has soared recently. Most of allowances for the refining sector so far have been allocated for free. In 2020, an average EU refiner needed to purchase allowances for only 20% of their emissions. Free emission allocations are reduced each year, however, and from 2021 the annual reduction rate accelerated from 2.2% to 4.2%. While 2021 data will only be finalised later, we estimate that refineries will need to purchase EUAs for about 24% of their emissions in 2021, and 30% in 2022, based on our refinery throughput and CO₂ intensity forecast. This translates into a liability of around 7.5 kg/bbl and 9 kg/bbl in 2021 and 2022, respectively. At EUA prices observed during the second week of December, this implies financial cost of \$0.75/bbl and \$0.90/bbl respectively, considerably higher than the average costs of \$0.20/bbl in 2019-20.



IEA/KBC Global Indicator Refining Margins ¹											
(\$/bbl)											
	Monthly Average				Change	Average for week ending:					
	Aug 21	Sep 21	Oct 21	Nov 21		Nov-Oct	12 Nov	19 Nov	26 Nov	03 Dec	10 Dec
NW Europe											
Brent (Cracking)	4.09	5.11	6.44	5.01	↓	-1.43	6.51	4.65	2.18	2.99	4.54
Urals (Cracking)	4.85	5.84	7.23	4.67	↓	-2.56	6.11	4.31	2.24	2.72	4.25
Brent (Hydroskimming)	1.23	2.60	3.22	1.64	↓	-1.58	2.34	1.32	-0.17	1.14	2.48
Urals (Hydroskimming)	0.17	1.23	1.97	-1.42	↓	-3.39	-0.85	-1.79	-2.76	-1.70	-0.43
Mediterranean											
Es Sider (Cracking)	5.48	6.65	7.43	4.84	↓	-2.59	5.46	3.69	3.51	4.89	6.27
Urals (Cracking)	4.69	5.38	6.71	3.91	↓	-2.81	4.88	2.98	2.31	3.16	4.46
Es Sider (Hydroskimming)	3.78	4.88	4.92	2.44	↓	-2.47	2.68	1.49	1.51	3.13	4.32
Urals (Hydroskimming)	0.24	0.76	1.09	-2.41	↓	-3.51	-2.00	-3.13	-3.51	-2.32	-1.31
US Gulf Coast											
Mars (Cracking)	9.86	8.10	9.51	6.63	↓	-2.87	5.47	6.01	7.46	6.26	6.05
50/50 HLS/LLS (Coking)	17.31	16.25	17.48	14.87	↓	-2.62	14.13	14.22	15.62	14.06	14.55
50/50 Maya/Mars (Coking)	12.64	11.22	12.12	9.73	↓	-2.38	8.99	9.00	9.97	10.51	10.45
ASCI (Coking)	14.57	12.91	14.64	12.46	↓	-2.17	11.51	11.69	13.24	11.84	11.30
US Midwest											
30/70 WCS/Bakken (Cracking)	16.90	14.03	13.06	10.59	↓	-2.48	10.72	10.30	10.39	10.40	11.81
Bakken (Cracking)	19.23	16.55	14.78	10.98	↓	-3.80	10.67	10.76	10.62	10.77	12.99
WTI (Coking)	20.00	17.29	15.58	11.14	↓	-4.44	10.60	10.47	11.34	11.34	13.32
30/70 WCS/Bakken (Coking)	20.13	17.12	16.08	13.84	↓	-2.24	14.04	13.47	13.43	13.91	15.27
Singapore											
Dubai (Hydroskimming)	-2.34	0.03	0.30	-2.74	↓	-3.03	-2.09	-2.97	-3.83	-2.59	-1.70
Tapis (Hydroskimming)	1.45	2.25	3.50	2.40	↓	-1.09	3.74	2.28	0.14	2.08	2.22
Dubai (Hydrocracking)	3.78	5.18	7.78	6.58	↓	-1.20	8.04	5.89	4.94	6.46	7.75
Tapis (Hydrocracking)	1.53	2.22	4.70	2.91	↓	-1.79	4.58	2.79	-0.05	1.31	2.10

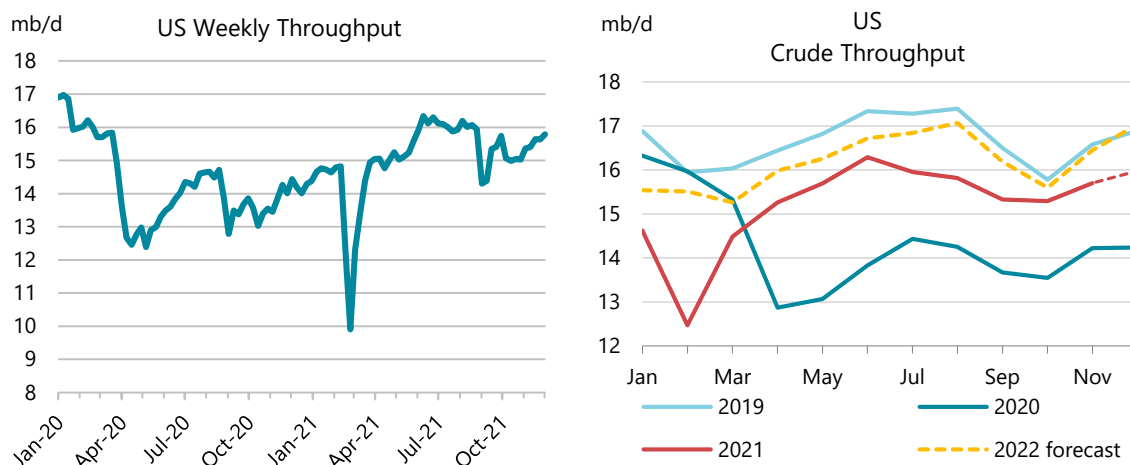
¹ Global Indicator Refining Margins are calculated for various complexity configurations, each optimised for processing the specific crude(s) in a specific refining centre. Margins include energy cost, but exclude other variable costs, depreciation and amortisation. Consequently, reported margins should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

Regional refining developments

US refining throughput was up 410 kb/d m-o-m in November, reaching 15.6 mb/d. US refinery activity turned positive y-o-y in April for the first time since the start of the pandemic, but annual growth slowed in November to 1.5 mb/d from 2 mb/d on average in April-October. Throughputs were still 880 kb/d below 2019, and 1.6 mb/d lower than the seasonal record in November 2018.

In the US Gulf Coast, or PADD 3, runs increased by 360 kb/d m-o-m, with refineries coming back from seasonal maintenance. Shell's Norco refinery, the only operable refinery still in a hurricane shutdown mode, did not restart as planned last month, and the next attempt is reportedly taking place mid-December. Meanwhile, refiners in the Midcontinent (PADD 2) are the first group to beat their pre-Covid seasonal highs. From August through November, they operated at about 60 kb/d above the same period in 2018, which marked the previous seasonal highs, supported by stronger margins from discounted domestic light and heavy Canadian crudes.



In **Canada**, final data put refinery throughputs in August at 1.7 mb/d, reaching a new post-pandemic high. In November, the 55 kb/d Burnaby refinery in British Columbia shut down due to danger for the Trans Mountain Pipeline from landslides following heavy rains. The pipeline restarted in the first week of December. The 115 kb/d Come by Chance refinery in Newfoundland was officially baptised as a renewable fuels plant, changing its name to Braya in preparation for the conversion.

Refinery Crude Throughput and Utilisation in OECD Countries

(million barrels per day)

	May 21	Jun 21	Jul 21	Aug 21	Sep 21	Oct 21	Change from Sep 21	Oct 20	Utilisation rate Oct 21	Oct 20
US ¹	15.59	16.19	15.85	15.72	15.23	15.19	-0.03	1.75	85%	73%
Canada	1.44	1.71	1.71	1.73	1.62	1.48	-0.15	-0.10	73%	79%
Chile	0.17	0.18	0.17	0.21	0.20	0.19	-0.01	-0.03	82%	93%
Mexico	0.69	0.67	0.65	0.65	0.79	0.75	-0.05	0.16	45%	35%
OECD Americas¹	17.93	18.75	18.39	18.31	17.84	17.60	-0.24	1.74	81%	71%
France	0.62	0.72	0.79	0.82	0.75	0.72	-0.03	-0.11	63%	67%
Germany	1.66	1.58	1.71	1.81	1.73	1.74	0.01	0.00	86%	86%
Italy	1.21	1.31	1.21	1.26	1.33	1.38	0.05	0.32	86%	61%
Netherlands	1.08	0.98	0.99	1.01	1.04	1.07	0.03	0.12	89%	79%
Spain	1.11	1.04	1.17	1.24	1.22	1.12	-0.10	0.06	80%	75%
United Kingdom	0.94	0.96	1.01	1.03	0.94	0.91	-0.03	0.01	76%	75%
Other OECD Europe ²	4.05	4.10	4.28	4.44	4.39	4.18	-0.21	0.48	82%	73%
OECD Europe	10.67	10.69	11.16	11.61	11.41	11.13	-0.28	0.88	81%	72%
Japan	2.13	2.12	2.25	2.67	2.62	2.73	0.11	0.45	79%	66%
South Korea	2.66	2.56	2.63	2.76	2.65	2.72	0.08	0.17	77%	72%
Other Asia Oceania ³	0.65	0.67	0.62	0.61	0.56	0.53	-0.03	-0.21	81%	85%
OECD Asia Oceania	5.45	5.35	5.50	6.03	5.82	5.98	0.15	0.41	78%	71%
OECD Total	34.04	34.80	35.04	35.96	35.07	34.71	-0.36	3.04	81%	72%

¹ US includes US50, OECD Americas include Chile and US territories

² Includes Lithuania

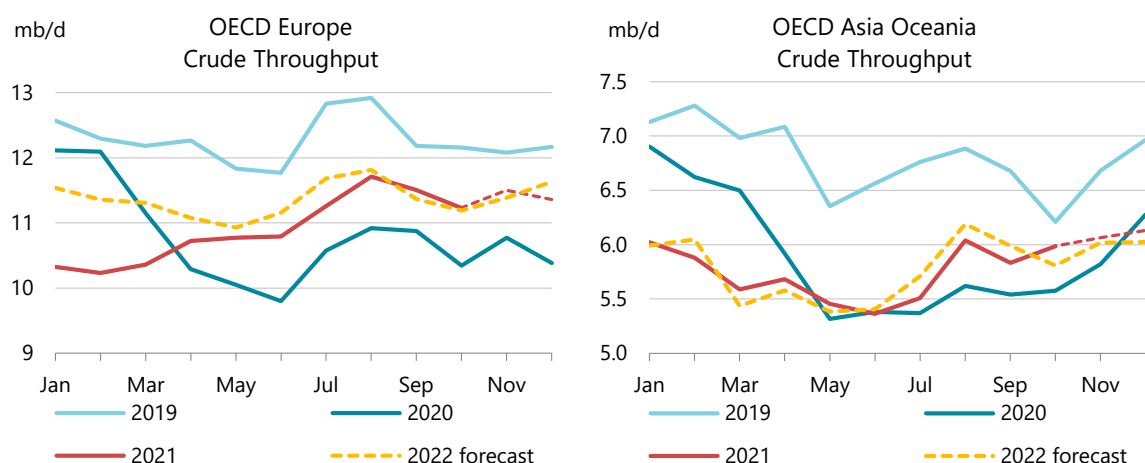
³ Includes Israel

Mexican refinery throughput fell 45 kb/d in October to 750 kb/d as the Tula refinery had to resort to run-cuts to clear a product stock overhang. While operational issues and accidents persist, 2021 has so far shaped up to be the best year for Mexican refining since 2017. Year-to-date refinery intake is up by 115 kb/d, the first annual growth since 2013.

In OECD Europe, refinery intake fell further to 11.1 mb/d in October on seasonal maintenance. Preliminary data from Euroilstock showed November runs up 300 kb/d m-o-m in reporting

countries. **French** refinery intake in September-October fell y-o-y with the planned closure of the Donges refinery, expected to last until March-2022. In October, **Italy** reported the highest runs since September 2019 at just under 1.4 mb/d. The STAR refinery in **Turkey** announced a 20-kb/d “capacity creep”, with plans to add another 10 kb/d through debottlenecking.

A modest rates of recovery lifted average utilisation rates in Europe to around 82-83% in July-October, facilitated by 600 kb/d of refinery capacity closures in the region since the start of 2020. These shutdowns, along with continued demand weakness, underpin our forecast for a limited recovery in regional runs in 2022, at 385 kb/d.



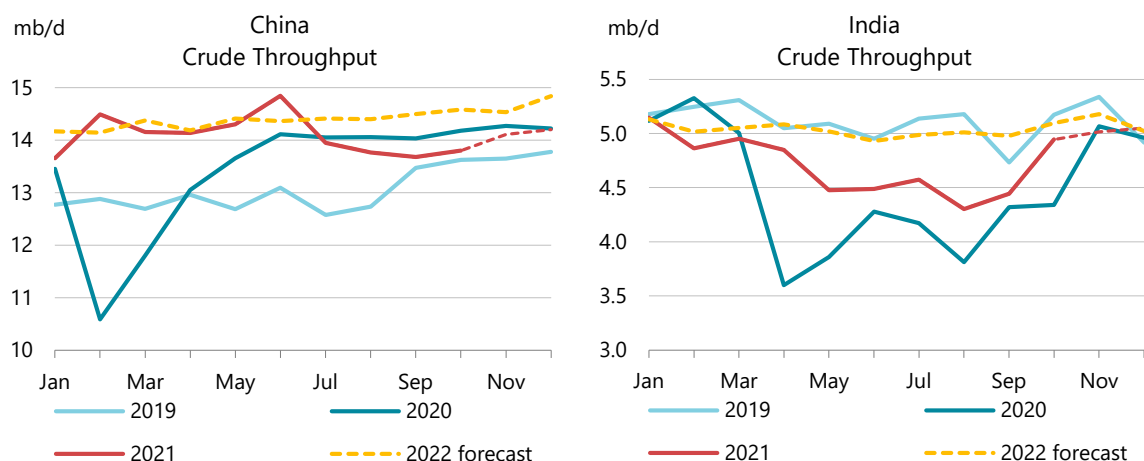
Japanese throughputs increased counter-seasonally in October for the first time since 2007. Refiners ramped up runs in response to increased demand for fuel oil to replace higher-priced natural gas in power generation. At 2.7 mb/d, runs were up 450 kb/d y-o-y, the largest post-pandemic rebound so far. Japanese refiners report significantly higher customer interest for fuel oil deliveries this winter due to expected tightness in natural gas markets. In December and January, runs are expected to increase further to 2.9 mb/d, up 190 kb/d y-o-y, in line with higher demand. Refining activity in **Korea** in September and October was close to Japanese levels, and the country's refiners have also announced higher runs to cater for increased demand due to natural gas substitution, but their upside potential is relatively limited.

No new data were reported for **Chinese** throughputs since our last *Report*, but several refinery surveys indicate a monthly increase of around 300 kb/d in November, bringing runs back to 14 mb/d. Chinese throughputs had crossed this mark first in October 2020 and reached a record high of 14.75 mb/d in June 2021, before falling 630 kb/d q-o-q in 3Q21. We expect a further small increase in December. Overall, 2021 runs are estimated up 620 kb/d y-o-y, at about 14 mb/d on average. Crude oil imports in November rebounded by 1.3 mb/d m-o-m, providing refiners with sufficient feedstocks, following a record 1.1 mb/d implied stock draw in October. China announced a strategic crude oil stock release in parallel with the action by the US, but by mid-December had yet to detail the quantity or timing.

This year, China formally overtook the US in terms of total installed crude distillation capacity, raising it to 18 mb/d, but utilisation rates are at just 78%, compared to 84% in the US. The Chinese government set a target of at least 80% utilisation rates in the broad action plan released late October, which aims to achieve peak emissions before 2030. With significant new capacity additions planned to come online, this target could only be reached with simultaneous shutdowns of existing units. There is an ongoing programme to decommission distillation units

under 40 kb/d. The new plan also bans the construction of secondary units and petrochemical crackers below set capacity thresholds.

Both the central and local governments have intensified refinery sector inspections this year. Recently, the Shandong government mandated independent refiners to conduct internal audits to reveal and correct tax payment irregularities since the start of 2019. Inspection teams were sent to some of the plants. Similar controls were carried out in the Liaoning province, another large centre of independent refining. Reported throughputs in Shandong have fallen y-o-y since May due to lower crude import quotas, taxes on imported blendstocks and overall tighter fiscal control.



Indian refinery throughput rose by a strong 500 kb/d in October to 4.9 mb/d (+600 kb/d y-o-y), tracking higher demand linked to a general post-Covid recovery and national festivities in the month. India announced a release of 5 mb of crude oil from its strategic reserves. The stocks will come from two storage sites that are connected by pipeline to ONGC's Mangalore Petrochemical and Hindustan Petroleum's Visakhapatnam refineries. Both are state-owned and their combined throughput is about 550 kb/d.

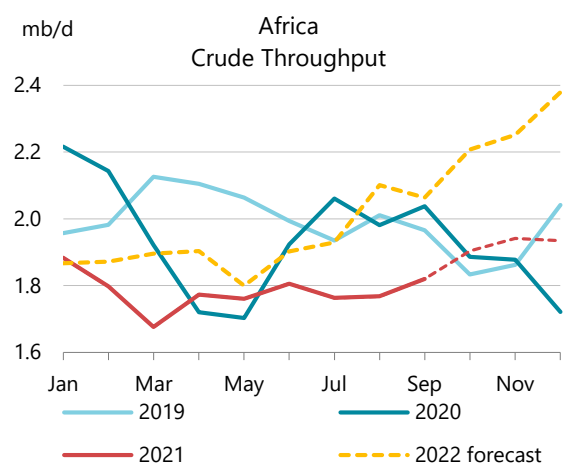
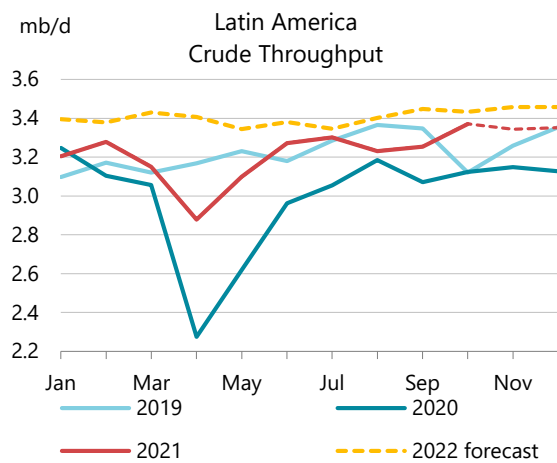
Malaysia reported very low runs in August and September and announced further delays to the restart of the Rapid refinery. September throughput was down m-o-m both in **Thailand** and **Chinese Taipei**, with more maintenance-related outages expected in October. In Indonesia, throughputs have yet to recover from last year's decline, with the first nine months of 2021 falling another 55 kb/d y-o-y.

Reported refining throughput in both **Saudi Arabia** and **Iraq** was down m-o-m in September, but higher in **Bahrain**. This was more than offset by an estimated increase in other Middle Eastern countries, resulting in a net m-o-m gain.

Russian refining throughput surged 185 kb/d m-o-m in November as refiners returned from maintenance. The excise tax adjustment, which rewards refiners for deliveries to the domestic market when export netbacks are higher, could have contributed \$1.4 billion to refining earnings last month, equivalent to an incremental \$8/bbl margin. In 2021, runs in the broader FSU region are expected to increase by 255 kb/d y-o-y following a 370 kb/d fall in 2020.

Brazil recorded the highest monthly throughput in six years in October, with runs just under 2 mb/d and utilisation rates at a solid 88%. Petrobras announced it will invest \$1 billion to complete the 165 kb/d RNEST refinery, where further work was shelved after the first train of

the refinery came online in 2014. The capacity will be increased to the originally planned 260 kb/d before Petrobras attempts to sell it again. It was offered as part of the company's divestment program but did not receive any bids.

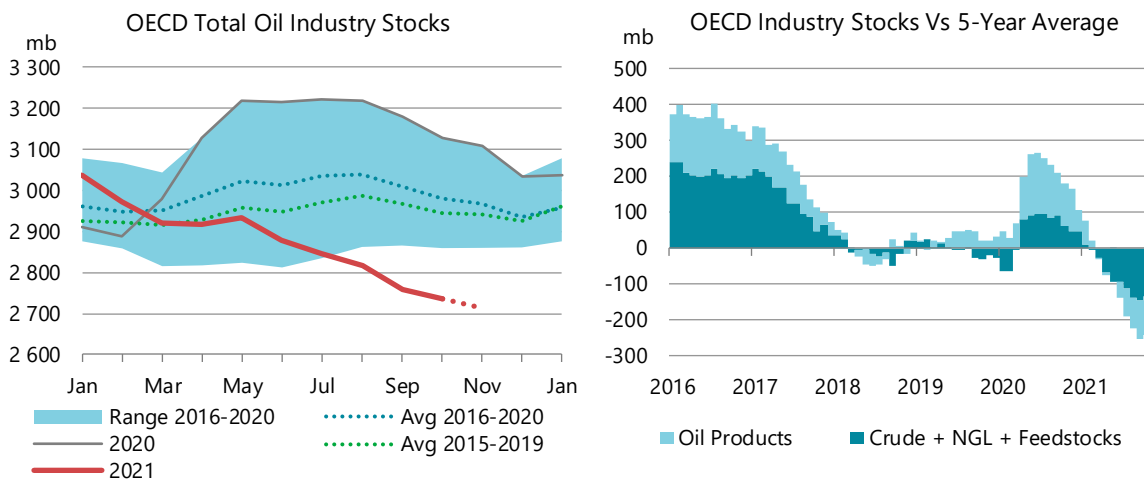


South Africa reported runs for the July 2019-December 2020 period for the first time, showing a stronger impact on runs in April - May 2020 and quicker recovery. Overall, throughput in 2020 fell 80 kb/d y-o-y, and is estimated to decline by another 120 kb/d this year on refinery closures.

Stocks

Overview

OECD industry stocks fell by 21.2 mb (684 kb/d) in October to close the month at 2 737 mb. A near constant drawdown in inventories for much of the year left stocks 243 mb below the 2016-2020 five-year average. OECD stocks have fallen by some 1 mb/d on average this year, with the draws split almost evenly between crude and products. OECD stock cover in days of forward demand rose 0.1 days in October to 60 days, but remained below the five-year average of 62 days. Preliminary data for November show industry stocks falling yet again, by roughly 23 mb.



OECD industry crude stocks rose by 17.8 mb to 1 028 mb in October. The increase was considerably higher than the seasonal build of 9.9 mb registered over the past five years. OECD crude stocks are now pegged at 116.4 mb below five-year average levels. OECD Europe accounted for the largest gain, with a counter-seasonal increase of 14.1 mb. OECD Americas added 13.6 mb, nearly double the normal builds. Conversely, OECD Asia Pacific crude stocks fell 9.9 mb, compared to a 3.6 mb historical increase.

Total product stocks in the OECD were down 42.3 mb m-o-m, on par with the five-year average trend. The greatest decline came from middle distillates, which fell by 25.8 mb, largely in line with normal seasonal patterns. OECD Europe also led the stock draws in products. Regional inventories fell by 25.4 mb, with middle distillates accounting for 80% of the decline. OECD Americas followed with a 17.9 mb draw, led by lower gasoline stocks (-11.5 mb). OECD Asia Pacific added 1.1 mb to its product inventories, due to a build of 2.1 mb in motor gasoline.

Preliminary data for November show OECD oil inventories falling 23.4 mb. US (-9 mb) and European stocks (-14.9 mb) were partly offset by a marginal increase in Asia (+0.6 mb). US crude and NGL inventories fell by 3.3 mb, while product stocks decreased by 5.7 mb. Crude oil stocks in Europe plunged by 12 mb, while products slumped by 3 mb. Asia Pacific holdings were largely steady.

Preliminary Industry Stock Change in October 2021 and Third Quarter 2021												
October 2021 (preliminary)					Third Quarter 2021							
(million barrels)					(million barrels per day)				(million barrels per day)			
	Am	Europe	As.Ocean	Total	Am	Europe	As.Ocean	Total	Am	Europe	As.Ocean	Total
Crude Oil	13.6	14.1	-9.9	17.8	0.4	0.5	-0.3	0.6	-0.3	-0.5	-0.2	-1.0
Gasoline	-11.5	2.2	2.1	-7.2	-0.4	0.1	0.1	-0.2	-0.1	-0.1	0.0	-0.2
Middle Distillates	-5.7	-19.7	-0.4	-25.8	-0.2	-0.6	0.0	-0.8	-0.1	-0.3	0.1	-0.3
Residual Fuel Oil	1.1	-4.3	-2.0	-5.1	0.0	-0.1	-0.1	-0.2	0.0	0.0	0.0	0.0
Other Products	-1.7	-3.7	1.3	-4.2	-0.1	-0.1	0.0	-0.1	0.3	0.0	0.1	0.4
Total Products	-17.9	-25.4	1.1	-42.3	-0.6	-0.8	0.0	-1.4	0.0	-0.4	0.2	-0.2
Other Oils ¹	3.9	0.0	-0.5	3.3	0.1	0.0	0.0	0.1	0.0	-0.1	0.0	-0.1
Total Oil	-0.4	-11.4	-9.4	-21.2	0.0	-0.4	-0.3	-0.7	-0.3	-0.9	0.0	-1.3

¹ Other oils includes NGLs, feedstocks and other hydrocarbons.

OECD stock data for September have been revised down by 4.6 mb since last month's *Report* following the receipt of more complete data. The largest adjustment came from Europe, where crude oil stocks were revised 8.2 mb higher. Products stocks were lowered across all regions, by 14.7 mb overall. Product inventories were reduced by 8 mb in Europe, 4 mb in the Americas and 2.7 mb in Asia Oceania.

Revisions versus November 2021 Oil Market Report								
(million barrels)								
	Americas		Europe		Asia Oceania		OECD	
	Aug-21	Sep-21	Aug-21	Sep-21	Aug-21	Sep-21	Aug-21	Sep-21
Crude Oil	0.5	0.9	0.0	8.2	0.0	0.4	0.5	9.5
Gasoline	0.4	-0.9	0.1	-1.6	0.0	-1.4	0.5	-3.9
Middle Distillates	0.0	-2.5	0.2	-5.6	0.0	-1.4	0.2	-9.5
Residual Fuel Oil	0.0	-0.5	0.0	-0.7	0.0	0.1	0.0	-1.1
Other Products	0.0	0.0	0.0	-0.1	0.0	0.0	0.0	-0.1
Total Products	0.4	-4.0	0.4	-8.0	0.0	-2.7	0.8	-14.7
Other Oils ¹	0.0	-0.3	0.0	0.8	0.0	0.2	0.0	0.6
Total Oil	0.9	-3.4	0.4	0.9	0.0	-2.1	1.2	-4.6

¹ Other oils includes NGLs, feedstocks and other hydrocarbons.

Implied balance

The global supply and demand balance shows implied stock draws of 1.57 mb/d in October, largely in line with the observable decline in inventories (-1.38 mb/d) based on available data. OECD industry crude oil stocks, including NGLs, rose by 680 kb/d in total, as increases of 440 kb/d and 455 kb/d in the OECD Americas and Europe, respectively, was offset by a 320 kb/d decline in Asia Pacific. Total product stocks in the OECD dropped by 1.36 mb/d, led by Europe (-820 kb/d) and the Americas (-580 kb/d). By contrast, product inventories in OECD Asia Oceania rose by a marginal 30 kb/d. Non-OECD crude inventories, excluding China, drew by 550 kb/d, according to satellite data from *Kayrros*. Crude oil on the water, including floating storage, swelled by a large 1.7 mb/d, while products on the water fell by 460 kb/d according to *Kpler*.

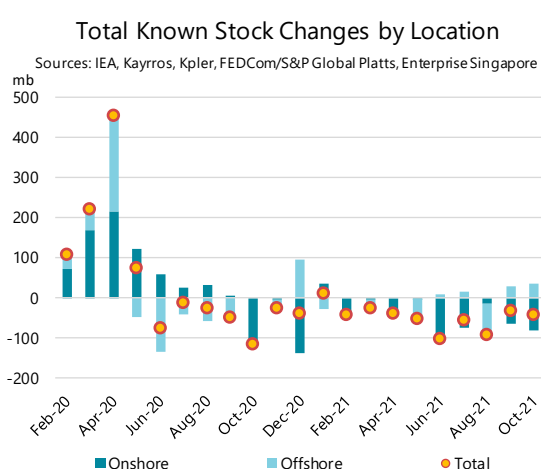
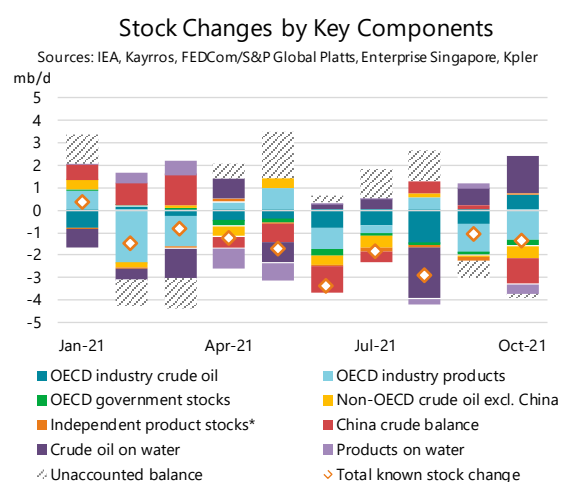
In 3Q21, the total stock change and miscellaneous to balance item calculated using assessed supply and demand data shows a stock draw of 1.34 mb/d, 270 kb/d more than the 1.07 mb/d decline shown in 1H21. Steady drawdowns over the second half of the year were a result of unplanned supply outages in August and September, combined with a stronger demand for oil.

Implied total oil balance (mb/d)									
	1Q21	2Q21	1H21	Jul-21	Aug-21	Sep-21	3Q21	Oct-21	Nov-21*
OECD industry crude oil, NGLs and feedstocks	-0.33	-0.57	-0.45	-0.70	-1.51	-0.62	-0.94	0.68	-0.60
OECD industry product stocks	-0.93	0.11	-0.41	-0.39	0.56	-1.30	-0.37	-1.36	-0.34
OECD government stocks	0.05	-0.24	-0.10	-0.12	-0.09	-0.15	-0.12	-0.28	-0.32
Non-OECD crude oil excluding China	0.13	-0.14	-0.01	-0.51	0.18	-0.05	-0.13	-0.55	-0.11
Independent product stocks (Fujairah and Singapore)	-0.05	0.03	-0.01	-0.20	-0.12	-0.19	-0.17	0.05	0.02
Crude oil on water including floating storage	-0.93	0.07	-0.43	0.51	-2.21	0.75	-0.33	1.66	
Products on water including floating storage	0.37	-0.53	-0.08	0.00	-0.27	0.25	-0.01	-0.46	
Total known stock change excluding China (as above)	-1.69	-1.28	-1.49	-1.40	-3.47	-1.30	-2.07	-0.26	
IEA estimate - Chinese crude balance	1.05	-0.83	0.10	-0.43	0.54	0.20	0.10	-1.12	
Total known and estimated stock change	-0.65	-2.11	-1.38	-1.83	-2.92	-1.10	-1.96	-1.38	
Total stock change and misc. to balance**	-1.04	-1.11	-1.07	-0.57	-1.60	-1.87	-1.34	-1.57	
Unaccounted balance	-0.39	1.00	0.31	1.27	1.33	-0.76	0.62	-0.19	

* OECD stocks are extrapolated using data from (EIA), Euroilstock and (PAJ), Chinese and Non-OECD crude data from Kayros.

** Assessed supply minus assessed demand from the IEA oil market balance.

Sources: IEA, EIA, PAJ, Euroilstock, Kayros, Kpler, FEDCom/S&P Global Platts, Enterprise Singapore



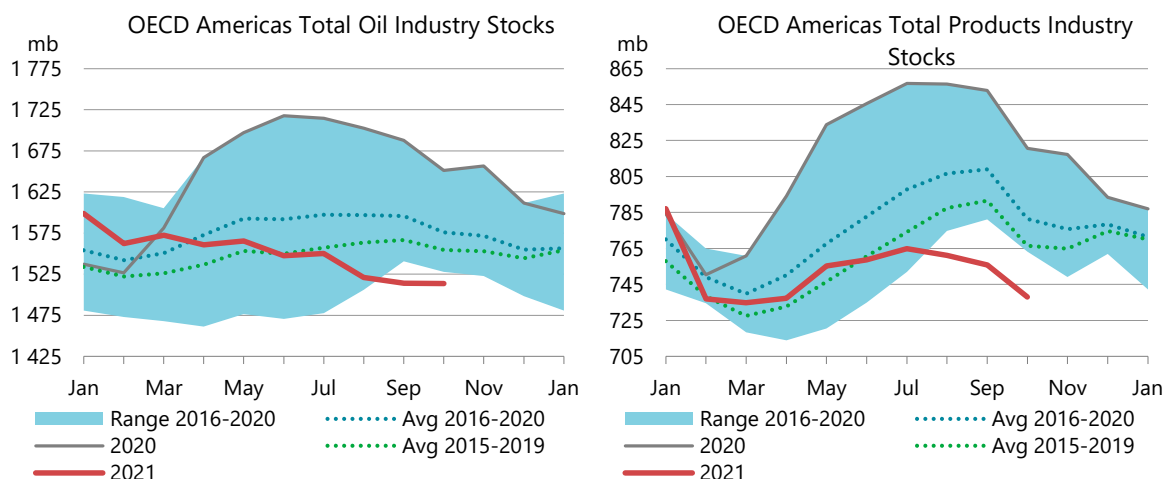
Recent OECD industry stock changes

OECD Americas

Industry stocks in OECD Americas for October were down by a mere 0.4 mb, far from the average decline of 19.9 mb over the past five years. By end-month, regional stocks stood at 1 514 mb, 62.3 mb below the five-year average. Crude stocks rose by 13.6 mb, nearly double the 8 mb typical build, but closed the month 11.8 mb lower than the five-year average.

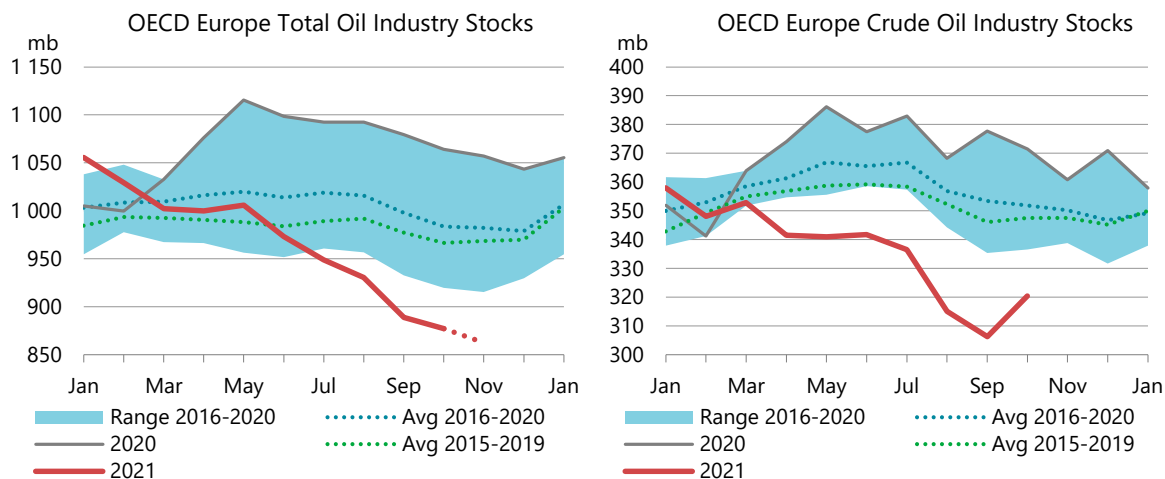
Product stocks declined by 17.9 mb, less than the average drop of 27.5 mb. Total product stocks at end-October stood at 738 mb, 43.5 mb below the five-year average levels. Motor gasoline stocks drove the decline, falling 11.5 mb, followed by middle distillates at 5.7 mb.

Weekly data from the US Energy Information Administration (EIA) show total stocks fell another 9 mb in November. Crude stocks eased by 1.4 mb, when they typically build by 5.2 mb. Midcontinent stocks rose by 7 mb, with Cushing storage facilities building by a much needed 3.5 mb. Inversely, Gulf Coast inventories drew by 11.3 mb. Total US product stocks fell by 5.7 mb, much less than the average decline of 10.4 mb. Middle distillate, fuel oil and other product inventories drew by 3.6 mb, 2 mb and 3.9 mb, respectively, while gasoline stocks rose by 3.8 mb.



OECD Europe

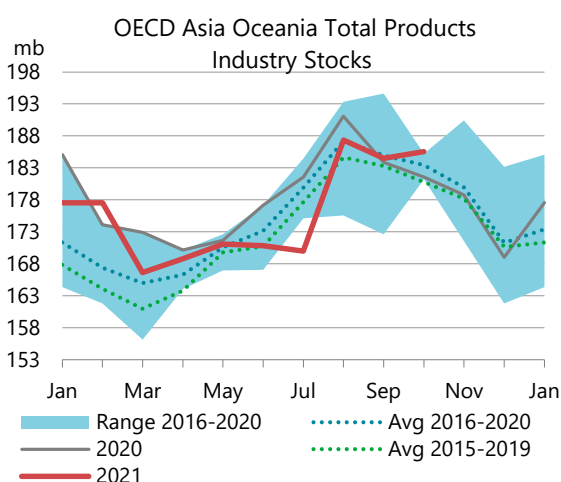
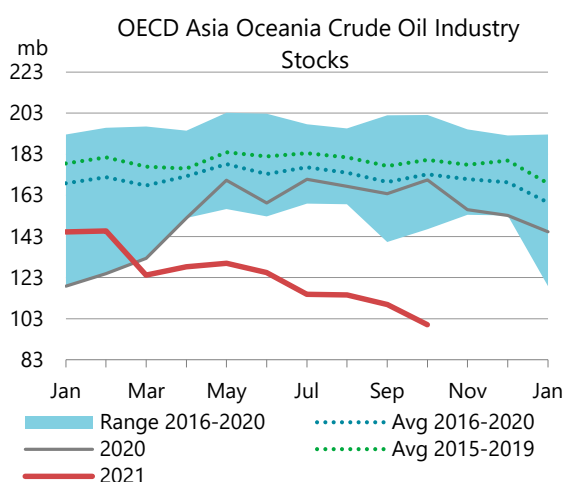
OECD industry stocks in Europe fell 11.4 mb in October, in line with the seasonal average. At 877 mb, regional stocks were 106 mb lower than the five-year average. Crude stocks rose counter seasonally, by 14.1 mb, reducing the deficit to the five-year average to 31.5 mb. Product stocks plunged by 25.4 mb, nearly double the historical trend, led by middle distillates (-19.7 mb). Fuel oil and other products also fell, by 4.3 mb and 3.7 mb, respectively. Refinery runs in Europe were down 277 kb/d m-o-m in October, which contributed to the overall product stock draw.



Preliminary data from *Euroilstock* show draws in November of 14.9 mb, when stocks typically fall around 1.1 mb. The bulk of the decline came from crude, which fell by 12 mb. At the same time, product stocks decreased by 3 mb, counter-seasonal to the average 0.5 mb build. Crude stock draws in Europe were led by Portugal at -2.9 mb, followed by the Netherlands at -2.2 mb, the UK and France at -1.8 mb each, and Italy at -1.5 mb. Product stock draws were mainly seen in Germany, totalling 7.7 mb, with a large drop in both gasoline (-4.7 mb) and middle distillates (-3 mb). France and Portugal holdings also fell, by 2.1 mb and 0.1 mb, respectively. Stock draws were countered by a 7.2 mb build from Spain (3 mb) and the UK (1.8 mb), along with a combined addition of 1.3 mb from Austria, Belgium, Luxembourg and Scandinavia.

OECD Asia Oceania

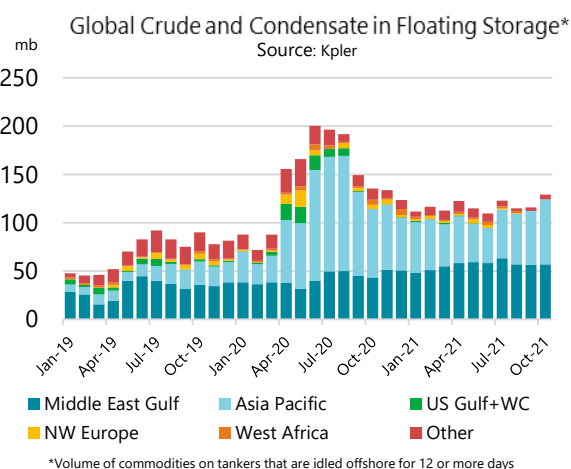
Industry stocks in OECD Asia Oceania declined counter-seasonally by 9.4 mb in October. At 346 mb, regional stocks were 74.2 mb below the five-year average. The deficit was mostly accounted for by crude oil inventories, which fell by 9.9 mb, to 100 mb. Product stocks built by 1.1 mb, to 185 mb, led by motor gasoline (+2.1 mb) and other fuels (+1.3 mb). These were offset by declines in middle distillates (-0.4 mb) and fuel oil (-2.0 mb). Refinery runs rose by 106 kb/d in October, contributing to product stock builds along with the draws in crude. In OECD Asia, stock cover in days of forward demand fell 2.1 days in October to 43 days, falling 14 % below the five-year average of 50.1 days.



Preliminary data from the *Petroleum Association of Japan* show that in November total oil stocks inched up by 0.6 mb to 346 mb, when inventories typically draw by 6 mb. Both crude and product stocks rose counter-seasonally, by 0.5 mb and 1.2 mb, respectively, partly offset by a 1.1 mb decline in NGL stocks.

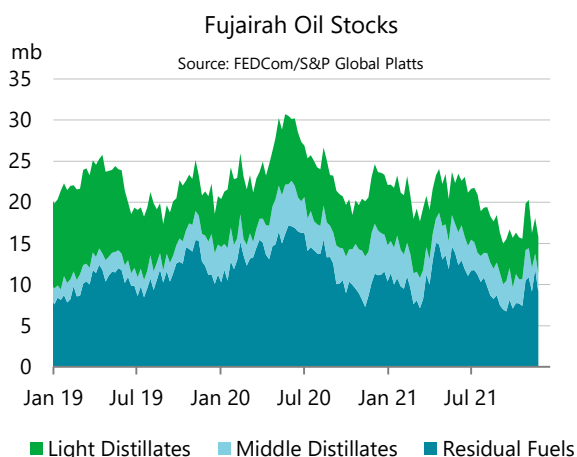
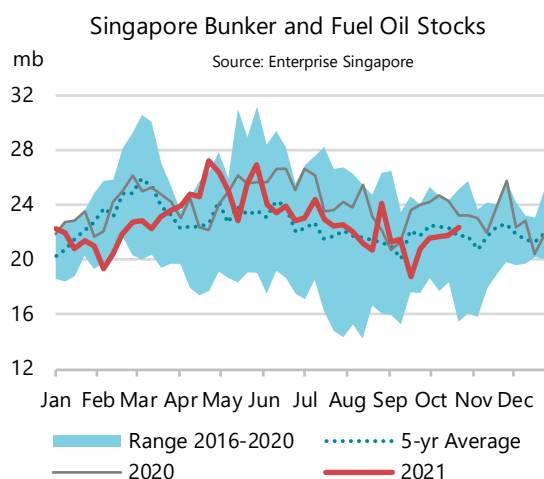
Other stock developments

Crude oil held in short-term floating storage rose by 8.4 mb, to 134.5 mb in October, according to data from *Kpler*. The Asia Pacific region led the increase, at 11.4 mb, while floating storage volumes in West Africa fell by a large 4.4 mb. Oil on the water (including floating storage) rose by a substantial 37 mb, according to data from *Kpler*. The increase was led by crude, which rose 51 mb. By contrast, total product volumes on the water fell by 14.2 mb, with fuel oil leading the decline at 10.4 mb.

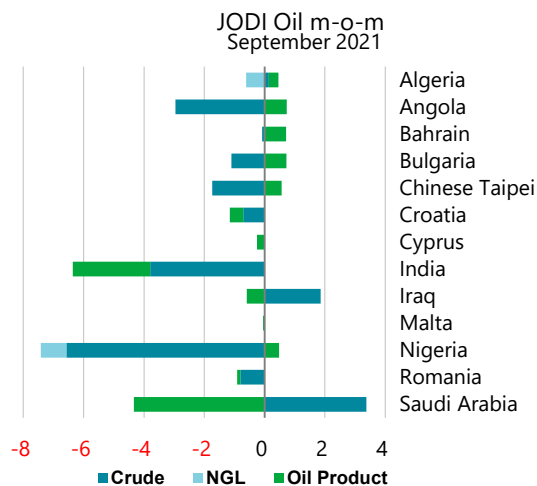
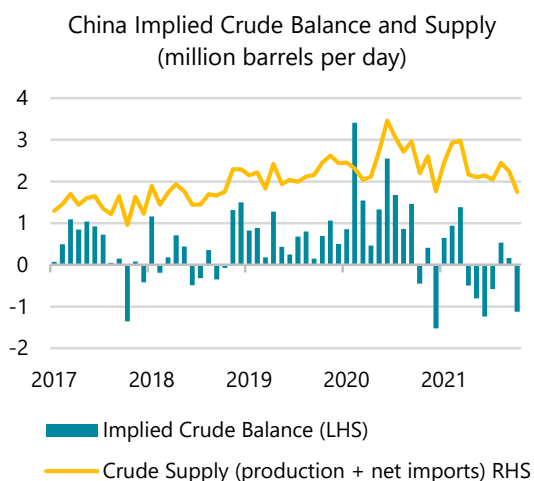


In Fujairah, independent product stocks rose by 3.5 mb in November, according to data from *FEDCom/S&P Global Platts*. Residual fuel oil inventories increased 2.4 mb m-o-m, while light and middle distillate stocks increased marginally, by 0.5 mb and 0.6 mb, respectively.

Independent product stocks in Singapore, the world's largest bunkering hub, fell by 2.9 mb in November, according to data from *Enterprise Singapore*. Middle distillate inventories led the way with a 2 mb draw for the third consecutive month. Residual fuel stocks fell by 1.8 mb due to higher exports to the Asian region. By contrast, light distillate stocks built by 0.9 mb.



Chinese implied crude stocks fell by a sharp 34.8 mb in October, or 1.1 mb/d, according to data derived from reported crude production, refinery runs and net crude imports. Reported imports fell roughly 1 mb/d m-o-m October, which was the main driver of the apparent crude stock draw in China. A 120 kb/d m-o-m increase in refinery runs was also a contributing factor.



Total oil stocks in 19 non-OECD economies reporting to the *JODI-Oil* database fell by 13.8 mb m-o-m in September, led by large draws in India, Nigeria and Saudi Arabia. Notably, crude stocks declined in Nigeria by 6.6 mb, India by 3.8 mb and Angola by 3 mb. By contrast, crude inventories increased in Iraq and Saudi Arabia, by 1.9 mb and 3.4 mb, respectively. Oil product stocks fell by 4.8 mb in total, mainly observed in India (-2.6 mb) and Saudi Arabia (-4.3 mb).

Box 4. US releases SPR crude in parallel with other countries to lower oil prices

In response to higher prices and inflationary pressures, the United States announced on 23 November it would make available up to 50 mb of oil from its Strategic Petroleum Reserve (SPR) in parallel with other countries including China, India, Japan, South Korea and the United Kingdom.

This is not a collective stock release coordinated by the International Energy Agency in accordance with the International Energy Programme treaty. In the past, the IEA has coordinated a release of stocks on three occasions: in the build-up to the Gulf War in 1991; after Hurricanes Katrina and Rita damaged offshore oil rigs, pipelines and oil refineries in the Gulf of Mexico in 2005; and in response to the prolonged disruption of oil supply caused by the Libyan Civil War in 2011.

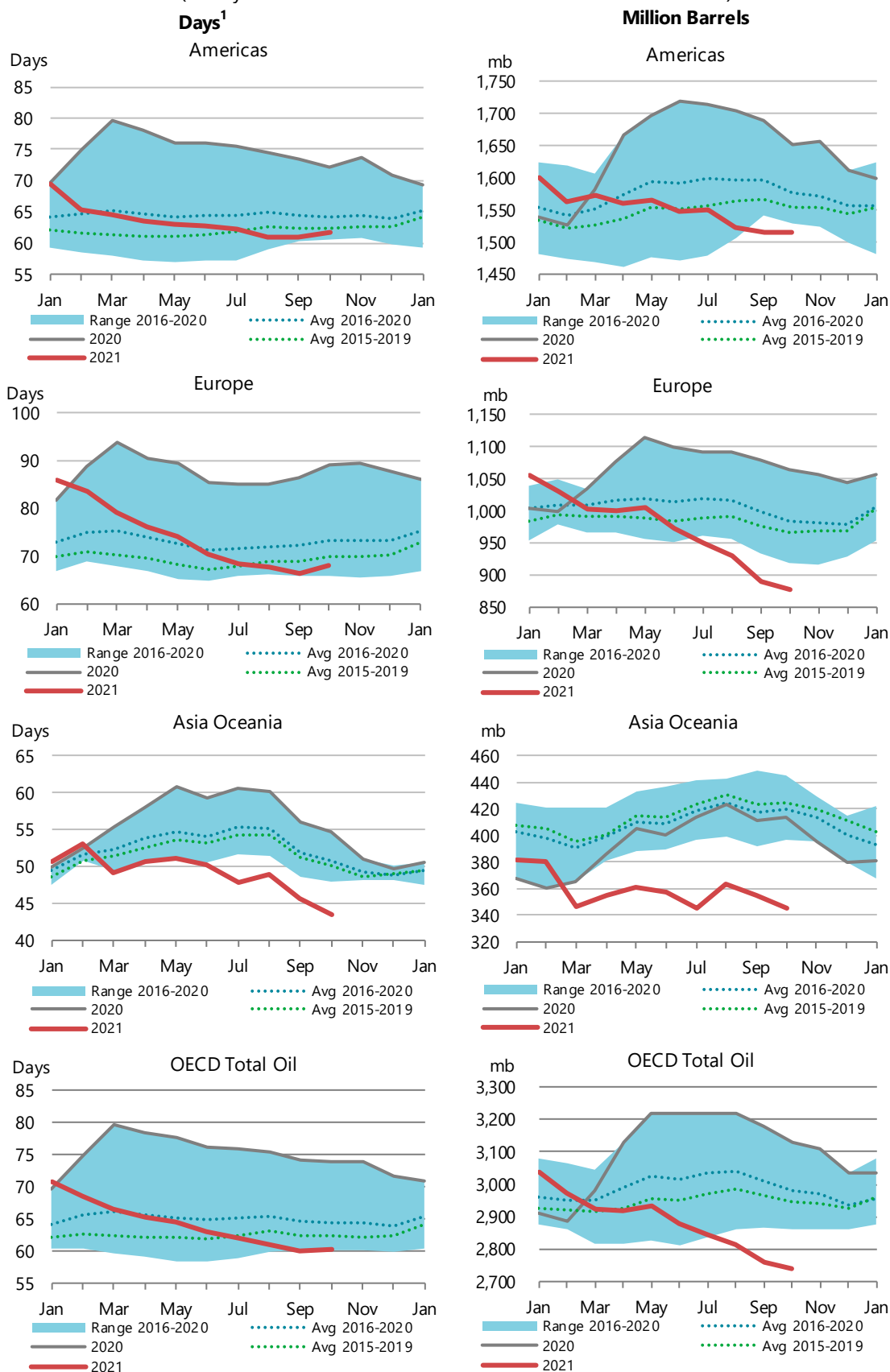
While details on volumes and timings are still sparse, the release by the US and other countries could potentially amount to as much as 70 mb. If released over 90 days, that would equal roughly 800 kb/d in additional supply. Announced plans include:

- The 50 mb release announced by the US includes an exchange of up to 32 mb for future supplies. The volumes would be delivered from mid-December through April and returned in 2022-2024. In addition, 18 mb of crude that had already been approved by Congress to be sold by the end of 2022 will now be made available ahead of the original plan. At the end of November, the US held about 600 mb of crude oil in its SPR.
- China announced on 24 November its intention to contribute with a SPR release. So far, however, the volumes and timing of the plan are still unclear. Earlier this year, China offered about 7.4 mb of SPR crude oil through its first auction.
- India will release 5 mb of crude oil from its SPR. Following a decision to commercialise its SPR, India already started selling a portion of the stocks out of 39 mb total capacity of SPR as part of its plan to lease the storage capacity to private companies.
- Japan, meanwhile, announced it would sell part of the country's strategic reserves. The sale will be made by advancing its planned sales of crude oil grades for replacement without violating the country's stockpiling law. According to the Minister of Economy, Trade and Industry, Koichi Hagiuda, the sale will amount to "a couple of hundred thousand kilolitres".
- South Korea also said it would join the release and that the amount and timing will be decided through discussions. The volume is expected to be around the same level as the last release when South Korea released about 3.5 mb in 2011 in response to the Libyan Civil War.
- The UK authorised oil companies to release up to 1.5 mb of oil by lowering obligations.

In response to recent market volatility and concerns over the impact of the Covid-19 Omicron variant, the US Department of Energy (DOE) has added some flexibility into the timing of its release which can take place over the "next several-months period", depending on crude and gasoline prices. However, the DOE said on 10 December that the Notice of Sale for 18 mb will be issued on 17 December and the first exchange of 4.8 mb with Exxon Mobile had already been approved. It remains to be seen whether the other countries will go ahead with their plans and if there is any interest from the market for additional barrels.

Regional OECD End-of-Month Industry Stocks

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



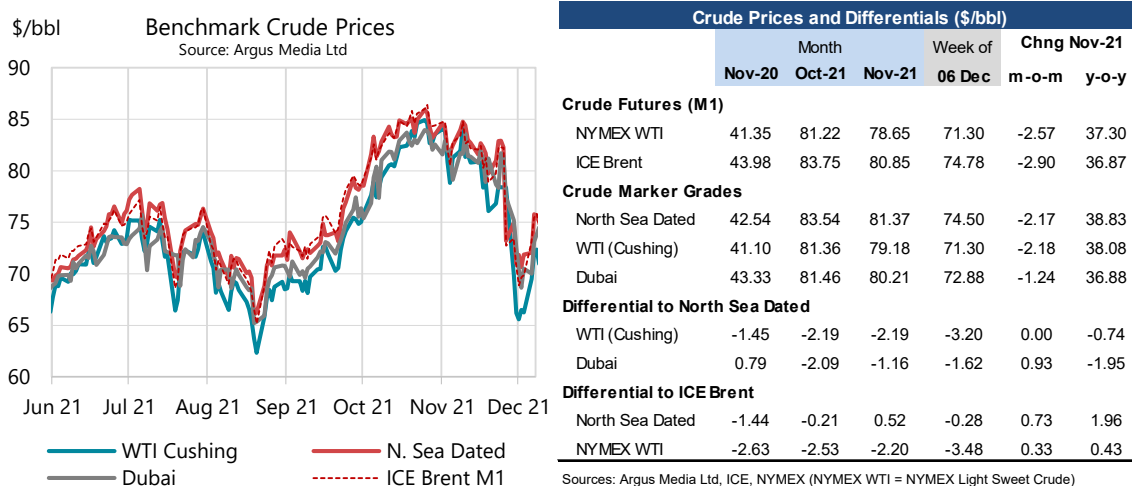
¹ Days of forward demand are based on average OECD demand over the next three months.

Prices

Overview

Oil prices fell sharply in November against a background of worsening Covid-19 cases and amid mounting worries over inflation as consumer nations weighed options to tamp down high energy costs. Oil prices plunged by \$15-17/bbl over the course of the month, with a particularly sharp drop in the final week after first reports of the new Covid-19 Omicron virus sparked fears that the fast-spreading variant could upend the robust economic recovery underway. Markets regained their equanimity in early December, with prices partially retracing their losses by mid-month.

The deterioration from October's highs of around \$83-85/bbl was extensive, as the oil price backwardation also flattened significantly and product cracks declined. Oil prices posted one of their steepest daily declines on record on 25 November, following confirmation by six major consuming countries of the planned release of strategic petroleum reserves and the subsequent acknowledgement of the Omicron variant, first reported from South Africa to the World Health Organisation on 24 November. However, by 1 December the price rout stalled and a slow recovery set in as news about Omicron progressively appeared more reassuring. On a monthly basis, North Sea Dated crude prices fell by \$2.17/bbl in November to \$81.37/bbl and reached \$68.87/bbl on 1 December while WTI prices dropped \$2.18/bbl to \$79.18/bbl on average and to \$65.57/bbl over the same period. However, in the week of 6 December North Sea Dated reached to \$74.50/bbl and WTI to \$71.30/bbl, posting their first weekly increase in five.



The rapid deterioration in all financial markets with the arrival of the Omicron variant highlights their febrile state. Prices have been high for both equities and commodities after many months of strong gains. Yet, while investors want to avoid a market correction, many still believe there is further upside. Much of the fall certainly reflects markets pricing in the impact of new lockdowns and mobility restrictions. But the sudden price move may also have triggered options hedging which accelerates a move down toward significant strike prices. Financial markets revived on 7 December, immediately gaining around 2%, after the Director of the US National Institute for Allergy and Infectious Diseases, Anthony Fauci, announced that "... we are not seeing a very severe profile of disease..." from Covid-19 Omicron.

The 30 November “pivot” on price inflation by the US Federal Reserve (Fed) reflects financial markets’ concerns, voiced for weeks, that inflation is no longer a “transitory” phenomenon. As if to support his statement, US consumer price inflation data published 10 December rose 6.8% y-o-y in November, the fastest pace in nearly 40 years. The Fed began reducing Covid-linked liquidity injections (increasing asset purchases) in November, but markets now expect an acceleration to possibly complete that phase-out in 1H22. The initial step in a series of interest rate increases will likely come in early 2022 in parallel with the phase-out. The more rapid phase-out of liquidity injections and increases in interest rates will cool economic growth faster in 2022. A slower approach could occur, depending on the Omicron variant’s ultimate contagiousness and virulence.

The tapering of Fed support for the US economy works against oil prices in two ways. First, it boosts the US dollar by tightening its availability and raising expectations of higher interest rates. US dollar strength weighs on growth in emerging markets that have borrowed in the currency. Secondly, a stronger dollar increases the cost of oil for importing countries.

Oil market balances are expected to loosen at the start of 2022, as demand eases seasonally and as new restrictions to contain the spread of Covid-19 are put in place. More OPEC+ crude will also hit the market as monthly production increases were upheld at the group’s 2 December meeting. Finally, countries will begin delivering barrels from SPR stocks, as promised in late November (see *US releases SPR in parallel with other countries to lower oil prices*).

Iran remains a remote factor for prices. Vienna-based nuclear talks reconvened in early December but substantial gaps appear to have developed between the negotiators since the last round of discussions in 3Q21. As a result, a resolution of the discussions and restart of oil exports could be many months away.

The looser oil balance expected in 1Q22 contributed to the recent fall of oil prices. It also drove the substantial flattening of the forward crude oil price curve and a weakening of product cracks on futures contracts. This was reflected in the physical market that eased with a lag to futures. The North Sea Dated premium versus front month ICE Brent spiked higher in November before dipping to -\$0.28/bbl in the week of 6 December.

Investors in commodities, and particularly oil futures contracts, appear to have capitulated for the moment, as the collapse in prices diminishes the potential for hedging inflation risks. Money Managers took a hit both from lower absolute prices and from a flatter price curve. A flatter curve reduces the roll-gains from holding positions in periods of strong price backwardation (buying forward and selling contracts when they become prompt). Investors reduced long positions across virtually all contracts and increased short positions, pushing the overall long-short ratio to its lowest level in almost two years.

Futures markets

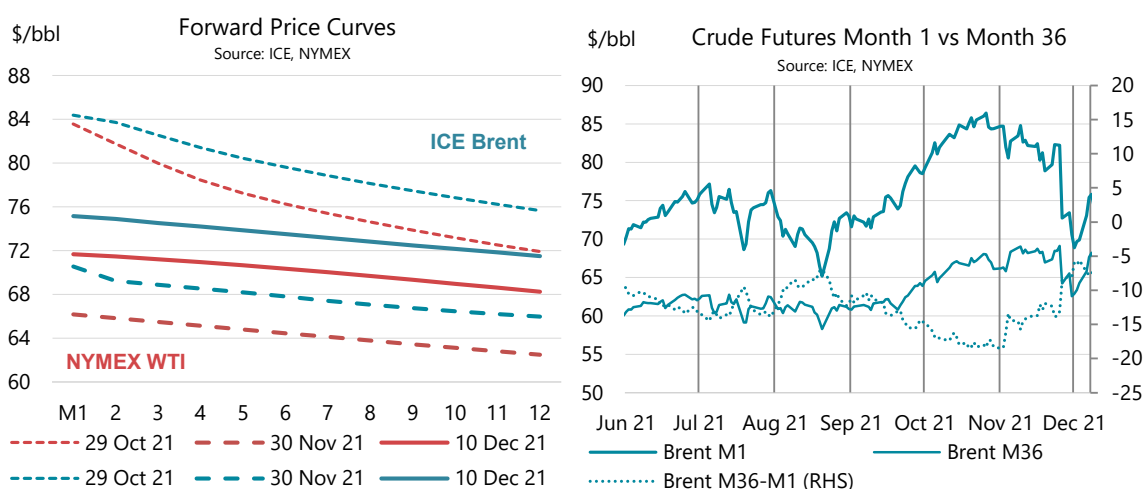
Crude futures drove the overall decline in prices in recent weeks as investors reacted to the volatility in indicators of underlying market fundamentals. The liquidity and the number of actors in the oil futures markets creates a price dynamic that is unequalled by the physical market, which prices at a differential to futures.

ICE Brent crude futures fell \$2.90/bbl m-o-m to \$80.85/bbl on average, but plummeted from \$85.13/bbl in the last week of October to \$70.49/bbl in the week of 29 November. NYMEX WTI contracts fell \$2.57/bbl in November to an average \$78.65/bbl, but plunged from \$83.49/bbl in

the week of 25 October to \$66.89/bbl in the week of 29 November. Crude futures lost around \$10/bbl on 26 November alone, one of the largest daily declines in the history of the contracts. Both contracts reached their lows on 1 December at \$68.87/bbl and \$65.57/bbl, respectively, and by 7 December, both contracts had recovered by almost \$6.50/bbl on reassuring news about Covid-19 Omicron. On 10 December, NYMEX WTI was \$71.67/bbl and ICE Brent \$75.15/bbl, still well below the peak levels of November.

Forward prices fell less than prompt prices, leading to a significant flattening of the backwardation across the length of the forward price curve. The backwardation on the 12-month strip narrowed from around \$12/bbl at the end of October to just over \$3/bbl at the beginning of December. At the 36-month horizon, the spread fell from nearly \$20/bbl in late October to just over \$5/bbl in early December. The narrowing results in part from a decoupling between prompt market fundamentals and perceptions of the forward balance. While the prompt market reflects a loosening of the supply/demand balance in 1H22, the forward curve integrates the risk that deficient upstream investment could tighten balances in the medium term.

Prompt ICE Brent crude futures dropped faster than NYMEX WTI in November. The discount for WTI versus Brent narrowed by \$0.33/bbl m-o-m to -\$2.20/bbl. Yet, while the spread began at -\$1.16/bbl in the week of 1 November, it widened to -\$1.96/bbl in the week of 15 November before sinking to around -\$3.60/bbl at end-month and in early December following the announcement of the SPR stock releases. The availability of SPR barrels compensated for the continuing tightness of crude stocks at Cushing, Oklahoma in the US PADD2 region. This improved export arbitrage for US crude from the Gulf of Mexico to Europe and to Asia.



Prompt product futures prices fell faster than crude prices leading to a tightening of product cracks over the month, with an improvement only in the first days of December. The narrowing cracks were a reversal of the strong gains made in October and reflect concern about both a weakening supply demand balance (notably due to the pandemic) and the seasonal slowdown in product demand that is anticipated in 1Q22. However, cracks recovered in the week of 6 December on prospects for a less severe than expected impact of the Covid-19 Omicron variant on economic and oil demand growth.

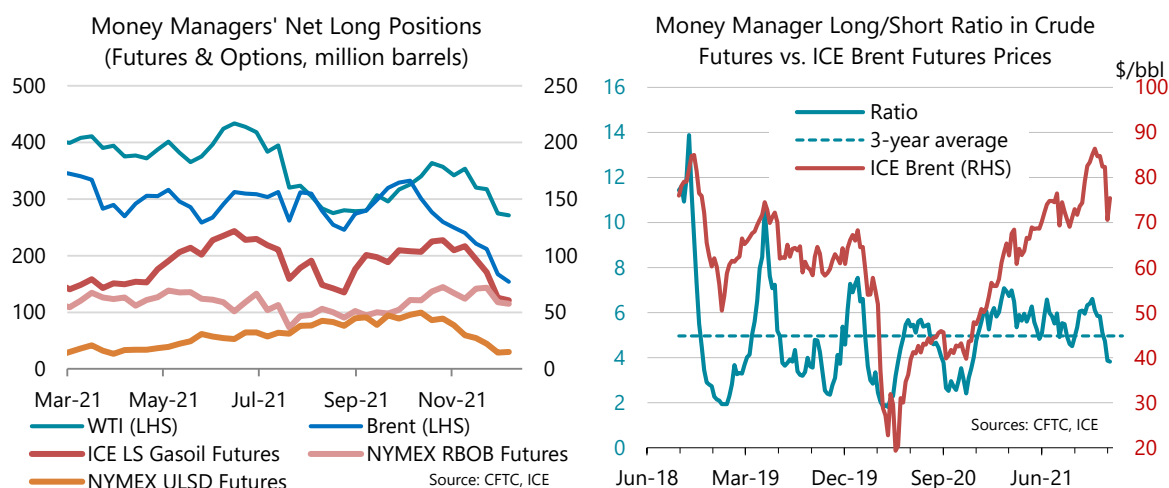
US cracks for gasoline and diesel on the NYMEX underwent deeper losses than European gasoil on ICE. This partly reflects changes surrounding the Renewable Volume Obligations (RVO) imposed by the US Renewable Fuels Standard (RFS) and the cost of renewable identification numbers (RINs) to meet that annual obligation this year. On 18 November, the US

Environmental Protection Agency (EPA) announced an indefinite delay to 2021 RFS deadlines for refiners. This helped ease tensions on prices for RINs (that can be purchased to meet RVOs) as refiners then no longer had to ensure coverage for a possible end-of-year compliance deadline. The EPA subsequently announced on 7 December reduced RVOs for 2020 and 2021 as well as higher levels for 2022.

NYMEX ULSD cracks fell \$3.37/bbl m-o-m in November to \$21.07/bbl, while NYMEX RBOB cracks fell \$3.27/bbl m-o-m to \$17.16/bbl. Cracks lost the gains made in the second half of October. ICE gasoil cracks fell \$1.33/bbl m-o-m to \$11.96/bbl in November. In the week of 6 December, NYMEX product cracks were over \$1/bbl higher than their average levels of November while ICE Gasoil had only just regained their average November level.

Prompt Month Oil Futures Prices (monthly and weekly averages, \$/bbl)												
	Nov-20	Sep-21	Oct-21	Nov-21	Nov-21		Week Commencing:					
					m-o-m Chg	y-o-y Chg	01 Nov	08 Nov	15 Nov	22 Nov	29 Nov	06 Dec
NYMEX												
Light Sweet Crude Oil (WTI)	41.35	71.54	81.22	78.65	-2.57	37.30	81.78	81.96	79.02	76.04	66.89	71.30
RBOB	49.00	90.90	101.65	95.81	-5.84	46.81	99.22	97.64	96.31	93.94	83.40	88.68
ULSD	52.42	92.43	105.66	99.72	-5.94	47.31	103.39	103.14	99.71	96.47	88.16	93.74
ULSD (\$/mmbtu)	9.24	16.30	18.63	17.59	-1.05	8.34	18.23	18.19	17.59	17.01	15.55	16.53
Henry Hub Natural Gas (\$/mmbtu)	2.87	5.12	5.57	5.12	-0.45	2.25	5.53	5.05	5.00	5.07	4.37	3.78
ICE												
Brent	43.98	74.88	83.75	80.85	-2.90	36.87	82.94	83.18	80.98	79.84	70.49	74.78
Gasoil	47.65	84.43	97.04	92.81	-4.23	45.16	96.13	97.57	91.91	89.85	82.40	86.68
Prompt Month Differentials												
NYMEX WTI - ICE Brent	-2.63	-3.34	-2.53	-2.20	0.33	0.43	-1.16	-1.22	-1.96	-3.80	-3.60	-3.48
NYMEX ULSD - WTI	11.07	20.89	24.44	21.07	-3.37	10.01	21.61	21.18	20.69	20.43	21.27	22.44
NYMEX RBOB - WTI	7.65	19.36	20.43	17.16	-3.27	9.51	17.44	15.68	17.29	17.90	16.51	17.38
NYMEX 3-2-1 Crack (RBOB)	8.79	19.87	21.77	18.46	-3.30	9.68	18.83	17.51	18.42	18.74	18.10	19.07
NYMEX ULSD - Natural Gas (\$/mmbtu)	6.37	11.19	13.06	12.47	-0.60	6.10	12.71	13.14	12.59	11.95	11.17	12.75
ICE Gasoil - ICE Brent	3.67	9.55	13.29	11.96	-1.33	8.29	13.19	14.39	10.93	10.01	11.91	11.90

Source: ICE, NYMEX.



Money Manager net long positions in oil futures and options have fallen sharply since mid-October. The fall reflected reductions in outright long positions and the first significant increases in outright short positions.

Over the four weeks to 7 December, crude futures saw net long positions fall 28%, with ICE Brent down 36% and WTI 23% lower. Outright long positions lost 20% while outright short positions rose 23%. The long-short ratio on crude contracts fell from over 6.5 in mid-October to 3.8 on 7 December.

For products, overall net long positions fell 33% in the same 4 weeks. The middle distillate contracts saw the greatest losses with ICE Gasoil net long positions losing 44% and NYMEX ULSD positions losing 50%. NYMEX RBOB gasoline futures only lost 7%. Outright long positions fell across all the contracts (ICE Gasoil -36%, NYMEX ULSD -30%, and NYMEX RBOB -17%), while outright shorts increased for the middle distillate contracts but fell for NYMEX RBOB.

Investors continue to see stronger potential for gasoline cracks due to sustained petrochemical feedstock demand and road-based mobility requirements. On the other hand, the threat of a renewed drop in air traffic pressured middle distillate cracks that posted their steepest losses in the last week of the month after first revelations of the Covid-19 Omicron variant.

Spot crude oil prices

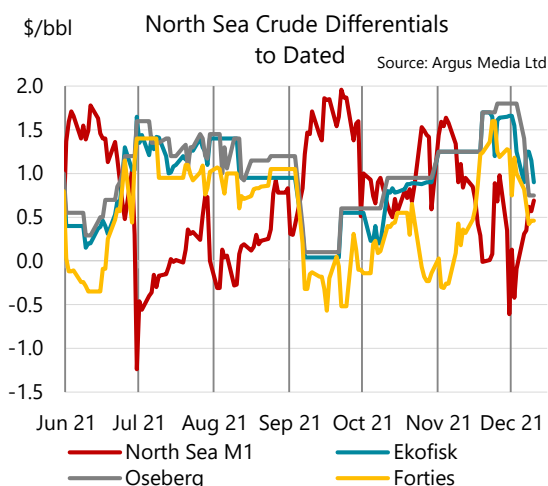
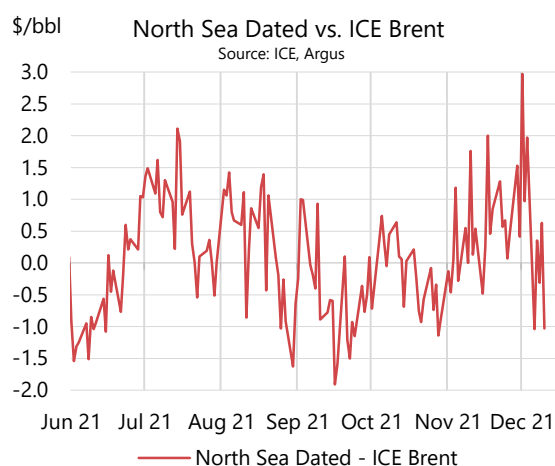
Physical crude prices held their ground amid volatile markets and gained value versus crude futures over the course of November and into December, before abruptly easing. Strong refinery purchasing through November eased in early December on expectations of slower throughputs in the final weeks of the year due to lower margins and weaker product demand.

North Sea Dated flipped from a discount versus ICE Brent futures to a premium of \$0.52/bbl in November, with the spread gaining \$0.73/bbl m-o-m. The flip occurred early in November and the premium rose into the month to a peak of \$1.57/bbl in the week of 29 November as physical prices lagged the collapse in crude futures driven by the financial side of the market. In the week of 6 December, the premium abruptly flipped to a discount of -\$0.28/bbl as futures recovered and as physical markets eased on improving supply and easing demand tensions.

The physical strength was reflected across the North Sea grade spectrum due to European refiners seeking light sweet grades that require less energy and hydrogen to refine than heavier sour grades. Prices for natural gas and carbon emission allowances remain high, increasing costs for every barrel of crude refined. This eats into the residual value of product cracks for refiners, and depresses the value of sour crude versus sweet. Locally available crude values were supported by the strong backwardation that lasted until roughly the third week of the month. The flattening backwardation and easing demand tensions led premiums lower in late November and early December.

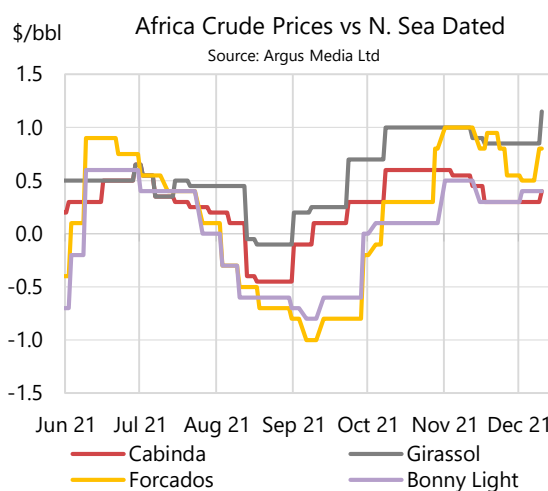
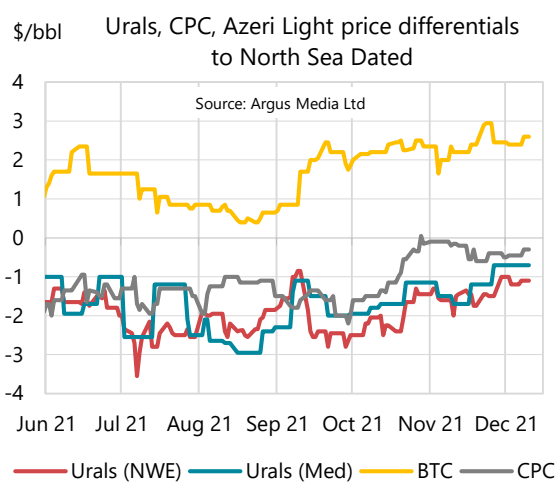
Despite the widening WTI discount to Brent on futures contracts, the strong backwardation squeezed the discount for prompt physical WTI to front month Brent futures (the one month price spread is the driver of the transatlantic arbitrage). This cut WTI exports to Northwest Europe in the first weeks of November, until the falling backwardation opened the gates.

Together these factors favoured European refinery demand for local light sweet grades. Ekofisk premiums gained \$0.68/bbl m-o-m to \$1.38/bbl and reached \$1.55/bbl in the week of 29 November before falling to \$1.09/bbl in the week of 6 December. Oseberg premiums rose \$0.58/bbl m-o-m to \$1.43/bbl and reached \$1.80/bbl before dropping to \$0.94/bbl. The trends even lifted prices for higher-sulphur Forties by \$0.45/bbl m-o-m to \$0.65/bbl on average and \$1.40/bbl in the week of 22 November before falling back to \$0.56/bbl. A surge in impending arrivals of WTI from the US contributed to pressure on the Northwest Europe market balance late in the month.



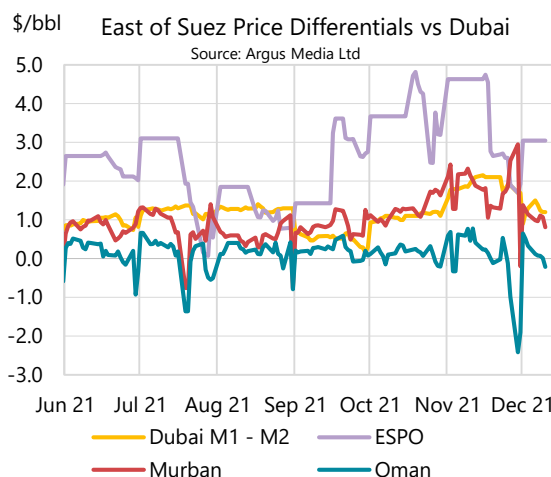
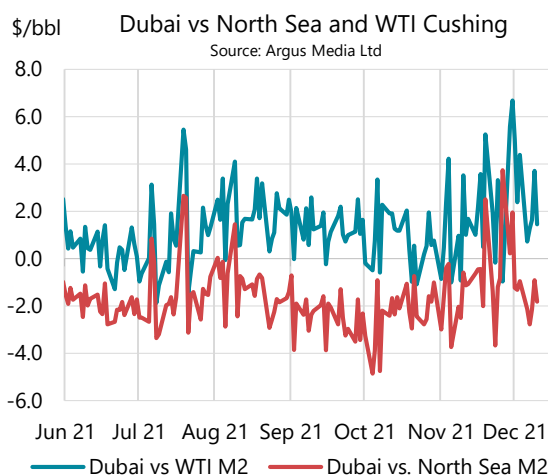
Sweet crude demand from European and Asian refiners supported prices for Mediterranean and Caspian grades like BTC Blend and Azeri Light. BTC Blend premiums to North Sea Dated rose \$0.09/bbl m-o-m to \$2.38/bbl in November and peaked at \$2.84/bbl in the week of 22 November before easing as European refinery buying faltered.

Urals, a heavier and sourer crude, is penalized by higher refinery costs for energy and hydrogen. Nevertheless, Urals discounts to North Sea Dated strengthened as refinery demand swung to crudes producing winter grade diesel in response to the onset of cold weather in Europe. Black Sea shipping delays also supported Urals prices. The discount in Northwest Europe narrowed by \$0.58/bbl m-o-m to -\$1.48/bbl and in the Mediterranean by \$0.32/bbl m-o-m to -\$1.29/bbl in November, and to -\$1.12/bbl and -\$0.70/bbl, respectively, in the week of 6 December.



West African crude price differentials to North Sea Dated gave up much of the gains seen in October over the course of November. Both light and heavy sweet grades benefitted from strong European buying while the transatlantic arbitrage for WTI was difficult and the backwardation robust. As the backwardation flattened in late November, the Brent spread to Dubai narrowed, and the Dubai EFS strengthened, Asian refinery demand improved markedly. However, WTI arbitrage barrels arriving in Europe displaced some demand for West African grades. Unsold December barrels pressured the West African market at end-month before markets recovered in a flurry of activity in the week of 6 December that boosted differentials.

Forcados premiums to North Sea Dated rose \$0.61/bbl m-o-m to \$0.88/bbl in November, peaking in the first weeks of the month before deteriorating. The Bonny Light premium to North Sea Dated rose \$0.30/bbl to \$0.39/bbl. The Girassol premium was almost unchanged m-o-m at \$0.92/bbl, as its steady increase in October reversed over the course of November. The Cabinda premium narrowed by \$0.10/bbl to \$0.43/bbl on average in November, but there were sharp swings over the period, dropping from \$0.60/bbl at the beginning of the month to \$0.30/bbl at end-month.

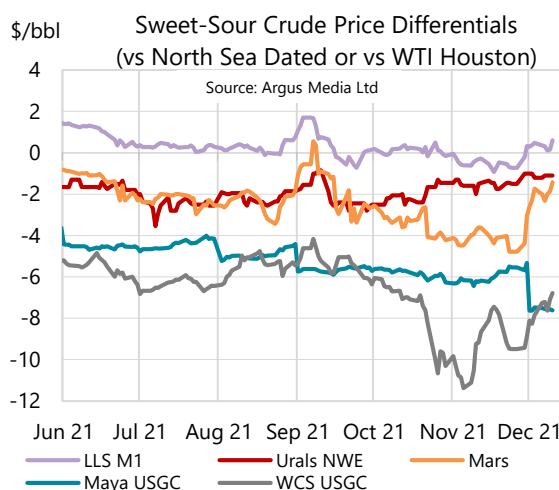
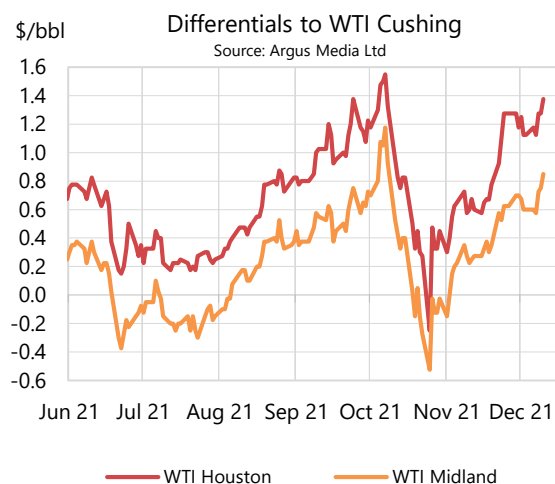


Middle East Dubai strengthened versus Atlantic Basin grades on strong Asian refinery demand ahead of winter. Dubai's discount versus North Sea M2 narrowed by \$1.43/bbl m-o-m to -\$0.91/bbl, and moved from -\$1.95/bbl in the last week of October to -\$0.26/bbl in the week of 29 November. This favoured West African crude trade to Asian refiners. However, in the week of 6 December, the differential dropped back to a discount of -\$1.95/bbl due to the sharp recovery in North Sea Dated prices.

The Dubai premium to WTI M2 rose by \$1.07/bbl m-o-m to \$1.90/bbl on average in November. The premium strengthened over the month, rising to \$4.82/bbl in the week of 29 November before dropping back to \$1.76/bbl in the week of 6 December. The strength of Dubai opened the arbitrage from the Gulf of Mexico to Asia.

While Murban premiums to Dubai rose overall by \$0.52/bbl m-o-m to \$1.80/bbl, they reversed the gains of October and fell steadily in November from over \$2.0/bbl in the first decade to \$0.99/bbl in the week of 6 December. The arbitrage of WTI barrels to Asian refiners pressured demand for Middle East light sweet grades like Murban. The Oman premium to Dubai fell by \$0.11/bbl m-o-m to \$0.02/bbl. All Middle East grades suffered in the second half of the month as the market awaited the outcome of the December OPEC+ meeting and adjusted to rumoured SPR releases, notably from China and Japan.

ESPO's premium to Dubai narrowed considerably over the month, falling \$0.87/bbl m-o-m to \$1.76/bbl in November and averaging less than \$1/bbl in the last decade of the month. The premium suffered from an absence of demand by Chinese independent refiners and from a rise in the number of WTI cargoes destined for Asia.



The discounts for WTI at Cushing versus Midland and Houston recovered steadily over the month of November as regional crude availability improved after completion of the filling of the recently-reversed Capline pipeline from Patoka, Illinois to Saint James, Louisiana. The announced release of SPR barrels also pressured the market in the last 10 days of the month. The WTI Midland premium to Cushing was flat m-o-m at around \$0.32/bbl but flipped from a discount of -\$0.17/bbl at the end of October to a premium of \$0.69/bbl in the first week of December. The WTI Houston premium to Cushing was also flat m-o-m at around \$0.75/bbl but rose from \$0.37/bbl at end-October to \$1.27/bbl in December. The normalisation of the differentials facilitated export flows.

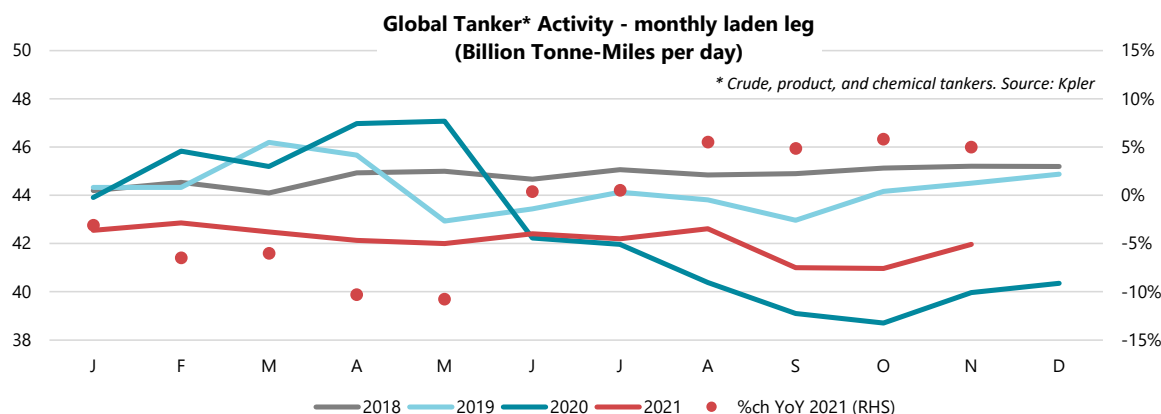
US Gulf of Mexico grades initially deteriorated versus WTI at Houston, pressured by weak export arbitrages and ample regional supply to refiners. However, as arbitrages to Europe and Asia opened in late-November and early-December, the differentials recovered. Light sweet LLS flipped to a discount versus WTI at Houston, dropping \$0.57/bbl m-o-m to -\$0.46/bbl, but rose to \$0.31/bbl in the week of 6 December. The imminent arrival of Midcontinent light sweet crude via the newly reversed Capline pipeline may have contributed to the initial weakness. The discount for heavy sour Mars versus WTI at Houston widened by -\$0.74/bbl m-o-m to -\$4.12/bbl, but narrowed in the week of 6 December to -\$1.93/bbl after Aramco published an increase in its crude price differentials that boosted demand for alternative grades. The discount for heavy sour Western Canadian Select (WCS) versus WTI Houston widened by -\$1.69/bbl m-o-m to -\$9.35/bbl, but narrowed to -\$7.19/bbl in the week of 6 December with stronger Mars crude prices. The discount for WCS at Hardisty widened by -\$5.66/bbl to -\$21.25/bbl as rising supply overwhelmed regional demand (including PADD 2 refiners) and pushed more crude into rail transport towards refiners on the Gulf of Mexico coast. The initial shutdown of the Trans Mountain pipeline from 14 November to 5 December did not appear to add to pressure on discounts that had already reached their nadir by mid-month. However, as the pipeline came back into service in the week of 6 December, the discount narrowed to -\$17.34/bbl. The flatter price structure also helped narrow the discount to prompt WTI.

Spot Crude Oil Prices and Differentials (monthly and weekly averages, \$/bbl)												
	Nov-20	Sep-21	Oct-21	Nov-21	Nov-21		Week Commencing:					
					m-o-m Chg	y-o-y Chg	01 Nov	08 Nov	15 Nov	22 Nov	29 Nov	06 Dec
Crudes												
North Sea Dated	42.54	74.40	83.54	81.37	-2.17	38.83	83.01	83.77	81.59	80.45	72.06	74.50
North Sea Mth 1	43.65	75.76	84.42	82.17	-2.26	38.52	84.57	84.80	82.04	80.98	71.93	75.01
North Sea Mth 2	43.89	74.99	83.80	81.13	-2.67	37.24	83.28	83.41	80.98	80.17	71.72	74.83
WTI (Cushing) Mth 1	41.10	71.56	81.36	79.18	-2.18	38.08	81.78	81.96	79.02	77.89	66.89	71.30
WTI (Cushing) Mth 2	41.36	71.33	80.62	78.31	-2.31	36.95	80.46	80.69	78.28	77.88	66.64	71.12
WTI (Houston) Mth 1	41.90	72.59	82.10	79.92	-2.18	38.02	82.29	82.60	79.69	78.99	68.08	72.55
Urals (NWE)	42.83	72.35	81.49	79.89	-1.59	37.07	81.57	82.14	80.04	78.97	71.02	73.38
Urals (Mediterranean)	43.35	72.65	81.93	80.08	-1.86	36.72	81.72	82.15	80.19	79.35	71.36	73.80
North Sea Dated vs. ICE Brent	-1.44	-0.48	-0.21	0.52	0.73	1.96	0.07	0.59	0.61	0.61	1.57	-0.28
WTI (Cushing) Mth1 vs. NYMEX	-0.25	0.02	0.14	0.53	0.39	0.78	0.00	0.00	0.00	2.44	0.00	0.00
Differentials to Physical Markers												
WTI (Houston) versus North Sea Mth 1	-1.75	-3.17	-2.32	-2.25	0.07	-0.50	-2.29	-2.21	-2.35	-1.99	-3.85	-2.46
WTI (Houston) versus WTI (Cushing) Mth 1	0.80	1.03	0.75	0.74	-0.01	-0.06	0.50	0.64	0.67	1.10	1.19	1.24
Urals (NWE) versus North Sea Dated	0.28	-2.05	-2.06	-1.48	0.58	-1.76	-1.44	-1.63	-1.55	-1.48	-1.04	-1.12
Urals (Med) versus North Sea Dated	0.81	-1.75	-1.61	-1.29	0.32	-2.10	-1.29	-1.62	-1.40	-1.10	-0.70	-0.70
Dubai versus North Sea Mth 2	-0.55	-2.42	-2.34	-0.91	1.43	-0.36	-1.90	-1.46	-0.20	-0.66	-0.26	-1.95
Dubai versus WTI (Cushing) Mth 2	1.97	1.24	0.83	1.90	1.07	-0.07	0.92	1.25	2.50	1.63	4.82	1.76
Prompt Month Differentials												
Forward North Sea Mth1-Mth2	-0.24	0.77	0.63	1.04	0.42	1.28	1.29	1.39	1.06	0.81	0.21	0.18
Forward WTI Cushing Mth1-Mth2	-0.26	0.23	0.73	0.87	0.13	1.13	1.32	1.27	0.74	0.01	0.25	0.18
Forward Dubai Mth1-Mth2	0.10	0.51	1.09	1.91	0.82	1.81	1.73	1.96	2.11	1.89	1.35	1.31

Source: Argus Media Ltd, ICE

Freight

Global tanker activity rose in November, in line with higher refinery runs and increased crude exports. Tanker traffic continues to move in parallel to the trend in 2020 at around 5% more tonne-miles y-o-y, but remains below 2019 levels. The overhang in tanker capacity persists and continues to pressure the market.



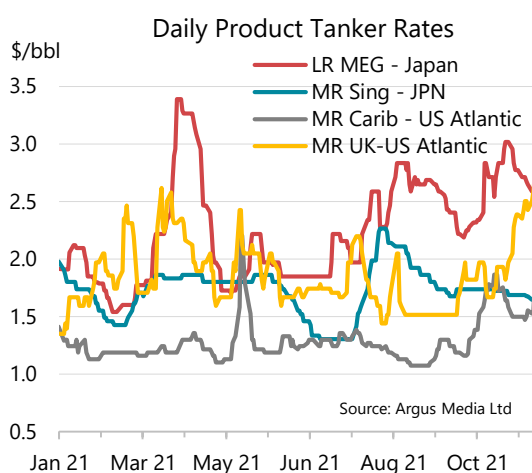
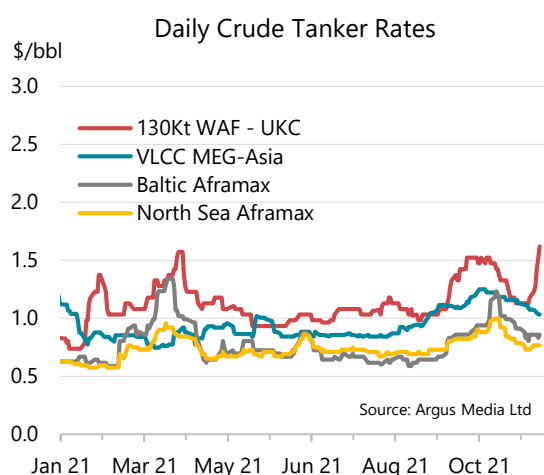
Crude tanker tensions eased over the course of November as available capacity returned to the market, particularly East of Suez, exceeding charterers' requirements. With few exceptions, rates fell across all classes and in most regions for dirty tankers from the beginning to the end of November and into December. Yet they still benefitted from a m-o-m increase in most cases.

Tanker availability East of Suez surpassed regional demand, leading some owners to move ships to the Atlantic Basin late in the month hoping to get better charters. This contributed to depressed West African tanker freight costs that were already pressured by weakening European chartering. However, chartering for unsold December West African cargoes loading in the third decade appeared in the market in the first week of the month, driving a spike in rates. Aframax rates in Europe (Baltic and North Sea) were supported by strong regional chartering to meet local demand for North Sea and Russian crude. They were also buoyed by navigational

delays in the Black Sea and the Bosphorus where storms and shortening daylight hours have delayed movements and reduced tanker availability. A boost also came from a few tankers moving west to the US Gulf of Mexico where chartering rates have strengthened in the last 10-15 days.

China's allocation of 1.579 million tonnes of clean product export quotas in the second week of November helped sustain Asia-Pacific clean product freight rates through end-2021. As well, rising Covid-19 infections in China and snowstorms impacted air travel and boosted Chinese jet fuel exports in mid-November. Japanese winter heating kerosene imports also helped sustain hiring. Combined Northeast Asia chartering supported LR and MR rates East of Suez, but the region remained relatively stable overall as good tanker demand met adequate supply.

MR rates for the USG to UKC route rose steadily over the month as charters rushed to lock-in tankers through off-market deals with owners. That cleared an abiding capacity overhang in the market and tightened availability of quoted capacity, resulting in a steady surge of freight rates ahead of the Thanksgiving and subsequently Christmas holidays. Caribbean routes added to the tension with strong chartering of product cargoes into Mexico and Panama Canal delays that reduced the available tonnage. Higher rates for chartering in the region attracted capacity from other routes.



(monthly and weekly averages, \$/bbl)												
	Nov-21						Week Commencing					
	Nov-20	Sep-21	Oct-21	Nov-21	m-o-m chg	y-o-y chg	01-Nov	08-Nov	15-Nov	22-Nov	29-Nov	06-Dec
Crude Tankers												
VLCC MEG-Asia	0.83	0.98	1.14	1.18	0.03	0.3	1.23	1.20	1.16	1.14	1.10	1.05
130Kt WAF - UKC	0.86	1.04	1.38	1.31	-0.07	0.4	1.50	1.40	1.27	1.14	1.14	1.41
Baltic Aframax	0.53	0.64	0.85	1.01	0.15	0.5	1.00	1.16	1.00	0.92	0.85	0.85
North Sea Aframax	0.59	0.71	0.82	0.87	0.05	0.3	0.91	0.98	0.85	0.79	0.74	0.77
Product Tankers												
LR MEG - Japan	2.09	2.70	2.35	2.80	0.45	0.7	2.70	2.71	2.97	2.82	2.69	2.58
MR Sing - JPN	1.38	1.92	1.73	1.71	-0.01	0.3	1.74	1.73	1.72	1.69	1.68	1.64
MR Carib - US Atlantic	0.96	1.11	1.27	1.67	0.40	0.7	1.69	1.82	1.66	1.50	1.50	1.75
MR UK-US Atlantic	1.37	1.55	1.70	1.99	0.29	0.6	1.80	1.80	1.90	2.29	2.44	2.67

Source: Argus Media Ltd

Tables

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

	2018	2019	1Q20	2Q20	3Q20	4Q20	2020	1Q21	2Q21	3Q21	4Q21	2021	1Q22	2Q22	3Q22	4Q22	2022
OECD DEMAND																	
Americas	25.4	25.5	24.3	19.8	22.6	23.0	22.4	22.7	24.3	24.7	24.9	24.2	24.3	25.1	25.6	25.1	25.0
Europe	14.3	14.3	13.3	11.0	12.9	12.5	12.4	11.9	12.6	13.8	13.4	12.9	13.0	13.5	13.9	13.5	13.5
Asia Oceania	8.0	7.9	7.9	6.6	6.8	7.4	7.1	7.7	7.0	7.1	7.8	7.4	7.9	7.2	7.4	7.9	7.6
Total OECD	47.7	47.7	45.5	37.5	42.3	42.8	42.0	42.3	44.0	45.7	46.0	44.5	45.2	45.8	46.9	46.5	46.1
NON-OECD DEMAND																	
FSU	4.7	4.7	4.6	4.1	4.7	4.7	4.5	4.6	4.7	4.9	4.9	4.8	4.7	4.8	5.1	5.0	4.9
Europe	0.8	0.8	0.7	0.7	0.8	0.8	0.7	0.7	0.7	0.8	0.8	0.8	0.7	0.8	0.8	0.8	0.8
China	13.0	13.5	11.9	14.2	14.6	14.8	13.9	14.6	15.2	15.2	15.1	15.0	15.2	15.8	15.8	15.5	15.6
Other Asia	14.0	14.0	13.5	11.2	12.2	13.4	12.6	13.5	12.8	12.5	13.8	13.2	14.2	14.0	13.5	14.2	14.0
Americas	6.3	6.3	5.8	5.0	5.7	5.9	5.6	5.8	5.8	6.2	6.1	6.0	5.9	6.0	6.2	6.2	6.1
Middle East	8.2	8.2	7.9	7.1	8.2	7.8	7.7	7.7	7.8	8.3	7.9	7.9	7.8	7.9	8.4	7.9	8.0
Africa	4.2	4.3	4.1	3.4	3.7	3.9	3.8	4.1	4.0	3.9	4.0	4.0	4.1	4.0	4.0	4.1	4.1
Total Non-OECD	51.1	51.8	48.4	45.7	49.8	51.3	48.8	51.0	51.2	52.0	52.6	51.7	52.7	53.3	53.9	53.8	53.4
Total Demand¹	98.9	99.5	93.9	83.1	92.1	94.1	90.8	93.3	95.2	97.6	98.6	96.2	97.9	99.1	100.8	100.3	99.5
OECD SUPPLY																	
Americas	23.0	24.8	25.9	22.6	23.2	23.7	23.8	23.3	24.2	24.3	25.2	24.3	25.2	25.4	25.7	26.0	25.6
Europe	3.5	3.4	3.7	3.6	3.4	3.5	3.6	3.6	3.1	3.4	3.5	3.4	3.6	3.4	3.5	3.5	3.5
Asia Oceania	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Total OECD⁴	26.9	28.6	30.1	26.8	27.1	27.8	27.9	27.4	27.8	28.3	29.3	28.2	29.3	29.3	29.7	30.1	29.6
NON-OECD SUPPLY																	
FSU	14.6	14.6	14.8	13.2	12.8	13.2	13.5	13.4	13.7	13.7	14.3	13.8	14.5	14.7	14.7	14.9	14.7
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	3.8	3.9	4.0	4.0	4.0	3.9	4.0	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
Other Asia	3.4	3.3	3.2	3.0	2.9	3.0	3.0	3.0	2.9	2.8	2.8	2.9	2.8	2.8	2.8	2.8	2.8
Americas	5.1	5.3	5.6	5.1	5.4	5.2	5.3	5.3	5.3	5.4	5.3	5.3	5.4	5.5	5.6	5.6	5.5
Middle East	3.1	3.0	3.1	3.0	3.0	3.0	3.0	3.1	3.1	3.1	3.1	3.1	3.2	3.2	3.3	3.3	3.2
Africa	1.5	1.5	1.4	1.4	1.4	1.3	1.4	1.3	1.3	1.3	1.3	1.3	1.3	1.2	1.3	1.3	1.3
Total Non-OECD⁴	31.6	31.8	32.2	29.9	29.6	29.7	30.3	30.2	30.5	30.5	31.0	30.5	31.4	31.6	31.7	32.0	31.7
Processing gains ³	2.4	2.4	2.3	2.0	2.1	2.1	2.1	2.1	2.2	2.3	2.3	2.3	2.4	2.4	2.4	2.4	2.4
Global Biofuels	2.7	2.8	2.3	2.5	3.1	2.6	2.6	2.2	2.9	3.2	2.7	2.7	2.5	3.1	3.4	3.0	3.0
Total Non-OPEC Supply	63.5	65.6	66.8	61.1	61.9	62.2	63.0	61.9	63.4	64.3	65.2	63.7	65.6	66.4	67.2	67.4	66.7
OPEC²																	
Crude	31.4	29.6	28.2	25.6	24.1	24.9	25.7	25.3	25.5	26.9							
NGLs	5.4	5.3	5.3	5.0	5.0	5.0	5.1	5.1	5.2	5.2	5.2	5.2	5.3	5.4	5.4	5.4	5.4
Total OPEC	36.8	35.0	33.5	30.6	29.0	29.9	30.8	30.4	30.7	32.1							
Total Supply	100.3	100.5	100.3	91.7	90.9	92.1	93.8	92.3	94.1	96.4							
STOCK CHANGES AND MISCELLANEOUS																	
Reported OECD																	
Industry	0.1	0.1	1.0	2.6	-0.4	-1.6	0.4	-1.3	-0.5	-1.3							
Government	-0.1	0.0	0.0	0.3	-0.1	-0.1	0.0	0.0	-0.2	-0.1							
Total	0.0	0.0	1.0	2.9	-0.5	-1.7	0.4	-1.2	-0.7	-1.4							
Floating storage/Oil in transit	0.3	0.1	0.6	0.4	-1.6	0.8	0.0	-0.6	-0.4	-0.4							
Miscellaneous to balance ⁵	1.1	0.9	4.8	5.3	1.0	-1.1	2.5	0.8	0.1	0.6							
Total Stock Ch. & Misc	1.4	1.0	6.4	8.6	-1.2	-2.0	2.9	-1.0	-1.1	-1.3							

Memo items:

Call on OPEC crude + Stock ch.⁶ 30.0 28.7 21.8 17.0 25.3 26.9 22.7 26.3 26.5 28.1 28.2 27.3 27.0 27.3 28.2 27.4 27.5

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 OPEC data based on today's membership throughout the time series.

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 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)

	2018	2019	1Q20	2Q20	3Q20	4Q20	2020	1Q21	2Q21	3Q21	4Q21	2021	1Q22	2Q22	3Q22	4Q22	2022
OECD DEMAND																	
Americas	-	-	-	-	-	-	-	-	-	-0.1	-	-	-0.2	-0.1	-	-	-0.1
Europe	-	-	-	-	-	-	-	-	-	0.1	-	-	-0.1	-	-	0.1	-
Asia Oceania	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total OECD	-	-	-	-	-	-	-	-	-	-	-	-	-0.3	-	0.1	0.1	-
NON-OECD DEMAND																	
FSU	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Europe	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
China	-	-	-	-	-	-	-	0.1	0.1	0.1	-	-	-	-	-	-0.1	-
Other Asia	-	-	-	-	-	-	-	-	-	-0.1	-0.2	-0.1	-0.1	-	-	-	-0.1
Americas	-	-	-	-	-	-	-	-0.1	-0.1	-	-	-	-	-	-	-	-
Middle East	-	-	-	-	-	-	-	-	-	-	-	-	-	0.1	0.1	-	-
Africa	-	-	-	-	-	-	-	-	-	-	-	-	-0.1	-	-	-	-
Total Non-OECD	-	-	-	-	-	-	-	-	-	-	-0.3	-0.1	-0.3	-0.1	0.1	-0.1	-0.1
Total Demand	-	-	-	0.1	-	-	-	-	-	-0.1	-0.3	-0.1	-0.6	-0.1	0.2	-	-0.1
OECD SUPPLY																	
Americas	-	-	-	-	-	-	-	-	-	0.1	0.3	0.1	0.1	-	-	-	-
Europe	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Asia Oceania	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total OECD	-	-	-	-	-	-	-	-	-	0.1	0.2	0.1	0.1	-	-	-	-
NON-OECD SUPPLY																	
FSU	-	-	-	-	-	-	-	-	-	-	-	-	-	-0.1	-0.1	0.1	-
Europe	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
China	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Asia	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Americas	-	-	-	-	-	-	-	-	-	-	-0.1	-	-	-	-	-	-
Middle East	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Africa	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Non-OECD	-	-	-	-	-	-	-	-	-	-	-0.1	-	-	-0.1	-0.2	-	-0.1
Processing gains	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Global Biofuels	-	-	0.1	-	-	-	-	-	-	-	-0.2	-	-	-0.1	-0.1	-0.1	-0.1
Total Non-OPEC Supply	-	-	-	-	-	-	-	-	-	0.1	-0.1	-	-	-0.2	-0.3	-	-0.1
OPEC																	
Crude	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NGLs	-	-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
Total OPEC	-	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-	-	-	-	-	-	-
Total Supply	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-	-	-	-	-	-	-	-
STOCK CHANGES AND MISCELLANEOUS																	
REPORTED OECD																	
Industry	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Government	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Floating storage/Oil in transit	-	-	-	-	-	-	-	-	0.1	0.1	-	-	-	-	-	-	-
Miscellaneous to balance	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-	-	-	-	-	-	-	-
Total Stock Ch. & Misc	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-	-	-	-	-	-	-	-
Memo items:																	
Call on OPEC crude + Stock ch.	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	-	-0.1	-	-0.6	0.2	0.5	0.1	0.1

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

Table 1b
WORLD OIL SUPPLY AND DEMAND (Including OPEC+ based on current agreement¹)
(million barrels per day)

	2018	2019	1Q20	2Q20	3Q20	4Q20	2020	1Q21	2Q21	3Q21	4Q21	2021	1Q22	2Q22	3Q22	4Q22	2022
Total Demand	98.9	99.5	93.9	83.1	92.1	94.1	90.8	93.3	95.2	97.6	98.6	96.2	97.9	99.1	100.8	100.3	99.5
OECD SUPPLY																	
Americas ²	20.9	22.8	23.9	20.7	21.3	21.8	21.9	21.3	22.3	22.4	23.3	22.3	23.2	23.4	23.7	24.0	23.6
Europe	3.5	3.4	3.7	3.6	3.4	3.5	3.6	3.6	3.1	3.4	3.5	3.4	3.6	3.4	3.5	3.5	3.5
Asia Oceania	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Total OECD (non-OPEC+)	24.8	26.7	28.1	24.8	25.2	25.9	26.0	25.5	25.8	26.3	27.3	26.2	27.3	27.3	27.7	28.0	27.6
NON-OECD SUPPLY																	
FSU ³	0.3	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	0.4
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	3.8	3.9	4.0	4.0	4.0	3.9	4.0	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
Other Asia ⁴	2.6	2.5	2.4	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.1	2.2	2.1	2.1	2.1	2.0	2.1
Latin America	5.1	5.3	5.6	5.1	5.4	5.2	5.3	5.3	5.3	5.4	5.3	5.3	5.4	5.5	5.6	5.6	5.5
Middle East ⁵	1.9	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.0	2.0	2.0	2.0
Africa ⁶	1.2	1.2	1.2	1.2	1.2	1.1	1.2	1.1	1.1	1.1	1.1	1.1	1.1	1.0	1.0	1.0	1.0
Total Non-OECD (non-OPEC+)	15.1	15.3	15.5	14.9	15.1	14.8	15.1	15.1	15.1	15.2	15.0	15.1	15.1	15.1	15.2	15.2	15.2
Processing Gains	2.4	2.4	2.3	2.0	2.1	2.1	2.1	2.1	2.2	2.3	2.3	2.3	2.4	2.4	2.4	2.4	2.4
Global Biofuels	2.7	2.8	2.3	2.5	3.1	2.6	2.6	2.2	2.9	3.2	2.7	2.7	2.5	3.1	3.4	3.0	3.0
Total Non-OPEC+	44.9	47.1	48.2	44.3	45.5	45.5	45.9	44.8	46.1	47.0	47.3	46.3	47.4	47.9	48.6	48.6	48.1
OPEC+ CRUDE																	
Algeria	1.0	1.0	1.0	0.9	0.8	0.9	0.9	0.9	0.9	0.9	1.0	0.9	1.0	1.0	1.0	1.0	1.0
Angola	1.5	1.4	1.4	1.3	1.2	1.2	1.3	1.1	1.1	1.1	1.1	1.1	1.2	1.2	1.1	1.1	1.1
Azerbaijan	0.7	0.7	0.7	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
Bahrain	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Brunei	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
Congo	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Equatorial Guinea	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
Gabon	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Iran	3.6	2.4	2.0	1.9	2.0	2.1	2.0	2.3	2.4	2.5	2.5	2.4	2.5	2.5	2.5	2.5	2.5
Iraq	4.6	4.7	4.6	4.1	3.7	3.8	4.0	3.9	3.9	4.1	4.2	4.0	4.3	4.5	4.6	4.7	4.5
Kazakhstan	1.6	1.6	1.7	1.5	1.4	1.4	1.5	1.5	1.5	1.4	1.6	1.5	1.6	1.6	1.5	1.6	1.6
Kuwait	2.7	2.7	2.7	2.4	2.2	2.3	2.4	2.3	2.4	2.4	2.5	2.4	2.6	2.7	2.8	2.8	2.7
Libya	1.0	1.1	0.3	0.1	0.1	0.9	0.4	1.2	1.2	1.2	1.1	1.2	1.1	1.1	1.1	1.1	1.1
Malaysia	0.5	0.5	0.5	0.4	0.4	0.4	0.5	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.5
Mexico	1.8	1.7	1.7	1.6	1.6	1.6	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
Nigeria	1.6	1.7	1.8	1.6	1.4	1.3	1.5	1.4	1.3	1.3	1.3	1.3	1.5	1.5	1.6	1.6	1.5
Oman	0.9	0.8	0.9	0.8	0.7	0.7	0.8	0.7	0.7	0.8	0.8	0.8	0.8	0.8	0.9	0.9	0.9
Russia	10.4	10.4	10.4	9.2	8.9	9.1	9.4	9.3	9.5	9.7	10.0	9.6	10.1	10.3	10.4	10.4	10.3
Saudi Arabia	10.3	9.9	9.8	9.3	8.8	9.0	9.2	8.5	8.5	9.6	9.9	9.1	10.2	10.6	10.9	11.0	10.7
South Sudan	0.1	0.2	0.2	0.2	0.2	0.1	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Sudan	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
UAE	3.0	3.2	3.2	2.9	2.8	2.5	2.9	2.6	2.6	2.8	2.9	2.7	2.9	3.0	3.1	3.2	3.1
Venezuela	1.4	0.9	0.8	0.5	0.4	0.4	0.5	0.5	0.5	0.6	0.7	0.6	0.8	0.8	0.8	0.8	0.8
OPEC+ Crude	47.8	45.9	44.6	40.2	38.2	39.3	40.6	39.9	40.5	41.9	43.3	41.4	44.4	45.3	46.1	46.5	45.6
OPEC+ NGLs & Condensate	7.4	7.4	7.5	7.1	7.1	7.3	7.2	7.4	7.4	7.4	7.5	7.4	7.7	7.8	7.9	7.9	7.8
OPEC+ Nonconventionals	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
Total OPEC+	55.3	53.4	52.1	47.5	45.4	46.7	47.9	47.4	48.0	49.4	50.9	49.0	52.2	53.2	54.1	54.6	53.5
Total Supply Oil	100.3	100.5	100.3	91.7	90.9	92.1	93.8	92.3	94.1	96.4	98.2	95.3	99.6	101.2	102.7	103.2	101.7
Memo items:																	
Call on OPEC+ crude + Stock ch	46.4	44.9	38.1	31.6	39.4	41.3	37.6	40.9	41.5	43.2	43.7	42.3	42.7	43.3	44.2	43.6	43.5

¹ From Dec 2021, OPEC+ supply reflects latest OPEC+ deal and individual country's sustainable capacity. Libya, Iran, Venezuela held at most recent level through 2022.

² OECD Americas excludes Mexico

³ FSU excludes Russia, Kazakhstan, Azerbaijan

⁴ Other Asia excludes Brunei, Malaysia

⁵ Middle East excludes Oman, Bahrain

⁶ Africa excludes Sudan, South Sudan

Table 2
SUMMARY OF GLOBAL OIL DEMAND

	2019	1Q20	2Q20	3Q20	4Q20	2020	1Q21	2Q21	3Q21	4Q21	2021	1Q22	2Q22	3Q22	4Q22	2022
Demand (mb/d)																
Americas	25.47	24.31	19.85	22.64	22.98	22.44	22.73	24.33	24.71	24.87	24.17	24.27	25.13	25.62	25.14	25.05
Europe	14.31	13.34	11.02	12.88	12.51	12.44	11.91	12.63	13.85	13.37	12.95	13.01	13.49	13.91	13.51	13.48
Asia Oceania	7.93	7.86	6.60	6.75	7.35	7.14	7.67	7.04	7.12	7.78	7.40	7.93	7.19	7.38	7.89	7.60
Total OECD	47.72	45.50	37.46	42.27	42.84	42.02	42.30	44.00	45.67	46.02	44.51	45.22	45.81	46.92	46.55	46.13
Asia	27.54	25.32	25.43	26.83	28.25	26.47	28.10	28.08	27.78	28.91	28.22	29.39	29.79	29.38	29.71	29.57
Middle East	8.24	7.85	7.09	8.18	7.78	7.72	7.70	7.83	8.33	7.88	7.94	7.84	7.93	8.38	7.92	8.02
Americas	6.29	5.77	4.99	5.70	5.90	5.59	5.79	5.85	6.18	6.10	5.98	5.90	6.00	6.17	6.15	6.06
FSU	4.72	4.57	4.05	4.65	4.67	4.49	4.56	4.68	4.93	4.89	4.77	4.69	4.80	5.12	5.03	4.91
Africa	4.25	4.13	3.42	3.73	3.92	3.80	4.08	3.99	3.92	4.03	4.00	4.09	4.04	3.99	4.15	4.07
Europe	0.78	0.74	0.68	0.77	0.77	0.74	0.74	0.74	0.83	0.77	0.77	0.74	0.76	0.83	0.79	0.78
Total Non-OECD	51.83	48.39	45.65	49.85	51.29	48.80	50.97	51.16	51.97	52.59	51.68	52.65	53.32	53.88	53.75	53.41
World	99.55	93.89	83.12	92.12	94.13	90.83	93.28	95.17	97.64	98.61	96.19	97.87	99.13	100.79	100.30	99.53
of which:																
United States ¹	20.46	19.50	16.07	18.45	18.72	18.19	18.45	20.03	20.21	20.28	19.75	19.66	20.37	20.60	20.29	20.23
Europe five ²	8.20	7.62	5.93	7.11	7.03	6.92	6.68	7.07	7.67	7.59	7.26	7.48	7.63	7.78	7.66	7.64
China	13.55	11.85	14.19	14.61	14.83	13.88	14.62	15.25	15.23	15.08	15.05	15.18	15.76	15.84	15.47	15.57
Japan	3.74	3.78	2.93	3.06	3.53	3.33	3.73	3.08	3.18	3.69	3.42	3.92	3.22	3.32	3.72	3.54
India	4.99	4.92	3.89	4.25	5.10	4.54	4.99	4.45	4.48	5.01	4.73	5.19	5.16	4.79	5.20	5.09
Russia	3.57	3.52	3.08	3.58	3.50	3.42	3.49	3.59	3.79	3.67	3.64	3.61	3.66	3.95	3.80	3.75
Brazil	3.08	2.95	2.64	2.99	3.13	2.93	2.97	2.98	3.19	3.13	3.07	2.98	2.96	3.07	3.10	3.03
Saudi Arabia	3.12	2.93	2.77	3.30	3.01	3.00	2.77	3.07	3.29	3.00	3.03	2.77	2.90	3.25	2.89	2.95
Canada	2.51	2.42	1.97	2.25	2.14	2.19	2.12	2.16	2.38	2.47	2.29	2.33	2.35	2.60	2.52	2.45
Korea	2.60	2.53	2.45	2.36	2.40	2.44	2.55	2.50	2.59	2.66	2.58	2.58	2.51	2.62	2.65	2.59
Mexico	1.96	1.85	1.40	1.50	1.58	1.58	1.62	1.63	1.56	1.60	1.60	1.74	1.87	1.89	1.80	1.83
Iran	1.93	1.97	1.78	1.89	1.88	1.88	1.97	1.78	1.86	1.89	1.87	1.97	1.88	1.89	1.89	1.91
Total	69.70	65.84	59.07	65.35	66.86	64.29	65.96	67.60	69.45	70.07	68.28	69.42	70.27	71.59	70.99	70.58
% of World	70.0%	70.1%	71.1%	70.9%	71.0%	70.8%	70.7%	71.0%	71.1%	71.1%	71.0%	70.9%	70.9%	71.0%	70.8%	70.9%
Annual Change (% per annum)																
Americas	0.2	-2.9	-21.6	-12.6	-10.3	-11.9	-6.5	22.6	9.1	8.2	7.7	6.8	3.3	3.7	1.1	3.6
Europe	0.0	-5.4	-22.7	-12.7	-11.6	-13.1	-10.7	14.7	7.5	6.9	4.1	9.3	6.8	0.5	1.0	4.1
Asia Oceania	-1.0	-6.0	-12.6	-12.3	-9.6	-10.0	-2.5	6.7	5.4	5.8	3.6	3.5	2.1	3.7	1.5	2.7
Total OECD	-0.0	-4.2	-20.5	-12.6	-10.6	-11.9	-7.0	17.5	8.1	7.4	5.9	6.9	4.1	2.7	1.1	3.6
Asia	2.0	-7.0	-7.9	-1.6	0.8	-3.9	11.0	10.4	3.5	2.3	6.6	4.6	6.1	5.8	2.8	4.8
Middle East	0.2	-2.1	-12.2	-5.6	-5.2	-6.3	-1.9	10.5	1.9	1.3	2.7	1.8	1.3	0.7	0.5	1.1
Americas	0.6	-6.5	-20.5	-10.7	-6.8	-11.1	0.2	17.3	8.5	3.4	7.0	2.0	2.6	-0.2	0.8	1.3
FSU	0.8	1.6	-12.6	-5.1	-3.7	-5.0	-0.3	15.5	6.0	4.9	6.3	2.9	2.6	3.8	2.8	3.0
Africa	0.8	-4.3	-20.4	-10.0	-8.0	-10.7	-1.2	16.8	5.3	2.8	5.5	0.2	1.2	1.8	2.9	1.5
Europe	3.4	-1.8	-13.4	-4.0	-3.1	-5.6	0.6	8.7	7.9	0.6	4.4	-0.6	3.3	0.2	2.1	1.2
Total Non-OECD	1.4	-5.1	-11.6	-4.4	-2.3	-5.8	5.3	12.1	4.3	2.5	5.9	3.3	4.2	3.7	2.2	3.3
World	0.7	-4.6	-15.9	-8.3	-6.2	-8.8	-0.7	14.5	6.0	4.8	5.9	4.9	4.2	3.2	1.7	3.5
Annual Change (mb/d)																
Americas	0.06	-0.73	-5.48	-3.26	-2.65	-3.03	-1.58	4.48	2.07	1.89	1.72	1.54	0.80	0.92	0.27	0.88
Europe	0.00	-0.76	-3.24	-1.87	-1.64	-1.88	-1.42	1.62	0.97	0.86	0.51	1.10	0.85	0.06	0.14	0.54
Asia Oceania	-0.08	-0.50	-0.95	-0.95	-0.78	-0.79	-0.19	0.44	0.36	0.43	0.26	0.27	0.15	0.27	0.12	0.20
Total OECD	-0.01	-1.99	-9.67	-6.08	-5.06	-5.70	-3.20	6.54	3.40	3.18	2.49	2.92	1.80	1.25	0.52	1.62
Asia	0.55	-1.90	-2.18	-0.44	0.22	-1.07	2.78	2.65	0.95	0.66	1.75	1.29	1.71	1.61	0.80	1.35
Middle East	0.02	-0.17	-0.99	-0.48	-0.43	-0.52	-0.15	0.74	0.15	0.10	0.21	0.14	0.10	0.05	0.04	0.08
Americas	0.04	-0.40	-1.29	-0.69	-0.43	-0.70	0.01	0.86	0.48	0.20	0.39	0.12	0.15	-0.01	0.05	0.08
FSU	0.04	0.07	-0.59	-0.25	-0.18	-0.24	-0.02	0.63	0.28	0.23	0.28	0.13	0.12	0.19	0.14	0.15
Africa	0.03	-0.18	-0.87	-0.42	-0.34	-0.45	-0.05	0.57	0.20	0.11	0.21	0.01	0.05	0.07	0.12	0.06
Europe	0.03	-0.01	-0.11	-0.03	-0.02	-0.04	0.00	0.06	0.06	0.00	0.03	0.00	0.02	0.00	0.02	0.01
Total Non-OECD	0.70	-2.59	-6.02	-2.31	-1.20	-3.02	2.58	5.51	2.12	1.30	2.87	1.68	2.16	1.91	1.16	1.73
World	0.69	-4.58	-15.69	-8.38	-6.26	-8.72	-0.62	12.05	5.52	4.48	5.37	4.60	3.97	3.15	1.68	3.34
Revisions to Oil Demand from Last Month's Report (mb/d)																
Americas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.06	-0.03	-0.02	-0.20	-0.06	0.04	0.01	-0.05
Europe	0.00	-0.01	0.01	0.00	0.00	0.00	0.00	-0.02	0.08	0.02	0.02	-0.14	-0.01	0.05	0.05	-0.01
Asia Oceania	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.04	0.02	0.00	0.05	0.04	0.02	0.05	0.04
Total OECD	-	-0.01	0.01	-0.00	-0.00	-0.00	-	-0.02	-0.03	0.00	-0.01	-0.30	-0.03	0.11	0.11	-0.02
Asia	0.00	0.03	0.04	0.03	0.02	0.03	0.02	0.02	-0.01	-0.21	-0.05	-0.16	-0.04	-0.02	-0.08	-0.07
Middle East	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.03	0.01	-0.03	0.01	0.01	0.06	0.07	0.02	0.04
Americas	0.00	0.00	0.00	0.00	0.00	0.00	-0.06	-0.05	-0.04	-0.03	-0.04	-0.04	-0.02	-0.01	-0.01	-0.02
FSU	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	-0.04	0.00	0.01	-0.02	-0.01
Africa	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	-0.04	0.00	-0.09	-0.04	0.03	0.03	-0.02
Europe	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.01	0.00	-0.01	-0.01	0.00	-0.01	-0.01
Total Non-OECD	0.01	0.03	0.04	0.03	0.03	0.04	0.00	0.01	-0.03	-0.31	-0.08	-0.33	-0.06	0.08	-0.07	-0.09
World	0.01	0.03	0.05	0.03	0.03	0.03	0.00	-0.01	-0.05	-0.30	-0.09	-0.63	-0.09	0.19	0.04	-0.12
Revisions to Oil Demand Growth from Last Month's Report (mb/d)																
World	0.00	0.02	0.05	0.02	0.02	0.03	-0.02	-0.06	-0.08	-0.33	-0.12	-0.63	-0.08	0.24	0.34	-0.03

¹ US figures exclude US territories.

² France, Germany, Italy, Spain and UK

Table 2a
OECD REGIONAL OIL DEMAND¹
(million barrels per day)

	Latest month vs.									
	2019	2020	4Q20	1Q21	2Q21	3Q21	Jul 21	Aug 21	Sep 21 ²	Aug 21 Sep 20
Americas										
LPG and ethane	3.40	3.46	3.75	3.66	3.50	3.53	3.32	3.64	3.63	-0.01 0.54
Naphtha	0.25	0.25	0.26	0.23	0.27	0.26	0.26	0.26	0.26	0.01 0.02
Motor gasoline	11.04	9.53	9.55	9.38	10.57	10.73	10.96	10.73	10.50	-0.23 0.42
Jet and kerosene	2.05	1.23	1.24	1.28	1.49	1.72	1.71	1.78	1.69	-0.09 0.63
Gasoil/diesel oil	5.37	4.92	5.08	5.08	5.03	4.98	4.75	5.02	5.17	0.15 0.24
Residual fuel oil	0.54	0.40	0.41	0.54	0.51	0.56	0.56	0.57	0.53	-0.05 0.04
Other products	2.82	2.66	2.70	2.56	2.95	2.93	2.87	3.06	2.85	-0.22 0.13
Total	25.47	22.44	22.98	22.73	24.33	24.71	24.43	25.06	24.62	-0.44 2.03
Europe										
LPG and ethane	1.20	1.08	1.06	1.12	1.06	1.10	1.20	1.09	1.00	-0.08 -0.09
Naphtha	1.02	1.07	1.16	1.23	1.02	1.11	1.04	1.12	1.17	0.04 0.20
Motor gasoline	2.04	1.75	1.72	1.57	1.92	2.19	2.22	2.19	2.16	-0.03 0.14
Jet and kerosene	1.56	0.73	0.65	0.61	0.67	1.01	0.93	1.04	1.05	0.01 0.35
Gasoil/diesel oil	6.46	5.96	6.07	5.70	6.13	6.52	6.41	6.31	6.84	0.53 0.49
Residual fuel oil	0.84	0.68	0.68	0.69	0.69	0.73	0.73	0.71	0.75	0.04 0.05
Other products	1.20	1.15	1.17	1.00	1.14	1.19	1.18	1.14	1.26	0.12 -0.09
Total	14.31	12.44	12.51	11.91	12.63	13.85	13.71	13.61	14.23	0.63 1.04
Asia Oceania										
LPG and ethane	0.82	0.78	0.79	0.86	0.77	0.73	0.77	0.70	0.74	0.04 0.01
Naphtha	1.98	1.82	1.75	1.97	1.86	2.02	1.91	2.01	2.13	0.12 0.30
Motor gasoline	1.52	1.35	1.42	1.32	1.37	1.36	1.38	1.37	1.35	-0.02 -0.07
Jet and kerosene	0.89	0.61	0.69	0.82	0.47	0.43	0.41	0.41	0.46	0.05 0.08
Gasoil/diesel oil	1.93	1.79	1.89	1.82	1.82	1.77	1.76	1.72	1.83	0.11 0.04
Residual fuel oil	0.43	0.43	0.44	0.50	0.41	0.44	0.44	0.45	0.43	-0.02 0.00
Other products	0.37	0.35	0.38	0.37	0.35	0.36	0.38	0.35	0.37	0.02 0.05
Total	7.93	7.14	7.35	7.67	7.04	7.12	7.05	7.00	7.30	0.30 0.42
OECD										
LPG and ethane	5.41	5.32	5.59	5.64	5.33	5.36	5.29	5.42	5.37	-0.05 0.47
Naphtha	3.26	3.15	3.16	3.43	3.16	3.38	3.21	3.39	3.56	0.17 0.53
Motor gasoline	14.59	12.64	12.69	12.27	13.86	14.29	14.56	14.29	14.01	-0.28 0.48
Jet and kerosene	4.50	2.57	2.58	2.71	2.62	3.16	3.05	3.23	3.20	-0.03 1.06
Gasoil/diesel oil	13.75	12.67	13.04	12.61	12.99	13.27	12.92	13.05	13.84	0.79 0.77
Residual fuel oil	1.81	1.51	1.53	1.72	1.60	1.73	1.74	1.73	1.71	-0.03 0.10
Other products	4.40	4.16	4.25	3.92	4.45	4.48	4.43	4.55	4.47	-0.08 0.08
Total	47.72	42.02	42.84	42.30	44.00	45.67	45.20	45.67	46.16	0.49 3.49

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, Canada and Chile.

² Latest official OECD submissions (MOS).

Table 2b
OIL DEMAND IN SELECTED OECD COUNTRIES¹
(million barrels per day)

	2019	2020	4Q20	1Q21	2Q21	3Q21	Jul 21	Aug 21	Sep 21 ²	Latest month vs.	
										Aug 21	Sep 20
United States³											
LPG and ethane	2.63	2.74	3.01	2.85	2.76	2.73	2.55	2.80	2.83	0.02	0.43
Naphtha	0.21	0.18	0.19	0.16	0.21	0.20	0.22	0.18	0.20	0.01	0.03
Motor gasoline	9.27	8.05	8.06	8.00	9.07	9.13	9.31	9.11	8.97	-0.15	0.43
Jet and kerosene	1.75	1.08	1.10	1.14	1.34	1.52	1.49	1.58	1.50	-0.08	0.57
Gasoil/diesel oil	4.08	3.78	3.94	3.97	3.93	3.87	3.66	3.89	4.08	0.19	0.26
Residual fuel oil	0.27	0.21	0.22	0.26	0.25	0.33	0.33	0.35	0.32	-0.03	0.00
Other products	2.24	2.13	2.21	2.05	2.47	2.43	2.34	2.60	2.34	-0.26	0.09
Total	20.46	18.19	18.72	18.45	20.03	20.21	19.89	20.51	20.22	-0.29	1.81
Japan											
LPG and ethane	0.43	0.41	0.42	0.50	0.40	0.37	0.37	0.33	0.39	0.06	0.04
Naphtha	0.74	0.68	0.71	0.74	0.68	0.70	0.64	0.69	0.78	0.08	0.10
Motor gasoline	0.85	0.76	0.78	0.71	0.71	0.78	0.78	0.79	0.76	-0.03	-0.05
Jet and kerosene	0.47	0.36	0.44	0.55	0.24	0.21	0.20	0.21	0.23	0.02	0.04
Diesel	0.44	0.40	0.42	0.41	0.39	0.39	0.39	0.37	0.41	0.04	0.01
Other gasoil	0.33	0.30	0.33	0.35	0.28	0.27	0.26	0.26	0.29	0.03	0.01
Residual fuel oil	0.23	0.21	0.23	0.27	0.21	0.23	0.24	0.23	0.22	-0.01	0.02
Other products	0.24	0.20	0.20	0.20	0.18	0.23	0.24	0.22	0.24	0.02	0.06
Total	3.74	3.33	3.53	3.73	3.08	3.18	3.12	3.11	3.32	0.21	0.22
Germany											
LPG and ethane	0.12	0.11	0.10	0.11	0.13	0.12	0.12	0.12	0.11	-0.01	0.01
Naphtha	0.27	0.29	0.32	0.35	0.31	0.32	0.31	0.31	0.35	0.03	0.11
Motor gasoline	0.50	0.45	0.44	0.40	0.44	0.49	0.47	0.49	0.49	0.00	0.01
Jet and kerosene	0.22	0.10	0.08	0.09	0.11	0.16	0.15	0.16	0.18	0.02	0.09
Diesel	0.76	0.71	0.71	0.60	0.71	0.77	0.77	0.76	0.76	0.00	-0.01
Other gasoil	0.34	0.36	0.33	0.23	0.26	0.26	0.21	0.25	0.33	0.08	0.06
Residual fuel oil	0.06	0.05	0.05	0.05	0.04	0.05	0.05	0.05	0.05	0.01	0.01
Other products	0.08	0.08	0.07	0.06	0.06	0.07	0.05	0.07	0.09	0.02	-0.02
Total	2.35	2.15	2.11	1.89	2.07	2.23	2.13	2.21	2.37	0.16	0.25
Italy											
LPG and ethane	0.10	0.09	0.10	0.11	0.09	0.09	0.09	0.09	0.09	0.01	0.00
Naphtha	0.11	0.10	0.12	0.11	0.10	0.09	0.08	0.10	0.10	-0.01	-0.01
Motor gasoline	0.18	0.14	0.14	0.13	0.17	0.19	0.21	0.19	0.18	-0.01	0.01
Jet and kerosene	0.11	0.04	0.04	0.02	0.04	0.07	0.06	0.07	0.06	-0.01	0.02
Diesel	0.47	0.42	0.45	0.44	0.49	0.52	0.54	0.48	0.54	0.06	0.05
Other gasoil	0.07	0.06	0.07	0.05	0.06	0.07	0.07	0.06	0.07	0.01	0.00
Residual fuel oil	0.06	0.06	0.06	0.05	0.05	0.06	0.07	0.06	0.06	0.00	0.00
Other products	0.15	0.14	0.15	0.14	0.16	0.16	0.17	0.12	0.17	0.05	0.02
Total	1.26	1.05	1.13	1.04	1.15	1.25	1.28	1.19	1.29	0.09	0.08
France											
LPG and ethane	0.14	0.11	0.11	0.12	0.13	0.11	0.12	0.12	0.10	-0.02	-0.02
Naphtha	0.11	0.12	0.14	0.15	0.12	0.13	0.12	0.12	0.14	0.02	0.04
Motor gasoline	0.20	0.17	0.17	0.18	0.20	0.24	0.25	0.24	0.24	-0.01	0.02
Jet and kerosene	0.17	0.09	0.08	0.08	0.07	0.11	0.10	0.12	0.11	-0.01	0.02
Diesel	0.76	0.67	0.69	0.68	0.72	0.78	0.80	0.73	0.80	0.07	0.02
Other gasoil	0.14	0.14	0.13	0.17	0.09	0.11	0.08	0.09	0.15	0.06	0.08
Residual fuel oil	0.05	0.03	0.03	0.03	0.03	0.03	0.04	0.03	0.04	0.01	0.01
Other products	0.11	0.09	0.09	0.07	0.09	0.12	0.13	0.10	0.12	0.03	-0.01
Total	1.69	1.42	1.44	1.47	1.45	1.63	1.63	1.56	1.70	0.15	0.17
United Kingdom											
LPG and ethane	0.13	0.13	0.12	0.13	0.09	0.10	0.11	0.10	0.10	0.00	-0.01
Naphtha	0.03	0.02	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	-0.02
Motor gasoline	0.29	0.22	0.23	0.20	0.26	0.28	0.27	0.28	0.29	0.01	0.03
Jet and kerosene	0.34	0.19	0.17	0.17	0.14	0.16	0.12	0.16	0.20	0.04	0.04
Diesel	0.52	0.43	0.46	0.42	0.50	0.50	0.47	0.50	0.53	0.04	0.06
Other gasoil	0.14	0.11	0.11	0.11	0.14	0.14	0.13	0.14	0.14	0.00	0.00
Residual fuel oil	0.02	0.02	0.02	0.02	0.01	0.02	0.02	0.02	0.02	0.00	0.00
Other products	0.12	0.10	0.10	0.09	0.11	0.11	0.11	0.12	0.11	-0.01	0.00
Total	1.58	1.21	1.22	1.16	1.25	1.31	1.24	1.32	1.39	0.08	0.10
Canada											
LPG and ethane	0.39	0.37	0.37	0.46	0.40	0.43	0.41	0.47	0.42	-0.05	0.06
Naphtha	0.02	0.03	0.04	0.03	0.03	0.03	0.02	0.04	0.03	-0.01	0.00
Motor gasoline	0.88	0.75	0.74	0.67	0.77	0.86	0.89	0.89	0.81	-0.08	-0.03
Jet and kerosene	0.17	0.07	0.06	0.05	0.05	0.10	0.10	0.10	0.10	0.00	0.03
Diesel	0.26	0.27	0.26	0.27	0.27	0.27	0.26	0.26	0.27	0.01	0.00
Other gasoil	0.38	0.33	0.35	0.32	0.32	0.36	0.33	0.37	0.38	0.01	0.01
Residual fuel oil	0.04	0.04	0.03	0.04	0.03	0.02	0.02	0.02	0.02	0.00	0.01
Other products	0.36	0.33	0.29	0.28	0.28	0.31	0.33	0.27	0.32	0.05	0.02
Total	2.51	2.19	2.14	2.12	2.16	2.38	2.36	2.43	2.34	-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)

	2020	2021	2022	2Q21	3Q21	4Q21	1Q22	2Q22	Sep 21	Oct 21	Nov 21
OPEC											
Crude Oil											
Saudi Arabia	9.21			8.53	9.57				9.68	9.80	9.89
Iran	2.00			2.40	2.46				2.46	2.46	2.45
Iraq	4.05			3.94	4.06				4.15	4.16	4.25
UAE	2.86			2.64	2.76				2.80	2.83	2.86
Kuwait	2.41			2.35	2.44				2.47	2.50	2.53
Angola	1.27			1.12	1.11				1.11	1.11	1.08
Nigeria	1.49			1.34	1.27				1.25	1.23	1.29
Libya	0.35			1.15	1.16				1.15	1.16	1.14
Algeria	0.90			0.89	0.92				0.94	0.95	0.96
Congo	0.30			0.27	0.27				0.28	0.28	0.27
Gabon	0.20			0.18	0.18				0.18	0.17	0.19
Equatorial Guinea	0.11			0.11	0.10				0.09	0.08	0.09
Venezuela	0.53			0.55	0.59				0.61	0.71	0.75
Total Crude Oil	25.69			25.48	26.89				27.17	27.44	27.75
of which Neutral Zone ¹	0.11			0.26	0.24				0.26	0.24	0.26
Total NGLs²	5.07	5.17	5.38	5.18	5.21	5.21	5.30	5.38	5.21	5.21	5.21
Total OPEC³	30.76			30.66	32.10				32.38	32.65	32.96
NON-OPEC⁴											
OECD											
Americas	23.85	24.27	25.56	24.23	24.33	25.23	25.16	25.37	23.93	24.93	25.28
United States	16.56	16.66	17.69	16.85	16.74	17.39	17.27	17.66	16.45	17.12	17.46
Mexico	1.93	1.95	2.00	1.96	1.95	1.95	1.96	1.98	1.96	1.97	1.94
Canada	5.35	5.65	5.87	5.42	5.62	5.88	5.92	5.72	5.50	5.83	5.87
Chile	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Europe	3.57	3.42	3.51	3.12	3.40	3.53	3.58	3.41	3.44	3.45	3.55
UK	1.08	0.90	0.93	0.77	0.88	0.94	0.97	0.93	0.90	0.89	0.96
Norway	2.01	2.06	2.11	1.92	2.05	2.12	2.15	2.02	2.03	2.10	2.12
Others	0.48	0.46	0.46	0.44	0.47	0.47	0.46	0.46	0.50	0.47	0.47
Asia Oceania	0.52	0.51	0.52	0.46	0.54	0.53	0.53	0.52	0.53	0.53	0.53
Australia	0.45	0.44	0.45	0.39	0.46	0.46	0.46	0.45	0.46	0.46	0.46
Others	0.07	0.07	0.07	0.07	0.08	0.07	0.07	0.07	0.08	0.06	0.07
Total OECD	27.94	28.20	29.59	27.81	28.26	29.29	29.27	29.30	27.90	28.91	29.37
NON-OECD											
Former USSR	13.50	13.76	14.68	13.69	13.67	14.27	14.47	14.66	13.82	14.21	14.32
Russia	10.61	10.87	11.66	10.80	10.89	11.24	11.46	11.60	11.07	11.20	11.23
Azerbaijan	0.70	0.70	0.72	0.69	0.71	0.71	0.72	0.72	0.71	0.71	0.71
Kazakhstan	1.84	1.84	1.94	1.84	1.70	1.95	1.93	1.97	1.68	1.94	2.02
Others	0.36	0.36	0.37	0.35	0.36	0.36	0.37	0.37	0.36	0.36	0.36
Asia	6.99	6.93	6.89	6.96	6.88	6.86	6.93	6.91	6.89	6.81	6.87
China	3.97	4.07	4.09	4.09	4.08	4.06	4.10	4.10	4.11	4.04	4.06
Malaysia	0.60	0.57	0.61	0.57	0.53	0.56	0.60	0.61	0.52	0.53	0.56
India	0.75	0.73	0.71	0.72	0.73	0.72	0.72	0.71	0.73	0.72	0.72
Indonesia	0.73	0.68	0.65	0.68	0.68	0.67	0.66	0.66	0.67	0.67	0.67
Others	0.93	0.88	0.83	0.90	0.86	0.86	0.84	0.84	0.86	0.85	0.86
Europe	0.12	0.11	0.10	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
Americas	5.32	5.33	5.53	5.31	5.43	5.30	5.43	5.49	5.44	5.23	5.30
Brazil	3.04	3.01	3.19	3.04	3.10	2.97	3.11	3.16	3.09	2.88	2.96
Argentina	0.61	0.64	0.67	0.63	0.64	0.66	0.67	0.67	0.65	0.66	0.66
Colombia	0.79	0.74	0.71	0.72	0.75	0.74	0.73	0.72	0.75	0.75	0.74
Ecuador	0.48	0.50	0.47	0.50	0.49	0.49	0.48	0.48	0.49	0.49	0.49
Others	0.40	0.44	0.49	0.42	0.44	0.44	0.44	0.46	0.45	0.44	0.44
Middle East	3.01	3.09	3.24	3.07	3.10	3.14	3.21	3.23	3.11	3.11	3.13
Oman	0.96	0.98	1.08	0.96	0.98	1.01	1.05	1.07	0.99	1.00	1.01
Qatar	1.77	1.82	1.85	1.82	1.82	1.83	1.85	1.85	1.82	1.83	1.83
Others	0.28	0.29	0.30	0.28	0.29	0.30	0.31	0.31	0.30	0.28	0.30
Africa	1.39	1.31	1.26	1.34	1.30	1.29	1.28	1.24	1.29	1.28	1.29
Egypt	0.60	0.57	0.55	0.58	0.56	0.56	0.55	0.55	0.57	0.56	0.56
Others	0.79	0.74	0.71	0.76	0.73	0.73	0.73	0.70	0.72	0.72	0.74
Total Non-OECD	30.33	30.53	31.70	30.48	30.49	30.97	31.43	31.64	30.66	30.75	31.02
Processing gains ⁵	2.11	2.25	2.38	2.22	2.34	2.32	2.38	2.38	2.29	2.27	2.33
Global Biofuels	2.63	2.74	2.99	2.93	3.20	2.66	2.53	3.09	3.16	2.83	2.69
TOTAL NON-OPEC	63.01	63.73	66.66	63.44	64.28	65.24	65.61	66.41	64.00	64.75	65.41
TOTAL SUPPLY	93.77			94.10	96.39				96.38	97.40	98.37

¹ Neutral Zone production is already included in Saudi Arabia and Kuwait production with their respective shares.

² Includes condensates reported by OPEC countries, oil from non-conventional sources, e.g. GTL in Nigeria and non-oil inputs to Saudi Arabian MTBE.

³ OPEC data based on today's membership throughout the time series.

⁴ Comprises crude oil, condensates, NGLs and oil from non-conventional sources.

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

Table 3a
OIL SUPPLY IN OECD COUNTRIES¹
(thousand of barrels per day)

	2020	2021	2022	2Q21	3Q21	4Q21	1Q22	2Q22	Sep 21	Oct 21	Nov 21
United States											
Alaska	448	439	451	443	406	453	460	456	430	446	456
California	404	371	355	374	368	364	360	357	365	365	364
Texas	4854	4803	5132	4808	4871	5125	5070	5133	4946	5099	5168
Federal Gulf of Mexico ²	1644	1697	1893	1791	1486	1713	1852	1887	1065	1541	1758
Other US Lower 48	3934	3901	4194	3867	3981	4091	4160	4177	4003	4067	4068
NGLs ³	5175	5346	5553	5459	5521	5533	5271	5542	5540	5504	5535
Other Hydrocarbons	100	103	110	104	109	106	102	109	99	96	109
Total	16558	16660	17688	16848	16743	17385	17275	17661	16448	17120	17459
Canada											
Alberta Light/Medium/Heavy	423	434	439	429	438	450	444	440	442	458	446
Alberta Bitumen	1718	1959	2202	1886	1941	2113	2142	2184	1934	1987	2221
Saskatchewan	435	442	429	437	442	439	435	431	440	440	439
Other Crude	490	458	424	469	455	440	423	422	437	419	453
NGLs	949	1011	1035	1004	1016	1010	1038	1027	990	1012	1011
Other Upgraders	219	178	180	163	178	192	194	163	169	204	174
Synthetic Crudes	1116	1170	1159	1027	1148	1236	1249	1051	1092	1315	1124
Total	5349	5652	5868	5416	5620	5881	5924	5719	5504	5835	5869
Mexico											
Crude	1721	1774	1836	1781	1784	1781	1787	1817	1807	1798	1771
NGLs	206	170	159	174	165	166	163	160	152	167	166
Total	1932	1950	2000	1961	1955	1953	1955	1982	1964	1970	1942
UK											
Brent Fields	35	23	13	29	12	14	16	16	5	9	16
Forties Fields	297	213	220	133	209	250	244	211	227	248	253
Ninian Fields	31	23	17	24	23	19	18	17	11	22	19
Flotta Fields	51	54	55	37	57	58	57	53	57	60	58
Other Fields	575	522	555	502	507	520	559	555	523	477	535
NGLs	88	68	73	42	69	74	74	74	82	73	75
Total	1078	902	934	767	878	936	969	926	904	887	956
Norway⁵											
Ekofisk-Ula Area	132	142	129	141	145	141	138	130	145	142	141
Oseberg-Troll Area	234	217	244	190	207	243	245	239	204	240	240
Statfjord-Gullfaks Area	230	264	255	244	271	274	267	260	244	276	275
Haltenbanken Area	280	282	299	248	275	287	289	295	254	287	288
Sleipner-Frigg Area	743	821	870	824	800	861	866	864	790	857	866
Other Fields	101	76	73	67	95	60	90	-14	153	38	54
NGLs	288	255	244	200	260	258	255	249	243	258	261
Total	2007	2057	2114	1915	2053	2123	2150	2023	2033	2098	2125
Other OECD Europe											
Denmark	71	65	58	67	67	61	60	59	64	60	63
Italy	101	98	102	79	103	105	104	103	102	107	103
Turkey	62	66	66	67	67	67	67	66	67	67	66
Other	90	100	90	99	99	96	93	91	91	98	96
NGLs	7	7	6	7	7	7	7	6	7	7	7
Non-Conventional Oils	151	124	133	115	124	137	133	133	168	129	138
Total	481	459	457	435	467	473	463	459	499	468	473
Australia											
Gippsland Basin	8	5	5	6	6	6	6	5	6	6	6
Cooper-Eromanga Basin	35	25	22	25	24	24	23	23	24	24	24
Carnarvon Basin	106	113	113	105	123	120	117	114	121	119	119
Other Crude	202	193	204	163	200	203	206	204	197	204	203
NGLs	102	101	107	87	109	109	108	107	110	109	109
Total	453	437	451	386	462	460	460	454	457	461	461
Other OECD Asia Oceania											
New Zealand	21	18	17	18	18	18	17	17	17	18	18
Japan	4	4	4	4	4	4	4	4	4	4	4
NGLs	11	11	9	10	11	10	10	9	11	10	10
Non-Conventional Oils	34	38	38	38	43	37	38	38	44	33	40
Total	71	71	68	71	75	69	69	69	75	65	71
OECD											
Crude Oil	19480	19603	20770	19364	19489	20400	20621	20619	19175	19984	20595
NGLs	6834	6975	7194	6991	7165	7174	6932	7182	7144	7145	7180
Non-Conventional Oils ⁴	1624	1617	1625	1451	1608	1714	1721	1500	1578	1783	1591
Total	27938	28195	29589	27806	28261	29288	29274	29301	27896	28912	29365

¹ Subcategories refer to crude oil only unless otherwise noted.

² Only production from Federal waters is included.

³ To the extent possible, condensates from natural gas processing plants are included with NGLs, while field condensates are counted as crude oil.

⁴ Does not include biofuels.

⁵ North Sea production is grouped by area including all fields being processed through the named field complex, ie, not just the field of that name.

⁶ Other North Sea NGLs are included.

Table 3b
WORLD OIL PRODUCTION (Including OPEC+ based on current agreement¹)
 (million barrels per day)

	2020	2021	2022	1Q21	2Q21	3Q21	4Q21	1Q22	Sep 21	Oct 21	Nov 21
OPEC+											
Crude Oil											
Algeria	0.90	0.91	0.99	0.87	0.89	0.92	0.96	0.98	0.94	0.95	0.96
Angola	1.27	1.12	1.15	1.14	1.12	1.11	1.12	1.17	1.11	1.11	1.08
Azerbaijan	0.61	0.59	0.59	0.59	0.60	0.60	0.59	0.60	0.59	0.59	0.59
Bahrain	0.17	0.18	0.19	0.17	0.17	0.18	0.18	0.19	0.18	0.17	0.18
Brunei	0.08	0.08	0.09	0.09	0.09	0.08	0.08	0.09	0.08	0.08	0.08
Congo	0.30	0.27	0.29	0.28	0.27	0.27	0.28	0.29	0.28	0.28	0.27
Equatorial Guinea	0.11	0.10	0.12	0.11	0.11	0.10	0.10	0.12	0.09	0.08	0.09
Gabon	0.20	0.18	0.18	0.17	0.18	0.18	0.18	0.17	0.18	0.17	0.19
Iran	2.00	2.41	2.50	2.32	2.40	2.46	2.47	2.50	2.46	2.46	2.45
Iraq	4.05	4.03	4.51	3.88	3.94	4.06	4.22	4.33	4.15	4.16	4.25
Kazakhstan	1.50	1.51	1.59	1.49	1.52	1.41	1.62	1.59	1.43	1.65	1.66
Kuwait	2.41	2.42	2.72	2.34	2.35	2.44	2.53	2.61	2.47	2.50	2.53
Libya	0.35	1.15	1.14	1.15	1.15	1.16	1.15	1.14	1.15	1.16	1.14
Malaysia	0.46	0.42	0.46	0.45	0.43	0.39	0.41	0.46	0.39	0.38	0.41
Mexico	1.66	1.67	1.69	1.67	1.69	1.66	1.65	1.65	1.67	1.67	1.65
Nigeria	1.49	1.32	1.53	1.39	1.34	1.27	1.29	1.46	1.25	1.23	1.29
Oman	0.76	0.75	0.85	0.73	0.74	0.76	0.78	0.82	0.76	0.77	0.78
Russia	9.42	9.62	10.30	9.26	9.54	9.72	9.96	10.15	9.82	9.92	9.95
Saudi Arabia	9.21	9.12	10.67	8.47	8.53	9.57	9.90	10.23	9.68	9.80	9.89
South Sudan	0.16	0.15	0.15	0.14	0.16	0.16	0.16	0.15	0.15	0.16	0.16
Sudan	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
UAE	2.86	2.72	3.08	2.61	2.64	2.76	2.86	2.95	2.80	2.83	2.86
Venezuela	0.53	0.60	0.75	0.55	0.55	0.59	0.74	0.75	0.61	0.71	0.75
Total Crude Oil	40.57	41.41	45.60	39.94	40.48	41.90	43.29	44.44	42.31	42.88	43.28
<i>of which Neutral Zone</i>	<i>0.11</i>			<i>0.23</i>	<i>0.26</i>				<i>0.26</i>	<i>0.24</i>	<i>0.26</i>
Total NGLs	7.34	7.54	7.92	7.50	7.54	7.48	7.65	7.78	7.52	7.62	7.67
TOTAL OPEC+	47.9	49.0	53.5	47.4	48.0	49.4	50.9	52.2	49.8	50.5	50.9
NON-OPEC+											
OECD											
Americas²	21.92	22.32	23.56	21.34	22.27	22.37	23.27	23.21	21.96	22.96	23.34
United States	16.56	16.66	17.69	15.64	16.85	16.74	17.39	17.27	16.45	17.12	17.46
Canada	5.35	5.65	5.87	5.69	5.42	5.62	5.88	5.92	5.50	5.83	5.87
Chile	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Europe	3.57	3.42	3.51	3.63	3.12	3.40	3.53	3.58	3.44	3.45	3.55
UK	1.08	0.90	0.93	1.03	0.77	0.88	0.94	0.97	0.90	0.89	0.96
Norway	2.01	2.06	2.11	2.14	1.92	2.05	2.12	2.15	2.03	2.10	2.12
Others	0.48	0.46	0.46	0.46	0.44	0.47	0.47	0.46	0.50	0.47	0.47
Asia Oceania	0.52	0.51	0.52	0.51	0.46	0.54	0.53	0.53	0.53	0.53	0.53
Australia	0.45	0.44	0.45	0.44	0.39	0.46	0.46	0.46	0.46	0.46	0.46
Others	0.07	0.07	0.07	0.07	0.07	0.08	0.07	0.07	0.08	0.06	0.07
Total OECD (non-OPEC+)	26.01	26.25	27.59	25.47	25.85	26.31	27.34	27.32	25.93	26.94	27.42
Non-OECD											
FSU	0.36	0.36	0.37	0.35	0.35	0.36	0.36	0.37	0.36	0.36	0.36
Asia	6.27	6.25	6.17	6.29	6.28	6.25	6.20	6.22	6.27	6.18	6.21
China	3.97	4.07	4.09	4.06	4.09	4.08	4.06	4.10	4.11	4.04	4.06
India	0.75	0.73	0.71	0.74	0.72	0.73	0.72	0.72	0.73	0.72	0.72
Indonesia	0.73	0.68	0.65	0.70	0.68	0.68	0.67	0.66	0.67	0.67	0.67
Others	0.82	0.77	0.72	0.79	0.79	0.76	0.75	0.73	0.76	0.75	0.75
Europe	0.12	0.11	0.10	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
Americas	5.32	5.33	5.53	5.27	5.31	5.43	5.30	5.43	5.44	5.23	5.30
Brazil	3.04	3.01	3.19	2.95	3.04	3.10	2.97	3.11	3.09	2.88	2.96
Argentina	0.61	0.64	0.67	0.62	0.63	0.64	0.66	0.67	0.65	0.66	0.66
Colombia	0.79	0.74	0.71	0.75	0.72	0.75	0.74	0.73	0.75	0.75	0.74
Ecuador	0.48	0.50	0.47	0.51	0.50	0.49	0.49	0.48	0.49	0.49	0.49
Others	0.4	0.4	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Middle East	1.87	1.93	1.96	1.92	1.92	1.93	1.93	1.96	1.93	1.93	1.93
Qatar	1.77	1.82	1.85	1.82	1.82	1.82	1.83	1.85	1.82	1.83	1.83
Others	0.10	0.10	0.10	0.10	0.10	0.10	0.11	0.11	0.10	0.11	0.11
Africa	1.2	1.1	1.0	1.11	1.11	1.08	1.07	1.07	1.07	1.07	1.07
Egypt	0.60	0.57	0.55	0.57	0.58	0.56	0.56	0.55	0.57	0.56	0.56
Others	0.57	0.53	0.50	0.54	0.53	0.52	0.51	0.52	0.51	0.51	0.51
Total non-OECD (non-OPEC+)	15.11	15.07	15.18	15.06	15.09	15.16	14.98	15.15	15.18	14.87	14.98
Processing gains	2.11	2.25	2.38	2.13	2.22	2.34	2.32	2.38	2.29	2.27	2.33
Global biofuels	2.63	2.74	2.99	2.18	2.93	3.20	2.66	2.53	3.16	2.83	2.69
TOTAL NON-OPEC+	45.86	46.31	48.14	44.83	46.09	47.00	47.29	47.38	46.56	46.91	47.42
TOTAL SUPPLY	93.77	95.27	101.67	92.28	94.10	96.39	98.23	99.60	96.38	97.40	98.37

¹ From Dec 2021, OPEC+ supply reflects latest OPEC+ deal and individual country's sustainable capacity. Libya, Iran, Venezuela held at most recent level through 2022.

² Excludes Mexico

Table 4
OECD STOCKS AND QUARTERLY STOCK CHANGES

	RECENT MONTHLY STOCKS ² in Million Barrels					PRIOR YEARS' STOCKS ² in Million Barrels			STOCK CHANGES in mb/d			
	Jun2021	Jul2021	Aug2021	Sep2021	Oct2021 ³	Oct2018	Oct2019	Oct2020	4Q2020	1Q2021	2Q2021	3Q2021
OECD INDUSTRY-CONTROLLED STOCKS¹												
OECD Americas												
Crude	622.6	616.5	597.8	594.8	608.4	595.8	584.2	655.1	-0.10	0.26	-0.57	-0.30
Motor Gasoline	264.8	258.5	251.5	253.2	241.7	261.2	251.0	256.0	0.17	-0.06	-0.02	-0.13
Middle Distillate	210.0	211.9	207.1	198.7	193.0	196.2	184.7	217.5	-0.11	-0.16	-0.01	-0.12
Residual Fuel Oil	38.7	36.1	36.4	34.9	36.0	34.9	34.7	38.1	-0.01	0.02	-0.01	-0.04
Total Products ⁴	759.0	765.3	761.5	756.3	738.4	769.7	772.8	821.1	-0.65	-0.65	0.26	-0.03
Total⁵	1547.9	1550.8	1521.3	1514.4	1514.0	1532.7	1528.2	1651.4	-0.83	-0.44	-0.27	-0.36
OECD Europe												
Crude	341.8	336.5	315.1	306.4	320.5	340.2	358.4	371.5	-0.07	-0.20	-0.12	-0.38
Motor Gasoline	86.5	80.3	80.4	77.2	79.4	85.6	87.3	96.1	0.09	-0.10	-0.04	-0.10
Middle Distillate	306.1	295.1	294.7	270.9	251.2	246.1	267.0	334.2	-0.19	-0.06	-0.07	-0.38
Residual Fuel Oil	64.6	63.5	65.1	64.3	60.1	55.2	66.4	64.9	-0.02	0.00	-0.02	0.00
Total Products ⁴	554.5	537.0	540.7	509.9	484.4	500.5	532.2	609.6	-0.19	-0.26	-0.20	-0.48
Total⁵	973.5	949.0	930.5	888.8	877.5	919.9	974.9	1064.1	-0.39	-0.46	-0.32	-0.92
OECD Asia Oceania												
Crude	125.0	114.5	114.0	109.4	99.6	157.2	146.1	170.0	-0.12	-0.33	0.01	-0.17
Motor Gasoline	29.4	26.1	28.3	26.5	28.6	27.5	26.2	26.1	-0.01	0.04	0.00	-0.03
Middle Distillate	65.3	66.2	75.0	72.0	71.6	74.5	73.9	73.3	-0.06	-0.03	0.02	0.07
Residual Fuel Oil	16.8	17.7	18.2	18.7	16.7	18.0	20.1	16.2	-0.02	0.02	0.00	0.02
Total Products ⁴	170.4	169.5	186.9	184.0	185.1	184.7	184.2	181.1	-0.16	-0.02	0.05	0.15
Total⁵	357.5	345.4	363.9	355.1	345.8	407.0	396.9	413.9	-0.34	-0.38	0.12	-0.03
Total OECD												
Crude	1089.3	1067.4	1026.9	1010.6	1028.4	1093.1	1088.7	1196.5	-0.29	-0.27	-0.67	-0.86
Motor Gasoline	380.8	364.9	360.1	356.8	349.7	374.3	364.6	378.2	0.26	-0.12	-0.06	-0.26
Middle Distillate	581.4	573.1	576.8	541.6	515.8	516.7	525.5	625.0	-0.36	-0.25	-0.05	-0.43
Residual Fuel Oil	120.0	117.3	119.7	117.9	112.7	108.0	121.2	119.1	-0.04	0.03	-0.04	-0.02
Total Products ⁴	1483.9	1471.8	1489.1	1450.2	1407.9	1454.9	1489.3	1611.8	-0.99	-0.93	0.11	-0.37
Total⁵	2878.9	2845.2	2815.7	2758.4	2737.2	2859.6	2899.9	3129.4	-1.56	-1.28	-0.47	-1.31
OECD GOVERNMENT-CONTROLLED STOCKS⁵												
OECD Americas												
Crude	621.3	621.3	621.3	617.8	611.1	654.8	641.2	638.6	-0.04	0.00	-0.18	-0.04
Products	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.00	0.00	0.00	0.00
OECD Europe												
Crude	205.8	204.4	204.0	205.3	204.3	213.1	207.9	204.9	-0.02	0.02	-0.02	0.00
Products	278.9	277.8	278.0	277.7	276.7	268.1	273.6	282.4	0.00	0.03	-0.05	-0.01
OECD Asia Oceania												
Crude	374.5	373.9	371.3	369.5	369.5	382.7	377.4	374.5	-0.03	0.00	0.00	-0.05
Products	38.8	38.8	38.8	38.8	38.9	38.7	38.9	39.1	0.00	0.00	0.00	0.00
Total OECD												
Crude	1201.6	1199.6	1196.5	1192.5	1184.9	1250.7	1226.5	1218.0	-0.10	0.02	-0.20	-0.10
Products	319.7	318.6	318.9	318.6	317.6	308.8	314.5	323.4	-0.01	0.03	-0.05	-0.01
Total⁵	1523.6	1519.8	1517.1	1512.7	1504.2	1562.3	1542.5	1543.5	-0.11	0.05	-0.24	-0.12

¹ Stocks are primary national territory stocks on land (excluding utility stocks and including pipeline and entrapot 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 Estimated.

⁴ Total products includes gasoline, middle distillates, fuel oil and other products.

⁵ Total includes NGLs, refinery feedstocks, additives/oxygenates and other hydrocarbons.

⁶ Includes government-owned stocks and stock holding organisation stocks held for emergency purposes.

Table 4a
INDUSTRY STOCKS¹ ON LAND IN SELECTED COUNTRIES

(million barrels)

	May			June			July			August			September		
	2020	2021	%	2020	2021	%	2020	2021	%	2020	2021	%	2020	2021	%
United States²															
Crude	521.6	476.6	-8.6	532.7	448.0	-15.9	520.1	438.9	-15.6	504.4	421.7	-16.4	497.7	420.4	-15.5
Motor Gasoline	259.0	239.9	-7.4	254.5	237.2	-6.8	250.4	230.8	-7.8	237.5	225.7	-5.0	227.6	227.0	-0.3
Middle Distillate	218.7	185.0	-15.4	220.5	186.4	-15.5	221.9	187.5	-15.5	222.2	182.4	-17.9	215.0	176.3	-18.0
Residual Fuel Oil	38.5	31.7	-17.7	39.5	31.1	-21.3	35.9	29.1	-18.9	34.4	29.4	-14.5	32.1	28.0	-12.8
Other Products	240.2	219.9	-8.5	256.7	225.9	-12.0	273.7	239.5	-12.5	291.1	246.9	-15.2	306.1	251.1	-18.0
Total Products	756.4	676.5	-10.6	771.2	680.6	-11.7	781.9	686.9	-12.1	785.2	684.4	-12.8	780.8	682.4	-12.6
Other ³	154.3	140.7	-8.8	153.8	142.9	-7.1	152.0	143.0	-5.9	147.9	135.1	-8.7	144.7	137.9	-4.7
Total	1432.3	1293.8	-9.7	1457.7	1271.5	-12.8	1454.0	1268.8	-12.7	1437.5	1241.2	-13.7	1423.2	1240.7	-12.8
Japan															
Crude	98.6	78.4	-20.5	91.0	76.0	-16.5	94.1	70.5	-25.1	94.2	73.9	-21.5	90.2	70.8	-21.5
Motor Gasoline	12.5	14.9	19.2	11.5	14.3	24.3	11.9	9.9	-16.8	12.1	9.9	-18.2	12.2	10.2	-16.4
Middle Distillate	30.5	32.2	5.6	31.9	31.5	-1.3	33.0	30.8	-6.7	37.1	34.4	-7.3	37.7	36.2	-4.0
Residual Fuel Oil	7.6	7.6	0.0	7.5	7.0	-6.7	7.4	7.1	-4.1	7.2	7.3	1.4	6.9	7.4	7.2
Other Products	37.1	33.1	-10.8	36.6	31.9	-12.8	36.0	31.7	-11.9	38.4	36.3	-5.5	38.5	37.7	-2.1
Total Products	87.7	87.8	0.1	87.5	84.7	-3.2	88.3	79.5	-10.0	94.8	87.9	-7.3	95.3	91.5	-4.0
Other ³	55.5	51.0	-8.1	55.7	51.3	-7.9	53.6	51.1	-4.7	56.1	52.9	-5.7	54.4	51.4	-5.5
Total	241.8	217.2	-10.2	234.2	212.0	-9.5	236.0	201.1	-14.8	245.1	214.7	-12.4	239.9	213.7	-10.9
Germany															
Crude	51.1	46.7	-8.6	51.4	48.7	-5.3	49.9	50.6	1.4	50.2	47.8	-4.8	49.6	45.5	-8.3
Motor Gasoline	10.0	11.3	13.0	9.6	9.4	-2.1	8.9	9.1	2.2	10.0	9.5	-5.0	9.3	9.2	-1.1
Middle Distillate	26.1	26.7	2.3	25.3	24.1	-4.7	25.5	25.4	-0.4	27.6	25.2	-8.7	22.3	21.6	-3.1
Residual Fuel Oil	7.6	7.9	3.9	8.2	7.9	-3.7	7.4	7.9	6.8	8.3	8.1	-2.4	7.9	8.1	2.5
Other Products	10.0	10.3	3.0	9.3	9.9	6.5	9.5	10.1	6.3	9.6	10.6	10.4	9.7	10.4	7.2
Total Products	53.7	56.2	4.7	52.4	51.3	-2.1	51.3	52.5	2.3	55.5	53.4	-3.8	49.2	49.3	0.2
Other ³	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	104.8	102.9	-1.8	103.8	100.0	-3.7	101.2	103.1	1.9	105.7	101.2	-4.3	98.8	94.8	-4.0
Italy															
Crude	39.8	42.9	7.8	41.6	42.7	2.6	43.2	36.0	-16.7	40.8	32.9	-19.4	40.0	33.6	-16.0
Motor Gasoline	12.9	12.1	-6.2	13.0	10.4	-20.0	11.5	9.4	-18.3	11.4	9.3	-18.4	11.5	9.6	-16.5
Middle Distillate	33.0	30.0	-9.1	32.9	29.4	-10.6	31.2	22.6	-27.6	31.3	26.6	-15.0	30.1	26.6	-11.6
Residual Fuel Oil	9.0	7.3	-18.9	9.2	7.5	-18.5	8.0	7.0	-12.5	8.4	7.5	-10.7	7.9	7.0	-11.4
Other Products	18.6	10.9	-41.4	17.8	10.8	-39.3	17.4	10.8	-37.9	19.0	11.5	-39.5	19.9	11.0	-44.7
Total Products	73.5	60.3	-18.0	72.9	58.1	-20.3	68.1	49.8	-26.9	70.1	54.9	-21.7	69.4	54.2	-21.9
Other ³	16.6	15.6	-6.0	17.5	15.0	-14.3	17.8	13.9	-21.9	17.6	14.3	-18.8	17.3	14.8	-14.5
Total	129.9	118.8	-8.5	132.0	115.8	-12.3	129.1	99.7	-22.8	128.5	102.1	-20.5	126.7	102.6	-19.0
France															
Crude	14.2	12.4	-12.7	11.9	13.0	9.2	14.0	13.6	-2.9	11.6	13.4	15.5	13.9	12.2	-12.2
Motor Gasoline	4.5	4.9	8.9	4.9	3.6	-26.5	4.5	3.8	-15.6	5.0	4.2	-16.0	4.9	4.0	-18.4
Middle Distillate	20.1	23.1	14.9	22.9	22.9	0.0	22.0	21.6	-1.8	25.9	21.3	-17.8	24.7	19.5	-21.1
Residual Fuel Oil	0.9	1.9	111.1	1.6	1.7	6.2	1.6	2.0	25.0	1.5	1.7	13.3	1.6	2.0	25.0
Other Products	4.7	3.7	-21.3	4.1	3.2	-22.0	4.2	3.3	-21.4	4.1	3.1	-24.4	3.9	3.2	-17.9
Total Products	30.2	33.6	11.3	33.5	31.4	-6.3	32.3	30.7	-5.0	36.5	30.3	-17.0	35.1	28.7	-18.2
Other ³	9.3	7.8	-16.1	8.7	8.4	-3.4	8.7	7.6	-12.6	9.1	7.0	-23.1	8.2	7.0	-14.6
Total	53.7	53.8	0.2	54.1	52.8	-2.4	55.0	51.9	-5.6	57.2	50.7	-11.4	57.2	47.9	-16.3
United Kingdom															
Crude	30.0	29.3	-2.3	32.1	26.5	-17.4	31.8	26.8	-15.7	28.4	24.0	-15.5	27.7	24.9	-10.1
Motor Gasoline	9.2	9.6	4.3	9.5	9.0	-5.3	9.8	9.4	-4.1	9.3	9.3	0.0	9.9	8.7	-12.1
Middle Distillate	31.3	25.6	-18.2	32.3	24.2	-25.1	32.1	24.5	-23.7	32.0	23.7	-25.9	30.6	21.4	-30.1
Residual Fuel Oil	1.3	1.5	15.4	1.8	1.3	-27.8	1.5	1.5	0.0	1.8	1.2	-33.3	1.2	1.3	8.3
Other Products	6.8	6.6	-2.9	6.3	6.4	1.6	7.2	6.3	-12.5	7.3	6.9	-5.5	6.5	7.1	9.2
Total Products	48.6	43.3	-10.9	49.9	40.9	-18.0	50.6	41.7	-17.6	50.4	41.1	-18.5	48.2	38.5	-20.1
Other ³	7.6	8.1	6.6	7.9	8.8	11.4	7.8	8.8	12.8	7.3	8.2	12.3	7.8	8.2	5.1
Total	86.2	80.7	-6.4	89.9	76.2	-15.2	90.2	77.3	-14.3	86.1	73.3	-14.9	83.7	71.6	-14.5
Canada⁴															
Crude	142.0	137.1	-3.5	137.5	141.3	2.8	133.5	143.3	7.3	130.9	142.1	8.6	129.0	140.5	8.9
Motor Gasoline	15.0	15.5	3.3	15.6	14.9	-4.5	15.0	15.1	0.7	14.3	14.3	0.0	15.0	14.7	-2.0
Middle Distillate	12.6	12.7	0.8	12.5	13.7	9.6	13.1	15.0	14.5	11.6	15.2	31.0	10.6	12.8	20.8
Residual Fuel Oil	2.5	3.6	44.0	2.6	2.9	11.5	2.7	3.1	14.8	2.7	2.4	-11.1	3.0	2.8	-6.7
Other Products	10.3	10.4	1.0	9.4	10.1	7.4	9.6	10.3	7.3	8.6	10.8	25.6	8.1	9.2	13.6
Total Products	40.4	42.2	4.5	40.1	41.6	3.7	40.4	43.5	7.7	37.2	42.7	14.8	36.7	39.5	7.6
Other ³	21.4	21.7	1.4	24.8	23.2	-6.5	28.4	25.7	-9.5	30.9	26.7	-13.6	30.0	25.2	-16.0
Total	203.8	201.0	-1.4	202.4	206.1	1.8	202.3	212.5	5.0	199.0	211.5	6.3	195.7	205.2	4.9

1 Stocks are primary national territory stocks on land (excluding utility stocks and including pipeline and entropot 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 US figures exclude US territories.

3 Other includes NGLs, refinery feedstocks, additives/oxygenates and other hydrocarbons.

4 Canadian stock information for recent months is the administration's best estimate. Data are usually finalised three months after first publication.

Table 5
TOTAL STOCKS ON LAND IN OECD COUNTRIES¹
(*millions of barrels² and 'days')

	End September 2020		End December 2020		End March 2021		End June 2021		End September 2021 ³	
	Stock	Days Fwd ²	Stock	Days Fwd	Stock	Days Fwd	Stock	Days Fwd	Stock	Days Fwd
	Level	Demand	Level	Demand	Level	Demand	Level	Demand	Level	Demand
OECD Americas										
Canada	195.7	92	199.1	94	201.0	93	206.1	87	205.2	-
Chile	11.9	32	11.0	33	9.7	30	11.7	31	10.4	-
Mexico	35.1	25	36.3	26	38.1	27	36.4	26	36.0	-
United States ⁴	2067.4	110	1983.4	108	1941.5	97	1894.8	94	1860.5	-
Total⁴	2332.2	102	2252.0	100	2212.4	92	2171.2	88	2134.2	86
OECD Asia Oceania										
Australia	40.9	39	40.2	39	43.5	40	39.8	40	41.1	-
Israel	-	-	-	-	-	-	-	-	-	-
Japan	559.5	158	532.4	143	506.5	164	528.6	166	525.1	-
Korea	219.4	91	213.3	84	201.5	81	194.9	75	189.3	-
New Zealand	8.4	51	8.0	51	8.3	57	7.6	56	7.9	-
Total	828.2	113	793.8	104	759.7	108	770.9	108	763.4	98
OECD Europe⁵										
Austria	24.4	107	23.6	113	23.6	97	23.0	85	21.2	-
Belgium	52.8	94	51.7	82	51.2	82	51.0	83	47.1	-
Czech Republic	22.7	115	23.8	134	23.1	108	21.8	93	21.7	-
Denmark	32.1	241	32.3	257	31.7	229	27.8	186	25.3	-
Estonia	3.6	139	3.7	150	2.9	107	2.9	99	2.7	-
Finland	43.3	235	38.5	235	39.1	230	39.5	209	37.3	-
France	167.7	116	158.4	107	162.1	112	163.0	100	157.3	-
Germany	276.6	131	278.2	148	278.0	134	275.8	123	269.7	-
Greece	34.9	150	35.0	153	34.4	144	30.5	100	27.3	-
Hungary	26.9	152	26.8	172	25.8	147	25.6	135	25.9	-
Ireland	12.2	85	11.9	94	11.7	86	12.4	85	10.6	-
Italy	139.9	124	135.8	130	126.8	110	128.9	103	118.0	-
Latvia	3.5	103	3.2	101	3.0	82	3.0	70	2.7	-
Lithuania	7.6	120	7.9	146	7.8	116	8.5	113	9.1	-
Luxembourg	0.6	12	0.6	13	0.6	13	0.8	14	0.5	-
Netherlands	165.5	194	156.6	195	158.1	196	147.2	181	122.0	-
Norway	31.8	136	30.1	114	28.2	146	23.6	99	20.2	-
Poland	82.2	122	81.6	131	82.7	126	80.0	103	78.1	-
Portugal	22.3	108	22.4	123	20.7	98	19.9	90	19.0	-
Slovak Republic	12.6	157	12.7	171	12.4	144	12.4	136	12.2	-
Slovenia	5.4	131	5.3	126	5.3	117	5.3	104	4.9	-
Spain	126.7	112	123.1	110	121.7	106	118.1	95	111.6	-
Sweden	66.5	268	62.7	219	48.8	162	45.2	144	38.3	-
Switzerland	34.5	196	34.0	206	33.7	192	32.9	178	33.4	-
Turkey	89.9	98	85.4	107	84.4	91	85.1	74	85.6	-
United Kingdom	83.5	68	85.5	74	76.9	61	76.2	58	71.6	-
Total	1569.6	125	1531.0	129	1494.9	119	1460.4	106	1373.5	103
Total OECD	4730.0	111	4576.8	109	4467.0	102	4402.4	97	4271.1	93
DAYS OF IEA Net Imports⁶ -		254		245		241		167		160

1 Total Stocks are industry and government-controlled stocks (see breakdown in the table below). Stocks are primary national territory stocks on land (excluding utility stocks and including pipeline and entrepot stocks where known) they include stocks held by industry to meet IEA, EU and national emergency reserves commitments and are subject to government control in emergencies.

2 Note that days of forward demand represent the stock level divided by the forward quarter average daily demand and is very different from the days of net imports used for the calculation of IEA Emergency Reserves.

3 End September 2021 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/hetimports.asp). Net exporting IEA countries are excluded.

TOTAL OECD STOCKS

CLOSING STOCKS	Total	Government ¹ controlled Millions of Barrels	Industry	Total	Government ¹ controlled Days of Fwd. Demand ²	Industry
3Q2018	4436	1570	2866	93	33	60
4Q2018	4425	1552	2873	93	33	61
1Q2019	4435	1557	2878	94	33	61
2Q2019	4487	1549	2938	93	32	61
3Q2019	4492	1544	2948	94	32	62
4Q2019	4432	1535	2896	98	34	64
1Q2020	4517	1537	2980	121	41	80
2Q2020	4778	1561	3217	114	37	76
3Q2020	4730	1551	3179	111	36	75
4Q2020	4577	1541	3035	109	37	72
1Q2021	4467	1546	2921	102	35	67
2Q2021	4402	1524	2879	97	34	63
3Q2021	4271	1513	2758	93	33	60

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 3Q2021 (where latest forecasts are used).

Table 6
IEA MEMBER COUNTRY DESTINATIONS OF SELECTED CRUDE STREAMS¹
(million barrels per day)

											Year Earlier	
	2018	2019	2020	4Q20	1Q21	2Q21	3Q21	Jul 21	Aug 21	Sep 21	Sep 20	change
Saudi Light & Extra Light												
Americas	0.66	0.20	0.26	0.11	0.18	0.31	0.45	0.42	0.40	0.53	0.05	0.48
Europe	0.69	0.68	0.60	0.53	0.43	0.40	0.55	0.55	0.61	0.49	0.65	-0.16
Asia Oceania	1.45	1.42	1.39	1.44	1.41	1.12	1.18	0.95	1.35	1.25	1.16	0.09
Saudi Medium												
Americas	0.30	0.12	0.14	0.03	0.06	-	-	-	-	-	0.11	-
Europe	0.01	0.02	0.02	0.01	0.01	-	0.02	0.01	0.03	0.01	-	-
Asia Oceania	0.41	0.23	0.25	0.26	0.22	0.17	0.19	0.20	0.18	0.18	0.26	-0.07
Canada Heavy												
Americas	2.41	2.27	2.39	2.55	2.62	2.43	2.46	2.41	2.46	2.52	2.16	0.36
Europe	0.04	0.04	0.03	0.03	0.04	0.03	0.04	0.05	0.04	0.02	0.03	0.00
Asia Oceania	0.00	0.00	0.00	-	0.01	0.04	0.01	-	0.01	0.01	0.02	-0.01
Iraqi Basrah Light ²												
Americas	0.50	0.31	0.11	0.05	0.06	0.05	0.04	0.12	-	-	0.10	-
Europe	0.76	0.85	0.58	0.54	0.56	0.63	0.54	0.58	0.63	0.41	0.56	-0.15
Asia Oceania	0.43	0.37	0.22	0.20	0.15	0.17	0.16	0.19	0.16	0.13	0.18	-0.05
Kuwait Blend												
Americas	0.02	-	-	-	-	-	-	-	-	-	-	-
Europe	0.13	0.11	0.04	-	-	-	-	-	-	-	-	-
Asia Oceania	0.66	0.61	0.55	0.47	0.47	0.45	0.47	0.51	0.43	0.46	0.48	-0.02
Iranian Light												
Americas	-	-	-	-	-	-	-	-	-	-	-	-
Europe	0.16	0.00	-	-	-	-	-	-	-	-	-	-
Asia Oceania	0.01	0.00	-	-	-	-	-	-	-	-	-	-
Iranian Heavy ³												
Americas	-	-	-	-	-	-	-	-	-	-	-	-
Europe	0.35	0.04	-	-	-	-	-	-	-	-	-	-
Asia Oceania	0.28	0.14	-	-	-	-	-	-	-	-	-	-
BFOE												
Americas	0.00	0.00	-	-	-	0.00	0.01	0.02	-	-	-	-
Europe	0.35	0.37	0.43	0.43	0.39	0.28	0.36	0.43	0.39	0.26	0.44	-0.17
Asia Oceania	0.09	0.01	0.03	0.03	0.08	0.07	-	-	-	-	0.03	-
Kazakhstan												
Americas	-	-	-	-	-	0.03	-	-	-	-	-	-
Europe	0.75	0.76	0.76	0.74	0.75	0.75	0.70	0.84	0.74	0.49	0.78	-0.28
Asia Oceania	0.19	0.18	0.07	0.03	0.07	0.10	0.10	0.10	0.10	0.09	0.10	-0.02
Venezuelan 22 API and heavier												
Americas	0.44	0.05	-	-	-	-	-	-	-	-	-	-
Europe	0.03	0.09	0.04	0.01	-	-	-	-	-	-	0.08	-
Asia Oceania	-	-	-	-	-	-	-	-	-	-	-	-
Mexican Maya												
Americas	0.63	0.51	0.48	0.37	0.36	0.45	0.45	0.40	0.48	0.49	0.41	0.08
Europe	0.21	0.19	0.16	0.18	0.15	0.15	0.13	0.13	0.13	0.13	0.17	-0.03
Asia Oceania	0.08	0.13	0.12	0.16	0.15	0.12	0.14	0.19	0.13	0.10	0.09	0.01
Russian Urals												
Americas	0.01	0.01	-	-	-	-	-	-	-	-	-	-
Europe	1.40	1.37	1.20	1.07	1.05	1.11	1.13	0.97	1.30	1.11	1.26	-0.15
Asia Oceania	0.00	-	-	-	0.01	-	0.03	-	-	0.08	-	-
Cabinda and Other Angola												
North America	0.06	0.01	0.01	-	-	-	-	-	-	-	-	-
Europe	0.14	0.15	0.12	0.10	0.02	0.04	0.03	-	0.06	0.03	0.11	-0.08
Pacific	0.01	0.00	-	-	-	-	-	-	-	-	-	-
Nigerian Light ⁴												
Americas	0.01	0.03	-	-	-	0.06	0.03	0.03	0.03	0.03	-	-
Europe	0.53	0.51	0.49	0.52	0.41	0.31	0.40	0.45	0.41	0.33	0.56	-0.23
Asia Oceania	0.02	0.02	0.02	0.02	0.00	0.01	-	-	-	-	-	-
Libya Light and Medium												
Americas	-	0.00	-	-	-	0.03	0.06	0.09	0.09	-	-	-
Europe	0.62	0.67	0.19	0.49	0.75	0.79	0.86	0.98	0.72	0.87	0.05	0.82
Asia Oceania	0.02	0.03	0.01	-	0.01	0.02	0.01	0.02	0.01	-	-	-

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)

	2018	2019	2020	4Q20	1Q21	2Q21	3Q21	Jul 21	Aug 21	Sep 21	Year Earlier	
											Sep 20	% change
Crude Oil												
Americas	3759	2698	1880	1625	1698	2111	2369	2364	2307	2437	1656	47%
Europe	9814	9872	8349	8053	7780	8382	8717	8606	8791	8754	8494	3%
Asia Oceania	6697	6542	5603	5511	5336	5459	5428	4994	5813	5478	5133	7%
Total OECD	20269	19111	15833	15189	14814	15952	16514	15965	16911	16670	15282	9%
LPG												
Americas	22	26	28	26	21	16	18	24	16	15	16	-4%
Europe	457	434	422	429	394	421	388	409	355	401	418	-4%
Asia Oceania	553	582	559	506	642	555	527	569	504	507	559	-9%
Total OECD	1032	1042	1009	961	1057	992	933	1002	874	923	993	-7%
Naphtha												
Americas	8	5	7	5	7	7	11	12	6	14	3	386%
Europe	391	347	409	410	526	514	450	531	376	444	214	108%
Asia Oceania	1021	993	1005	889	1087	1076	1229	1167	1265	1254	890	41%
Total OECD	1420	1345	1422	1303	1620	1597	1690	1710	1647	1712	1107	55%
Gasoline³												
Americas	773	817	567	565	598	1074	973	1042	939	937	754	24%
Europe	110	112	109	108	102	159	101	34	120	152	37	310%
Asia Oceania	113	114	126	116	155	196	135	134	163	106	113	-6%
Total OECD	996	1043	802	789	854	1429	1209	1210	1222	1195	905	32%
Jet & Kerosene												
Americas	140	175	158	145	108	166	207	152	219	253	188	35%
Europe	509	520	337	295	281	291	364	386	358	348	337	3%
Asia Oceania	89	76	63	58	100	71	43	51	28	51	20	151%
Total OECD	738	771	558	498	489	528	615	590	605	651	545	19%
Gasoil/Diesel												
Americas	124	118	135	256	267	149	146	115	150	175	102	72%
Europe	1339	1300	1192	1178	1099	1172	1156	1238	1250	975	1040	-6%
Asia Oceania	253	262	328	320	336	353	346	368	347	321	310	4%
Total OECD	1716	1680	1656	1754	1701	1673	1648	1721	1747	1471	1452	1%
Heavy Fuel Oil												
Americas	161	116	143	129	116	96	91	72	120	81	135	-40%
Europe	197	223	295	310	368	315	425	371	341	567	285	99%
Asia Oceania	162	101	88	80	109	116	122	137	112	115	163	-29%
Total OECD	520	440	526	519	594	527	637	581	573	763	583	31%
Other Products												
Americas	679	713	592	515	507	698	607	644	632	541	571	-5%
Europe	1011	865	574	491	515	512	575	575	595	556	580	-4%
Asia Oceania	263	268	241	232	246	260	267	310	206	285	260	9%
Total OECD	1952	1846	1406	1238	1268	1470	1449	1529	1433	1382	1412	-2%
Total Products												
Americas	1908	1971	1629	1641	1623	2206	2053	2061	2082	2016	1769	14%
Europe	4013	3800	3339	3221	3286	3384	3460	3544	3393	3444	2912	18%
Asia Oceania	2454	2397	2410	2200	2674	2627	2668	2738	2625	2639	2316	14%
Total OECD	8374	8168	7378	7062	7583	8217	8181	8343	8100	8098	6996	16%
Total Oil												
Americas	5666	4669	3510	3266	3321	4317	4422	4425	4389	4453	3424	30%
Europe	13827	13672	11688	11274	11066	11765	12177	12150	12184	12198	11406	7%
Asia Oceania	9151	8939	8014	7711	8011	8087	8096	7732	8439	8117	7449	9%
Total OECD	28644	27279	23211	22251	22397	24169	24695	24307	25012	24768	22279	11%

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.

Table 7a
REGIONAL OECD IMPORTS FROM NON-OECD COUNTRIES^{1,2}
(thousand barrels per day)

	2018	2019	2020	4Q20	1Q21	2Q21	3Q21	Jul 21	Aug 21	Sep 21	Year Earlier	
											Sep 20	% change
Crude Oil												
Americas	3606	2553	1820	1547	1615	2007	2277	2244	2216	2373	1642	45%
Europe	9088	8913	7115	6786	6643	7109	7408	7385	7463	7374	7150	3%
Asia Oceania	6249	5914	5076	5003	4710	4840	4782	4368	5112	4868	4614	6%
Total OECD	18943	17380	14011	13336	12968	13957	14466	13997	14792	14615	13406	9%
LPG												
Americas	15	23	22	18	19	16	18	24	16	15	16	-4%
Europe	350	303	252	231	244	229	250	242	277	230	221	4%
Asia Oceania	158	74	57	65	58	60	35	57	22	25	88	-71%
Total OECD	523	400	331	314	321	304	303	323	315	271	325	-17%
Naphtha												
Americas	4	2	1	1	4	2	5	5	2	7	1	354%
Europe	360	320	390	377	427	452	380	449	334	355	203	75%
Asia Oceania	924	898	835	744	870	948	1012	862	1108	1069	788	36%
Total OECD	1288	1220	1226	1122	1301	1402	1397	1316	1444	1431	993	44%
Gasoline³												
Americas	271	308	194	167	174	330	312	325	349	261	180	44%
Europe	105	108	104	103	98	152	96	28	116	146	36	311%
Asia Oceania	90	88	109	116	144	189	135	134	163	106	113	-6%
Total OECD	466	504	406	386	417	671	543	488	628	513	330	56%
Jet & Kerosene												
Americas	56	39	54	47	31	63	65	48	75	73	68	7%
Europe	445	464	297	278	248	273	319	329	301	329	263	25%
Asia Oceania	89	76	63	58	100	71	43	51	28	51	20	151%
Total OECD	590	579	414	382	378	406	428	428	404	452	351	29%
Gasoil/Diesel												
Americas	100	86	103	190	203	94	94	69	105	108	89	21%
Europe	1160	1126	1062	1082	1027	1094	1044	1112	1107	910	883	3%
Asia Oceania	253	261	324	316	336	353	346	368	347	321	310	4%
Total OECD	1513	1473	1489	1588	1566	1541	1484	1549	1559	1338	1282	4%
Heavy Fuel Oil												
Americas	147	102	110	97	105	84	78	67	98	67	106	-36%
Europe	185	202	279	295	340	281	407	347	313	565	257	120%
Asia Oceania	162	100	88	80	109	116	122	137	112	115	163	-29%
Total OECD	493	404	477	472	554	481	606	551	523	748	526	42%
Other Products												
Americas	522	542	514	466	469	631	556	574	589	503	502	0%
Europe	702	629	352	334	358	337	375	386	356	382	341	12%
Asia Oceania	182	184	164	162	176	198	178	206	127	203	194	5%
Total OECD	1406	1355	1030	962	1004	1166	1109	1165	1072	1088	1036	5%
Total Products												
Americas	1115	1103	998	986	1005	1219	1127	1111	1234	1034	962	7%
Europe	3307	3152	2735	2699	2742	2817	2871	2894	2802	2918	2203	32%
Asia Oceania	1857	1681	1640	1540	1793	1934	1871	1815	1908	1891	1677	13%
Total OECD	6279	5936	5373	5225	5540	5971	5869	5820	5945	5842	4843	21%
Total Oil												
Americas	4721	3656	2818	2533	2620	3227	3404	3355	3451	3407	2605	31%
Europe	12395	12064	9850	9485	9385	9927	10279	10279	10266	10291	9353	10%
Asia Oceania	8106	7595	6716	6543	6503	6775	6653	6183	7020	6759	6291	7%
Total OECD	25223	23316	19384	18561	18508	19928	20336	19817	20736	20457	18248	12%

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

Table 7b
INTER-REGIONAL OECD TRANSFERS^{1,2}
(thousand barrels per day)

	2018	2019	2020	4Q20	1Q21	2Q21	3Q21	Jul 21	Aug 21	Sep 21	Year Earlier	
											Sep 20	% change
Crude Oil												
Americas	153	145	60	78	83	104	92	120	90	64	13	380%
Europe	726	959	1234	1268	1137	1272	1309	1221	1328	1380	1344	3%
Asia Oceania	448	628	527	508	627	619	646	626	701	610	519	18%
Total OECD	1326	1731	1821	1853	1846	1995	2047	1968	2119	2054	1877	9%
LPG												
Americas	7	3	6	8	3	0	0	0	0	0	0	-100%
Europe	107	131	171	197	150	193	138	167	78	170	198	-14%
Asia Oceania	395	508	501	442	584	495	492	512	482	482	470	2%
Total OECD	508	642	678	647	737	688	630	679	560	652	668	-2%
Naphtha												
Americas	4	3	6	4	3	4	6	7	4	7	1	420%
Europe	31	27	20	33	99	62	71	82	42	89	11	740%
Asia Oceania	97	96	170	144	217	128	216	306	157	185	102	81%
Total OECD	132	125	196	181	319	195	293	394	203	281	114	147%
Gasoline³												
Americas	502	509	373	398	423	744	661	716	590	676	574	18%
Europe	5	4	5	5	3	7	5	6	4	5	1	297%
Asia Oceania	23	26	18	0	11	8	0	0	0	0	0	-25%
Total OECD	530	539	396	403	437	759	666	722	594	682	575	19%
Jet & Kerosene												
Americas	84	136	104	99	77	103	142	105	144	180	120	50%
Europe	64	56	40	18	33	19	45	57	57	19	74	-74%
Asia Oceania	0	0	0	0	0	0	0	0	0	0	0	na
Total OECD	148	192	144	116	110	122	187	162	201	199	194	3%
Gasoil/Diesel												
Americas	25	32	32	66	64	55	52	46	45	67	13	431%
Europe	178	174	131	96	72	77	112	126	143	66	157	-58%
Asia Oceania	0	1	4	3	0	0	0	0	0	0	0	na
Total OECD	203	207	167	166	136	132	165	172	188	133	170	-22%
Heavy Fuel Oil												
Americas	15	14	33	33	11	12	13	5	22	13	29	-55%
Europe	12	21	16	15	29	34	18	24	28	2	28	-93%
Asia Oceania	0	1	0	0	0	0	0	0	0	0	0	na
Total OECD	27	36	49	47	39	46	32	29	50	15	57	-74%
Other Products												
Americas	157	171	78	48	38	67	51	70	43	38	70	-45%
Europe	308	236	222	158	157	175	201	189	239	174	240	-27%
Asia Oceania	81	83	77	70	70	62	88	105	79	81	66	23%
Total OECD	546	490	377	276	264	304	340	364	361	294	376	-22%
Total Products												
Americas	793	867	631	655	618	986	926	950	847	982	806	22%
Europe	706	649	604	522	543	566	590	650	591	526	709	-26%
Asia Oceania	597	716	770	660	881	693	796	922	717	748	639	17%
Total OECD	2095	2232	2005	1836	2043	2246	2312	2522	2156	2256	2154	5%
Total Oil												
Americas	945	1012	691	733	701	1090	1018	1070	938	1046	820	28%
Europe	1432	1608	1838	1789	1681	1839	1899	1871	1919	1906	2053	-7%
Asia Oceania	1044	1343	1297	1168	1508	1312	1443	1549	1419	1358	1158	17%
Total OECD	3421	3963	3827	3690	3889	4241	4359	4490	4275	4310	4030	7%

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

Table 8
REGIONAL OECD CRUDE IMPORTS BY SOURCE¹
(thousand barrels per day)

	2018	2019	2020	4Q20	1Q21	2Q21	3Q21	Jul 21	Aug 21	Sep 21	Year Earlier Sep 20	change
OECD Americas												
Venezuela	506	81	-	-	-	-	-	-	-	-	-	-
Other Central & South America	795	867	745	750	648	689	809	664	808	961	828	133
North Sea	150	143	60	78	83	93	92	120	90	64	13	51
Other OECD Europe	1	2	1	-	-	11	-	-	-	-	-	-
Non-OECD Europe	-	-	-	-	-	-	-	-	-	-	-	-
Former Soviet Union	145	189	91	96	128	295	308	305	346	271	86	186
Saudi Arabia	983	601	572	293	333	370	484	435	444	577	381	196
Kuwait	78	45	21	16	7	20	36	37	24	46	18	28
Iran	-	-	-	-	12	-	-	-	-	-	-	-
Iraq	519	331	177	107	115	172	128	220	131	29	83	-55
Oman	-	-	-	-	-	-	-	-	-	-	-	-
United Arab Emirates	5	3	5	10	-	-	44	34	31	69	-	-
Other Middle East	-	-	-	-	-	-	-	-	-	-	-	-
West Africa ²	317	267	145	188	207	273	255	333	244	187	187	0
Other Africa	196	137	45	67	149	172	167	170	172	157	59	98
Asia	61	32	17	11	17	16	46	47	16	77	-	-
Other	3	0	3	10	-	-	-	-	-	-	-	-
Total	3759	2698	1880	1625	1698	2111	2369	2364	2307	2437	1656	782
of which Non-OECD	3606	2553	1820	1547	1615	2007	2277	2244	2216	2373	1642	731
OECD Europe												
Canada	81	60	95	117	108	81	89	103	94	67	56	12
Mexico + USA	645	900	1139	1150	1029	1191	1220	1118	1233	1313	1288	24
Venezuela	57	106	44	13	-	-	-	-	-	-	93	-
Other Central & South America	132	118	208	205	143	272	246	222	307	208	350	-143
Non-OECD Europe	12	14	25	34	23	19	28	34	23	27	19	8
Former Soviet Union	4149	4240	3506	3270	3306	3466	3466	3496	3526	3372	3440	-68
Saudi Arabia	818	792	756	602	517	484	582	566	602	578	752	-174
Kuwait	137	97	48	30	-	-	0	0	-	-	-	-
Iran	536	74	6	2	-	-	6	-	17	-	4	-
Iraq	962	1124	814	759	783	916	852	971	915	663	978	-314
Oman	-	-	-	-	-	-	-	-	-	-	-	-
United Arab Emirates	2	2	-	-	-	-	-	-	-	-	-	-
Other Middle East	-	3	8	1	6	12	12	-	18	18	18	0
West Africa ²	1115	1140	1074	976	780	719	852	935	928	688	1063	-375
Other Africa	1161	1180	596	858	1071	1204	1193	1155	1085	1343	397	946
Asia	-	-	0	-	-	-	0	-	-	0	4	-4
Other	9	13	11	5	-	-	147	-	15	436	5	431
Total	9816	9863	8330	8022	7767	8364	8692	8600	8764	8714	8468	246
of which Non-OECD	9088	8913	7115	6786	6643	7109	7408	7385	7463	7374	7150	224
OECD Asia Oceania												
Canada	3	5	1	-	17	38	5	-	6	10	17	-7
Mexico + USA	344	613	477	444	493	491	554	569	593	497	433	64
Venezuela	-	-	-	-	-	-	-	-	-	-	-	-
Other Central & South America	35	48	91	114	107	145	93	116	76	88	81	8
North Sea	100	10	49	64	116	90	87	57	102	103	69	34
Other OECD Europe	-	-	-	-	-	-	-	-	-	-	-	-
Non-OECD Europe	-	-	-	-	-	-	-	-	-	-	-	-
Former Soviet Union	435	435	300	295	328	372	265	209	321	264	298	-34
Saudi Arabia	2040	1878	1867	1976	1868	1574	1601	1389	1766	1650	1629	20
Kuwait	672	666	584	508	482	484	493	546	437	495	515	-20
Iran	274	137	-	-	-	-	-	-	-	-	-	-
Iraq	435	364	224	205	151	165	160	187	161	131	180	-48
Oman	56	59	22	19	15	43	49	64	65	17	57	-40
United Arab Emirates	1098	1256	1096	960	908	1094	1143	1034	1275	1118	929	189
Other Middle East	450	449	387	374	396	383	371	317	332	466	350	116
West Africa ²	95	56	65	49	46	119	83	118	76	53	89	-35
Other Africa	105	90	42	23	59	35	68	44	100	60	21	40
Non-OECD Asia	319	220	161	207	193	161	164	108	184	203	172	31
Other	235	255	234	268	155	264	285	231	304	322	294	28
Total	6697	6542	5602	5505	5336	5455	5420	4988	5797	5478	5133	345
of which Non-OECD	6249	5914	5076	5003	4710	4840	4782	4368	5112	4868	4614	254
Total OECD Trade	20271	19103	15812	15152	14801	15931	16481	15952	16867	16630	15257	1373
of which Non-OECD	18943	17380	14011	13336	12968	13957	14466	13997	14792	14615	13406	1209

¹ Based on Monthly Oil Questionnaire data submitted by OECD countries in tonnes, and converted to barrels at 7.37 barrels per tonne. Data will differ from Table 6 which is based on submissions in barrels.

² West Africa includes Angola, Nigeria, Gabon, Equatorial Guinea, Congo and Democratic Republic of Congo.

Table 9
REGIONAL OECD GASOLINE IMPORTS BY SOURCE¹
(thousand barrels per day)

	2018	2019	2020	4Q20	1Q21	2Q21	3Q21	Jul 21	Aug 21	Sep 21	Year Earlier	
											Sep 20	change
OECD Americas												
Venezuela	23	4	-	-	-	-	-	-	-	-	-	-
Other Central & South America	64	83	40	24	10	67	37	12	50	49	37	12
ARA (Belgium Germany Netherlands)	167	189	146	138	127	312	240	281	227	211	242	-31
Other Europe	323	293	207	241	275	380	381	397	328	418	311	107
FSU	80	100	67	89	100	112	105	98	147	69	65	4
Saudi Arabia	11	7	6	-	4	50	41	65	41	16	11	5
Algeria	1	-	4	-	4	-	-	-	-	-	-	-
Other Middle East & Africa	19	14	13	20	23	12	15	22	13	10	10	0
Singapore	8	5	1	-	4	3	8	5	9	10	-	-
OECD Asia Oceania	13	28	21	19	21	52	43	39	44	47	20	27
Non-OECD Asia (excl. Singapore)	84	116	72	53	47	99	116	131	107	110	70	40
Other	0	0	-	-	0	-	-	-	-	-	-	-
Total²	794	838	578	585	615	1088	986	1050	967	941	767	173
of which Non-OECD	271	308	194	167	174	330	312	325	349	261	180	80
OECD Europe												
OECD Americas	4	3	3	4	2	5	4	6	3	4	0	4
Venezuela	0	0	0	-	1	1	5	3	-	10	-	-
Other Central & South America	5	3	4	5	8	2	6	-	6	11	-	-
Non-OECD Europe	11	18	16	12	9	16	7	10	10	2	19	-17
FSU	70	62	44	41	25	16	34	28	50	24	18	6
Saudi Arabia	2	0	8	21	-	-	11	-	-	33	-	-
Algeria	0	0	1	-	-	-	-	-	-	-	-	-
Other Middle East & Africa	4	8	3	3	8	6	2	3	1	2	4	-2
Singapore	2	3	2	1	-	-	0	0	0	0	2	-2
OECD Asia Oceania	1	1	1	1	1	2	1	0	1	1	1	0
Non-OECD Asia (excl. Singapore)	2	0	0	2	3	2	2	2	4	2	-	-
Other	20	21	37	27	57	117	46	7	60	72	6	66
Total²	122	121	120	116	113	168	118	59	135	162	51	111
of which Non-OECD	105	108	104	103	98	152	96	28	116	146	36	111
OECD Asia Oceania												
OECD Americas	4	6	4	0	2	0	0	0	0	0	0	0
Venezuela	-	-	-	-	-	-	-	-	-	-	-	-
Other Central & South America	-	-	-	-	-	-	-	-	-	-	-	-
ARA (Belgium Germany Netherlands)	13	14	4	-	9	7	0	0	-	0	-	-
Other Europe	7	5	10	-	-	-	-	-	-	-	-	-
FSU	1	0	2	-	-	-	-	-	-	-	-	-
Saudi Arabia	0	1	-	-	-	-	-	-	-	-	-	-
Algeria	-	-	-	-	-	-	-	-	-	-	-	-
Other Middle East & Africa	1	-	1	-	-	-	-	-	-	-	-	-
Singapore	49	46	51	44	86	98	96	86	119	84	37	47
Non-OECD Asia (excl. Singapore)	19	21	37	52	39	58	19	29	25	2	55	-53
Other	20	21	19	19	20	33	19	19	19	20	20	0
Total²	114	114	128	116	155	196	135	134	163	106	112	-6
of which Non-OECD	90	88	109	116	144	189	135	134	163	106	113	-7
Total OECD Trade²	1029	1073	826	816	883	1451	1239	1243	1264	1209	931	278
of which Non-OECD	466	504	406	386	417	671	543	488	628	513	330	184

¹ Based on Monthly Oil Questionnaire data submitted by OECD countries in tonnes.

² Total figure excludes intra-regional trade.

Table 10
REGIONAL OECD GASOIL/DIESEL IMPORTS BY SOURCE¹
(thousand barrels per day)

	2018	2019	2020	4Q20	1Q21	2Q21	3Q21	Jul 21	Aug 21	Sep 21	Year Earlier Sep 20	change
OECD Americas												
Venezuela	4	1	-	-	-	-	-	-	-	-	-	-
Other Central and South America	30	38	34	39	40	30	24	29	24	19	56	-38
ARA (Belgium Germany Netherlands)	6	5	11	36	51	31	30	26	9	56	5	51
Other Europe	3	2	5	4	3	9	1	1	-	1	3	-2
FSU	16	6	12	26	35	21	10	6	1	24	-	-
Saudi Arabia	17	3	8	17	23	9	11	-	25	8	5	3
Algeria	-	-	-	-	-	-	-	-	-	-	-	-
Other Middle East and Africa	8	2	9	29	48	8	18	-	30	23	11	12
Singapore	1	0	-	-	-	2	8	-	17	7	-	-
OECD Asia Oceania	15	24	16	26	10	15	21	18	36	10	5	5
Non-OECD Asia (excl. Singapore)	23	30	34	64	48	16	12	17	9	9	14	-5
Other	-	7	6	15	8	8	11	17	-	17	2	15
Total²	124	118	135	256	267	149	146	115	150	175	102	73
of which Non-OECD	100	86	103	190	203	94	94	69	105	108	89	18
OECD Europe												
OECD Americas	154	138	99	64	34	38	63	79	88	18	119	-100
Venezuela	-	-	-	-	-	-	-	-	-	-	-	-
Other Central and South America	4	0	3	2	-	1	1	1	2	0	2	-2
Non-OECD Europe	39	41	30	33	28	30	27	31	25	26	22	4
FSU	714	685	661	633	721	716	583	652	547	548	521	27
Saudi Arabia	225	205	193	260	131	114	137	152	151	109	207	-98
Algeria	-	0	2	-	-	-	-	-	-	-	-	-
Other Middle East and Africa	76	83	71	73	65	129	192	135	221	220	103	118
Singapore	14	27	17	13	10	18	20	30	17	11	7	4
OECD Asia Oceania	25	36	32	32	38	39	50	46	55	47	38	9
Non-OECD Asia (excl. Singapore)	151	152	101	89	72	108	119	108	165	83	76	7
Other	12	10	15	10	23	7	-10	25	4	-60	-26	-34
Total²	1413	1378	1224	1210	1122	1201	1181	1260	1275	1003	1068	-65
of which Non-OECD	1160	1126	1062	1082	1027	1094	1044	1112	1107	910	883	26
OECD Asia Oceania												
OECD Americas	-	1	4	3	-	-	-	-	-	-	-	-
Venezuela	-	-	-	-	-	-	-	-	-	-	-	-
Other Central and South America	-	-	0	0	-	-	-	-	-	-	-	-
ARA (Belgium Germany Netherlands)	-	-	0	-	-	0	0	-	-	0	-	-
Other Europe	-	-	-	-	-	-	-	-	-	-	-	-
FSU	4	4	2	1	1	1	2	1	4	2	-	-
Saudi Arabia	3	-	-	-	-	-	-	-	-	-	-	-
Algeria	-	-	-	-	-	-	-	-	-	-	-	-
Other Middle East and Africa	8	7	13	8	13	-	-	-	-	-	-	-
Singapore	141	111	91	85	82	92	154	130	179	154	97	56
Non-OECD Asia (excl. Singapore)	91	133	208	215	229	249	181	233	150	160	207	-47
Other	5	5	10	8	11	11	9	5	15	5	5	0
Total²	253	262	328	320	336	353	346	368	347	321	310	11
of which Non-OECD	253	261	324	316	336	353	346	368	347	321	310	11
Total OECD Trade²	1790	1758	1687	1785	1724	1702	1673	1743	1772	1499	1479	19
of which Non-OECD	1513	1473	1489	1588	1566	1541	1484	1549	1559	1338	1282	56

¹ Based on Monthly Oil Questionnaire data submitted by OECD countries in tonnes.

² Total figure excludes intra-regional trade.

Table 11
REGIONAL OECD JET AND KEROSENE IMPORTS BY SOURCE¹
(thousand barrels per day)

	2018	2019	2020	4Q20	1Q21	2Q21	3Q21	Jul 21	Aug 21	Sep 21	Year Earlier	
											Sep 20	change
OECD Americas												
Venezuela	6	0	-	-	-	-	-	-	-	-	-	-
Other Central and South America	2	7	5	5	3	-	-	-	-	-	16	-
ARA (Belgium Germany Netherlands)	0	-	-	-	4	0	14	8	19	15	-	-
Other Europe	0	0	4	4	6	5	6	16	2	0	9	-9
FSU	0	-	0	-	-	0	0	-	0	-	3	-
Saudi Arabia	1	2	6	14	-	4	4	6	2	3	-	-
Algeria	-	-	1	-	9	0	3	-	7	3	10	-6
Other Middle East and Africa	2	10	11	18	6	31	14	13	25	4	22	-18
Singapore	6	3	4	-	-	2	5	-	11	6	-	-
OECD Asia Oceania	84	136	100	95	67	98	122	80	123	165	111	54
Non-OECD Asia (excl. Singapore)	27	14	22	10	13	25	34	27	20	57	17	40
Other	11	3	4	-	-	-	4	2	11	-	-	-
Total²	140	175	158	145	108	166	207	152	219	253	188	65
of which Non-OECD	56	39	54	47	31	63	65	48	75	73	68	5
OECD Europe												
OECD Americas	32	20	13	1	1	2	3	1	7	0	-	-
Venezuela	1	-	-	-	-	-	-	-	-	-	-	-
Other Central and South America	2	1	0	-	-	-	-	-	-	-	-	-
Non-OECD Europe	6	2	0	-	-	-	-	-	-	-	-	-
FSU	40	45	22	26	34	25	31	41	22	30	10	19
Saudi Arabia	98	105	40	30	36	39	12	15	5	17	20	-3
Algeria	9	11	9	6	6	8	6	-	9	10	-	-
Other Middle East and Africa	197	199	155	153	137	136	171	196	183	132	210	-78
Singapore	25	29	10	8	3	4	18	-	31	24	3	22
OECD Asia Oceania	32	36	27	16	32	17	42	56	50	19	74	-55
Non-OECD Asia (excl. Singapore)	69	73	50	54	17	59	62	31	52	103	28	75
Other	1	2	10	2	12	2	21	48	0	14	-9	23
Total²	512	523	337	296	278	292	366	388	360	351	337	14
of which Non-OECD	445	464	297	278	248	273	319	329	301	329	263	66
OECD Asia Oceania												
OECD Americas	-	-	-	-	-	-	-	-	-	-	-	-
Venezuela	-	-	-	-	-	-	-	-	-	-	-	-
Other Central and South America	-	-	-	-	-	-	-	-	-	-	-	-
ARA (Belgium Germany Netherlands)	-	-	-	-	-	-	-	-	-	-	-	-
Other Europe	-	-	-	-	-	-	-	-	-	-	-	-
FSU	-	-	-	-	-	-	-	-	-	-	-	-
Saudi Arabia	1	-	-	-	-	-	-	-	-	-	-	-
Algeria	-	-	-	-	-	-	-	-	-	-	-	-
Other Middle East and Africa	1	-	-	-	3	-	-	-	-	-	-	-
Singapore	28	21	14	10	6	18	20	19	20	22	10	13
Non-OECD Asia (excl. Singapore)	26	29	28	28	55	37	15	24	1	20	2	18
Other	33	26	21	19	36	17	8	8	8	8	8	0
Total²	89	76	63	58	100	71	43	51	28	51	20	30
of which Non-OECD	89	76	63	58	100	71	43	51	28	51	20	30
Total OECD Trade²	741	774	558	499	486	529	617	592	607	654	545	109
of which Non-OECD	590	579	414	382	378	406	428	428	404	452	351	101

¹ Based on Monthly Oil Questionnaire data submitted by OECD countries in tonnes.

² Total figure excludes intra-regional trade.

Table 12
REGIONAL OECD RESIDUAL FUEL OIL IMPORTS BY SOURCE¹
(thousand barrels per day)

	2018	2019	2020	4Q20	1Q21	2Q21	3Q21	Jul 21	Aug 21	Sep 21	Year Earlier Sep 20	change
OECD Americas												
Venezuela	42	7	-	-	-	-	-	-	-	-	-	-
Other Central and South America	72	50	52	38	29	25	39	39	32	47	26	20
ARA (Belgium Germany Netherlands)	7	6	12	15	3	2	9	-	14	12	18	-6
Other Europe	7	8	21	17	8	10	4	5	6	1	11	-10
FSU	23	30	44	51	62	36	19	19	23	15	43	-28
Saudi Arabia	-	2	2	-	-	0	-	-	-	-	-	-
Algeria	-	8	2	-	8	4	3	7	0	-	0	-
Other Middle East and Africa	7	5	10	7	6	11	15	1	43	-	37	-
Singapore	-	1	1	-	-	-	2	-	-	6	-	-
OECD Asia Oceania	-	-	-	-	-	-	1	0	2	-	-	-
Non-OECD Asia (excl. Singapore)	0	0	-	-	-	8	0	-	0	-	-	-
Other	2	-	-	-	-	-	-	-	-	-	-	-
Total²	161	117	145	129	116	96	91	72	120	81	136	-55
of which Non-OECD	147	102	110	97	105	84	78	67	98	67	106	-38
OECD Europe												
OECD Americas	4	7	12	12	28	32	16	16	28	2	22	-20
Venezuela	-	-	-	-	-	-	-	-	-	-	-	-
Other Central and South America	3	5	6	5	5	1	18	2	23	29	13	16
Non-OECD Europe	17	21	13	21	12	13	11	6	21	7	16	-9
FSU	154	154	149	156	272	154	282	288	151	410	119	291
Saudi Arabia	1	-	2	-	-	-	-	-	-	-	-	-
Algeria	1	0	2	-	3	-	2	-	6	-	-	-
Other Middle East and Africa	15	19	13	14	14	10	14	11	11	20	13	6
Singapore	-	1	3	4	2	7	2	-	7	-	1	-
OECD Asia Oceania	8	14	4	3	0	2	3	7	0	-	6	-
Non-OECD Asia (excl. Singapore)	0	3	-	-	-	-	-	-	-	-	-	-
Other	5	8	93	99	48	94	92	47	128	101	89	12
Total²	208	232	295	315	384	313	439	378	375	568	280	289
of which Non-OECD	185	202	279	295	340	281	407	347	313	565	257	308
OECD Asia Oceania												
OECD Americas	0	1	-	-	-	-	-	-	-	-	-	-
Venezuela	-	-	-	-	-	-	-	-	-	-	-	-
Other Central and South America	-	-	0	0	-	-	-	-	-	-	-	-
ARA (Belgium Germany Netherlands)	-	-	-	-	-	-	-	-	-	-	-	-
Other Europe	-	-	-	-	-	-	-	-	-	-	-	-
FSU	16	6	5	-	1	-	-	-	-	-	-	-
Saudi Arabia	-	1	1	-	-	14	13	35	3	-	9	-
Algeria	-	-	-	-	-	-	-	-	-	-	-	-
Other Middle East and Africa	23	27	38	35	32	27	31	31	30	31	81	-50
Singapore	37	25	18	14	27	44	22	13	26	27	41	-14
Non-OECD Asia (excl. Singapore)	85	40	26	31	49	30	56	59	53	57	32	25
Other	0	1	-	-	-	-	-	-	-	-	-	-
Total²	162	101	88	80	109	116	122	137	112	115	163	-48
of which Non-OECD	162	100	88	80	109	116	122	137	112	115	163	-48
Total OECD Trade²	531	450	528	524	609	524	652	588	607	764	578	186
of which Non-OECD	493	404	477	472	554	481	606	551	523	748	526	222

¹ Based on Monthly Oil Questionnaire data submitted by OECD countries in tonnes.

² Total figure excludes intra-regional trade.

Table 13
AVERAGE IEA CIF CRUDE COST AND SPOT CRUDE AND PRODUCT PRICES
 (\$/bbl)

	2018	2019	2020	4Q20	1Q21	2Q21	3Q21	Jun 21	Jul 21	Aug 21	Sep 21	Oct 21	Nov 21
CRUDE OIL PRICES													
IEA CIF Average Import¹													
IEA Americas	60.02	56.93	37.31	40.17	53.66	63.76	67.23	67.39	68.34	65.75	67.62		
IEA Europe	70.52	64.25	42.85	43.99	60.09	67.22	72.08	70.68	73.48	70.32	72.49		
IEA Asia Oceania	72.46	66.38	46.28	44.27	57.82	67.63	74.07	70.26	73.53	74.49	74.12		
IEA Total	67.77	62.75	42.16	43.00	57.61	66.29	71.14	69.55	72.00	70.09	71.39		
FOB Spot													
North Sea Dated	71.27	64.12	41.76	44.03	61.07	68.84	73.42	72.96	74.99	70.75	74.40	83.54	81.37
Brent (Asia) Mth 1	72.23	64.86	44.86	45.86	61.55	69.50	74.09	74.09	75.36	71.12	75.70	84.27	82.58
WTI (Cushing) Mth 1	65.20	57.03	39.25	42.63	58.13	66.19	70.54	71.38	72.46	67.73	71.56	81.36	79.18
Urals (Mediterranean)	70.17	64.31	41.93	44.49	60.41	67.48	71.32	71.57	73.09	68.08	72.65	81.93	80.08
Dubai (1st month)	69.65	63.49	42.36	44.62	60.20	67.01	71.60	71.50	72.88	69.32	72.57	81.46	80.21
Tapis (Dated)	72.16	69.16	43.28	44.21	62.30	69.81	75.30	74.00	77.33	72.22	76.30	86.39	85.09
PRODUCT PRICES													
Rotterdam, Barges FOB													
Premium Unl 10 ppm	78.78	71.35	44.65	46.99	65.71	78.57	85.64	81.96	86.22	84.32	86.31	95.92	93.21
Naphtha	64.48	56.27	39.64	43.64	60.82	66.69	74.61	70.92	75.26	72.43	76.04	85.37	82.33
Jet/Kerosene	86.39	79.24	44.79	46.75	64.04	72.52	78.87	76.88	78.49	75.92	82.07	94.81	90.46
ULSD 10ppm	86.22	79.45	49.32	48.86	66.15	74.64	80.81	79.34	80.29	77.67	84.35	96.92	92.83
Gasoil 0.1 %	84.28	77.73	48.10	48.05	65.02	73.43	79.41	78.21	79.15	76.03	82.90	95.22	90.67
LSFO 1%	63.22	62.21	42.78	46.27	62.77	66.88	72.12	69.73	72.02	69.35	74.86	82.72	78.61
HSFO 3.5%	61.13	50.31	34.43	41.40	55.34	60.08	63.95	63.31	63.99	61.71	66.05	74.26	67.40
Mediterranean, FOB Cargoes													
Premium Unl 10 ppm	79.41	71.31	45.59	47.42	66.81	77.94	86.49	81.40	86.87	84.87	87.66	96.59	91.68
Naphtha	66.08	54.43	37.81	42.80	59.29	65.19	73.44	69.56	74.03	71.28	74.92	83.83	80.76
Jet Aviation Fuel	85.37	77.76	43.28	46.01	62.77	71.22	77.96	75.73	77.48	75.05	81.21	93.58	89.29
ULSD 10ppm	86.03	79.05	48.76	49.02	65.71	74.07	80.64	78.85	80.19	77.54	84.05	96.44	91.96
Gasoil 0.1 %	84.74	77.70	47.60	48.48	64.76	72.94	79.60	77.86	79.20	76.65	82.81	95.03	90.64
LSFO 1%	64.31	63.90	44.06	47.07	63.60	67.84	73.10	70.56	72.71	70.60	75.89	84.08	80.30
HSFO 3.5%	62.06	52.17	34.36	39.72	53.60	58.23	62.69	61.34	62.36	60.35	65.26	73.08	66.01
US Gulf, FOB Pipeline													
Super Unleaded	85.71	79.24	50.64	52.94	76.13	90.78	97.57	94.75	98.99	96.43	97.33	105.98	100.72
Unleaded	80.10	72.28	46.02	49.93	72.92	85.70	91.72	88.96	92.39	91.17	91.63	101.08	95.45
Jet/Kerosene	85.12	78.81	46.20	49.16	65.77	73.74	79.86	77.94	79.25	76.45	84.05	96.22	92.43
ULSD 10 ppm	85.94	79.09	50.17	52.24	71.63	82.05	87.33	86.89	87.04	84.70	90.38	103.07	97.70
No. 6 3% ²	60.20	52.57	34.63	40.20	51.93	57.77	62.33	60.55	60.93	60.92	65.20	72.89	66.25
Singapore, FOB Cargoes													
Premium Unleaded	80.21	72.55	46.65	48.72	67.39	76.86	83.45	80.31	85.14	81.13	84.06	98.48	95.01
Naphtha	67.50	57.15	40.77	43.51	61.09	66.41	73.93	70.64	75.57	71.01	75.15	84.45	84.21
Jet/Kerosene	85.05	77.26	44.83	47.08	63.47	71.52	77.10	75.91	77.25	74.05	79.88	93.09	89.09
Gasoil 0.05%	84.33	77.23	48.43	48.38	64.93	72.28	77.16	76.78	77.93	73.77	79.66	93.38	90.84
HSFO 180 CST	67.04	58.62	39.32	44.09	56.74	61.28	68.34	64.79	66.22	65.07	73.48	77.52	71.15
HSFO 380 CST 4%	66.01	57.57	38.25	43.26	56.09	60.20	66.13	63.64	64.56	63.34	70.30	76.02	69.87

¹ IEA CIF Average Import price for September is an estimate.

IEA Americas includes United States and Canada.

IEA Europe includes all countries in OECD Europe except Estonia, Hungary and Slovenia.

IEA Asia Oceania includes Australia, New Zealand, Korea and Japan.

² Waterborne

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Table 14
MONTHLY AVERAGE END-USER PRICES FOR PETROLEUM PRODUCTS

November 2021

NATIONAL CURRENCY *							US DOLLARS					
Total	% change from		Ex-Tax	% change from			Total	% change from		Ex-Tax	% change from	
Price	Oct-21	Nov-20	Price	Oct-21	Nov-20		Price	Oct-21	Nov-20	Price	Oct-21	Nov-20
GASOLINE ¹ (per litre)												
France	1.660	1.5	25.1	0.692	3.0	66.7	1.893	-0.2	20.6	0.789	1.2	60.7
Germany	1.742	1.9	38.8	0.809	3.6	89.5	1.987	0.2	33.8	0.923	1.8	82.6
Italy	1.747	1.6	25.9	0.704	3.4	71.7	1.993	-0.1	21.3	0.803	1.6	65.5
Spain	1.510	2.4	31.0	0.775	4.0	61.5	1.722	0.7	26.2	0.884	2.3	55.6
United Kingdom	1.458	5.1	29.4	0.635	10.2	76.9	1.960	3.2	31.7	0.854	8.2	80.1
Japan	168.8	3.2	26.8	96.9	5.3	50.5	1.481	2.4	16.1	0.850	4.5	37.8
Canada	1.461	- 1.1	40.8	0.977	-1.5	59.4	1.163	-2.1	46.4	0.778	-2.5	65.7
United States	0.897	3.1	61.0	0.767	3.6	78.4	0.897	3.1	61.0	0.767	3.6	78.4
AUTOMOTIVE DIESEL FOR NON COMMERCIAL USE (per litre)												
France	1.554	1.2	28.0	0.686	2.2	70.2	1.772	-0.5	23.4	0.782	0.5	64.1
Germany	1.566	2.4	48.2	0.846	3.7	91.8	1.786	0.6	42.8	0.965	1.9	84.9
Italy	1.612	2.3	28.0	0.704	4.3	69.6	1.839	0.6	23.4	0.803	2.5	63.5
Spain	1.382	2.8	34.7	0.763	4.2	62.7	1.576	1.1	29.8	0.870	2.5	56.8
United Kingdom	1.495	5.1	27.2	0.667	10.1	67.2	2.010	3.1	29.5	0.897	8.1	70.2
Japan	148.6	3.7	30.5	103.1	4.9	44.0	1.303	2.9	19.5	0.904	4.0	31.8
Canada	1.464	1.0	43.2	1.027	1.3	59.0	1.165	0.0	49.0	0.817	0.3	65.3
United States	0.985	3.2	53.2	0.835	3.9	68.7	0.985	3.2	53.2	0.835	3.9	68.7
DOMESTIC HEATING OIL (per litre)												
France	1.054	2.9	49.8	0.722	3.5	67.9	1.202	1.1	44.4	0.824	1.8	61.9
Germany	0.918	3.6	98.4	0.710	3.9	110.3	1.047	1.9	91.2	0.810	2.2	102.7
Italy	1.402	1.2	28.7	0.746	1.8	52.3	1.599	-0.5	24.1	0.851	0.1	46.8
Spain	0.855	3.2	63.4	0.610	3.7	81.6	0.975	1.4	57.5	0.696	2.0	75.1
United Kingdom	0.721	- 0.1	66.5	0.576	-0.2	91.1	0.970	-2.0	69.5	0.774	-2.0	94.6
Japan ²	106.6	7.3	36.9	94.1	7.6	38.4	0.935	6.4	25.3	0.825	6.7	26.7
Canada	1.374	3.5	53.1	1.197	3.6	51.3	1.094	2.4	59.2	0.953	2.6	57.3
United States	-	-	-	-	-	-	-	-	-	-	-	-
LOW SULPHUR FUEL OIL FOR INDUSTRY ³ (per kg)												
France	0.678	0.7	45.8	0.538	0.9	65.4	0.773	-1.0	40.5	0.614	-0.8	59.4
Germany	-	-	-	-	-	-	-	-	-	-	-	-
Italy	0.613	1.0	63.9	0.582	1.1	69.8	0.700	-0.6	58.0	0.664	-0.6	63.6
Spain	0.526	6.2	66.1	0.509	6.4	69.9	0.600	4.4	60.1	0.581	4.6	63.8
United Kingdom	-	-	-	-	-	-	-	-	-	-	-	-
Japan	-	-	-	-	-	-	-	-	-	-	-	-
Canada	-	-	-	-	-	-	-	-	-	-	-	-
United States	-	-	-	-	-	-	-	-	-	-	-	-

¹ Unleaded premium (95 RON) for France, Germany, Italy, Spain, UK; regular unleaded for Canada, Japan and the United States.

² Kerosene for Japan.

³ VAT excluded from prices for low sulphur fuel oil when refunded to industry.

* Prices for France, Germany, Italy and Spain are in Euros; UK in British Pounds, Japan in Yen, Canada in Canadian Dollars.

Table 15
IEA/KBC Global Indicator Refining Margins¹
 (\$/bbl)

	Monthly Average					Change	Average for week ending:				
	Aug 21	Sep 21	Oct 21	Nov 21		Nov-Oct	12 Nov	19 Nov	26 Nov	03 Dec	10 Dec
NW Europe											
Brent (Cracking)	4.09	5.11	6.44	5.01	↓	-1.43	6.51	4.65	2.18	2.99	4.54
Urals (Cracking)	4.85	5.84	7.23	4.67	↓	-2.56	6.11	4.31	2.24	2.72	4.25
Brent (Hydroskimming)	1.23	2.60	3.22	1.64	↓	-1.58	2.34	1.32	-0.17	1.14	2.48
Urals (Hydroskimming)	0.17	1.23	1.97	-1.42	↓	-3.39	-0.85	-1.79	-2.76	-1.70	-0.43
Mediterranean											
Es Sider (Cracking)	5.48	6.65	7.43	4.84	↓	-2.59	5.46	3.69	3.51	4.89	6.27
Urals (Cracking)	4.69	5.38	6.71	3.91	↓	-2.81	4.88	2.98	2.31	3.16	4.46
Es Sider (Hydroskimming)	3.78	4.88	4.92	2.44	↓	-2.47	2.68	1.49	1.51	3.13	4.32
Urals (Hydroskimming)	0.24	0.76	1.09	-2.41	↓	-3.51	-2.00	-3.13	-3.51	-2.32	-1.31
US Gulf Coast											
Mars (Cracking)	9.86	8.10	9.51	6.63	↓	-2.87	5.47	6.01	7.46	6.26	6.05
50/50 HLS/LLS (Coking)	17.31	16.25	17.48	14.87	↓	-2.62	14.13	14.22	15.62	14.06	14.55
50/50 Maya/Mars (Coking)	12.64	11.22	12.12	9.73	↓	-2.38	8.99	9.00	9.97	10.51	10.45
ASCI (Coking)	14.57	12.91	14.64	12.46	↓	-2.17	11.51	11.69	13.24	11.84	11.30
US Midwest											
30/70 WCS/Bakken (Cracking)	16.90	14.03	13.06	10.59	↓	-2.48	10.72	10.30	10.39	10.40	11.81
Bakken (Cracking)	19.23	16.55	14.78	10.98	↓	-3.80	10.67	10.76	10.62	10.77	12.99
WTI (Coking)	20.00	17.29	15.58	11.14	↓	-4.44	10.60	10.47	11.34	11.34	13.32
30/70 WCS/Bakken (Coking)	20.13	17.12	16.08	13.84	↓	-2.24	14.04	13.47	13.43	13.91	15.27
Singapore											
Dubai (Hydroskimming)	-2.34	0.03	0.30	-2.74	↓	-3.03	-2.09	-2.97	-3.83	-2.59	-1.70
Tapis (Hydroskimming)	1.45	2.25	3.50	2.40	↓	-1.09	3.74	2.28	0.14	2.08	2.22
Dubai (Hydrocracking)	3.78	5.18	7.78	6.58	↓	-1.20	8.04	5.89	4.94	6.46	7.75
Tapis (Hydrocracking)	1.53	2.22	4.70	2.91	↓	-1.79	4.58	2.79	-0.05	1.31	2.10

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)

Table 16
REFINED PRODUCT YIELDS BASED ON TOTAL INPUT (%)¹

	Jul-21	Aug-21	Sep-21	Sep-20	Sep 21 vs Previous Month	Sep 21 vs Previous Year	Sep 21 vs 5 Year Average	5 Year Average
OECD Americas								
Naphtha	1.2	1.2	1.2	1.3	0.0	-0.1	-0.2	1.5
Motor gasoline	45.0	45.7	46.7	47.2	1.1	-0.5	0.4	46.3
Jet/kerosene	7.7	7.9	7.7	5.1	-0.2	2.6	-1.0	8.7
Gasoil/diesel oil	27.7	27.4	27.3	29.3	0.0	-2.0	-1.1	28.4
Residual fuel oil	2.7	2.7	2.9	2.8	0.2	0.1	-0.4	3.3
Petroleum coke	4.2	4.3	4.2	4.4	-0.1	-0.2	-0.2	4.5
Other products	14.4	14.3	12.8	13.2	-1.5	-0.4	0.9	11.9
OECD Europe								
Naphtha	8.2	8.4	8.8	8.6	0.4	0.2	1.1	7.8
Motor gasoline	21.5	21.2	21.2	21.5	0.0	-0.3	0.1	21.1
Jet/kerosene	6.0	6.6	6.3	4.7	-0.3	1.6	-1.9	8.2
Gasoil/diesel oil	41.0	40.5	40.8	42.6	0.3	-1.8	1.0	39.8
Residual fuel oil	7.6	7.7	7.8	7.0	0.1	0.9	-1.1	8.9
Petroleum coke	1.5	1.6	1.5	1.5	-0.2	0.0	0.1	1.3
Other products	17.3	16.6	16.4	16.6	-0.2	-0.2	1.3	15.2
OECD Asia Oceania								
Naphtha	15.0	15.6	16.3	16.6	0.7	-0.4	0.6	15.7
Motor gasoline	23.1	22.0	22.4	22.1	0.4	0.3	0.3	22.1
Jet/kerosene	12.2	12.2	12.4	10.8	0.2	1.5	-2.1	14.4
Gasoil/diesel oil	30.3	30.6	30.6	31.3	0.0	-0.7	0.4	30.1
Residual fuel oil	8.3	8.0	7.8	7.0	-0.2	0.8	0.8	7.0
Petroleum coke	0.4	0.5	0.4	0.4	-0.1	0.0	0.0	0.4
Other products	13.1	12.9	12.9	13.4	-0.1	-0.5	0.3	12.5
OECD Total								
Naphtha	5.7	6.0	6.3	6.4	0.3	-0.1	0.2	6.1
Motor gasoline	34.0	33.8	34.2	34.4	0.5	-0.2	0.5	33.7
Jet/kerosene	7.9	8.2	8.0	6.0	-0.1	2.1	-1.5	9.6
Gasoil/diesel oil	32.4	32.2	32.3	34.0	0.1	-1.7	-0.2	32.4
Residual fuel oil	5.1	5.2	5.3	4.9	0.1	0.5	-0.5	5.8
Petroleum coke	2.8	2.8	2.7	2.7	-0.1	-0.1	-0.1	2.7
Other products	15.1	14.8	14.0	14.4	-0.8	-0.3	0.9	13.1

¹ Due to processing gains and losses, yields in % will not always add up to 100%

Table 17
WORLD BIOFUELS PRODUCTION
(thousand barrels per day)

	2019	2020	2021	1Q21	2Q21	3Q21	Sep 21	Oct 21	Nov 21
ETHANOL									
OECD Americas¹	1059	934	993	931	1021	993	966	1001	1026
United States	1029	906	963	901	991	963	936	971	996
Other	30	28	30	30	30	30			
OECD Europe²	96	93	103	82	107	125	122	97	97
France	20	16	17	12	18	28	27	11	11
Germany	12	11	12	10	17	19	17	2	2
Spain	9	8	10	8	8	9	9	14	14
United Kingdom	5	5	9	7	10	12	13	7	7
Other	50	52	55	45	54	58			
OECD Asia Oceania³	4	4	5	4	5	4	4	5	5
Australia	4	4	4	4	5	3	3	5	5
Other	0	0	0	0	0	0			
Total OECD Ethanol	1160	1031	1101	1018	1133	1122	1092	1104	1129
Total Non-OECD Ethanol	796	735	708	289	873	1131	1097	728	566
Brazil	621	560	518	99	683	942	907	538	377
China	67	69	76	76	76	76			
Argentina	19	15	18	18	18	18			
Other	89	90	96	96	96	96	190	190	190
TOTAL ETHANOL	1957	1766	1809	1307	2006	2253	2189	1832	1695
BIODIESEL									
OECD Americas¹	151	159	167	146	160	172	180	188	188
United States	145	153	159	141	154	166	175	175	175
Other	7	6	7	6	6	6			
OECD Europe²	291	282	316	279	312	317	334	357	357
France	43	41	43	41	45	51	53	33	33
Germany	66	60	66	54	62	71	72	77	77
Italy	18	28	30	28	30	30			
Spain	42	31	39	35	36	36	38	49	49
Other	122	123	138	121	139	130	136	164	164
OECD Asia Oceania³	14	14	14	8	17	16	16	13	13
Australia	0	0	0	0	0	0	0	0	0
Other	14	14	14	8	17	16			
Total OECD Biodiesel	457	455	497	433	489	505	530	558	558
Total Non-OECD Biodiesel	394	411	437	437	437	437	437	437	437
Brazil	102	111	117	117	117	117	120	121	118
Argentina*	42	27	36	36	36	36			
Other	251	274	284	285	284	285			
TOTAL BIODIESEL	851	866	934	870	926	942	968	995	995
GLOBAL BIOFUELS	2808	2632	2743	2178	2932	3195	3156	2827	2690

* monthly data not available.

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