International Energy Agency

Oil Market Report

15 June 2022

- World oil demand is forecast to reach 101.6 mb/d in 2023, surpassing pre-pandemic levels. While higher prices and a weaker economic outlook are moderating consumption increases, a resurgent China will drive gains next year, with growth accelerating from 1.8 mb/d in 2022 to 2.2 mb/d in 2023. In contrast to 2022 when the OECD led the expansion, non-OECD economies are set to account for nearly 80% of growth next year.

- Non-OPEC+ is set to lead world supply growth through next year, adding 1.9 mb/d in 2022 and 1.8 mb/d in 2023. As for OPEC+, total oil output in 2023 may fall as embargoes and sanctions shut in Russian volumes and producers outside the Middle East suffer further declines. Assuming Libya rebounds from a steep drop, the bloc's production could increase 2.6 mb/d this year, eroding its spare capacity cushion.

- Global refining capacity is set to expand by 1 mb/d in 2022 and 1.6 mb/d in 2023, boosting throughputs by 2.3 mb/d and 1.9 mb/d, respectively. Nevertheless, product markets are expected to remain tight, with a particular concern for diesel and kerosene supplies. While diesel cracks eased month-on-month in May, both jet fuel and gasoline cracks surged as demand picked up seasonally.

- Following nearly two years of declines, observed global oil inventories increased by 77 mb in April. OECD industry stocks also rose, by 42.5 mb (1.42 mb/d), helped by government stock releases of nearly 1 mb/d. At 2 669 mb, OECD industry stocks were nevertheless 290.3 mb below the 2017-2021 average. Preliminary data for May show total OECD stocks building by 6 mb.

- Despite economic headwinds, steady demand for light sweet crude in a tight physical market is boosting marker grade prices as they are in the same crude quality family. Since 6 June, WTI and Brent futures have averaged over $120/bbl. North Sea Dated hit $127.9/bbl on 13 June.

Table of contents

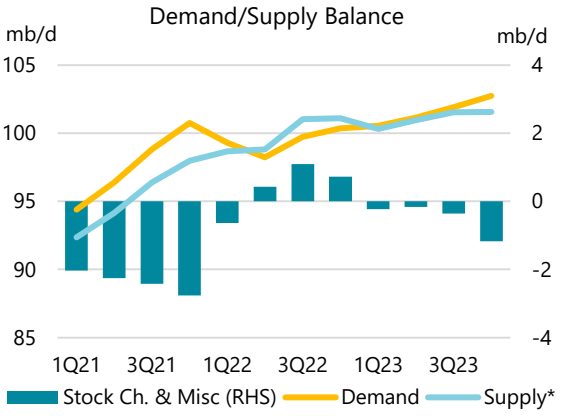
List of boxes

IEA. All rights reserved.

Small buffers

After seven consecutive quarters of hefty inventory draws, slowing demand growth and a rise in world oil supply through the end of the year should help world oil markets rebalance. This situation might prove short-lived, however, as tougher sanctions on Russia come into full force, oil demand in China recovers from Covid-lockdowns, if sharper Libyan losses persist and the OPEC+ spare production capacity cushion erodes.

Higher oil prices and a weaker economic outlook continue to temper our oil demand growth expectations. But in 2023, a resurgent China will boost non-OECD demand growth, offsetting a slowdown in the OECD. Following gains of 1.8 mb/d this year, world oil demand is forecast to expand by 2.2 mb/d to 101.6 mb/d in 2023.



* Assumes OPEC+ unwinds cuts. Iran remains under sanctions.

Global oil supply may struggle to keep pace with demand next year, as tighter sanctions force Russia to shut in more wells and a number of producers bump up against capacity constraints. EU countries have agreed to ban 90% of the bloc's imports of Russian crude and oil products, to be phased out over the next six to eight months. Modest increases from OPEC+ will provide a partial offset, but non-OPEC+ will dominate gains for the remainder of the year and in 2023. Non-OPEC+ producers, led by the US, will add 1.9 mb/d of supply in 2022 and 1.8 mb/d next year. Nevertheless, to keep the implied balance from tipping into deficit OPEC+ would have to further tap into its dwindling capacity cushion, reducing it to historic lows of just 1.5 mb/d.

For now though, oil inventories are rising and IEA Strategic Petroleum Reserve releases have helped reverse persistent declines in OECD industry stocks. Preliminary data show global oil stocks increased by 77 mb in April and made further gains in onshore stocks in May, yet oil prices continued their upward trajectory. At the time of writing, ICE Brent was trading at around $124/bbl, up 11% on a month ago and 70% higher than in June 2021. With the start of summer, gains in oil product prices and cracks have been even stronger as refinery output has failed to keep up with demand for key products.

But as the refinery maintenance season winds down in the US, Europe and Asia and a rebound in Chinese throughputs gathers pace, global refinery activity is set for a solid recovery. Runs are forecast to rise by 3.5 mb/d from May through August, and by 2.3 mb/d for the year on average. A further 1.9 mb/d increase is expected next year, supported by new refinery start-ups in Africa, the Middle East and Asia. However, shortages in individual products may well persist due to uneven rates of demand growth and limits in the refining system. Diesel and kerosene supplies remain of particular concern. OECD industry stocks of middle distillates have fallen by 25% since January 2021 to their lowest levels since 2004. That very limited cushion is driving middle distillates prices to record highs, with a knock on effect for other products which could cause more pain at the pump just as pent-up demand is unleashed during the peak driving and summer cooling season.

IEA. All rights reserved.

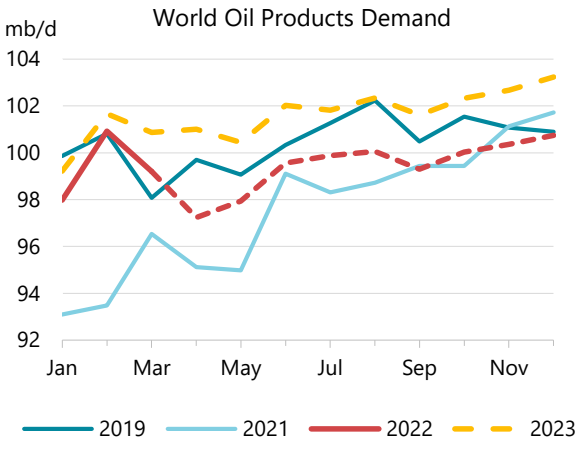
Demand

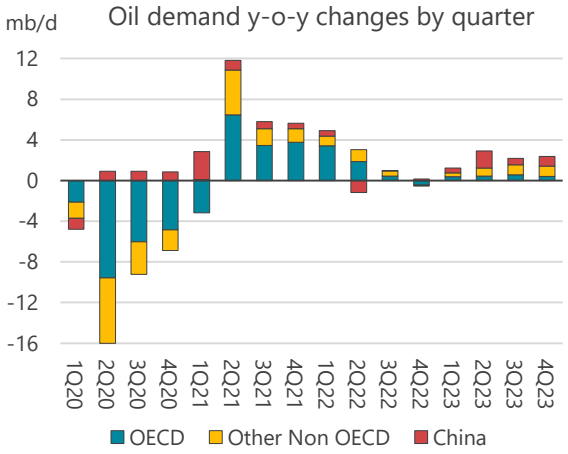
Overview

Oil demand growth slowed by economic headwinds

Global oil demand growth will be tempered by higher prices and a weaker economic outlook from the second half of 2022 onwards. While underlying economic growth is forecast to remain subdued in 2023, resurgent Chinese oil consumption will more than compensate for a slowdown in OECD oil demand next year. However, advanced economies are underpinning oil demand growth this year – as their emergence from the Covid-19 pandemic gathers pace. By contrast, China continues to struggle with severe lockdowns that are sharply curtailing economic activity, and the country is now on track to post its first decline in oil demand growth in this century. Global oil demand is forecast to climb by 1.8 mb/d in 2022 and by 2.2 mb/d in 2023.

Our newly-released 2023 forecast shows demand growth is dominated by jet/kerosene (+990 kb/d) and the petrochemical feedstocks LPG and naphtha (together +610 kb/d). Consumption will surpass pre-pandemic levels for the first time, at 101.6 mb/d in 2023. Much of this apparent acceleration results from a robust recovery in Chinese demand following the severe Covid-19 disruptions of 2022.





Overall 2022 oil demand is forecast to average 99.4 mb/d, marginally higher than in our May *Report*, due to stronger than projected growth during March and April. This remains 1 mb/d behind 2019 levels. Strong US consumer spending and a robust labour market have buttressed unexpectedly buoyant recent demand data. However, economic fears persist, as various international institutions have recently released downbeat outlooks. Similarly, tightening central bank policy, the impact of a soaring US dollar and rising interest rates on the purchasing power of emerging economies mean the risks to our outlook are concentrated on the downside.

The unprecedented petroleum price rally continues unabated. Crude oil is now trading at higher levels than in the immediate aftermath of Russia's invasion of Ukraine. Distillate and gasoline

IEA. All rights reserved.

prices have climbed even more, as severely restricted refining capacity is causing markets to price in long-term supply deficits in key refined products. This translates into a structurally elevated product price outlook. While petroleum demand is very price-inelastic, the sheer magnitude of the price surge has begun to manifest in nascent but clear signals of a demand response.

Surging consumer prices for gasoline are already moderating car use. Traffic data for April and May indicate a prompt reduction in road fuel demand in the US, UK and Germany, while preliminary April data came in below expectations for gasoline and diesel for several OECD countries (including Japan, Korea, Germany, France and Belgium). In our outlook, this is reflected in combined global year-on-year (y-o-y) demand growth for the fuels slowing from March onwards, before turning negative from September through December. Additionally, elevated forward product cracks and prices increase elasticity effects throughout the forecast period. Persistently higher prices are incentivising consumers to modify their behaviour and economise on fuel purchases, depressing demand. Government initiatives to reduce fuel duties may attenuate but not fully offset these impacts.

Despite economic headwinds, pent-up demand for airline travel is supporting the near-term outlook. The momentum behind recovering air travel in Europe and North America is increasingly apparent. Therefore, we have revised up our expectations for jet/kerosene demand growth by 120 kb/d for the year as a whole (excluding lockdown-curtailed China). Easing restrictions have opened the floodgates for increased travel, with the *International Air Transport Association* (IATA) reporting a wave of international bookings in April and May. Aviation analysts *OAG* predict scheduled capacity to hit 85-90% of 2019 levels by mid-year. Recent, widely reported, delays and cancellations at various airports illustrate this unexpected upswell, but also reflect supply-side constraints on growth for this year. The reopening is further advanced in Europe (2022 jet/kerosene demand forecast at 79% of 2019) and the Americas (91% of 2019) with more ground to make up in Asia Pacific (only 66% of 2019). We project global growth of 870 kb/d in 2022 and 990 kb/d in 2023. Average 2023 consumption will reach 7.1 mb/d, 89% of 2019 levels.

Global Demand by Product
(thousand barrels per day)

	Demand				Annual Chg (kb/d)		Annual Chg (%)	
	2020	**2021**	**2022**	**2023**	**2022**	**2023**	**2022**	**2023**
LPG & Ethane	13 245	13 841	14 388	14 626	547	238	4.0	1.7
Naphtha	6 538	7 073	6 849	7 217	- 223	368	-3.2	5.4
Motor Gasoline	23 662	25 716	26 179	26 251	463	72	1.8	0.3
Jet Fuel & Kerosene	4 634	5 200	6 072	7 067	872	994	16.8	16.4
Gas/Diesel Oil	26 469	27 784	28 071	28 209	287	138	1.0	0.5
Residual Fuel Oil	5 644	6 023	6 174	6 388	151	215	2.5	3.5
Other Products	11 692	11 975	11 689	11 839	- 285	149	-2.4	1.3
Total Products	**91 883**	**97 612**	**99 423**	**101 597**	**1 811**	**2 174**	**1.9**	**2.2**

Stringent restrictions on mobility and business activity designed to fight Covid-19 in China reduced demand to a greater extent than forecast in April. Oil use for the month tumbled by 820 kb/d from March and by 1.3 mb/d y-o-y. Jet fuel demand (-610 kb/d y-o-y) was particularly weak on declining flight numbers. Given the apparent government commitment to zero-Covid policies, we project significant disruptions until 4Q22, although the heaviest losses should be over by late-summer. This protracted period of muted consumption means that we now forecast total Chinese annual oil demand to decline (-130 kb/d) for the first time in decades. Subsequently, rebounding in 2023, demand is set to re-establish the recent trend of rapid annual expansion.

IEA. All rights reserved.

The latest data indicate that oil demand rose beyond expectations during March and April in major developed economies despite soaring fuel costs and a looming economic slowdown. A renewed desire to travel also underpins a surge in air traffic into the middle of the year, with jet fuel use closing-in on 2019 levels in some regions. Nonetheless, these supportive developments are tempered in the short term by the ongoing lockdowns which weigh heavily on China's economy. From 2H22 onwards the drag of elevated prices and a weaker economic outlook will limit the potential for further growth.

The extent of the impact of higher prices, macroeconomic factors and policy drivers on oil consumers will become clearer during the year. Similarly, the rate at which the Chinese government relaxes its measures to fight Covid and the speed of the subsequent demand response remain sources of considerable uncertainty with significant downside risks. However, if consumption in developed countries is stronger than anticipated and China's economy reverts to growth in short order, oil demand could surpass our projections.

Global Demand by Region

(thousand barrels per day)

	Demand				Annual Chg (kb/d)		Annual Chg (%)	
	2020	2021	2022	2023	2022	2023	2022	2023
Africa	3 728	3 967	4 059	4 131	93	72	2.3	1.8
Americas	28 194	30 328	31 213	31 458	885	244	2.9	0.8
Asia/Pacific	33 995	36 043	36 520	38 153	477	1 633	1.3	4.5
Europe	13 142	13 826	14 243	14 390	417	147	3.0	1.0
FSU	4 497	4 785	4 588	4 626	- 197	38	-4.1	0.8
Middle East	8 327	8 664	8 800	8 840	136	40	1.6	0.5
World	**91 883**	**97 612**	**99 423**	**101 597**	**1 811**	**2 174**	**1.9**	**2.2**
OECD	42 128	44 767	46 073	46 528	1 306	455	2.9	1.0
Non-OECD	49 755	52 845	53 350	55 069	505	1 719	1.0	3.2

Box 1. Sky-high product prices to curtail road fuel demand growth

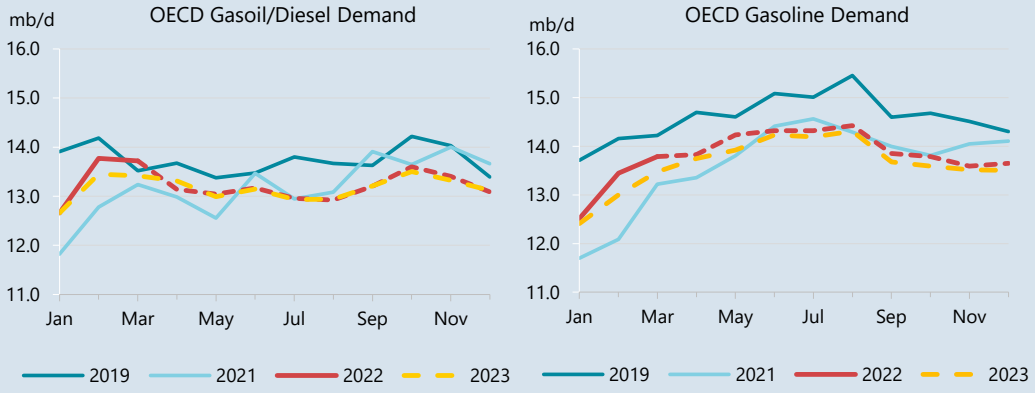
OECD road fuel demand has made a strong recovery since the last quarter of 2021. The relaxation of pandemic restrictions has revived consumption as motorists hit the road amid an overall release of pent-up demand for mobility and travel. The reopening saw drivers shrug off elevated pump prices, at least temporarily. OECD gasoline demand rose by 570 kb/d (y-o-y), to 13.8 mb/d in March 2022, substantially narrowing the gap to pre-pandemic levels. For diesel, the rebound has also been signicant: OECD demand climbed by 370 kb/d (y-o-y), to 9.9 mb/d in March, above 2019 pre-Covid volumes and capping a robust first quarter where diesel grew 6.5% y-o-y.

However, the recovery stalled in April and May, after fuel prices soared to unprecedented levels in the wake of Russia's invasion of Ukraine. Preliminary data point to an almost instant demand cutback in response to the price surge. A more adverse macroeconomic climate of rising interest rates, the prospect of slowing economic growth and recession fears are also weighing on demand.

This is certainly the case in the US, where the driving season got off to a lacklustre start amid skyrocketing gasoline prices – currently over $5/gallon on average. Based on weekly data from the US *Energy Information Administration* (EIA), gasoline deliveries were lower in May at -2.7% y-o-y. Gas oil, where prices shot up faster than for gasoline, fell even more, by 4.7% y-oy in May. Data from the

IEA. All rights reserved.

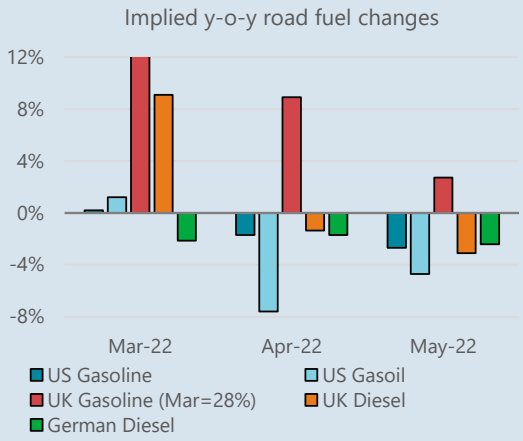
American Trucking Association (ATA) corroborate diesel's downturn: its *For-Hire Truck Tonnage Index* decreased by 2% in April, after eight straight monthly gains.



The US decline is mirrored by recent British and German data, where, in addition to soaring pump prices, the firm US dollar and generally weaker macroeconomic conditions make for additional headwinds for fuel demand. Average gasoline sales growth figures at sampled petrol stations in Great Britain decelerated rapidly in April and May, falling by 2.7% y-o-y. Here as well, diesel underperformed other fuels: demand growth turned negative during April and was down 3.1% in May. A similar development occurred in Germany, where toll collection data show a 2.2% y-o-y fall in truck traffic in May.

This weakness is likely to endure, as multi-year petroleum forward prices and product cracks have stabilised at much higher levels post-Ukraine, indicative of a semi-permanent global shortage. This is likely to act as a persistent drag on demand: one that is unlikely to be dented significantly by the recent government initiatives in a number of OECD member countries that aim to provide consumer relief by cutting fuel duties and taxes.

Adding to the bearish climate, the pent-up demand that is currently supporting driving miles will dissipate eventually as the summer driving season progresses. Moreover, gasoline in particular faces headwinds in the shape of steady vehicle efficiency gains that are already inscribed in regulations, electric vehicle substitution as well as post-pandemic trends such as work-from-home. This could mean that road fuel demand is unlikely ever to attain pre-pandemic levels again. Diesel faces fewer structural challenges, but is more exposed to the slowdown in global economic growth.



Therefore, we forecast persistent weak fuel demand for the remainder of 2022 and in 2023. OECD gasoline and diesel demand have been reduced by 0.3% and 0.9%, respectively, for 2H22, and expect OECD fuel usage to decline in 2023 y-o-y by 1.3% for gasoline and by 1.0% for diesel.

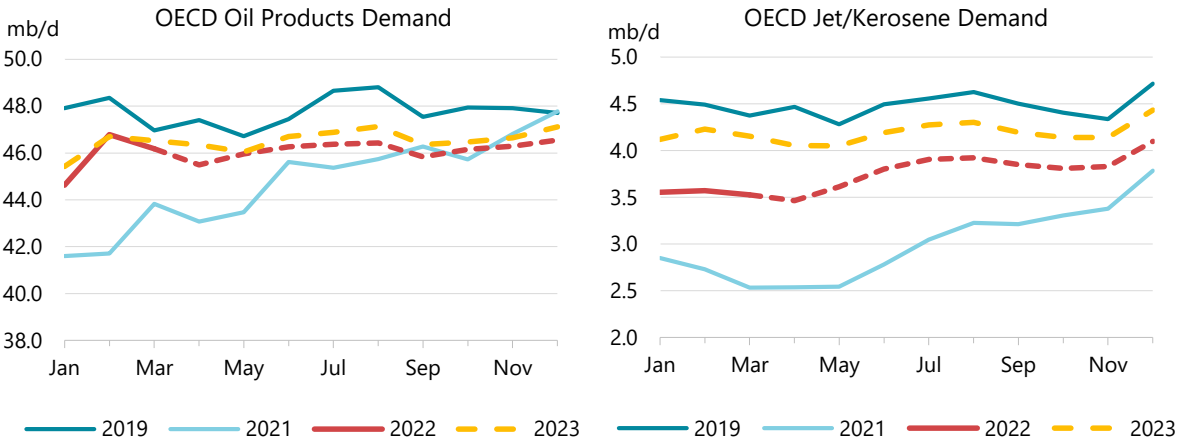
IEA. All rights rese

OECD

OECD oil demand fell by 600 kb/d month-on-month (m-o-m) in March to 46.2 mb/d but this was still 2.3 mb/d above year-ago levels. This decline was somewhat less than the typical seasonal fall of 820 kb/d and largely due to firmer demand in Europe. Seasonally-adjusted consumption rose for each of the major products, with the exception of LPG/ethane.

Deliveries were also considerably higher than last month's preliminary estimate for March, by 900 kb/d, as gasoline and diesel use came in better than anticipated. However, preliminary data for April suggest below average deliveries for the road transport fuels, but these were counterbalanced by stronger usage in jet fuel and LPG. Overall, April saw a fall in demand of 680 kb/d, 90 kb/d stronger than the seasonal average.

OECD consumption for 2022 is now projected to average 46.1 mb/d, a 1.3 mb/d y-o-y increase and 150 kb/d above last month's forecast. This will be followed by a 460 kb/d y-o-y rise in 2023, as slower economic growth and higher prices curb demand growth.

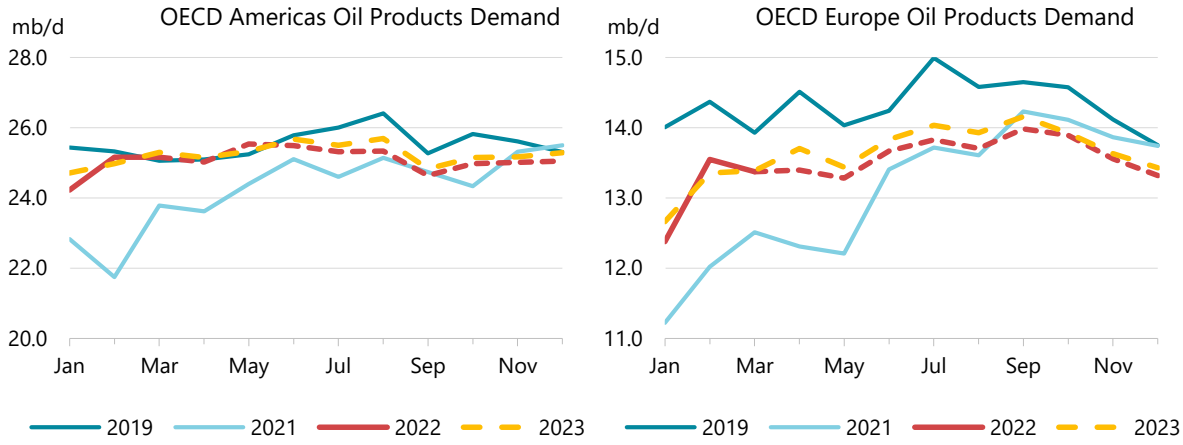


OECD Americas: jet, fuel oil compensate for weak road fuels

Oil demand in the OECD Americas was largely unchanged m-o-m in March, and marginally below its typical 40 kb/d rise. US demand was more or less in line with normal patterns, while sub-par growth in Canada (-220 kb/d versus historical trend) was mostly offset by stronger deliveries in Mexico (190 kb/d faster than average growth).

Most products were in line with their seasonal trends, with the exception of LPG/ethane, where demand lagged by about 150 kb/d in both the US and Canada. These weaker levels were mainly weather-related, as consumption eased from elevated levels after extremely low temperatures at the beginning of the year. Mexico saw solid demand growth in gasoil and gasoline, continuing a steady recovery from a dismal 2021.

IEA. All rights reserved.



We project that this path of steady demand growth in the Americas continued in April, but with a diminished contribution from gasoil and gasoline, as record high pump prices and more challenging economic conditions dimmed growth prospects. Although the US economy is still firing on all cylinders, the outlook has darkened in the wake of the Federal Reserve's hawkish policy shift, with a recession now a real possibility. The *S&P Global US Manufacturing Purchasing Managers Index* (PMI) fell by 2.2 points to 57 in May. However, other major products are set to support overall demand, compensating for the lacklustre road fuels outlook. Jet fuel use continues to soar, while fuel oil for in power generation is supported by elevated natural gas prices and in shipping, where runaway marine distillate prices encourage substitution. LPG/ethane is set to recover further from recent North American weather turmoil and resume its remarkable growth track.

As a result, our OECD Americas demand estimate for the second half of 2022 is little-changed versus last month, at 25.1 mb/d, with firm growth in jet fuel (12.4% y-o-y) and fuel oil (11.3% y-o-y) counterbalancing tepid increases in other product categories. For 2023 we see total demand at 25.2 mb/d, 0.6 % higher y-o-y (+160 kb/d), with jet/kerosene (+160 kb/d) dominating gains.

OECD Europe outlook overcast despite resurgent jet usage

OECD Europe oil demand fell by 170 kb/d in March, about 80 kb/d stronger than trend and 860 kb/d higher y-o-y, at 13.4 mb/d. As in recent months, momentum came from gasoil and jet fuel, with growth well above the historical norm for March and up by 220 kb/d and 460 kb/d y-o-y, respectively. Gasoil use in Germany stayed markedly robust, outperforming the seasonal change by 150 kb/d in March and 80 kb/d higher y-o-y.

Growing strength in jet/kerosene, powered by a resurgence in air travel, led to a 460 kb/d y-o-y increase in demand for March. We expect an overall gain of 390 kb/d for the year as a whole. *Eurocontrol*'s latest analysis of air traffic across the continent shows May flights at 85% of 2019 levels – slightly ahead of their most bullish scenario which would see them close to pre-pandemic levels by late-summer. We have revised our expectations for jet/kerosene use in Europe higher for 2022 and expect continued growth in 2023 (+160 kb/d).

However, Europe's outlook is clearly worsening, as consumer inflation remains stubbornly above 8%. This prompted the European Central Bank to plan an end to its ultra-accommodative monetary policy and potentially raise interest rates for the first time in over a decade at its July

IEA. All rights reserved.

policy meeting. The fragile shape of the eurozone's economy was affirmed by the *S&P Global Eurozone Manufacturing PMI*, which fell to 54.6 versus 55.5 in April, an 18-month low.

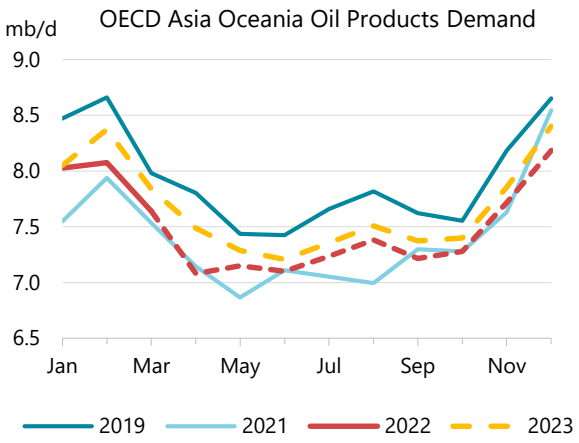
A more challenging outlook is corroborated by preliminary April data, as record pump prices cut diesel and gasoline consumption by 80 kb/d and 50 kb/d, respectively, behind their seasonal norms. Apart from weaker road fuel use, the sharp increase in gasoil prices reduces the incentive to substitute oil for natural gas in industrial processes.

OECD Europe's deliveries are forecast to stall further in the second half of 2022, with overall demand falling by 1.2% y-o-y. For 2023 we anticipate a demand increase of 1% versus 2022, to 13.6 mb/d, as declines in gasoil and gasoline (-40 kb/d y-o-y each) are offset by sustained stellar jet fuel gains (+160 kb/d y-o-y).

Economic troubles squeezing OECD Asia Oceania demand

Preliminary OECD Asia Oceania demand in April fell by 560 kb/d m-o-m to 7.1 mb/d, about 30 kb/d below the typical seasonal pattern. Consumption was more or less in line with historical trends, with weaker than average gasoil deliveries offset by moderate strength in the other products.

April underperformed last month's estimate by 310 kb/d. This weakness was spread evenly across the products, as the impact of record prices was exacerbated by softer local currencies (the Japanese yen is down 16% year-to-date against the US dollar), while the region's exposure to a rapidly slowing China brings additional economic uncertainty. LPG and naphtha were 80 kb/d lower than expected, as some of Japan's steam crackers were slow to resume following March's earthquake amid thin margins and falling demand.



Demand is expected to stay seasonally weak in the next few months as consumption approaches its mid-year nadir. Growth is anticipated to slow in 2H22, at 0.5% y-o-y as the economic outlook dims and record prices curtail demand.

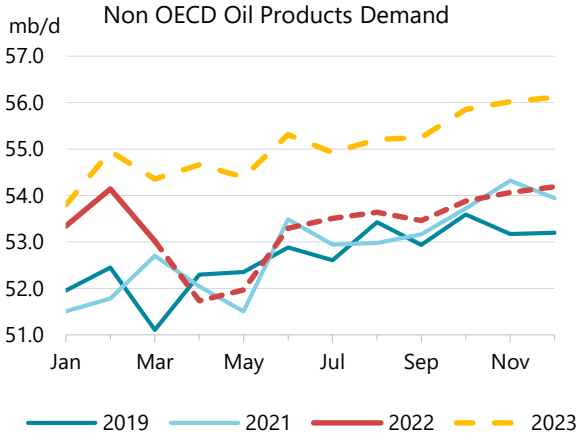
For 2023 we see a return to growth, at 2.3% y-o-y, reaching 7.7 mb/d. This will mainly be driven by jet fuel (+19.2% y-o-y) as Asia's post-pandemic air traffic rebound continues to gather steam. As the continent was relatively slow in easing international restrictions, jet's performance is partly due to a low 2022 baseline.

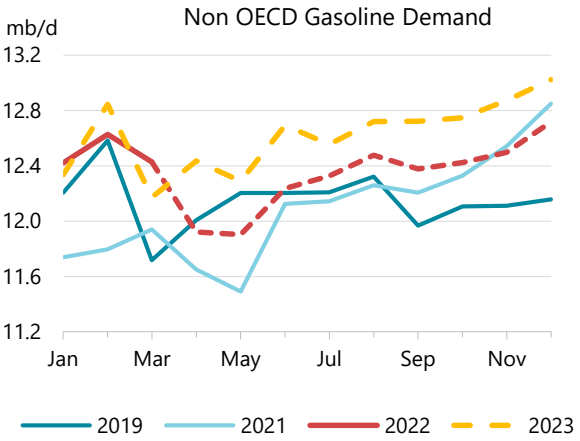
Non-OECD

Demand in non-OECD countries plummeted by 1.3 mb/d, to 51.7 mb/d, in April (in contrast to the typical 520 kb/d increase), largely as a result of China's lockdowns and the effects of higher prices in India. We expect deliveries to remain close to April's level in May (+240 kb/d) and to recover

IEA. All rights reserved.

gradually during the rest of 2022. Total 2022 demand is pegged at 53.3 mb/d, 510 kb/d higher y-o-y and 690 kb/d above 2019. In contrast to the OECD, jet/kerosene growth will be relatively modest, at 120 kb/d with China's travel restrictions capping gains.





Overall 2023 growth benefits from a projected rebound in China that accelerates growth to 1.7 mb/d y-o-y. Increases will be spread across all major products but led by jet/kerosene (+550 kb/d), naphtha (+270 kb/d) and gasoline (+250 kb/d). All major regions are forecast to see growth in 2023 (notably: China, +930 kb/d; other Asia, +530 kb/d and Africa +70 kb/d), but Russian demand is expected to remain subdued.

Non-OECD: Demand by Region
(thousand barrels per day)

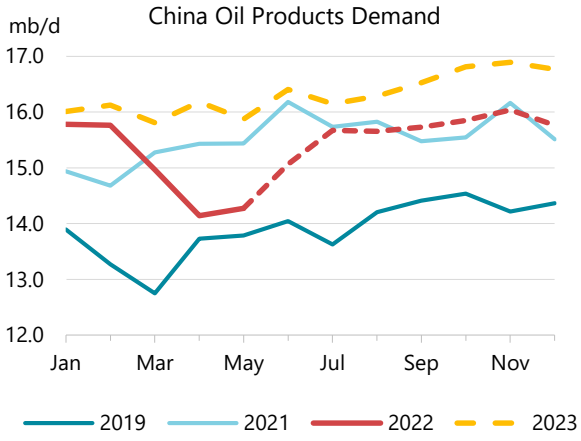
	Demand				Annual Chg (kb/d)		Annual Chg (%)	
	2020	2021	2022	2023	2022	2023	2022	2023
Africa	3 728	3 967	4 059	4 131	93	72	2.3	1.8
Asia	26 856	28 634	29 015	30 479	381	1 463	1.3	5.0
FSU	4 497	4 785	4 588	4 626	- 197	38	-4.1	0.8
Latin America	5 638	6 053	6 137	6 227	84	90	1.4	1.5
Middle East	8 327	8 664	8 800	8 840	136	40	1.6	0.5
Non-OECD Europe	708	742	750	766	9	16	1.2	2.1
Total Products	**49 755**	**52 845**	**53 350**	**55 069**	**505**	**1 719**	1.0	3.2

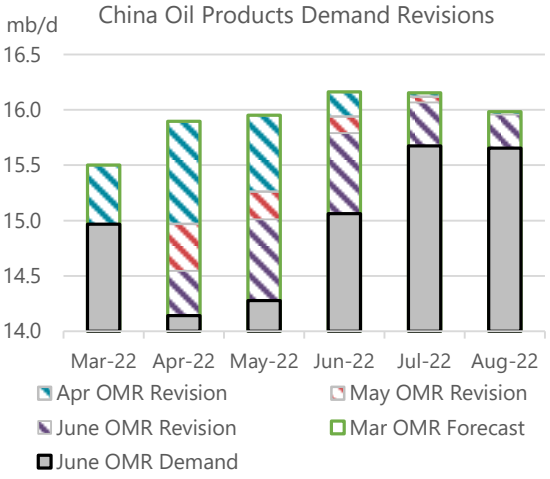
Lockdowns weigh heavily on Chinese oil use

The ongoing wave of lockdowns imposed to stem the spread of Covid-19 continued to subdue Chinese oil demand. Interruptions to personal mobility and commercial activity saw apparent demand plummet by 1.3 mb/d y-o-y (-8.4%) in April. Tumbling by 820 kb/d from March, use was 400 kb/d below the level forecast in our previous *Report.* Average 2Q22 demand is set to be 1.2 mb/d lower y-o-y, at 14.5 mb/d.

The impact of mobility restrictions was highlighted by large y-o-y falls in April jet/kerosene (-610 kb/d) and gasoline (-300 kb/d). Gasoil demand slipped by a comparatively modest 40 kb/d y-o-y, although a significant fall in other products (-780 kb/d) likely disguises reduced consumption of fuel blending components as well as some inconsistency in reporting. Petrochemical feedstocks were unexpectedly weak, with m-o-m LPG and naphtha use down by 90 kb/d and 80 kb/d, respectively. While these were both up y-o-y, this is a combined 160 kb/d underperformance relative to our forecast.

IEA. All rights reserved.





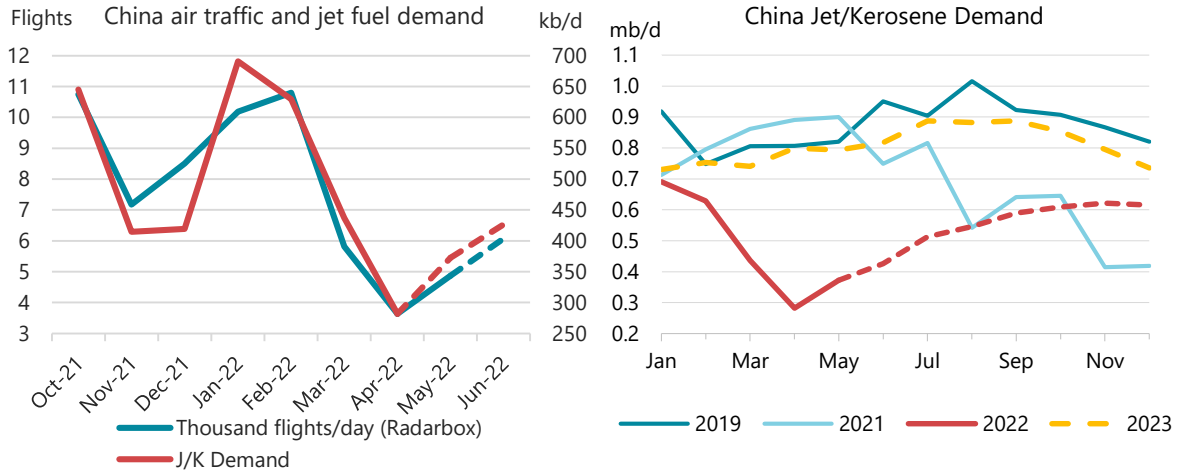
Because of the slightly wider than expected impact of the present crisis and indications that lockdowns are likely to remain in place longer than projected in last month's *Report*, we have further revised our outlook for 2022 oil demand. May demand is now estimated 740 kb/d lower (for a 1.2 mb/d y-o-y drop), with June reduced by 730 kb/d and average 2H22 consumption down by 210 kb/d. This 260 kb/d downwards revision for 2022 as a whole has led to a projected 130 kb/d annual contraction in Chinese oil demand, to 15.4 mb/d. While the situation in China remains fluid this would be the first such decline in more than two decades.

Public health restrictions remained at high levels throughout May and into June. Japan's *Nomura Research Institute* estimates that more than 130 million people remained under lockdowns in China in early June, down from a peak of almost 350 million. May oil demand was 140 kb/d higher than April but still down by 1.2 mb/d y-o-y. A weighted average of provincial Covid-19 restriction data from Oxford University's *Blavatnik School of Government* (BSG) indicates that, overall, lockdowns were almost as severe as in April. Similarly, Baidu's *Congestion Index* showed a substantial lack of activity throughout much of May, although some recovery was apparent by the second week of June, with cities such as Shanghai and Beijing recording moderate traffic levels after long periods with clear roads. Air traffic also remained well below February levels in May.

We expect that as lockdown measures are progressively eased over the summer months, demand for gasoil and gasoline will approach 2021 levels, although the lingering effects of economic disruption and higher prices should cap y-o-y growth. If substantial restrictions on interprovincial travel are maintained throughout the year, as they have been since October 2021, the potential for gasoline demand growth will be limited. Our base assumption is that a moderate level of restrictions will be maintained at least until the 20th National Congress of the Chinese Communist Party, expected in 4Q22.

Jet/kerosene demand will also continue to be severely impacted by these restrictions throughout 2022 – as it has since 4Q21. April saw air traffic fall to levels close to their 2020 low and early signs are that the recovery will be slow during 2022. *Radarbox* tracking data shows that the average day in May saw one-third more flights than April, but was still at only 45% of the level of February. This recovered further, to 56% of February in early June and our forecasts assume a very gradual path back to 1Q21 levels by mid-2023. Average May jet/kerosene demand is expected to be 90 kb/d higher than April but still 530 kb/d lower y-o-y.

IEA. All rights reserved.



The large underperformance of naphtha and LPG suggests that the difficulties being experienced across the economy are translating into reduced requirements for polymers and synthetic fibres. The *Caixin Manufacturing PMI* for May shows a continued, albeit slightly slower, contraction at 48.1 (up from 46 in April). In previous periods of restrictions, petrochemical growth was largely unconstrained. However, reflecting the wider than anticipated impact in April, we have reduced our expectations for feedstock demand by an average of 180 kb/d for 2Q22 and 3Q22.

China: Demand by Product

(thousand barrels per day)

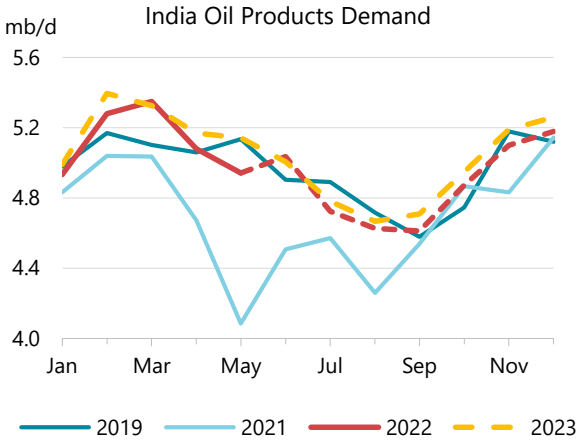
	Demand				Annual Chg (kb/d)		Annual Chg (%)	
	2020	**2021**	**2022**	**2023**	**2022**	**2023**	**2022**	**2023**
LPG & Ethane	1 894	2 211	2 397	2 498	186	101	8.4	4.2
Naphtha	1 476	1 677	1 714	1 872	37	159	2.2	9.3
Motor Gasoline	3 298	3 643	3 668	3 780	25	112	0.7	3.1
Jet Fuel & Kerosene	720	698	527	807	- 171	279	-24.5	52.9
Gas/Diesel Oil	3 253	3 630	3 628	3 767	- 2	139	-0.1	3.8
Residual Fuel Oil	443	480	495	533	15	38	3.1	7.7
Other Products	3 213	3 181	2 962	3 063	- 219	101	-6.9	3.4
Total Products	**14 298**	**15 521**	**15 391**	**16 320**	**- 130**	**929**	**-0.8**	**6.0**

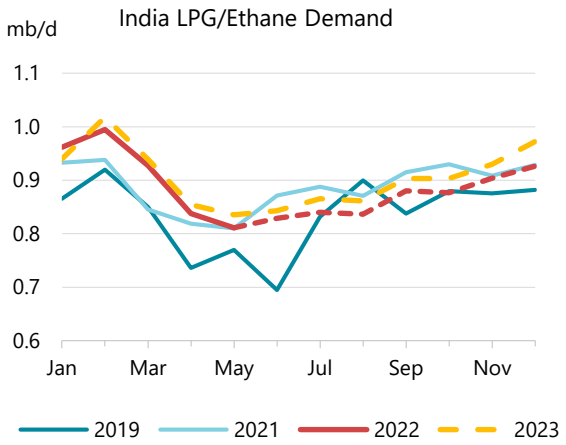
Our 2023 outlook assumes that Chinese demand will expand by 930 kb/d, as the impact from Covid restrictions dissipates – although they will likely still weigh on interprovincial and international mobility to varying extents. Overall consumption will reach 16.3 mb/d. While growth is expected for every major product, rebounding jet/kerosene (+280 kb/d) and further structural gains for petrochemical feedstocks (naphtha +160 kb/d and LPG +100 kb/d) will be significant drivers. China's demand will stand a remarkable 2.4 mb/d (17.4%) above 2019, re-establishing its position as the primary engine of global oil demand growth.

Higher prices hindering Indian consumption

Indian oil deliveries fell by 140 kb/d in May. This precipitous drop, in contrast to the seasonal average increase of 80 kb/d, came amid higher prices and reflects a loss of momentum after 1Q22's unusually high levels. The largest declines were for gasoil (-40 kb/d), LPG (-30 kb/d) and naphtha (-60 kb/d). According to data from *GlobalPetrolPrices.com*, the cost to consumers of diesel spiked by about 11% from late March, while LPG prices surged by 16% during late March and early April. Gasoline prices went up in a similar way, but demand continued rising in May.

IEA. All rights reserved.





India: Demand by Product

(thousand barrels per day)

	Demand				Annual Chg (kb/d)		Annual Chg (%)	
	2020	2021	2022	2023	2022	2023	2022	2023
LPG & Ethane	869	888	885	905	- 3	20	-0.4	2.3
Naphtha	318	317	289	292	- 29	3	-9.0	1.2
Motor Gasoline	663	746	815	829	69	14	9.2	1.7
Jet Fuel & Kerosene	120	128	169	208	41	39	31.6	23.2
Gas/Diesel Oil	1 389	1 491	1 599	1 583	108	- 16	7.2	-1.0
Residual Fuel Oil	136	142	146	149	4	2	2.8	1.7
Other Products	1 018	984	1 073	1 081	89	8	9.1	0.7
Total Products	**4 513**	**4 697**	**4 976**	**5 046**	**279**	**71**	**5.9**	**1.4**

These challenges are partially mitigated by the rate of India's economic expansion, where expected GDP growth remains amongst the fastest of all major countries for both 2022 and 2023, despite a downgrade since last month's *Report*. The May *S&P Global India Manufacturing PMI* registered steady expansion, at 54.6 (compared with 54.7 in April), with businesses shrugging off cost pressures to register a rapid increase in export orders. Average 2Q22 demand is set to increase by 600 kb/d over lockdown-effected 2Q21 and we expect annual growth of 280 kb/d for 2022 to 5 mb/d, marginally surpassing 2019 levels. Annual gasoline use is forecast to be 80 kb/d above pre-pandemic levels with many Indians choosing to avoid crowded public transport. LPG consumption is set to be 50 kb/d higher than 2019 following government schemes to promote domestic use.

Expansion is expected to continue, albeit at a reduced pace, in 2023. Demand will rise by 70 kb/d, fuelled by the jet recovery (+40 kb/d) and the continued growth of LPG (+20 kb/d). This deceleration, with projected growth pegged at 1.4%, in contrast to GDP growth of 5.5%, reflects price elasticity effects and gradual increases in the efficiency of the vehicle fleet (improving by roughly 2% in 2023). Gasoil use will fall (-20 kb/d), while gasoline's previously stellar growth will cool (+10 kb/d).

Other Non-OECD

Our outlook for **Russian** deliveries has increased since last month's *Report*, although we still expect a contraction of 130 kb/d this year. April data for gasoil (+20 kb/d m-o-m) was more robust than expected, edging up counter-seasonally as local prices fell, according to *GlobalPetrolPrices.com* and potentially reflecting higher military use. While April jet/kerosene use

IEA. All rights reserved.

was in line with expectations, air traffic increased strongly during May and early June according to data from *FlightRadar24.com* and we have slightly upgraded our expectations for the rest of 2022. Total oil demand is now expected to fall by 130 kb/d in 2022 and by a further 20 kb/d in 2023, assuming Russia's international isolation continues.

Brazil's April demand fell by 80 kb/d, contrary to typical seasonal changes, led by weaker gasoil (-60 kb/d m-o-m). This was despite relatively positive economic indicators, with the *S&P Global Brazil Manufacturing PMI* showing continued expansion and an upward revision to the GDP growth assumptions used in our modelling. We expect demand to shrink by 20 kb/d in both 2022 and 2023. Higher prices will see demand for gasoil and gasoline fall by a combined 40 kb/d during 2023.

In evidence of the impact of China's lockdowns on its neighbours, with bunker use in both **Hong Kong** and **Singapore** considerably reduced in March and April. March data for Hong Kong show fuel oil and gasoil demand down by 6% and 53% y-o-y, respectively. Jet/kerosene was also 45% below 2021. In Singapore, April fuel oil demand was 140 kb/d (16%) lower y-o-y, with gasoil also falling (-11%).

Middle East demand is expected to expand during both 2022 (+140 kb/d) and 2023 (+40 kb/d), taking it above 2019 levels. The region is set to benefit from an improved economic outlook resulting from higher oil prices and from the resurgence of air travel in 2022, with y-o-y jet/kerosene gains of 110 kb/d. In 2023, further growth in jet/kerosene (+20 kb/d) and gasoline (+30 kb/d) will underpin overall increases.

African demand is set to rise steadily, reaching 4.1 mb/d in 2023. Growth of 90 kb/d in 2022 is headlined by a 50 kb/d increase in fuel oil requirements, the majority of which stem from Egyptian gas-to-oil substitution in power plants and increasing bunkering volumes. We also project 40 kb/d higher gasoil demand across 2022 and 2023 and a 30 kb/d boost to jet/kerosene demand with the rebound in global aviation and tourism.

Non-OECD: Demand by Region

(thousand barrels per day)

	Demand				Annual Chg (kb/d)		Annual Chg (%)	
	2020	**2021**	**2022**	**2023**	**2022**	**2023**	**2022**	**2023**
Africa	3 728	3 967	4 059	4 131	93	72	2.3	1.8
Asia	26 856	28 634	29 015	30 479	381	1 463	1.3	5.0
FSU	4 497	4 785	4 588	4 626	- 197	38	-4.1	0.8
Latin America	5 638	6 053	6 137	6 227	84	90	1.4	1.5
Middle East	8 327	8 664	8 800	8 840	136	40	1.6	0.5
Non-OECD Europe	708	742	750	766	9	16	1.2	2.1
Total Products	**49 755**	**52 845**	**53 350**	**55 069**	**505**	**1 719**	1.0	3.2

IEA. All rights reserved.

Supply

Overview

Non-OPEC+ is poised to dominate world oil supply growth through the rest of this year and in 2023. In May, global output rose 900 kb/d to 99 mb/d, with non-OPEC+ providing all of the increase while OPEC+ volumes edged slightly lower on the month. From June through December, world oil production is projected to rise by 1.9 mb/d compared to a 1.2 mb/d increase in demand, of which collective non-OPEC+ supply (that from producers outside OPEC+) is expected to climb 1.1 mb/d. The OPEC+ alliance may add 800 kb/d assuming Libya rebounds from a severe drop, but deepening losses from Russia offset gains from Middle East producers. Higher OPEC+ flows, however, will come at the expense of the bloc's effective spare capacity, held mostly by Saudi Arabia and the UAE. By 4Q22, its production buffer may fall to just 2.6 mb/d, heightening oil market volatility.

World Oil Production by Region (OPEC+ based on current agreement)
(million barrels per day)

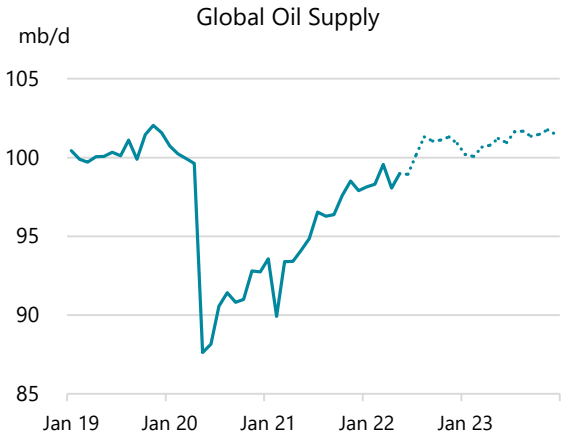
	2021	1Q22	2Q22	3Q22	4Q22	2022	1Q23	2Q23	3Q23	4Q23	2023
Africa	7.4	7.4	6.9	7.1	7.5	7.2	7.5	7.4	7.4	7.4	7.4
Latin America	5.9	6.2	6.2	6.5	6.6	6.4	6.6	6.6	6.7	6.7	6.7
North America	24.3	25.0	25.5	26.2	26.7	25.9	26.9	27.1	27.3	27.6	27.2
China	4.1	4.2	4.3	4.2	4.2	4.2	4.3	4.3	4.3	4.2	4.3
Other Asia	3.4	3.3	3.2	3.2	3.2	3.2	3.2	3.1	3.1	3.1	3.1
Europe	3.5	3.4	3.3	3.3	3.5	3.4	3.5	3.4	3.4	3.6	3.5
FSU	13.8	14.4	13.2	13.1	12.4	13.3	11.7	11.7	11.6	11.7	11.7
Middle East	27.9	30.1	30.8	31.5	31.7	31.0	31.8	31.8	31.9	31.9	31.8
Total Oil Production	**90.2**	**93.9**	**93.4**	**95.2**	**95.8**	**94.6**	**95.4**	**95.5**	**95.8**	**96.2**	**95.7**
Processing Gains	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.4	2.4	2.4	2.4
Global Biofuels	2.8	2.5	3.0	3.3	2.9	2.9	2.6	3.1	3.4	3.0	3.0
Total Supply	**95.2**	**98.7**	**98.7**	**100.8**	**101.1**	**99.8**	**100.3**	**101.0**	**101.6**	**101.6**	**101.1**
OPEC Crude	*26.5*	*28.6*	*28.7*	*29.5*	*30.2*	*29.2*	*30.2*	*30.1*	*30.1*	*30.1*	*30.1*
OPEC NGLs	*5.0*	*5.2*	*5.3*	*5.3*	*5.3*	*5.3*	*5.3*	*5.4*	*5.4*	*5.4*	*5.4*
Non-OPEC OPEC+	*17.4*	*18.2*	*17.0*	*16.9*	*16.3*	*17.1*	*15.6*	*15.6*	*15.5*	*15.6*	*15.6*
Total OPEC+	*49.0*	*51.9*	*51.0*	*51.8*	*51.8*	*51.6*	*51.1*	*51.1*	*51.1*	*51.1*	*51.1*

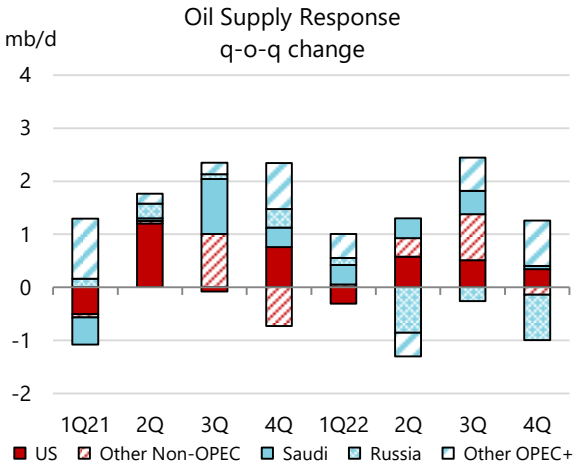
OPEC+ capacity constraints set the stage for 2023, when global oil supply will struggle to keep pace with demand. While non-OPEC+ continues to power ahead, OPEC+ would have to further deflate its shrunken capacity cushion to keep the implied balance from tipping into deficit. In that case, spare capacity would shrink to just 1.5 mb/d, the lowest level in recent history (see *Higher Gulf output rates = wafer-thin spare capacity in 2023)*. Our forecast for 2023 shows non-OPEC+ supply rising by 1.8 mb/d compared to 1.9 mb/d this year. The US accounts for 60% of the gains in 2023. Triple digit oil prices are clearly coaxing more oil from the shale patch and breathing life into conventional oil projects the world over (see *Conventional oil plays set to dominate non-OPEC+ supply growth*).

As for OPEC+, total annual supply in 2023 may fall as embargoes and sanctions shut in Russian volumes and producers outside the Middle East suffer further declines. While the bloc's output could expand by 2.6 mb/d this year as record 2020 supply cuts are unwound, it is poised to

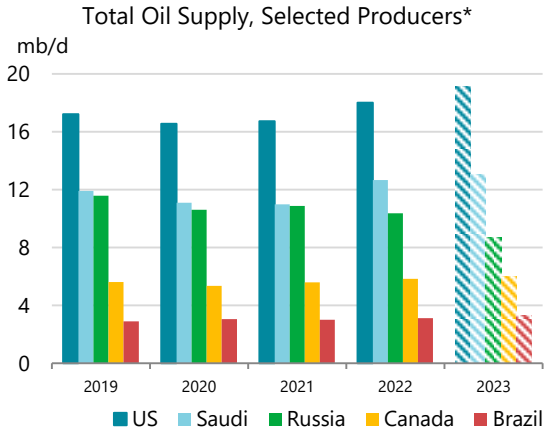
IEA. All rights reserved.

contract by 520 kb/d next year if Russia's production trajectory follows the path set in motion by international sanctions levied in response to Moscow's invasion of Ukraine.





The outlook for Russia meanwhile remains mired in uncertainty and may continue to surprise. After plunging 930 kb/d in April, total oil production in May actually rose by 130 kb/d to 10.55 mb/d as crude oil exports to world markets were reallocated from traditional buyers adhering to new sanctions or shunning barrels voluntarily in solidarity with Ukraine.



* Includes condensates and NGLs.

Even with a large swathe of Russian oil output hit by sanctions and embargoes, the country will easily retain its rank as the world's third-largest oil producer behind the US and Saudi Arabia. But the top two producers are expected to post annual record-high output both this year and next, widening the gap between them and Russia. Canada and Brazil are also poised to reach their highest ever levels for two years running.

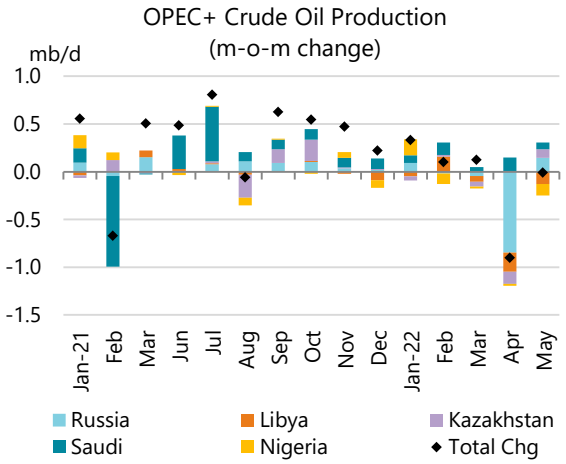
OPEC+ production holds steady

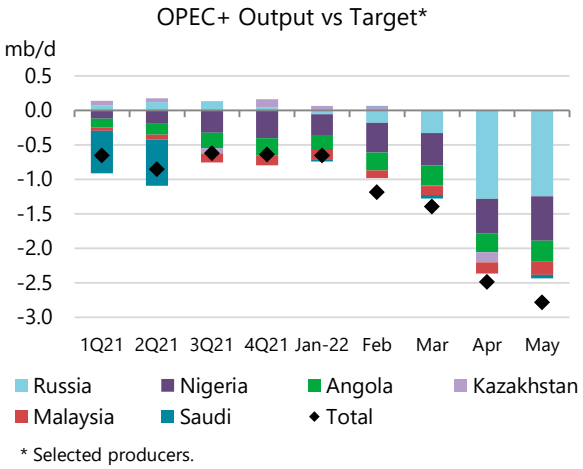
Crude oil production from the 23-member OPEC+ bloc held broadly steady at 43.26 mb/d in May despite a surprising increase from Russia. Supply from OPEC countries fell 210 kb/d to 28.52 mb/d in May while its non-OPEC partners raised output by 200 kb/d to 14.74 mb/d, led by Russian and Kazakh increases. A hefty decline in Nigerian production meant that - taking into account only the 19 members bound by the supply deal - output was up 140 kb/d compared to a planned 432 kb/d increase.

With Russia trailing 1.25 mb/d below its quota, the shortfall between the bloc's supply versus official output targets widened to around 2.8 mb/d compared to 2.5 mb/d in April, reflecting the group's persistent battle with capacity constraints and technical issues. Apart from Russia, many countries can't keep pace with rising targets due to dwindling spare capacity and reduced

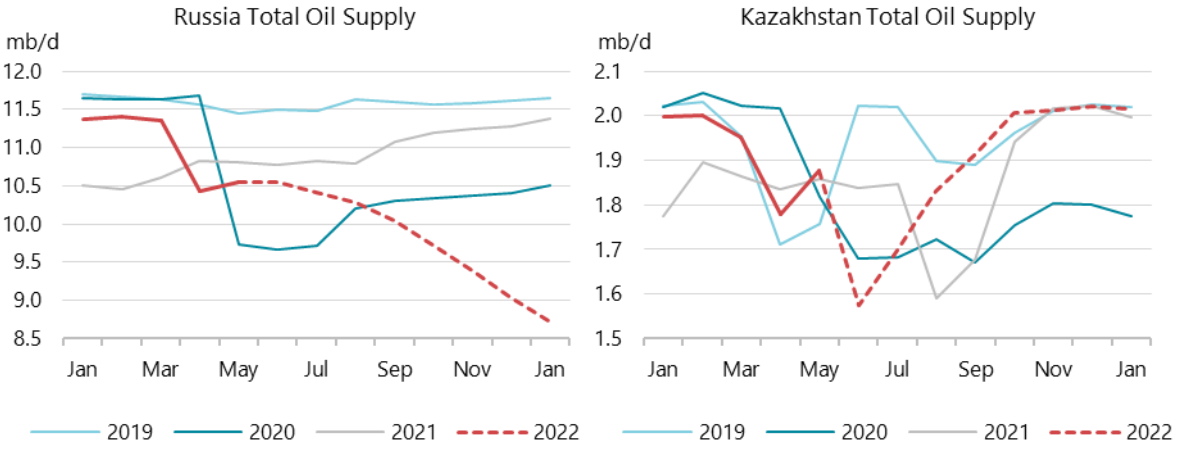
IEA. All rights reserved.

operational efficiency. Nigeria, for example, pumped 640 kb/d short of its target in May while Angola fell 310 kb/d below.





Defying expectations, **Russia** delivered the single biggest OPEC+ supply increase during May as shipments of crude oil remained resilient. Total crude oil, condensates and NGLs rose 130 kb/d to reach 10.55 mb/d, though still down 850 kb/d from pre-invasion levels. We expect oil production to hold steady for June and then start to decline gradually as an EU embargo on Russian oil is phased in. That would result in annual average output in 2022 of 10.37 mb/d, down 500 kb/d y-o-y. By the start of next year, we expect to see close to 3 mb/d shut in, which would drop total oil supply to 8.7 mb/d. Because it is unclear how long the crisis will continue, we have held production at 8.7 mb/d throughout 2023. Given the rapidly evolving situation and high degree of uncertainty, our estimates are under continuous review and will be revised as necessary. Russia itself admits that finding new markets will become increasingly challenging and that upstream projects may be delayed by some domestic producers struggling to secure equipment and financing as Western investors, service companies and lenders plan to quit the country.



In neighbouring **Kazakhstan**, output recovered in May following repairs to its storm-damaged Caspian Pipeline Consortium terminal but is on the decline again this month because of planned maintenance. Total production of crude oil and condensates rose by 100 kb/d in May to 1.88 mb/d, with crude oil increasing by 90 kb/d to 1.56 mb/d. So far in June, total oil supply is running at around 1.5 mb/d on average, with the 400 kb/d Kashagan oil field halted completely

IEA. All rights reserved.

for maintenance. The turnaround is reportedly due to last at least until early July. Meanwhile, in a bid to avoid sanction risks and issues with financing, Kazakhstan renamed the oil it ships through Russian sea ports as Kazakhstan export blend crude oil (Kebco) to differentiate it from Russian export blend crude oil (Rebco).

Box 2. OPEC+ moves forward deadline to unwind production cuts

In a surprise move, OPEC+ agreed on 2 June to accelerate monthly production increases this summer to help meet anticipated stronger demand. While it will not result in substantial additional volumes to the market (most members save Saudi Arabia and the UAE are struggling to meet quotas), it should help partially compensate for near-term losses in Russian crude supply. It's also a welcome gesture to consuming nations that have sounded the alarm over triple digit oil prices. Washington has recently intensified diplomacy with Gulf heavyweights ahead of a planned visit by US President Joe Biden to Saudi Arabia. And after the OPEC+ deal was announced, Washington specifically commended the efforts of Riyadh and recognized the positive contributions of the UAE, Kuwait and Iraq.

OPEC+ Crude Oil Targets
(million barrels per day)

	May Target	Jun Target	Jul Target	Aug Target*
Algeria	1.01	1.02	1.04	1.05
Angola	1.47	1.48	1.50	1.52
Congo	0.31	0.32	0.32	0.33
Equatorial Guinea	0.12	0.12	0.12	0.13
Gabon	0.18	0.18	0.18	0.19
Iraq	4.46	4.51	4.58	4.65
Kuwait	2.69	2.72	2.77	2.81
Nigeria	1.75	1.77	1.80	1.83
Saudi Arabia	10.55	10.66	10.83	11.00
UAE	3.04	3.07	3.13	3.18
Total OPEC-10	**25.59**	**25.86**	**26.28**	**26.69**
Azerbaijan	0.69	0.70	0.71	0.72
Kazakhstan	1.64	1.65	1.68	1.71
Oman	0.85	0.85	0.87	0.88
Russia	10.55	10.66	10.83	11.00
Others[1]	1.06	1.07	1.09	1.11
Total Non-OPEC	**14.78**	**14.94**	**15.18**	**15.41**
OPEC+-19 in cut deal	**40.37**	**40.81**	**41.45**	**42.10**

[1] Bahrain, Brunei, Malaysia, Sudan and South Sudan. * Estimated.

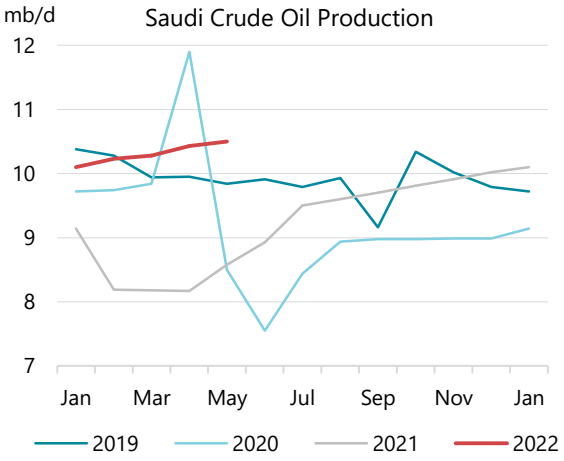
Under the new agreement, which advances the phase-out of record 2020 cuts by one month, the bloc's target increases by 648 kb/d in both July and August, up from previously-agreed increments of 432 kb/d. On paper, the July-August boost is 1.3 mb/d, but in reality it may only amount to roughly 700 kb/d as many producers are unable to keep up with higher targets due to operational issues and capacity constraints. Saudi Arabia and the UAE, along with Kazakhstan (returning from maintenance) account for the majority of the increase.

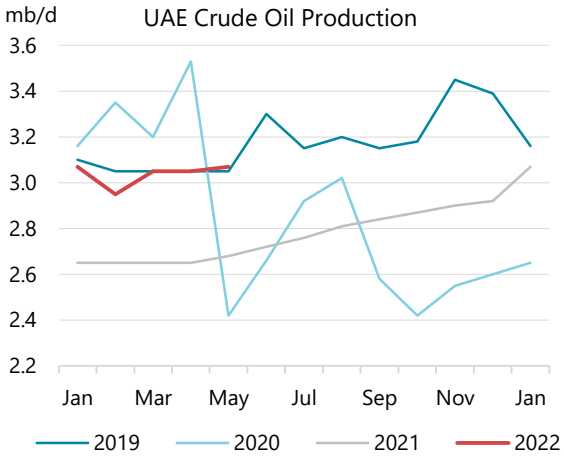
By the start of September, cuts would be fully unwound, leaving the group with limited spare capacity to boost output. Saudi crude production of 11 mb/d, a lofty level that has yet to be sustained for a prolonged period, would reduce its spare capacity to just 1.2 mb/d. UAE crude supply would hit 3.18 mb/d, with 950 kb/d of spare.

It is as yet unclear what policy course OPEC+ will chart after August: in the weeks ahead it will consider how to manage supply going forward. The crucial issue is whether there will be a substantial revision of targets that would resolve the challenges some members have had in meeting them. OPEC+ is due to meet again on 30 June. Until there is clarity we have held OPEC+ member countries with sustainable production capacity flat at their August levels. All other countries have been adjusted to reflect current operational issues.

IEA. All rights reserved.

In the Middle East, producers continue to use up their spare capacity as they phase out OPEC+ cuts. Only Saudi Arabia and the UAE hold significant, readily available spare capacity and so far they are lifting supply broadly in line with their previously-agreed OPEC+ quotas. During May, **Saudi Arabia** pumped 10.5 mb/d of crude oil, up 70 kb/d m-o-m. In the **UAE**, production inched up 20 kb/d to 3.07 mb/d. As it presses ahead with its exploration effort, the Abu Dhabi National Oil Co has discovered 650 million barrels of crude in onshore fields. The biggest find was an estimated 500 million barrels at the 650 kb/d Bu Hasa, its largest onshore field. Around 100 million bbl of oil in place was discovered in the Occidental Petroleum-operated Onshore Block 3 and another 50 million bbl of light, sweet Murban crude was discovered in the Al-Dhafra concession.





In **Iraq**, production declined by 50 kb/d to 4.38 mb/d in May as shipments of crude to world markets fell. In the Kurdish region of northern Iraq, Oil Minister Kamal Atroshi has resigned for health reasons. The move comes amid growing tensions between the Kurds and the federal government in Baghdad. Output in **Kuwait** crept higher to 2.67 mb/d.

Box 3. Higher Gulf output rates = wafer-thin spare capacity in 2023

Effective spare capacity held by OPEC+ could fall next year to the lowest level in recent history if Gulf heavyweights Saudi Arabia and the UAE opt to balance the global market. Chronic under-investment outside the Middle East has already eroded the bloc's overall crude oil production capacity, which we estimate will decrease by 50 kb/d to 49.8 mb/d in 2023. But roughly 4 mb/d of that volume may be offline due to sanctions. Around 1.3 mb/d of Iranian crude has been off the market for some time and by early 2023 some 2.7 mb/d of Russian crude may be removed.

Although Gulf heavyweight producers are spending heavily to re-inflate the spare cushion in the medium term, a modest expansion in the UAE and marginal increases in the Gulf next year will not offset a long-running slump in crude oil capacity outside of the region – especially in Angola and Nigeria. For 2023, OPEC's crude oil capacity is expected to slip by 40 kb/d to 33.96 mb/d.

For Saudi Arabia, the big growth story will not start until after 2024, when it taps giant offshore fields to boost capacity by 1 mb/d by 2027 to 13 mb/d (excluding the Neutral Zone). The UAE, which has been ramping up capacity in recent years, is aiming for an official target of 5 mb/d by 2030 and reportedly is considering speeding up the effort. Capacity in Iraq, constrained by infrastructure

IEA. All rights reserved.

bottlenecks, will hold broadly steady. Baghdad has said export capacity in the Gulf will rise by around 200 kb/d to 3.45 mb/d from 2Q22 after finishing the installation of new pumps.

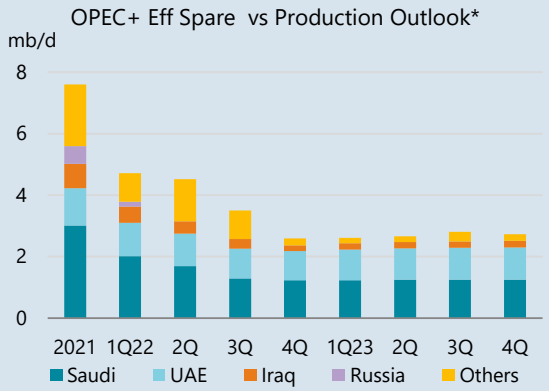
As for non-OPEC producers that are part of the alliance, capacity growth has largely stalled apart from Kazakhstan, which could see a bump up from Tengiz and Kashagan expansions. Total crude oil capacity from the 10 non-OPEC producers eases a touch to 15.88 mb/d in 2023.

OPEC+ Production Capacity* (mb/d)

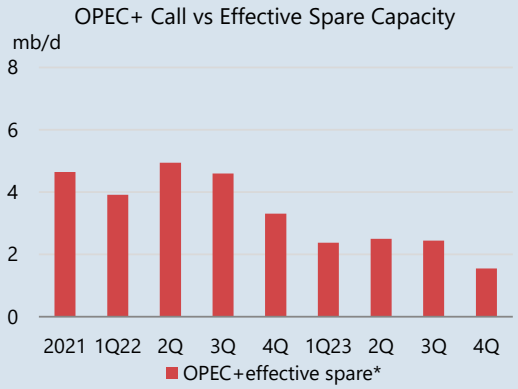
	2022	2023	Change		2022	2023	Change
OPEC Countries				***Non-OPEC Countries***			
Saudi Arabia	12.2	12.2		Russia	10.2	10.2	
Iraq	4.8	4.8		Kazakhstan	1.7	1.7	
UAE	4.1	4.2	0.1	Azerbaijan	0.6	0.6	
Iran	3.8	3.8		Oman	0.9	0.9	
Kuwait	2.8	2.8		Bahrain	0.2	0.2	
Nigeria	1.5	1.5	-0.1	Malaysia	0.4	0.4	
Angola	1.2	1.1	-0.1	Brunei	0.1	0.1	
Libya	1.2	1.2		South Sudan	0.2	0.2	
Algeria	1.0	1.0		Sudan	0.1	0.1	
Congo	0.3	0.3		Mexico	1.7	1.7	
Eq. Guinea	0.1	0.1		**Total OPEC**	**34.0**	**34.0**	**0.0**
Gabon	0.2	0.2		**Total non-OPEC**	**15.9**	**15.9**	**0.0**
Venezuela	0.8	0.8		**Total OPEC+**	**49.9**	**49.8**	**-0.1**

*Levels can be reached within 90 days and sustained for extended period. Sanctioned volumes not excluded from capacity. Totals may not sum due to individual country rounding.

The overall decline in OPEC+ capacity will collide with a higher call on OPEC+ crude oil, which is expected to rise by around 300 kb/d to 43.6 mb/d in 2023 and reach 44.3 mb/d in 4Q23 - the highest point in the year. But to balance the market in 2023 and meet the call for its crude oil, OPEC+ would have to further boost production – cutting effective spare capacity to the razor thin level of 1.5 mb/d.



* Effective spare in 2021, 1Q22 is based on actual supply. Excludes shut in Iranian, Russian crude.

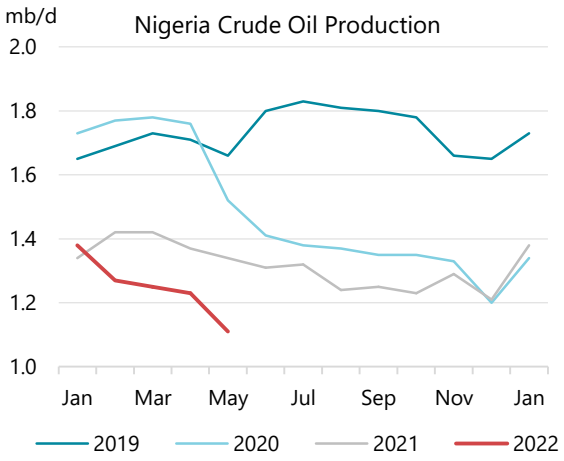


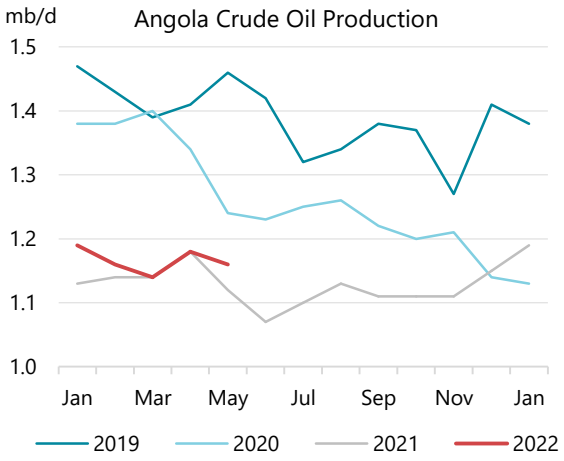
* Excludes shut-in Iranian, Russian crude.

For the remainder of this year, OPEC+ looks set to pump above the call on its crude as it phases out supply cuts. Based on our current production outlook, effective spare capacity (excluding shut-in Iranian and Russian crude) falls to 2.6 mb/d by 4Q22. Saudi Arabia would hold roughly 1.2 mb/d of spare and the UAE around 950 kb/d.

IEA. All rights reserved.

Production from the African members of OPEC+ fell by a combined 240 kb/d during May. Crude oil supply in **Nigeria** sank 120 kb/d to 1.11 mb/d – the lowest monthly level in nearly four decades. Maintenance at the core oil fields of Qua Iboe and Forcados drove the hefty decline, but output is starting to recover this month. Persistent technical and operational issues along with sabotage and pipeline leaks have prevented Africa's top producer from optimising its existing capacity, which is expected to decline to 1.46 mb/d in 2023. Nigerian oil officials have repeatedly set – and missed – targets for the country to overcome production issues. The battle to reverse declines and repair ageing infrastructure underscores the chronic underinvestment in Nigeria's crucial oil sector. On a brighter note, the 32 kb/d Ikike shallow-water oil field, operated by TotalEnergies, is expected to come online during 2Q22. It is one of three TotalEnergies' projects underway in Nigeria alongside Owowo and Preowei.





Crude oil production in **Angola** eased 20 kb/d to 1.16 mb/d in May. Plagued by operational and technical issues at its high-cost deepwater oil fields, Angola's crude oil capacity is expected to decline by 90 kb/d to 1.07 mb/d in 2023. The start-up of a number of fields in 2021 has meanwhile offset some of the losses. TotalEnergies's Zinia Phase 2 project in Block 17 is expected to reach 40 kb/d by mid-2022. The deepwater project will feed into Pazflor exports. Output from Eni's 10 kb/d Cuica and 15 kb/d Cabaca North fields will be routed to the Olombendo floating production, storage and offloading (FPSO) vessel in the eastern hub of Block 15/06. Eni has also started up the Ndungu field on the west of Block 15/06.

Libya posted the largest decline within OPEC+, with output falling 130 kb/d in May to 770 kb/d due to ongoing civil unrest. Protestors have shut the fields of el-Sharara, the country's largest, and el-Feel since mid-April. Hopes of a resolution are fading and downside risks to supply are growing as export disruptions intensify. At the time of writing, production reportedly had plunged to just 100 kb/d. During the 2020 blockade, output dropped below 200 kb/d for eight months. The divided country has been beset with outages at major fields and blockades at ports. It is spared from a quota under the OPEC+ deal, along with Iran and Venezuela.

Iran's crude oil supply held at 2.55 mb/d during May. Negotiations between Tehran and the West to revive the 2015 nuclear deal have been on hold since March, primarily because Iran insists that the US must remove the Islamic Revolutionary Guard Corps from the US Foreign Terrorist Organization list. Most recently, Iran put into service a number of new-generation uranium centrifuges and removed dozens of IAEA cameras monitoring its nuclear enrichment activities. Iran could be a source of significant supplies if sanctions were to be eased, although its increasingly complicated return to the market would not happen overnight.

IEA. All rights reserved.

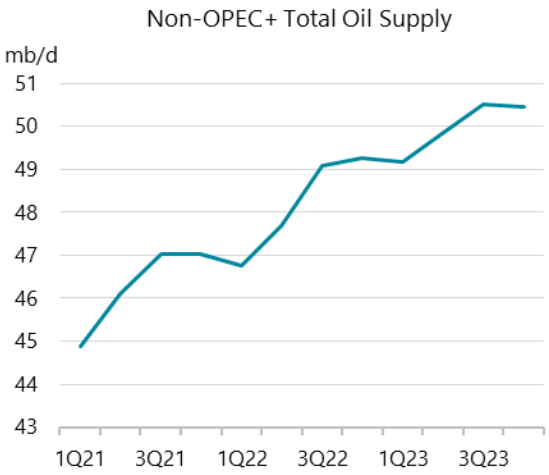
OPEC+ Crude Oil Production[1]
(million barrels per day)

	Apr 2022 Supply	May 2022 Supply	May Compliance	May 2022 Target	Sustainable Capacity[2]	Eff Spare Cap vs May[3]
Algeria	1.00	1.01	106%	1.01	1.01	0.00
Angola	1.18	1.16	585%	1.47	1.16	0.00
Congo	0.26	0.28	352%	0.31	0.28	0.00
Equatorial Guinea	0.10	0.10	569%	0.12	0.11	0.00
Gabon	0.19	0.19	-37%	0.18	0.20	0.01
Iraq	4.43	4.38	143%	4.46	4.82	0.44
Kuwait	2.65	2.67	121%	2.69	2.79	0.12
Nigeria	1.23	1.11	947%	1.75	1.52	0.41
Saudi Arabia	10.43	10.50	111%	10.55	12.22	1.72
UAE	3.05	3.07	77%	3.04	4.12	1.05
Total OPEC-10	**24.52**	**24.47**	**202%**	**25.59**	**28.24**	**3.77**
Iran[4]	2.55	2.55			3.80	
Libya[4]	0.90	0.77			1.20	0.43
Venezuela[4]	0.76	0.73			0.76	0.00
Total OPEC	**28.73**	**28.52**			**34.00**	**4.20**
Azerbaijan	0.58	0.57	491%	0.69	0.58	0.01
Kazakhstan	1.47	1.56	210%	1.64	1.65	0.09
Mexico[5]	1.61	1.62		1.75	1.66	0.04
Oman	0.84	0.84	103%	0.85	0.87	0.03
Russia	9.15	9.30	377%	10.55	10.20	
Others[6]	0.89	0.84	596%	1.06	0.93	0.09
Total Non-OPEC	**14.54**	**14.74**	**363%**	**16.53**	**15.89**	**0.26**
OPEC+-19 in cut deal[4]	**37.45**	**37.58**	**261%**	**40.37**	**42.47**	**3.98**
Total OPEC+	**43.27**	**43.26**			**49.89**	**4.45**

1 Excludes condensates.
2 Capacity levels can be reached within 90 days and sustained for extended period.
3 Excludes shut in Iranian, Russian crude.
4 Iran, Libya, Venezuela exempt from cuts.
5 Mexico excluded from OPEC+ compliance. Only cut in May, June 2020.
6 Bahrain, Brunei, Malaysia, Sudan and South Sudan.

US powers non-OPEC+ supply higher

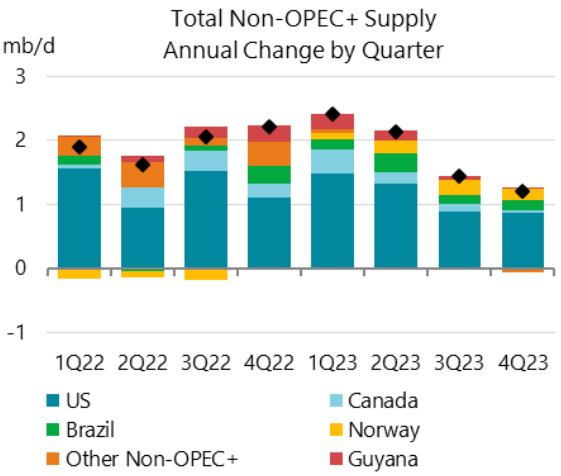
Increased output from the US and Canada, along with seasonally higher biofuels production, boosted non-OPEC+ oil supply by 940 kb/d in May to 47.9 mb/d. Growth is expected to continue throughout this year and into 2023, averaging 48.2 mb/d in 2022 (+1.9 mb/d y-o-y) and reaching the remarkable threshold of 50 mb/d in 2023 (+1.8 mb/d). The US is set to add 1.3 mb/d overall in 2022, or 65% of the gains. Additional growth will come from Canada, Guyana and Brazil – particularly in the second half of the year. That acceleration pushes 2H22 non-OPEC+ output up by 1.1 mb/d to exit the year at 49.3 mb/d, a rise of 2.8 mb/d from December 2021. Conventional projects take the reins back from US light tight oil (LTO) as Guyana's Liza development, Norway's Johan Sverdrup Phase 2 and Brazil's Mero project all ramp up (see *Conventional oil plays set to dominate 2023 non-OPEC+ supply growth*). Additional barrels come as LTO gains and Canada, Norway and Brazil return from maintenance.



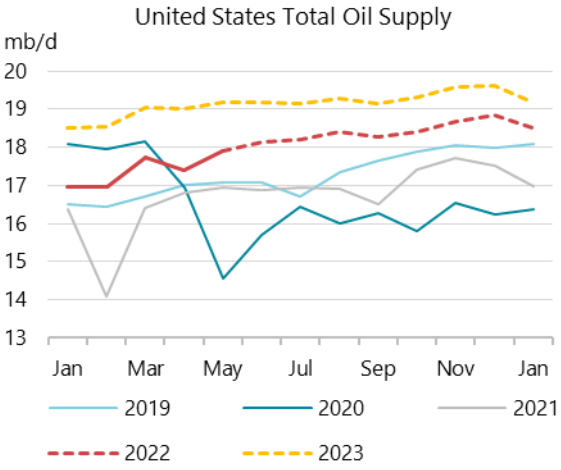
IEA. All rights reserved.

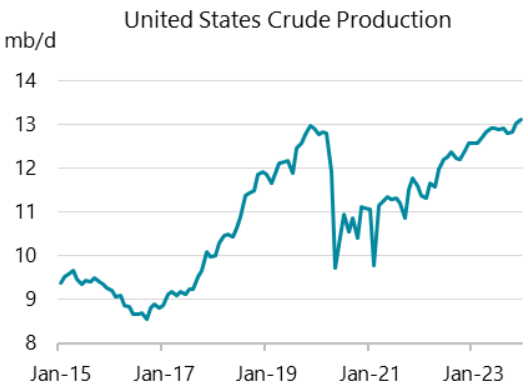
Companies are spending billions of dollars to raise annual average output. In 2023, the US is set to add 1.1 mb/d such that the world's largest oil producer will account for roughly 60% of total non-OPEC+ gains. Norway (190 kb/d), Brazil (180 kb/d), Canada (180 kb/d) and Guyana (120 kb/d) make up almost all of the other non-OPEC+ expansion. But the pace is set to slow in 2H23, with most of the growth from the US and Guyana arriving in the next 12 months.

US output rose by an estimated 520 kb/d m-o-m in May to 17.9 mb/d, driven by rebounding volumes in the Bakken and growth in the Permian. In March, the last month for which official data from the Energy Information Administration (EIA) is available, total oil supply jumped by 780 kb/d m-o-m. March growth was driven by NGLs, Permian production, and Gulf of Mexico (GoM) volumes. Total US output is forecast to average 18 mb/d in 2022, up 120 kb/d from last month's *Report*.



US LTO production is expected to continue its growth trajectory this year, with an exit rate of 8.8 mb/d, 1 mb/d above December 2021. Gains come mainly from the Permian, where onshore oil rig growth accounts for over 50% of the US total so far in 2022. LTO volumes are forecast to average 8.4 mb/d in 2022 (+890 kb/d y-o-y). Continued tightness in oilfield services and supply chains could limit any upside. In the absence of material changes in market conditions, we see slightly slower LTO growth in 2023 bringing average annual production to a hair over 9 mb/d, as inflation persists and a lower forward price curve undermines project economics.





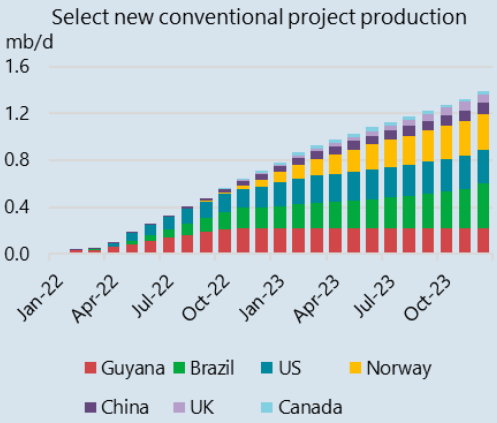
The post-Covid rebound in total US oil supply of 1.3 mb/d in 2022 and 1.1 mb/d in 2023, is slightly above the previous 10-year average growth rate (excluding 2020 Covid effects). Along with higher LTO, next year sees GoM adds 240 kb/d as recent projects continue to ramp up and NGL volumes climb by 280 kb/d on increases in liquids-rich natural gas production and higher gas-oil ratios in the shale patch.

IEA. All rights reserved.

Box 4. Conventional oil plays set to dominate 2023 non-OPEC+ supply growth

In a shift from recent years, the majority of non-OPEC+ gains are coming from new conventional projects, with US LTO expected to provide only one-third of the 1.8 mb/d growth in 2023, down from nearly a half this year. Brazil is the largest source of new conventional supply in the short term, followed by Norway, the US GoM and Guyana.

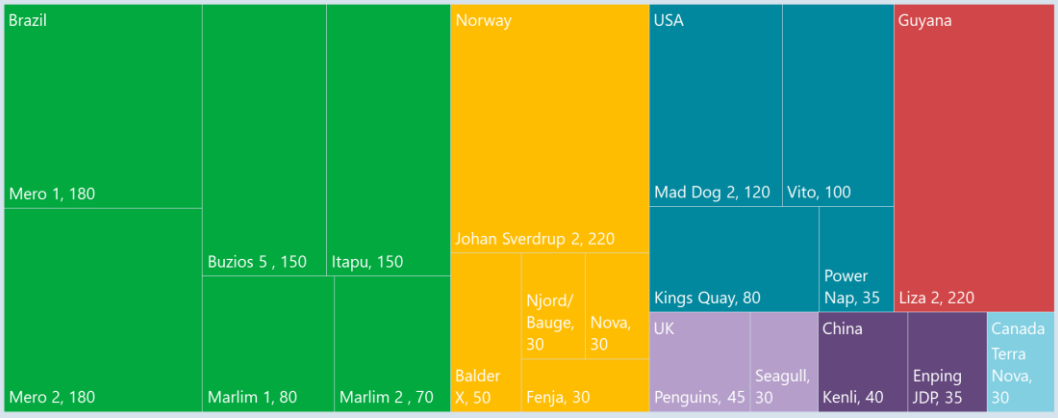
Brazil is on track to bring on five new FPSO vessels over the next 18 months in addition to the Guanabara FPSO that started up in the Mero field earlier this year. Chinese firms also have a slate of domestic projects coming online to meet the government's energy security goals. Norway has five major projects, including the large Johan Sverdrup Phase 2 start up, expected before the end of 2023 with a total capacity of 360 kb/d. That's in contrast to the UK where over the same time period only two smaller projects are expected to increase capacity by 80 kb/d.



Almost all of the new projects are concentrated in a handful of mature basins of well-established oil producing countries. This reflects years of dwindling exploration budgets as companies sought to reduce risks and uncertainty regarding the path of the energy transition. The notable exception is Guyana, which saw the second Liza FPSO, Unity, come online in 1Q22 and a final investment decision (FID) taken on the project's fourth FPSO for start-up in 2025.

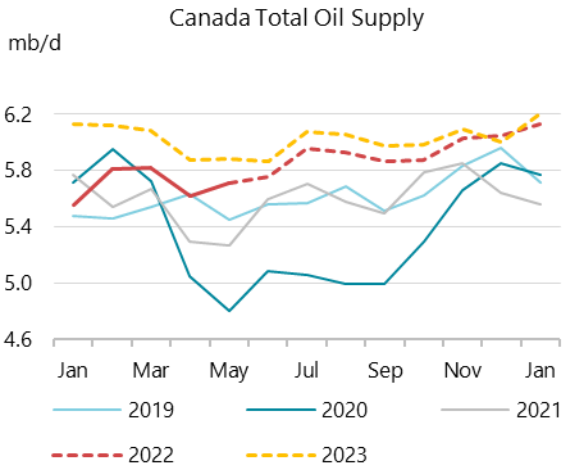
Impacts from Covid-19, uncertainties over long-term demand and ongoing pressure from shareholders and financiers to reduce emissions are still being felt by global exploration and production firms even as they reap record profits. Capital expenditures are up 30% from the depths of 2020 but still almost $100 billion below 2019 levels in real terms. If governments act soon to curb oil demand, this could be sufficient. However, in the event that demand remains buoyant, this level of capital spending could further reduce the ability of markets to weather volatility.

Conventional oil projects (>30 kb/d) due online in 2022 and 2023 sized by peak production



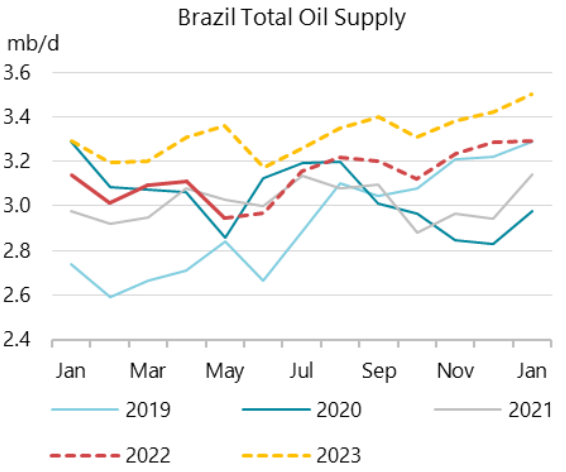
IEA. All rights reserved.

Canadian supply was down 210 kb/d in April, according to data from the Alberta Energy Regulator (AER) and the Canada-Newfoundland & Labrador Offshore Petroleum Board (C-NLOPB). Reduced upgrader throughput and lower NGLs contributed to the bulk of the drop. Output in May increased by 100 kb/d as higher Albertan crude more than offset continued weak upgrader throughput as maintenance continues. Production in 2023 is expected to increase by 180 kb/d as CNRL's 60 kb/d Horizons North Pit extension is due to come online and other smaller debottlenecking and optimization projects add throughput. Takeaway capacity, by and large, is not an issue through this forecast period with the replaced and fully operational Line 3 providing enough capacity until the beleaguered Trans Mountain Expansion (TMX) comes online in late 2023.



Producers Cenovus and Suncor agreed to restart work on the West White Rose project after it was put on hold following last year's Cenovus-Husky merger. The decision to restart the project was based on the current higher price environment and as a "strategic alignment" of Cenovus's working interest in the existing Terra Nova field. The project is expected to produce 80 kb/d at its peak with first oil projected for 2026.

Brazilian output dropped by 160 kb/d in May to 2.9 mb/d primarily due to downtime at the Tupi oil field, according to provisional daily data from the Agencia Nacional do Petroleo (ANP). This comes after production held flat during 1Q22 at 3.1 mb/d. Heading into the second half of the year, supply is expected to rise by 160 kb/d on average compared with 1H22 as Mero and two Tupi FPSOs continue to ramp up. In 2023, five more FPSOs are scheduled to come online and are projected to help lift Brazil's output by 180 kb/d to 3.3 mb/d for the year.



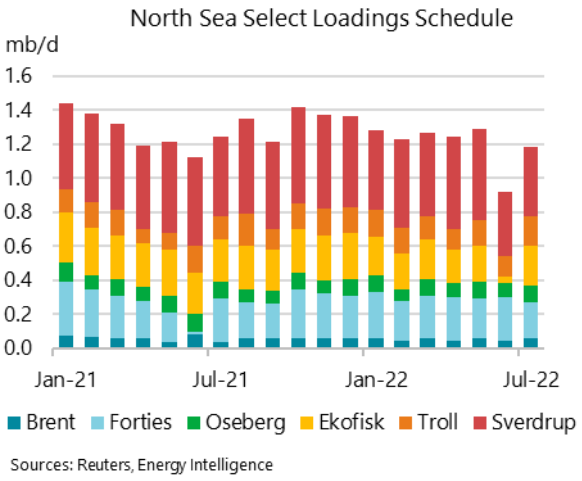
Argentinean supply held steady in May at 700 kb/d even as fracking activity hit record highs of 1 180 frack stages, up 30% m-o-m. In addition to the increased activity levels, supported by high prices and the building of more take-away capacity, the government announced on 24 May a loosening of capital controls for companies that boost output over 2021 levels. Since 2019, oil and gas profits have essentially been ring-fenced in Argentina except for the ability to pay down a percentage of foreign debt. The devil is in the details, but the announcement will allow companies that increase production to be able to take money out of the country to pay dividends, import equipment, or service their debts. We do not expect this to materially impact volumes in the short term. Supply is forecast to increase by 60 kb/d in 2022 and by 20 kb/d in 2023.

IEA. All rights reserved.

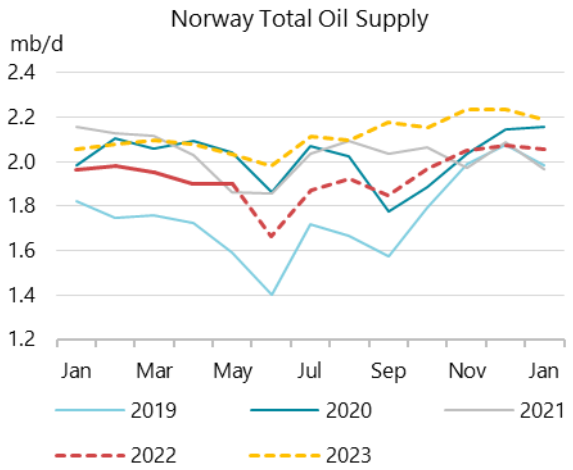
Growth will also come from **Guyana**, where an ExxonMobil-led consortium has continued to make discoveries in the Stabroek block. Now estimated to contain 10 billion barrels of recoverable oil equivalent resources, oil started flowing in 2019 from the 120 kb/d Liza Phase 1 development of the block. The second FPSO, Unity, started up this February and is set to reach full production of 220 kb/d by the end of 2022. Next year, the third FPSO, Payara, is due to come online, but won't materially contribute to Guyanese volumes until 2024, when it reaches 220 kb/d. May supply increased by 25 kb/d m-o-m thanks to the Unity ramp up. Last year, Guyana averaged 110 kb/d. Growth of 140 kb/d is expected this year, with a further 120 kb/d next year – more than tripling the country's output by the end of 2023.

In contrast, supply is expected to decline in the rest of Latin America, with slowing investment and a lack of new projects taking their toll on the region's industry. **Colombia**, **Peru** and **Ecuador** all have announced plans to boost investment in exploration and production but the roadmap to increased volumes is still not clear. For the most part, output from these countries is forecast to hold steady this year and next. The exception is Ecuador, which declines 20 kb/d in 2023 to 460 kb/d.

North Sea loadings (as measured by BFOE plus Troll and Johan Sverdrup) are scheduled to rebound in July by 270 kb/d with Ekofisk back to average levels and Johan Sverdrup recovering slightly. **UK** production was down by 30 kb/d m-o-m to 900 kb/d in May and is forecast to oscillate around that level for the remainder of the year. Next year sees UK supply falling by 70 kb/d y-o-y to 850 kb/d despite the 45 kb/d Penguins project coming online this year and the 30 kb/d Seagull project next year.



Sources: Reuters, Energy Intelligence



Data from the **Norwegian** Petroleum Directorate indicates that output in April was down 50 kb/d to 1.9 mb/d, with May flat m-o-m. Official data for February through April show NGLs eased 30 kb/d off December levels and close to 50 kb/d compared to 2021 averages as higher gas prices since Russia's invasion of Ukraine have led producers to adjust operations. Maintenance at Johan Sverdrup and the Greater Ekofisk Area is expected to take 340 kb/d off the market in June and 140 kb/d in July. In the second half of the year, autumn maintenance will temporarily reduce volumes but production picks up as Njord/Bauge, Nova, and Johan Sverdrup Phase 2 come online. December will be almost 200 kb/d higher than 1H22 output and for 2022 as a whole supply will average 1.9 mb/d. Next year will see gains of 190 kb/d to average 2.1 mb/d as 2022 projects continue to ramp up and Balder X and Fenja both come online

Ghana loadings rebounded by 20 kb/d m-o-m in May as the Jubilee field returned from maintenance. On average, supply is expected to hold steady at around 170 kb/d in both 2022 and

IEA. All rights reserved.

2023. Elsewhere in non-OPEC+ Africa, **Egyptian** declines moderated as higher oil prices and renegotiated production sharing contracts have led firms such as Apache and Eni to increase investment. Additionally, first oil from Baleine Phase 1 in Cote d'Ivoire, Coral FLNG in Mozambique, and Greater Tortue Ahmeyim FLNG in Mauritania are all expected by the end of 2023. While those volumes will not be significant enough to directionally change African production, they are green shoots for a region with lots of untapped potential.

Total **Chinese** oil production rose modestly by 40 kb/d m-o-m to 4.3 mb/d in May. Strong year-to-date supply, three sizable offshore projects and a planned 7% increase in upstream capital expenditure in 2022 among PetroChina, Sinopec and CNOOC support our growth forecast for 2022 and 2023. This year, we expect to see annualized growth of 170 kb/d, to 4.2 mb/d. Next year, Chinese output will rise another 50 kb/d to 4.3 mb/d. This runs counter to other parts of non-OECD Asia, notably **Indonesia** and **Thailand**, where a lack of investment and new projects have led these countries into a managed decline. Indonesia is expected to ease by 30 kb/d both this year and next year to an average of 630 kb/d in 2023. Thailand sees output fall this year by 40 kb/d to 340 kb/d and by another 20 kb/d in 2023.

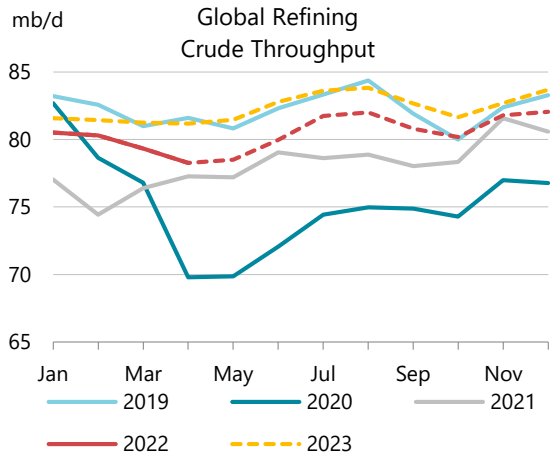
IEA. All rights reserved.

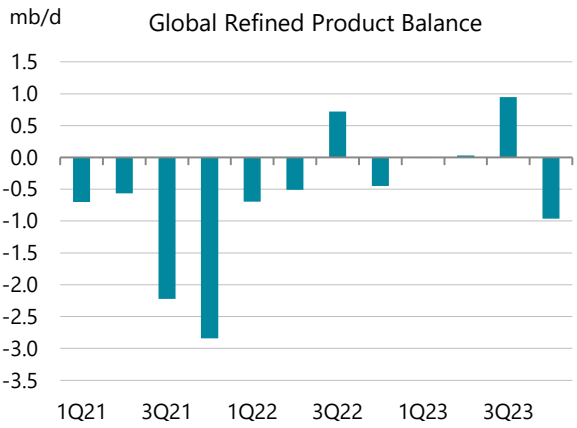
Refining

Overview

Global refinery throughputs are expected to ramp up by 3.5 mb/d from May through August as the maintenance season draws to a close in the US and Europe and a rebound in Chinese throughputs gathers pace. China accounts for almost a third of the increase, but this is mostly in response to a recovery in domestic demand as the country has been reducing refined product exports. Nevertheless, increased processing rates in the rest of the world will also propel global throughputs above refined product demand for the first time in two years, helping to reverse inventory losses. At 81.4 mb/d, 3Q22 refinery runs would be the highest since 4Q19, but downside risks remain. The potential for a major impact from hurricanes in the US Gulf Coast is above normal this year, which could easily wipe out expected product stock builds.

For the year as a whole, global crude processing is set to increase by 2.3 mb/d to 80.4 mb/d, resulting in overall net product inventory draws for the second consecutive year. Our first forecast for 2023 assumes a further 1.9 mb/d gain in refinery throughputs, to 82.2 mb/d, almost entirely from new capacity coming online in 2H22 and throughout 2023 (See *Global refinery capacity increases gather pace in 2023*). This would be largely sufficient to meet the expected call on refineries next year. However, shortages in individual products are likely to persist due to uneven rates of demand growth among them. Of particular concern are diesel and kerosene supplies (See *Few signs of tight diesel and kerosene markets easing*).

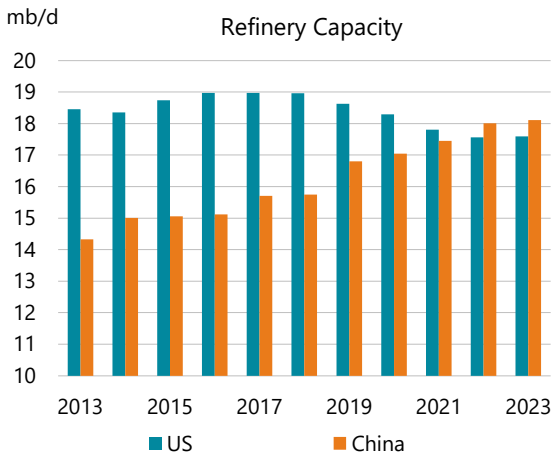


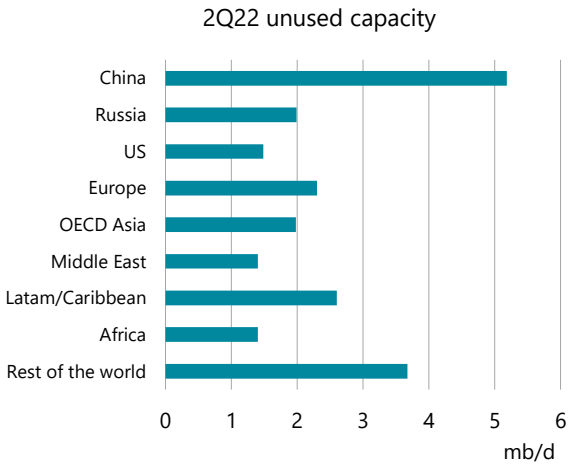


Refinery throughputs in May were up by a marginal 235 kb/d. We revised our 2Q22 estimate down by 580 kb/d since last month's *Report*, mostly on the unexpectedly large slowdown in Chinese refining activity and further delays in several new and idled refinery start-ups. While China has surpassed the US in terms of total installed refinery capacity, we expect its throughputs to lag the US by 2 mb/d on average this year and by 1.4 mb/d in 2023. The country now sits on the largest fleet of spare refinery capacity. In 2Q22, global refinery throughputs are forecast 1.1 mb/d lower q-o-q, at 78.8 mb/d, with global spare capacity amounting to 22 mb/d. Of this, more than 5 mb/d was in China, followed by Russia at 2 mb/d, of which half was a result of sanctions. We also estimate about 7 mb/d of long-term idled, but not decommissioned capacity in Latin America, the Caribbean, Africa, Mexico and elsewhere. Only a small fraction of the remaining spare

IEA. All rights reserved.

capacity may be able to come back online in the near future, if and when any necessary repairs are completed. Overall, about 4.3 mb/d of unused capacity in 2Q22 was due to planned maintenance work, which will fall to 1.3 mb/d in 3Q22, contributing to the seasonal increase. But for most of the remaining spare capacity on the books, eventual decommissioning, rather than restart, is the likely outcome.





Global Refinery Crude Throughput[1]

(million barrels per day)

	2019	2020	2021	1Q22	Apr-22	May-22	Jun-22	2Q22	Jul-22	Aug-22	3Q22	4Q22	2022	2023
Americas	**19.2**	**16.6**	**17.8**	18.4	18.6	18.9	19.3	18.9	19.5	19.2	19.0	18.6	**18.7**	**19.3**
Europe	**12.2**	**10.7**	**11.0**	11.1	11.3	11.1	11.5	11.3	11.8	11.8	11.8	11.8	**11.5**	**11.3**
Asia Oceania	**6.8**	**5.9**	**5.8**	6.2	6.0	5.5	5.4	5.6	5.7	6.1	5.9	6.0	**5.9**	**5.8**
Total OECD	**38.1**	**33.2**	**34.5**	35.7	35.9	35.5	36.2	35.9	37.1	37.1	36.7	36.3	**36.2**	**36.4**
FSU	**6.8**	**6.4**	**6.7**	6.6	5.5	5.7	5.7	5.7	5.8	5.7	5.7	5.7	**5.9**	**5.2**
Non-OECD Europe	**0.5**	**0.4**	**0.4**	0.5	0.4	0.4	0.5	0.4	0.5	0.5	0.5	0.5	**0.5**	**0.5**
China	**13.4**	**13.8**	**14.2**	14.0	12.8	12.8	13.5	13.0	14.1	14.0	14.1	14.3	**13.8**	**14.5**
Other Asia	**10.3**	**9.3**	**9.5**	10.2	10.2	10.4	10.3	10.3	10.5	10.7	10.6	10.6	**10.4**	**10.9**
Latin America	**3.2**	**3.0**	**3.2**	3.3	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	**3.5**	**3.5**
Middle East	**7.8**	**7.1**	**7.6**	7.7	8.2	8.2	8.3	8.3	8.4	8.5	8.4	8.3	**8.2**	**8.8**
Africa	**2.0**	**1.9**	**1.8**	1.9	1.8	1.8	1.8	1.8	1.9	1.9	1.9	2.0	**1.9**	**2.5**
Total Non-OECD	**44.0**	**41.9**	**43.5**	44.2	42.3	42.9	43.6	42.9	44.6	44.8	44.7	44.9	**44.2**	**45.8**
Total	**82.1**	**75.1**	**78.0**	79.9	78.2	78.4	79.9	78.8	81.6	81.9	81.4	81.2	**80.4**	**82.2**
Year-on-year change	***-0.2***	***-7.0***	***3.0***	*4.0*	*1.0*	*1.3*	*0.9*	*1.1*	*3.1*	*3.1*	*3.0*	*1.2*	***2.3***	***1.9***

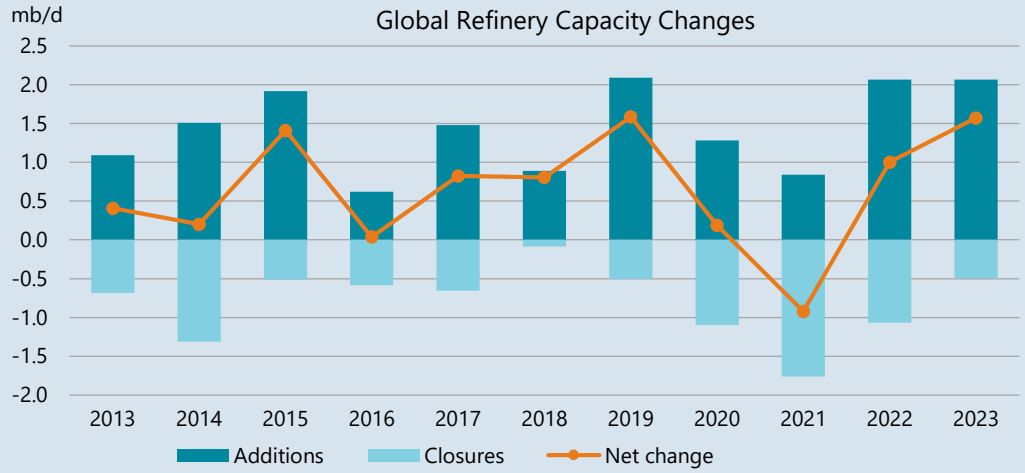
[1] Preliminary and estimated runs based on capacity, known outages, economic runcuts and global demand forecast.

Box 5. Global refinery capacity increases gather pace in 2023

After posting its first decline in 30 years during 2021, global refining capacity resumes its growth trajectory this year. Net additions of 1 mb/d are forecast for 2022 and a further 1.6 mb/d in 2023. This is a result of 4.1 mb/d of new capacity coming online, offset by 1.6 mb/d of permanent shutdowns. The closures are front-loaded, with 1.1 mb/d set to shut in 2022. Still, the pace of capacity shutdowns is slowing somewhat, compared to 1.8 mb/d in 2021. Over 2022 and 2023, net capacity growth is slightly less than in 2019, but is among the fastest rates for net additions observed over the last two decades.

IEA. All rights reserved.

East of Suez delivers 70% of global net additions in 2022-23, led by major projects in the Middle East and China. After four years of capacity decline, the Atlantic Basin will finally see net growth, thanks to African and North American projects.



When looking at a five-year period of 2019-23, the role of East of Suez is even more prominent – it delivers all the growth globally, offsetting the net 0.7 mb/d decline in the Atlantic Basin. China alone accounts for almost 70% of global net additions in 2019-2023, even as the rate of the capacity additions in the country slows in 2022-23. Excluding China, global capacity additions during 2019-2023 amount to just 1 mb/d.

Refinery Capacity Net Additions (kb/d)					
	2021	2022	2023	2022-23 total	2019-23 total
Atlantic Basin	**-1.00**	**-0.24**	**1.02**	**0.78**	**-0.70**
North America	-0.60	-0.25	0.38	0.13	-0.94
Europe	-0.35	-	-	-	-0.43
Africa	-0.10	-0.05	0.62	0.57	0.54
Other	0.05	0.06	0.02	0.08	0.13
East of Suez	**0.09**	**1.25**	**0.57**	**1.82**	**4.17**
Middle East	0.01	0.71	0.30	1.01	1.64
OECD Asia	-0.22	-0.25	-0.12	-0.37	-0.66
China	0.41	0.57	0.10	0.67	2.37
India	0.04	0.19	0.16	0.35	0.44
Other Asia	-0.15	0.03	0.13	0.16	0.38
Total global	**-0.91**	**1.01**	**1.59**	**2.60**	**3.46**
Global net of China	-1.32	0.44	1.49	1.93	1.09

Among additions, 2.8 mb/d are greenfield sites, while the rest is expansion projects at existing refineries. Five projects, including mega-refineries in Nigeria and Kuwait and large sites in China and Mexico, contribute 2.3 mb/d, which is just over half of total gross additions. Assumed start-up dates for these particularly big projects mostly reflect the initial launch of the first train where the projects consist of several trains. There is also the usual degree of uncertainty around the start-up dates due to operational issues, logistical challenges, and supply chain disruptions, among other various unforeseen circumstances affecting the planned timing of projects. We have not included the recent announcement of Japanese refiner Idemitsu Kosan on shutting the 120 kb/d Yamaguchi refinery by the end of the 2023 fiscal year, as the timeline extends into 2024, due to the Japanese fiscal year ending in March.

IEA. All rights reserved.

Major additions and shutdowns of refinery capacity[1] (kb/d)							
Country	Company	Year	Capacity	Country	Company	Year	Capacity
Africa				***Asia***			
Algeria	Sonatrach	2022	60	China	PetroChina	2022	400
Egypt	MIDOR	2022	60	China	Shenghong	2022	320
Nigeria	Dangote Oil Refining Company	2023	650	China	Sinopec	2023	100
South Africa	Natref	2023	-108	China	Yongxin	2022	-60
South Africa	Sapref	2022	-172	China	Hengyuan	2022	-70
Middle East				India	HPCL	2022	150
Iraq	INOC-SOR	2023	70	India	Indian Oil	2023	100
Kuwait	Kuwait National Petroleum Co.	2022	615	India	Indian Oil	2023	60
Oman	Oman Refinery Co.	2023	230	Japan	ENEOS	2022	-120
UAE	Emirates National Oil Co.	2022	65	Japan	ENEOS	2023	-122
North America				New Zealand	NZR	2022	-129
Mexico	Petroleos Mexicanos	2023	340	Thailand	Thai Oil	2023	126
US	ExxonMobil	2023	250				
US	Meridian Resources	2023	50				
US	ConocoPhillips	2022	-247				
US	LyondellBasell	2023	-264				

[1]Projects with capacity greater than 50 kb/d

Product cracks and refinery margins

In May, crude oil prices resumed their upward trend and regained around $6-9/bbl on average m-o-m. Middle distillate cracks were very volatile, but last month's most extreme performance came from light distillates, with a dramatic divergence between the two main products. As diesel cracks paused for a breather, gasoline surged to new highs. Intense competition for the finite pool of molecules suitable to making jet, diesel and gasoline (either directly or via conversion units) is pushing cracks of these products to align at higher levels. Fuel oil cracks started pricing at more conventional levels relative to crude oil prices.

From May through August, global gasoline demand is expected to seasonally increase by 800 kb/d. The kick-off of summer driving season in the US and Europe was marked by new records in gasoline cracks. In Europe, they breached $50/bbl at the end of the month, and in the US $60/bbl. In both regions, gasoline cracks surpassed diesel in the second half of the month. The US government announced plans to issue a waiver on the summertime ban of the E15 gasoline blend, where ethanol content is 15%, compared to the usual 10%, in a bid to increase supply and cap prices. E15 has a higher level of volatile organic compounds that contribute to smog formation in warmer weather, but may offer additional supplies at lower marginal cost. If all of the US gasoline supply were to be sold as an E15 blend, it would "save" some 300-400 kb/d of refinery gasoline output, assuming the equivalent volumes of ethanol are available. However, in practice, few fuel stations have the necessary infrastructure to handle this blend during the summer peak demand season.

IEA. All rights reserved.

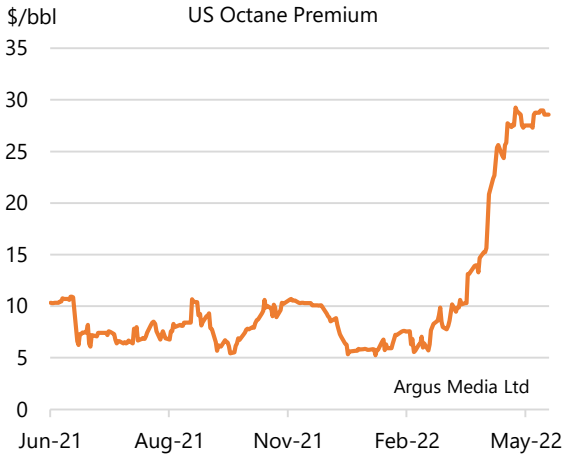
Product Prices and Differentials

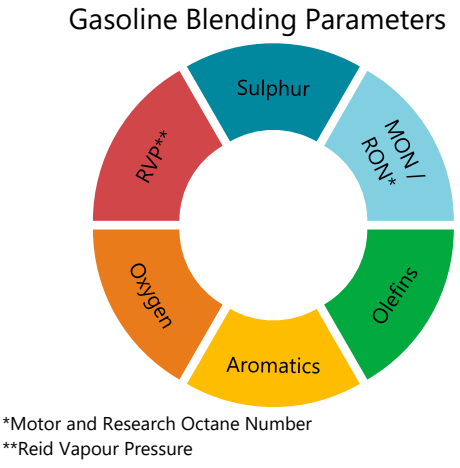
(monthly and weekly averages, $/bbl)

	Prices			Differentials				Week Starting				
	Mar	Apr	May	Mar	Apr	May	Apr-May chg	09-May	16-May	23-May	30-May	06-Jun
Northwest Europe				to North Sea Dated								
Gasoline	127.07	125.34	148.24	8.25	21.26	35.33	14.07	34.72	36.20	38.20	53.40	45.64
Diesel	156.04	151.19	151.68	37.22	47.10	38.76	-8.34	41.22	31.76	34.58	46.31	54.99
Jet/Kero	151.59	154.92	161.88	32.77	50.84	48.96	-1.88	55.56	39.67	41.33	50.17	55.75
Naphtha	113.76	101.80	99.84	-5.07	-2.29	-13.08	-10.79	-6.45	-12.09	-20.39	-28.87	-33.60
HSFO	96.49	90.34	96.80	-22.34	-13.74	-16.12	-2.38	-14.79	-15.22	-17.98	-26.18	-32.55
0.5% Fuel Oil	127.45	120.58	121.31	8.63	16.50	8.39	-8.11	8.70	9.32	6.46	12.36	14.76
US Gulf Coast				to WTI Houston								
Gasoline	134.41	133.18	157.34	24.03	30.14	46.55	16.41	52.16	45.51	44.69	56.24	57.70
Diesel	151.23	160.75	163.46	40.86	57.71	52.67	-5.04	58.22	39.95	41.67	55.37	61.32
Jet/Kero	145.40	157.08	161.46	35.02	54.04	50.66	-3.37	60.89	36.61	37.34	46.80	51.96
Naphtha	112.28	102.12	101.48	1.90	-0.92	-9.31	-8.40	-5.07	-13.87	-12.94	-3.21	-6.11
HSFO	93.48	89.46	94.62	-16.89	-13.58	-16.18	-2.59	-16.84	-17.05	-15.92	-19.23	-22.89
0.5% Fuel Oil	133.98	127.07	131.87	23.60	24.02	21.07	-2.95	20.56	20.81	21.85	23.51	24.90
Singapore				to Dubai								
Gasoline	127.53	123.69	140.99	16.19	19.95	32.05	12.10	29.75	37.25	31.02	33.26	33.31
Diesel	142.33	149.04	153.41	30.99	45.30	44.47	-0.82	47.78	37.08	39.20	49.63	58.55
Jet/Kero	133.98	133.86	142.90	22.65	30.12	33.97	3.85	36.87	26.75	31.29	38.11	49.15
Naphtha	111.66	97.41	95.76	0.32	-6.33	-13.17	-6.83	-8.15	-11.83	-16.18	-23.30	-29.52
HSFO	98.89	103.92	98.44	-12.44	0.17	-10.50	-10.67	-9.28	-11.87	-12.41	-19.66	-24.62
0.5% Fuel Oil	134.04	124.83	136.42	22.71	21.09	27.49	6.40	21.17	27.54	31.83	40.19	42.48

Copyright @ 2022 Argus Media Limited - All rights Reserved.

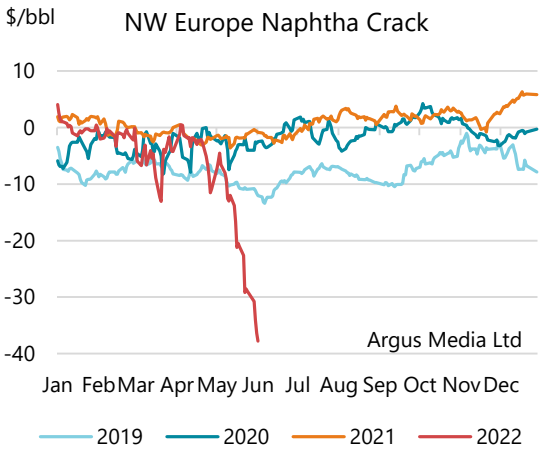
Gasoline is one of few products where Russia does not play a significant role in terms of supply to global markets. But it is also the most complex transport fuel, with significant seasonal and geographical differences in specifications, requiring blending of various components while optimising across several parameters. Shortages or tightness in any of the blendstocks may drive the product margin higher. Currently, it is the shortage of high-octane components. In the US, octane premiums (differential between premium-grade and regular gasoline) have reached record high levels.

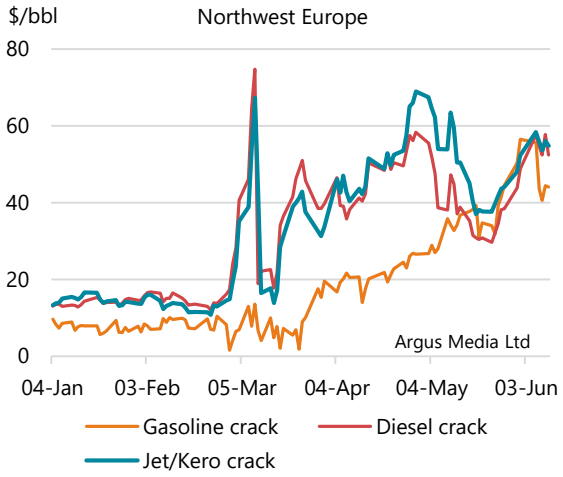




In the Atlantic Basin, and principally in Europe, most capacity closures over the last decade were refineries geared to produce gasoline. This took down a proportionately higher share of units involved in gasoline production, particularly reformers that yield high-octane reformate. In turn, naphtha cracks have plunged to record lows on a combination of cyclical and structural factors, including the petrochemical capacity overhang, lower plastics demand from constrained manufacturing sectors in Asia and high crude oil prices.

IEA. All rights reserved.



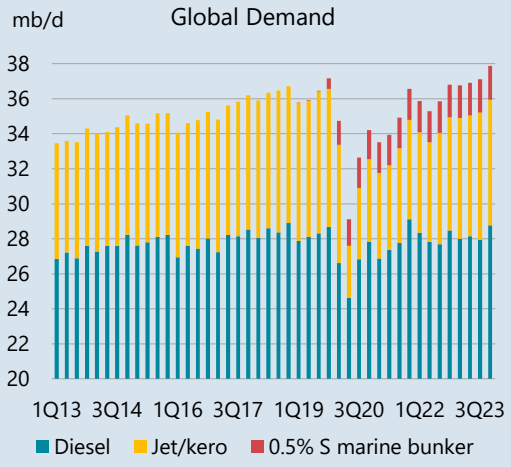


Diesel cracks in May were down $8/bbl on average in Europe and $5/bbl in the US, but held flat in Singapore. Despite the full EU ban on Russian product imports not coming into full effect until early 2023, undersupply concerns remain as the market is increasingly reluctant to trade Russian-origin product. Pricing agency *Platts* started excluding Russian cargoes from its benchmark Northwest Europe diesel assessment on 1 June, which now likely incorporates the premium previously paid for non-Russian origin products. European jet cracks surged above diesel, ending up with a $10/bbl average monthly premium, reflecting the refiner's dilemma of jet versus diesel yield maximisation on one hand and booming air travel demand on the other (see *Few signs of tight diesel and kerosene markets easing*).

Box 6. Few signs of tight diesel and kerosene markets easing

With the start of summer, gasoline prices and cracks are breaking new records, but middle distillate markets continue to experience unprecedented shortages and prices. Northwest Europe diesel cracks shot up to $70/bbl on the March close of gasoil contracts in a knee-jerk reaction to possible sanctions on Russian imports. The cracks have fallen since then, trading in a wide range of $30-60/bbl, similar to the peaks during the 2007-08 diesel supply crunch. With a surge in air travel, jet kerosene cracks spiked to record levels in May. There is little hope that the undersupply will ease in the near future given strong demand growth and constrained refinery output.

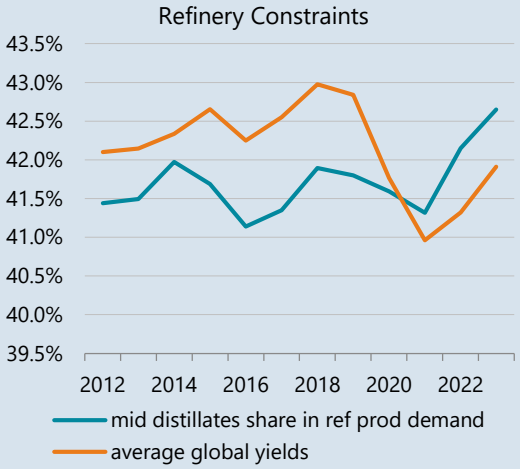
Global diesel and jet/kerosene demand combined peaked in 4Q18 at 36.7 mb/d and is not expected to reach that level again before end-2023. However, diesel demand, taken on its own, has seen a particularly strong post-Covid recovery, reaching an all-time high in 4Q21 at 29 mb/d. This was partly driven by the gas-to-oil switch due to a spike in natural gas prices. Total diesel and jet/kerosene demand in 2021 increased by an unprecedented 1.9 mb/d y-o-y, and is set to grow by a further 1.1 mb/d y-o-y in both 2022 and 2023.

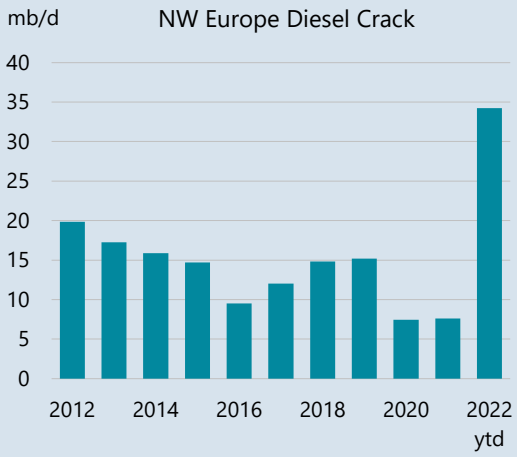


IEA. All rights reserved.

An additional factor for higher middle distillate demand has been the marine bunker sector. In January 2020, the International Maritime Organisation (IMO) introduced a 0.5% sulphur emission cap, down from the 3.5% allowed previously. This was largely expected to have a tightening impact on global diesel markets, as distillate products would be required to blend down the higher sulphur content of fuel oil-based marine bunkers. However, the onset of the Covid-19 pandemic and the general decline in global oil demand in 2020 briefly negated the immediate impact from the sulphur specification change. After the first Covid wave, seaborne trade recovered as oil and dry bulk exports rebounded, boosting demand for bunker fuel, further supported by strong container shipping And as global diesel demand surpassed pre-pandemic levels, the low-sulphur distillate molecule deficit became more apparent. While not entirely a diesel product, the large share of distillate-range molecules in 0.5% sulphur marine fuel sets its price at or near diesel levels.

Middle distillates account for 34% of global oil demand, but their share can be much higher on a regional basis. In Europe, it is 55%, and even higher in individual countries such as France and Spain. Just under half of cars in EU countries run on diesel - even as the share has trended down in recent years - unlike other regions, where road diesel use is almost exclusively for freight and mass transit.



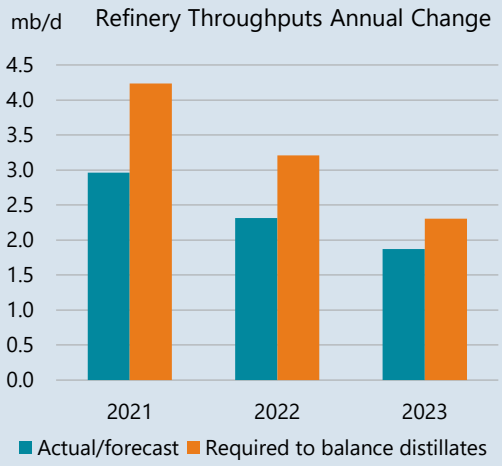


The share of middle distillates is higher still in refined product demand, which is net of products bypassing the refining sector (natural gas liquids, biofuels, etc). It hovered between 41-42% pre-Covid, and increased in 2020 with the IMO specification change. Refinery product outputs vary as a function of equipment and feedstock slate, but it is practically impossible to achieve more than 45-50% yields for middle distillates. This is why Europe eventually became the largest middle distillates importing region.

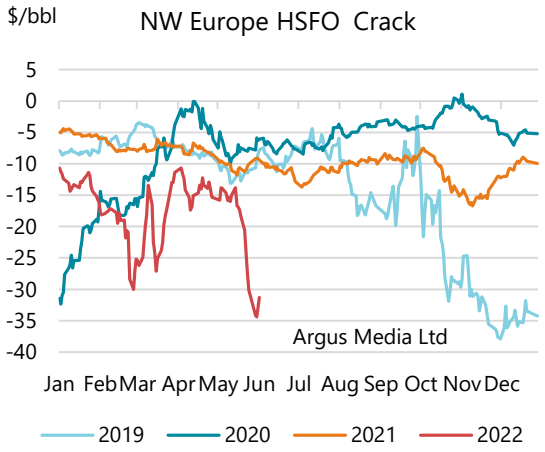
Generally, markets were comfortably supplied between 2015 and 2020, as refiners' ability to produce middle distillates was slightly above demand, which is reflected in relatively low diesel cracks during that period. Middle distillate yields effectively peaked in 2018. In the middle of last decade Chinese refiners started reducing diesel yields and increasing gasoline and petrochemical feedstock output. In regions with relatively high distillate yields, such as India and Europe, processing rates started falling in 2019 on refinery upgrades and low margins. In 2021, for the first time since the diesel crunch in 2007-08, the call on refinery middle distillate yields was higher than what refiners could actually produce.

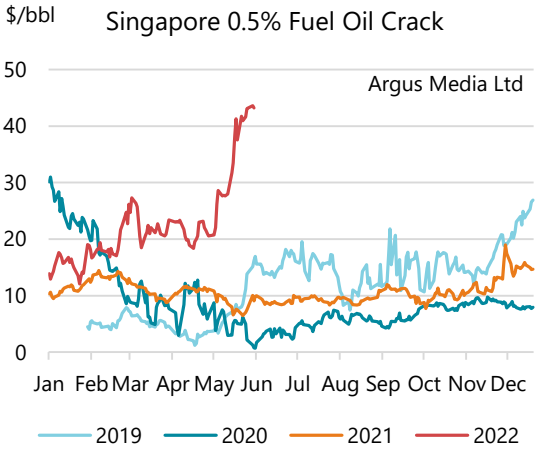
IEA. All rights reserved.

This was compounded by refinery runs underperforming relative to demand growth as margins were squeezed by crude price tensions from steady stock draws. A large gap developed in product supply.



While we expect refiners to run in distillate maximisation mode, average yields are not likely to return to pre-Covid levels by the end of the forecast period. Our refinery throughput outlook, which is constrained by the lack of available operable capacity, including the impact of Russian sanctions and potential delays for new plants coming online, is not sufficient to fully meet middle distillates demand in 2022 or in 2023. Actual market undersupply could be volumetrically less than in 2021, but inventories are at much lower levels, having consistently drawn during the whole of 2021 and this year so far. In the OECD, middle distillates commercial stocks have decreased by 25% since January 2021, falling to their lowest levels since 2004. As such, their cushioning effect is limited now, contributing to the extraordinary levels of middle distillates prices.





High sulphur fuel oil cracks fell to levels more consistent with the current price of crude oil, resulting in a widening of the spread between high and low sulphur fuel oil. The 0.5% sulphur marine bunker fuel cracks moved up with transport fuel cracks.

Markets have entered the fourth month of an exceptionally strong margin environment. Refinery margins in Northwest Europe remained at lofty levels and were largely unchanged m-o-m. All observed margins in the US saw further strong gains on the twin record cracks for gasoline and diesel. In Singapore, higher gasoline and stable diesel cracks contributed to an increase in Dubai cracking margins. European refiners, that still include Urals in their crude slate, continue publishing indicators consistent with our own assessment of Urals margins at around $55/bbl, based on $35/bbl Urals discount to North Sea Dated, as assessed by *Argus*.

IEA. All rights reserved.

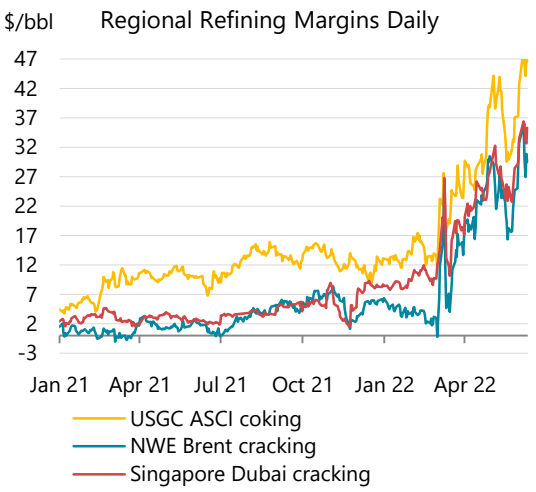
IEA/KBC Global Indicator Refining Margins[1]

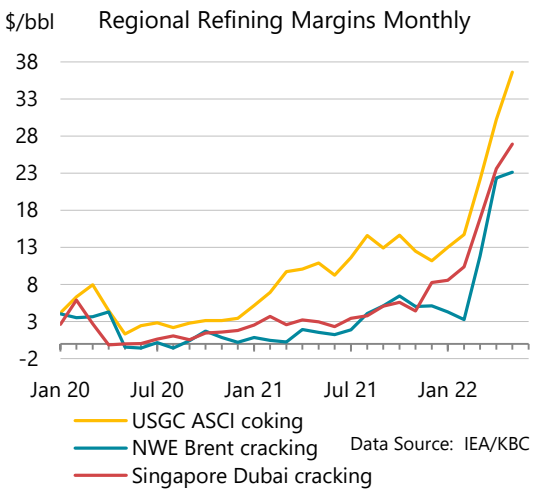
($/bbl)

	Monthly Average					Change	Average for week ending:				
	Feb 22	Mar 22	Apr 22	May 22		May-Apr	13 May	20 May	27 May	03 Jun	10 Jun
NW Europe											
Brent (Cracking)	3.28	11.84	22.33	23.13	↑	0.80	25.25	19.42	21.02	28.75	30.63
Urals (Cracking)	7.04	38.78	55.01	54.64	↓	-0.37	56.79	51.13	52.43	58.39	60.00
Brent (Hydroskimming)	-0.37	6.26	14.30	12.09	↓	-2.21	14.16	9.20	9.68	14.24	14.74
Urals (Hydroskimming)	0.76	29.76	45.32	43.00	↓	-2.32	45.32	40.47	40.57	42.24	41.98
Mediterranean											
Es Sider (Cracking)	4.21	15.62	24.45	22.33	↓	-2.12	26.11	19.30	17.58	23.57	28.31
Urals (Cracking)	5.16	38.66	55.11	52.71	↓	-2.40	56.06	49.70	48.36	53.24	58.02
Es Sider (Hydroskimming)	0.79	9.46	16.61	13.48	↓	-3.13	16.72	11.59	9.26	12.82	14.78
Urals (Hydroskimming)	-2.40	26.15	41.65	38.71	↓	-2.95	41.52	36.94	35.22	35.98	37.23
US Gulf Coast											
Mars (Cracking)	8.11	11.76	16.98	23.15	↑	6.17	26.04	20.01	21.95	25.29	29.13
50/50 HLS/LLS (Coking)	17.29	27.01	36.25	42.86	↑	6.61	48.66	37.22	38.30	45.12	52.22
50/50 Maya/Mars (Coking)	12.33	18.13	25.71	31.55	↑	5.84	37.21	26.72	26.85	33.39	40.12
ASCI (Coking)	14.73	22.13	30.24	36.60	↑	6.36	41.48	31.36	33.24	39.94	46.58
US Midwest											
30/70 WCS/Bakken (Cracking	9.14	16.10	24.20	34.60	↑	10.41	34.37	32.29	36.57	47.66	41.59
Bakken (Cracking)	11.05	20.22	30.39	41.45	↑	11.06	41.84	38.22	42.18	55.98	50.04
WTI (Coking)	11.89	22.74	34.23	45.24	↑	11.01	47.26	40.65	44.97	60.87	56.00
30/70 WCS/Bakken (Coking)	12.22	21.75	31.79	43.65	↑	11.86	43.94	40.25	45.09	59.43	54.12
Singapore											
Dubai (Hydroskimming)	-1.47	2.11	11.86	8.35	↓	-3.50	10.08	5.75	5.88	5.35	5.79
Tapis (Hydroskimming)	-0.76	2.82	15.45	13.60	↓	-1.84	16.94	12.42	8.73	13.38	16.32
Dubai (Hydrocracking)	10.35	16.87	23.58	26.89	↑	3.31	27.27	24.21	25.24	30.66	34.67
Tapis (Hydrocracking)	-1.02	3.12	17.80	15.84	↓	-1.96	20.47	14.33	9.71	13.58	16.66

[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.

Sources: IEA, KBC Advanced Technologies (KBC).



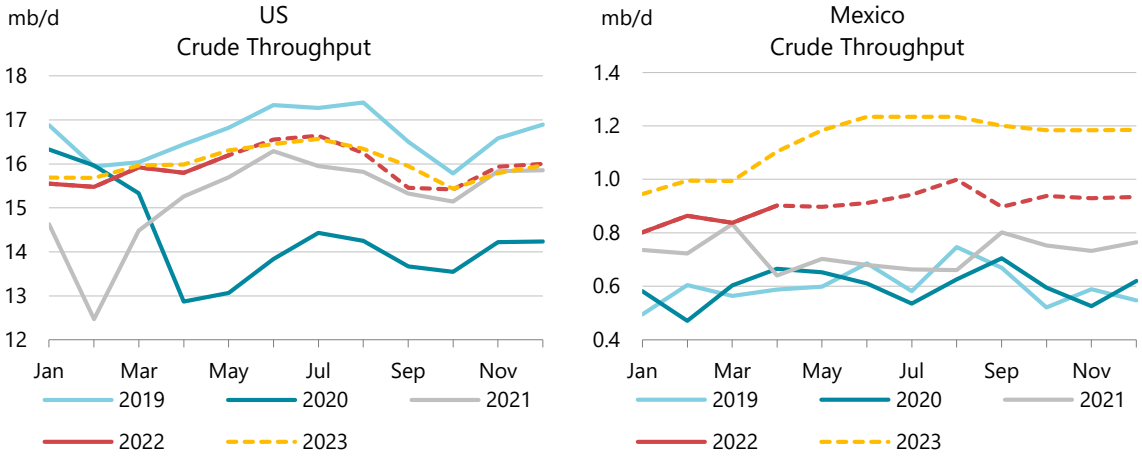


IEA. All rights reserved.

Regional refining developments

US throughputs returned to the seasonal trend in May, gaining 400 kb/d m-o-m to 16.1 mb/d, and up 505 kb/d y-o-y. Utilisation rates hit 92%, their highest since August 2019. Runs are forecast to increase by another 440 kb/d through July, which would require a record-high utilisation rate of 94%. With reports of increased probabilities of a strong hurricane season, we have revised the August-September forecast lower. Equipment failures are also more likely in summer during periods of high capacity utilisation, resulting in refinery outages.

US refinery capacity peaked in 2016 and since then has fallen by 1.2 mb/d. Two more refinery closures are expected in 2022 and 2023, totalling 500 kb/d, but this will be partly offset by the Beaumont refinery's 250 kb/d expansion that is coming online next year and a 50 kb/d plant in North Dakota. Last month, as US Gulf Coast margins hit record highs, LyondellBasel announced the closure in 2023, or earlier, "in case of equipment failure", of its 270 kb/d Houston refinery. Overall, the US will see a net 210 kb/d capacity decrease over 2022-23.



Mexican throughputs increased by 65 kb/d to almost 900 kb/d in April, the highest level in five years. Existing refineries run at only 54% utilisation rates due to the old and inefficient equipment. The government has vowed to start the 340 kb/d Olmeca refinery in 3Q22, but we do not expect a full ramp-up before 3Q23. Mexico exports about 1 mb/d of crude oil and imports 700 kb/d of diesel and gasoline. With current product differentials, its petroleum trade balance in monetary terms is negative, even if its physical balance is positive. The new refinery, which reportedly has cost around $15 bn so far, could offer a payback in as little as four years if current margins persist, assuming no subsidy cost to the plant.

Refinery runs in OECD Europe were up by 390 kb/d m-o-m in April, but fell in May on seasonal maintenance, according to preliminary *Euroilstock* data. The restart of the 220 kb/d Donges refinery in **France** after 17 months of shutdowns was confirmed last month, but another TotalEnergies refinery, the 110 kb/d Feyzin plant, suffered a fire when it was restarting from maintenance.

The EU approved the sixth round of sanctions on Russia, banning imports of the country's crude oil and products after a six-month and eight-month phase-out periods, respectively. Exceptions were made for the three countries on the southern branch of the Druzhba pipeline, collectively taking some 270 kb/d of Russian oil, and for **Bulgaria**'s sole refinery, owned by Russian major

IEA. All rights reserved.

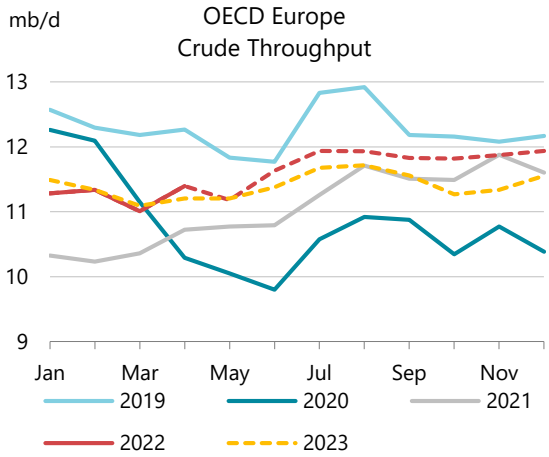
Lukoil. **Croatia** was also allowed to continue importing Russian vacuum gasoil for secondary processing.

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

	Nov 21	Dec 21	Jan 22	Feb 22	Mar 22	Apr 22	Change from Mar 22	Change from Apr 21	Utilisation rate Apr 22	Utilisation rate Apr 21
US[1]	15.73	15.76	15.45	15.38	15.82	15.70	-0.12	0.54	89%	85%
Canada	1.83	1.82	1.80	1.84	1.76	1.78	0.02	0.27	94%	75%
Chile	0.14	0.19	0.19	0.21	0.21	0.19	-0.02	0.01	82%	75%
Mexico	0.72	0.76	0.79	0.85	0.83	0.89	0.06	0.26	54%	76%
OECD Americas[1]	**18.43**	**18.52**	**18.23**	**18.28**	**18.62**	**18.56**	**-0.06**	**1.02**	**87%**	**81%**
France	0.79	0.78	0.80	0.78	0.80	0.82	0.02	0.20	72%	54%
Germany	1.93	1.88	1.71	1.82	1.72	1.90	0.18	0.18	94%	85%
Italy	1.39	1.25	1.13	1.11	1.23	1.34	0.10	0.11	77%	70%
Netherlands	1.05	0.95	0.96	0.90	0.88	0.82	-0.05	-0.22	68%	86%
Spain	1.20	1.23	1.23	1.22	1.17	1.33	0.15	0.23	94%	78%
United Kingdom	1.04	1.03	1.04	1.02	1.05	1.10	0.05	0.20	92%	75%
Other OECD Europe[2]	4.38	4.38	4.30	4.39	4.06	4.00	-0.07	-0.02	78%	83%
OECD Europe	**11.78**	**11.50**	**11.18**	**11.24**	**10.91**	**11.30**	**0.39**	**0.68**	**82%**	**77%**
Japan	2.62	2.93	2.85	2.82	2.72	2.72	-0.01	0.31	79%	70%
South Korea	2.71	2.81	2.91	2.87	2.78	2.80	0.03	0.21	80%	74%
Other Asia Oceania[3]	0.58	0.58	0.58	0.59	0.54	0.51	-0.03	-0.16	79%	92%
OECD Asia Oceania	**5.92**	**6.32**	**6.34**	**6.29**	**6.04**	**6.04**	**-0.01**	**0.36**	**79%**	**74%**
OECD Total	**36.12**	**36.35**	**35.76**	**35.80**	**35.57**	**35.89**	**0.32**	**2.06**	**84%**	**78%**

1 US includes US50, OECD Americas include Chile and US territories
2 Includes Lithuania
3 Includes Israel

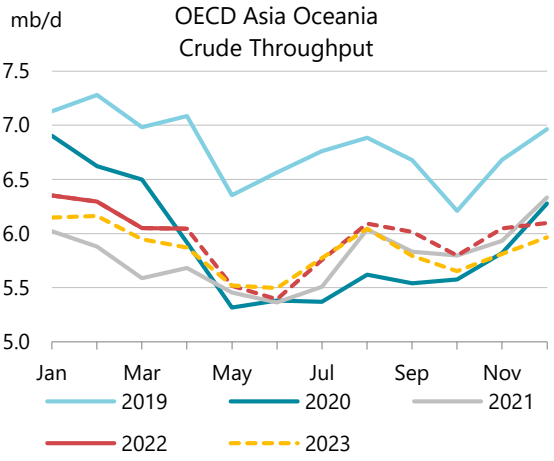
After 630 kb/d of closures in the last two years, no capacity changes are expected in Europe during 2022 and 2023. Eni's 120 kb/d Livorno refinery in **Italy**, slated for a biorefinery conversion, has reportedly restarted crude oil processing. Partial closure at Shell's Rheinland integrated complex, announced to take place before 2025, is not included in our forecast for 2023. At the same time, there is uncertainty around the fate of Russian-operated refineries in Europe, which have not received exemptions from sanctions. Lukoil's ISAB site in Italy and its smaller Ploeisti plant in **Romania,** along with Rosneft's Schwedt in **Germany,** have a combined capacity of around 600 kb/d. It is not clear how these refiners will be able to purchase other crudes after the import ban comes into force. Our outlook for European runs thus remains constrained. Throughputs are expected to fall by 200 kb/d in 2023 after a growth of 540 kb/d this year.



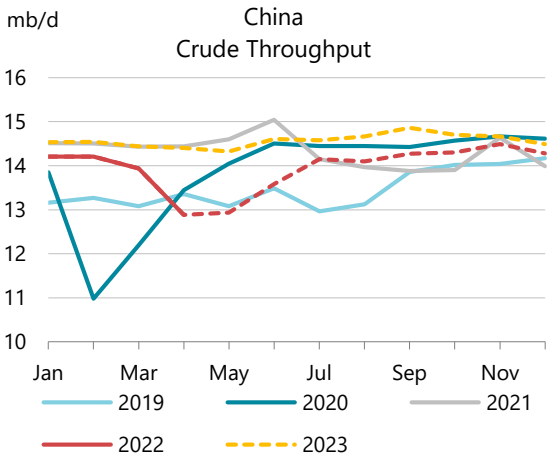
OECD Asia runs were significantly higher than expected in May, with a counter-seasonal increase m-o-m. The 580 kb/d Ulsan refinery in **Korea** suffered a deadly fire in May in a secondary unit, but crude processing was reportedly not affected. **New Zealand**'s 130 kb/d Marsden Point refinery was permanently closed in April. Three

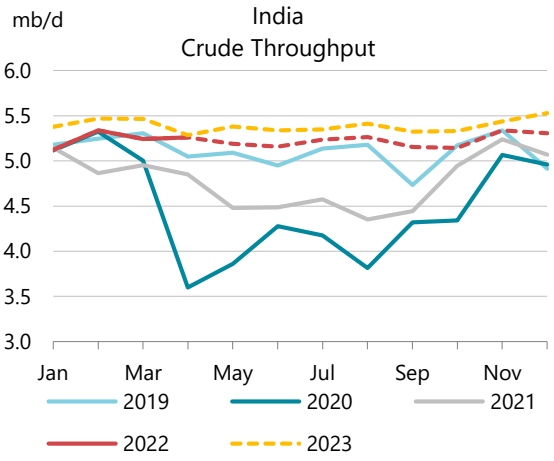
IEA. All rights reserved.

more shutdowns are planned in Japan with combined capacity of 365 kb/d, but we have included only 245 kb/d in our forecast period (See *Global refinery capacity increases gather pace in 2023*). OECD Asia runs are expected to increase by 170 kb/d in 2022 but fall by 110 kb/d in 2023.



Chinese throughputs plunged 1.1 mb/d m-o-m in April to just 12.8 mb/d, and were down 1.6 mb/d y-o-y, on demand losses due to strict lockdowns. We have assumed runs remained flat in May but will increase in 2H22 to above 2021 levels, with 720 kb/d of new capacity expected online this year, although several smaller plants are also expected to shut. However, for the year as a whole, runs will fall by 390 kb/d, posting its first ever significant decline. China's government issued a second batch of product export quotas in May, with cumulative volumes down 55% compared to the first two batches in 2021. In 2023, runs are expected to rebound by 620 kb/d to a new record high as demand recovers and continues to expand. Our forecast assumes that China phases out most of its refined product exports by the end of next year.

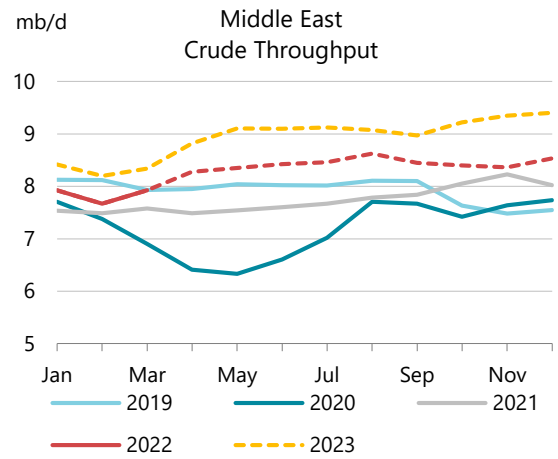


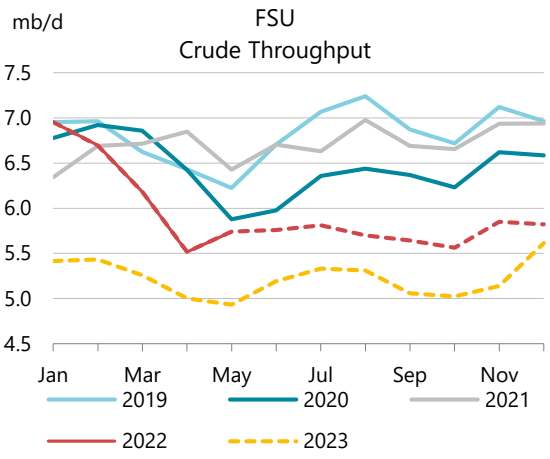


Indian refinery intake in April was slightly up, to 5.3 mb/d, but is set to fall during the monsoon season in the May-June period. A relatively small ramp-up is expected in 2023, with modest additions to capacity. Throughputs are forecast to increase by 450 kb/d this year and by 160 kb/d in 2023, on two expansion projects coming online. Elsewhere in Asia, refining activity is set to increase by 450 kb/d this year on the eventual start-up of the Rapid refinery in **Malaysia** this summer. In 2023, 160 kb/d of capacity additions in **Thailand** and Malaysia will contribute to the 260 kb/d annual growth.

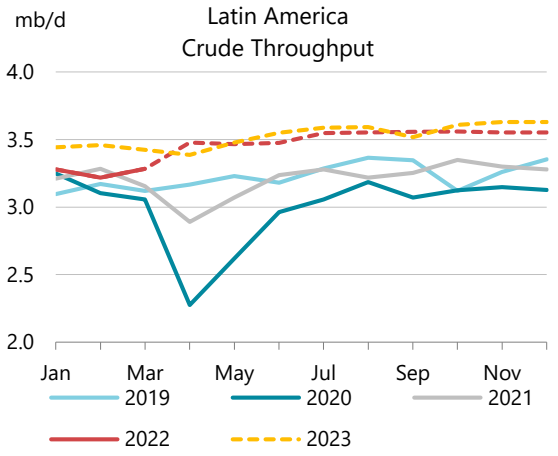
Refinery throughputs in the Middle East were estimated 255 kb/d higher m-o-m in March. Runs will ramp up further through the end of the year with increased utilisation in **Saudi Arabia** and the start-up of **Kuwait**'s Al-Zour plant. In 2022, annual growth is forecast at 550 kb/d. In 2023, as more capacity comes online in **Iraq** and **Oman**, and Al-Zour reaches full capacity, throughputs are expected to increase by another 645 kb/d.

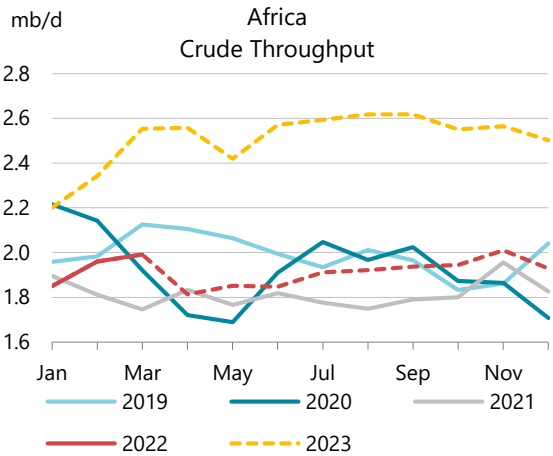
IEA. All rights reserved.





Russian refinery runs in May were reportedly up by 70 kb/d to 4.9 mb/d. We have revised up our throughput forecast for Russia to reflect slower than expected declines in both domestic demand and product exports (see *Russian exports down, revenues up in May*). In 2022, throughputs are projected to fall by 590 kb/d y-o-y. In 2023, when European sanctions are fully in place, further cuts in Russian product exports are assumed, resulting in a 690 kb/d y-o-y drop in runs.





In April, **Brazil** refinery intake surged to its highest level in seven years, and **Argentina** reported its peak runs since mid-2017. The continent is expected to see a 250 kb/d growth this year on improved utilisation rates in these two countries and a modest capacity expansion in **Peru**. In 2023, growth will slow to 65 kb/d with only two small expansion projects coming online in **Argentina**.

In Africa, throughput growth this year is driven by new projects in **Algeria** and **Egypt**, at 60 kb/d each. Next year, Nigeria's giant Lekki refinery is expected to come online. This project, combined with two small modular refineries in Nigeria and the first phase of the Lobito project in Angola, will result in growth of around 600 kb/d, with the continent's runs close to historical highs of 2001 at 2.5 mb/d.

IEA. All rights reserved.

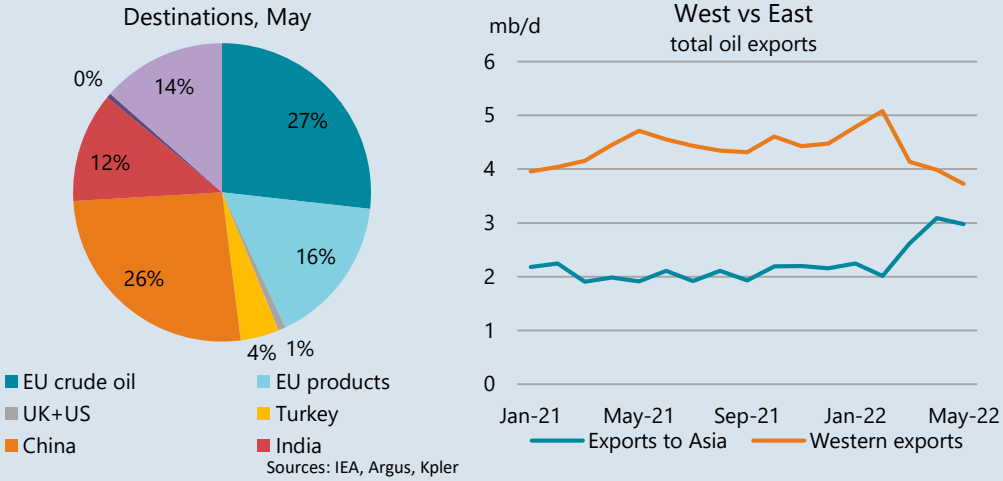
Box 7. Russian export volumes down, revenues up in May

Russian oil exports fell slightly in May as crude oil flows held steady from April, at 5.4 mb/d, while product shipments dropped another 155 kb/d m-o-m to 2.4 mb/d. Exports to EU countries were down by 170 kb/d m-o-m, to 3.3 mb/d, on lower product offtake. This was offset by increased shipments to China that rose by 240 kb/d and reached 2 mb/d for the first time. April export estimates were revised down by 150 kb/d to 7.9 mb/d, mostly due to lower actual deliveries to FSU countries. With higher crude oil and product prices globally, Russian oil export revenues are estimated to have increased by $1.7 bn in May to about $20 bn.

Russian Oil Exports (mb/d)						
	2021 avg	Jan-22	Feb-22	Mar-22	Apr-22	May-22
EU crude oil	2.1	2.4	2.4	2.1	2.1	2.1
EU products	1.3	1.5	1.5	1.3	1.4	1.3
UK+US	0.7	0.6	0.9	0.2	0.1	0.1
Turkey	0.2	0.2	0.2	0.4	0.4	0.3
China	1.6	1.7	1.6	1.8	1.8	2.0
India	0.1	0.1	0.1	0.5	1.0	0.9
OECD Asia	0.4	0.4	0.3	0.3	0.3	0.0
Other/unknown	1.1	1.1	0.9	1.0	0.9	1.0
Total exports	**7.5**	**8.1**	**7.9**	**7.7**	**7.9**	**7.7**
Memo						
Pipeline to EU	*0.72*	*0.76*	*0.84*	*0.82*	*0.86*	*0.84*
Pipeline to China	*0.72*	*0.83*	*0.78*	*0.76*	*0.82*	*0.83*
Estimated export revenues, $bn	*15*	*20*	*20*	*22*	*18*	*20*

Sources: IEA, Argus, Kpler

Note: Recent months volumes are estimates and subjec to change

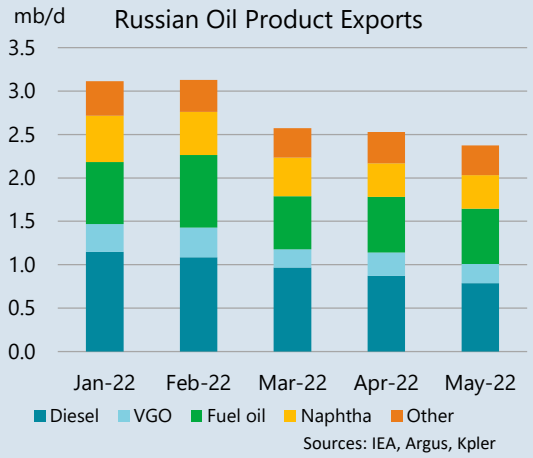


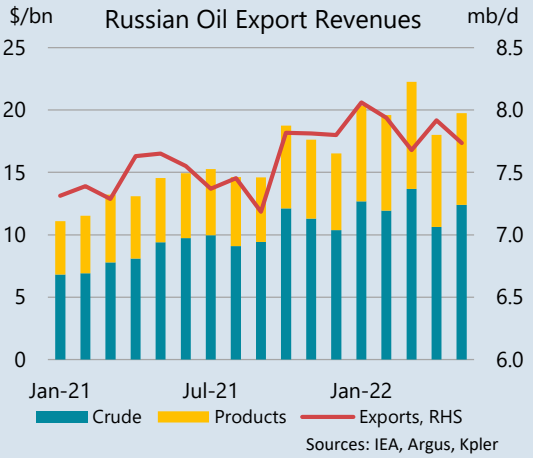
Compared to pre-war levels (January-February), Russian oil exports were down by 265 kb/d, which is a net result of a 485 kb/d increase in crude oil exports and 750 kb/d decrease in product exports. The EU remained the most important destination in May. At 3.3 mb/d, shipments were nevertheless 585 kb/d lower than the January-February average, and the region's share dropped 6 percentage points to 43%. China has been the largest individual importer of Russian oil since 2016, with its share

IEA. All rights reserved.

reaching a peak 26% for the first time in May. In recent months, India has overtaken Germany as the second-largest importer, with volumes in April and May at around 950 kb/d. Overall, eastward exports have surged by 1 mb/d from the baseline of about 2 mb/d, but this includes a 1.3 mb/d increase to China and India combined, and a 380 kb/d decline in shipments to OECD Asia. Exports to the West were down 650 kb/d at 3.7 mb/d from 2021 average levels, and 1.4 mb/d from the peak in February.

Russian crude oil exports remain at elevated levels as domestic refining activity is constrained by lower product shipments. China and India, which have both sharply increased crude oil purchases from Russia, are net product exporters and have no need to lift Russian products. Exports of diesel and vacuum gasoil (VGO) fell by 135 kb/d m-o-m, and were down 440 kb/d compared to January-February levels. Exports of fuel oil and naphtha were flat in May, but remain lower than pre-war levels. Russia exports relatively small volumes of gasoline, jet fuel and other products.





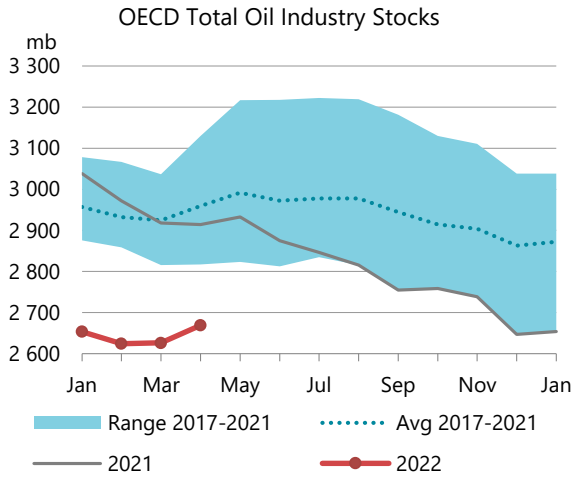
IEA. All rights reserved.

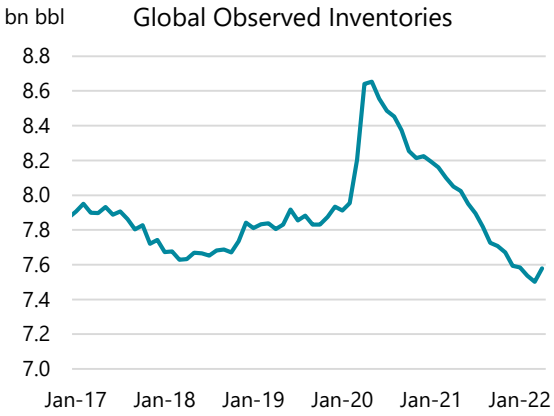
Stocks

Overview

Following nearly two years of declines, amounting to 1.15 billion barrels in total, observed global oil inventories built by 77 mb in April. The reallocation of trade resulting from Russia's invasion of Ukraine boosted oil on the water while a steep drop in China's oil demand and refining activity led to a rise in the country's inventories. OECD industry stocks also rose by 42.5 mb (1.42 mb/d), helped by government stock releases of nearly 1 mb/d during the month.

At 2 669 mb, OECD industry stocks were nevertheless 290.3 mb below the 2017-2021 average. Middle distillates and crude oil accounted for 33% and 46% of the deficit versus the average, respectively. In terms of forward demand, end-April industry stocks covered 57.8 days, an increase of 0.6 days m-o-m but 7.6 days below the five-year average.





Sources: IEA, Kayrros, Kpler, S&P Global, Enterprise SIngapore

OECD industry crude inventories rose in April by 17.4 mb to 1 026 mb, 134.1 mb below the five-year average. Stocks in the OECD Americas increased by 5.7 mb, thanks to the US Strategic Petroleum Reserve (SPR) release of 16.6 mb. European industry crude stocks built counter-seasonally by 3.5 mb, while in the Asia Oceania region they increased by 8.2 mb.

At the same time, OECD oil product commercial inventories built by 21.8 mb, to 1 353 mb, still 133.6 mb lower than the five-year average. Other refined product stocks led the way, rising 22.7 mb, with a notable build in the OECD Americas (+18.8 mb). Middle distillate commercial inventories increased by 1.3 mb in April, as European countries released 5.5 mb from government stocks. Gasoline stocks fell by 5.4 mb, led by a larger drawdown than the seasonal trend in the Americas (-9.2 mb). Fuel oil stocks built counter-seasonally by 3.2 mb.

Preliminary data for May show overall stocks building by 6 mb across the OECD regions. Product stocks increased by 10.8 mb while crude stocks drew by 5.3 mb. According to *Euroilstock* data, crude inventories in Europe declined by 4.8 mb, while in the US and Japan they were mostly unchanged. EIA data show a sizeable seasonal build in other product inventories (+19.1 mb) and lower gasoline stocks (-9.5 mb) in the US. These product stocks were only marginally changed in

IEA. All rights reserved.

Europe and Japan. OECD total middle distillate inventories were roughly unchanged overall, as a draw in European (-8.3 mb) was partially offset by builds in the US (+6.5 mb) and Japan (+1.4 mb).

Crude oil inventory data from *Kayrros* show an outsized crude oil stock build of 54.9 mb in May in non-OECD countries, of which a 48.1 mb increase in China. By contrast, early data from *Kpler* show oil on water fell by 53.9 mb, with crude oil down by 64 mb while oil products rose 10.1 mb.

Preliminary OECD Industry Stock Change in April 2022 and First Quarter 2022

	April 2022 (preliminary) (million barrels)				April 2022 (preliminary) (million barrels per day)				First Quarter 2022 (million barrels per day)			
	Am	Europe	As.Ocean	Total	Am	Europe	As.Ocean	Total	Am	Europe	As.Ocean	Total
Crude Oil	**5.7**	**3.5**	**8.2**	**17.4**	**0.2**	**0.1**	**0.3**	**0.6**	**-0.2**	**0.3**	**0.1**	**0.2**
Gasoline	-9.2	3.0	0.8	-5.4	-0.3	0.1	0.0	-0.2	0.1	0.1	0.0	0.1
Middle Distillates	-8.3	7.0	2.6	1.3	-0.3	0.2	0.1	0.0	-0.2	0.0	-0.1	-0.3
Residual Fuel Oil	-0.6	2.7	1.1	3.2	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0
Other Products	18.8	2.7	1.2	22.7	0.6	0.1	0.0	0.8	-0.4	0.0	0.0	-0.4
Total Products	**0.7**	**15.4**	**5.6**	**21.8**	**0.0**	**0.5**	**0.2**	**0.7**	**-0.5**	**0.0**	**0.0**	**-0.5**
Other Oils[1]	-1.1	-1.8	6.2	3.3	0.0	-0.1	0.2	0.1	0.1	0.1	-0.1	0.1
Total Oil	**5.3**	**17.0**	**20.1**	**42.5**	**0.2**	**0.6**	**0.7**	**1.4**	**-0.6**	**0.4**	**-0.1**	**-0.2**

[1] Other oils includes NGLs, feedstocks and other hydrocarbons.

OECD industry inventories for February and March have been revised up by 1.9 mb and 1 mb, respectively, since last month's *Report* with the receipt of more complete information. Crude oil stocks in the Americas were adjusted up by 13 mb for March, but were offset by lower petroleum product holdings. European stocks were raised by 4.9 mb in total in March, with changes to other products of +3 mb and crude oil inventories of +2.1 mb.

OECD government inventories were also revised up by 2.6 mb in March. Crude stocks in the US were adjusted 1.2 mb higher. Revisions to data for European countries resulted in increases for crude (+0.8 mb) and middle distillates (+0.7 mb) stocks.

OECD Industry Stock Revisions versus May 2022 Oil Market Report

(million barrels)

	Americas		Europe		Asia Oceania		OECD	
	Feb-22	Mar-22	Feb-22	Mar-22	Feb-22	Mar-22	Feb-22	Mar-22
Crude Oil	**3.7**	**13.0**	**2.7**	**2.1**	**0.0**	**1.2**	**6.4**	**16.2**
Gasoline	0.0	-4.8	-1.3	0.6	0.0	-1.3	-1.3	-5.5
Middle Distillates	0.0	-6.5	-0.4	-1.5	0.0	-3.1	-0.4	-11.1
Residual Fuel Oil	0.0	-2.0	0.3	1.5	0.0	-0.2	0.3	-0.8
Other Products	0.0	1.5	-0.3	3.0	0.0	1.6	-0.3	6.1
Total Products	**0.0**	**-11.8**	**-1.7**	**3.6**	**0.0**	**-3.0**	**-1.6**	**-11.2**
Other Oils[1]	-2.9	-3.1	0.1	-0.8	0.0	-0.1	-2.8	-4.0
Total Oil	**0.8**	**-2.0**	**1.1**	**4.9**	**0.0**	**-1.9**	**1.9**	**1.0**

[1] Other oils includes NGLs, feedstocks and other hydrocarbons.

Implied Balance

Global reported and observed stocks rose by a sharp 2.58 mb/d in April, its largest increase since May 2020. OECD total inventories built by 480 kb/d. Commercial crude oil, NGLs and feedstocks increased by 690 kb/d, marking this the third straight month of gains. Product stocks were also up by 730 kb/d compared with a 1.13 mb/d fall in the previous month. By contrast, OECD government stocks fell by 940 kb/d, mostly in crude oil stocks. Non-OECD crude oil inventories increased by 660 kb/d, according to *Kayrros* satellite data. The largest stock build was observed in China (+700 kb/d), where crude imports rose by 4% m-o-m while refinery throughputs fell 9%

IEA. All rights reserved.

as demand slumped due to Covid-lockdowns. Product stocks in Singapore and Fujairah drew marginally by 60 kb/d. In addition, a substantial build of 1.49 mb/d was observed in oil on the water, according to shipping data from *Kpler*.

Global Oil Balance and Observed Stock Changes (mb/d)

	2020	1Q21	2Q21	3Q21	4Q21	2021	1Q22	Apr-22	May-22
Global oil balance	**1.90**	-2.03	-2.25	-2.42	-2.77	**-2.37**	-0.63	0.84	1.05
Observed stock changes									
OECD industry stocks	**0.41**	-1.34	-0.48	-1.30	-1.17	**-1.07**	-0.23	1.42	0.19
OECD government stocks	**0.02**	0.05	-0.24	-0.12	-0.31	**-0.16**	-0.46	-0.94	
Non-OECD crude stocks*	**0.34**	0.40	-0.39	-0.58	-1.00	**-0.40**	0.21	0.66	1.88
Selected non-OECD product stocks**	**0.12**	0.15	-0.08	-0.13	-0.03	**-0.02**	0.06	-0.06	0.19
Oil on water	**0.01**	-0.48	-0.54	-0.28	1.07	**-0.05**	-0.57	1.49	
Total observed stock changes	**0.90**	-1.22	-1.73	-2.41	-1.44	**-1.70**	-0.99	2.58	
Unaccounted for balance	**1.00**	-0.81	-0.52	-0.02	-1.33	**-0.67**	0.36	-1.74	

*Crude stock change data from *Kayrros*. Data are available for selected countries and include only, and not all, above-ground storage.

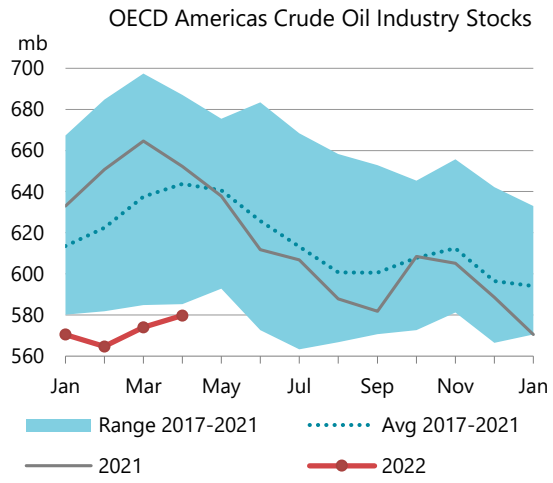
***JODI* data adjusted for monthly gaps in reporting, latest data for March 2021 plus Fujairah and Singapore inventories.

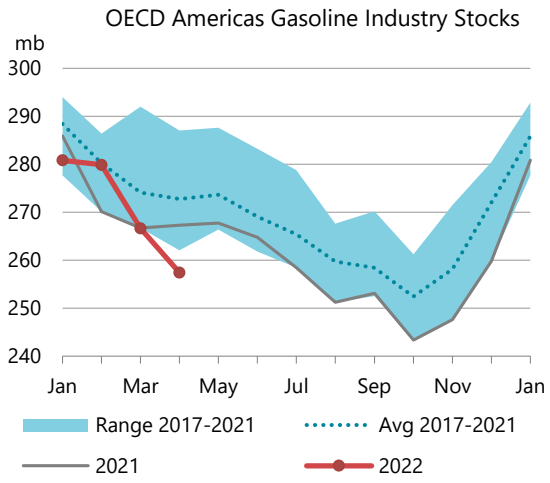
Sources: IEA, EIA, PAJ, *Euroilstock*, *Kayrros*, *JODI*, *Kpler*, *FEDCom/S&P Global Platts*, *Enterprise Singapore*.

Recent OECD industry stock changes

OECD Americas

Total commercial oil stocks in the OECD Americas increased in April for the first time since October 2021. At 1 421 mb, inventories were 5.3 mb higher than a month earlier but nevertheless stood 142.5 mb below the five-year average. Crude oil stocks rose by 5.7 mb, to 580 mb, as 16.6 mb crude oil was released from the US SPR. Total oil stocks, including industry and government, were down by 11.3 mb, as high demand abroad boosted US crude and oil products exports to an all-time monthly high of 9.7 mb/d.





Total industry product stocks rose by a mere 0.7 mb, despite a steep increase of 18.8 mb in other oil product stocks. Motor gasoline stocks fell by 9.2 mb to 257.4 mb, more than six times the average 2017-2021 draw. Middle distillates inventories slumped by 8.3 mb to 170.9 mb, 41.2 mb or 19% below the five-year average. Fuel oil was slightly down by 0.6 mb.

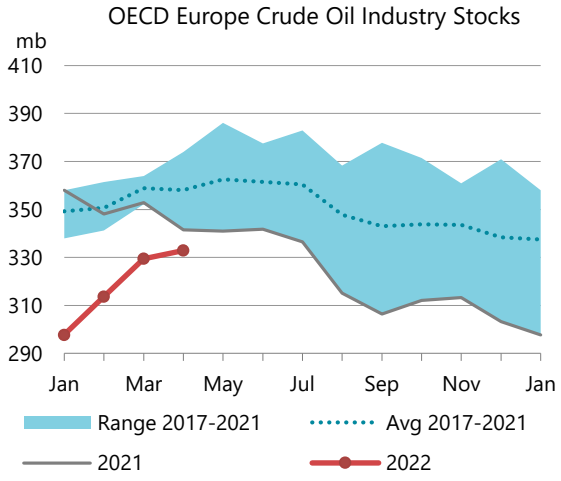
IEA. All rights reserved.

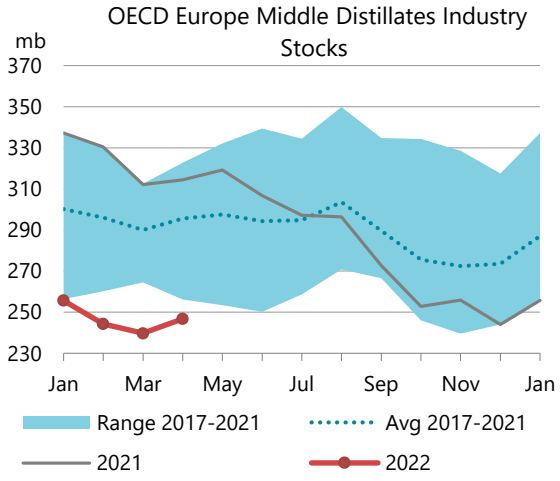
Weekly data from the US EIA for May show that, despite the release of 26.5 mb of SPR stocks, commercial crude oil inventories drew by 1 mb as refinery throughput increased by 400 kb/d and crude exports rose by 100 kb/d m-o-m to 3.5 mb/d. Total product stocks increased less than usual by 15.4 mb, led by a 19.1 mb build in other refined products. Gasoline stocks dropped at a similar rate to April, by 9.5 mb. The drawdown was led by high gasoline exports of 940 kb/d. Middle distillates rose, for the first time since July 2021, by 6.5 mb. Residual fuel oil fell marginally, by 0.8 mb.

OECD Europe

Industry stocks in OECD Europe increased by 17 mb in April, to 912.7 mb. They were 97.3 mb below the five-year average at end-month. The build was supported by the release of 8.7 mb of government stocks. Crude oil inventories rose by 3.5 mb to 332.9 mb, while they normally decline seasonally by 0.7 mb. The stock-build can be partially explained by high crude imports into the region (+380 kb/d m-o-m), according to *Kpler,* in addition to government crude stock releases (2.7 mb).

Products stocks rose by 15.4 mb to 504.9 mb, 64.3 mb below the five-year average, while 6 mb of refined products were released from government stocks. Middle distillates accounted for about half of the increase (+7 mb), but, without the SPR release (5.5 mb), the industry stock build was less than the five-year average (+5.6 mb). Inventories for gasoline (+3 mb), fuel oil (+2.7 mb) and other products (+2.7 mb) in April showed a counter-seasonal increase due to a higher refinery intake (+390 kb/d m-o-m).





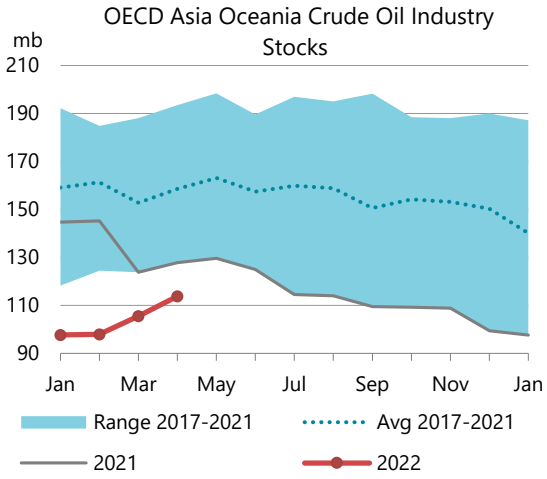
Preliminary data from *Euroilstock* show total oil inventories drew 12.6 mb in May. Crude stocks fell by 4.8 mb, led by a decline in France (-6.6 mb). Middle distillates stocks showed a notable decrease (-8.3 mb) after a recovery (+7 mb) in April. Gasoline inventories also fell by 1.3 mb, whereas fuel oil and naphtha rose by 1.4 mb and 0.3 mb, respectively.

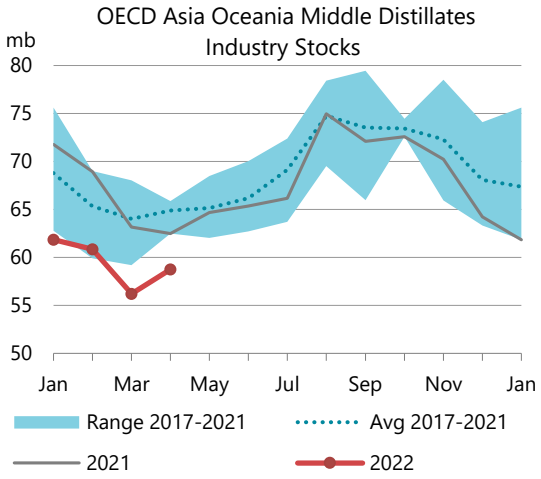
OECD Asia Oceania

OECD Asia Oceania industry stocks increased by 20.1 mb in April, double the seasonal trends. At 335.9 mb, they were still 50.5 mb below the five-year average. Crude oil rose by 8.2 mb, and NGLs and feedstocks increased by 6.2 mb. An estimated 2.8 mb of government crude stocks were released.

IEA. All rights reserved.

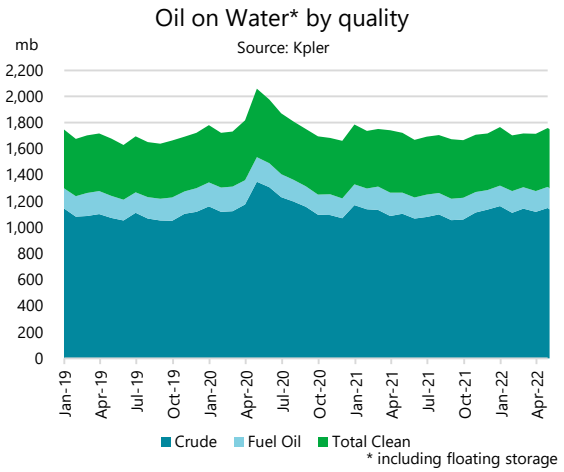
Product stocks also increased by 5.6 mb, and were 2.8 mb less than the five-year average. Middle distillates stocks built by 2.6 mb, (versus a typical 0.9 mb gain), thanks to a counter-seasonal increase in Korea. Gasoline and fuel oil also rose by 0.8 mb and 1.1 mb, respectively, in line with the seasonal pattern. Other product stocks showed limited growth overall (1.2 mb) while they typically decline by 0.4 mb in April.

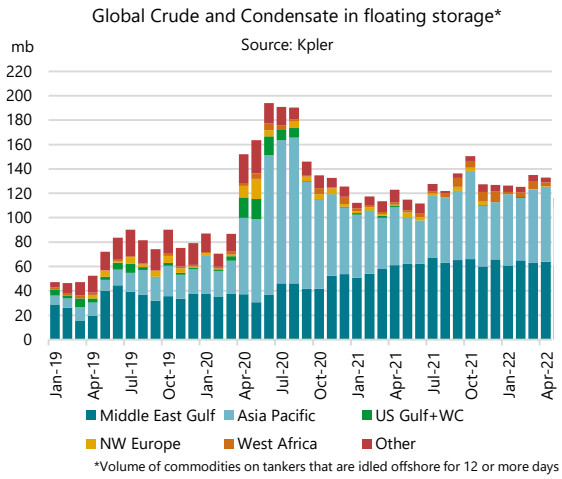




Preliminary data for May from the Petroleum Association of Japan show crude oil inventories increasing by 0.5 mb m-o-m, less than the average 3 mb build for the month. Total product stocks built by 3.2 mb, led by middle distillates (+1.4 mb) and residual fuel oil (+1.2 mb). Gasoline inventories fell just 0.3 mb, while other products increased by 0.9 mb. Japanese refinery runs in May edged down to 2.42 mb/d at end-month from 2.87 mb at the end of April, in line with the seasonal trends.

Other stock developments

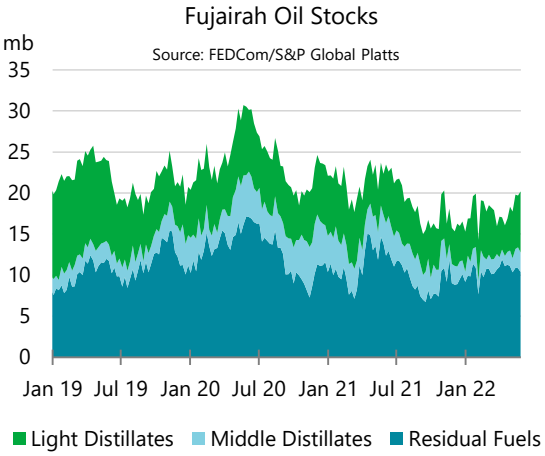


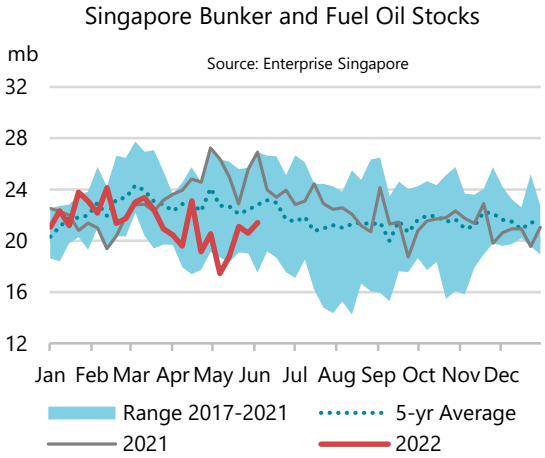


The total volume of oil on the water (including floating storage) grew by 44.8 mb in April to 1 760 mb, according to *Kpler*. Crude oil increased by 29.5 mb, compared to a drop of 25.6 mb in March. The ongoing reallocation of Russian oil trade to longer routes boosted oil at sea. Oil products also rose by 15.2 mb m-o-m. Of the products, LPG increased by 9.1 mb (+160 kb/d) due to record high world exports of 4.7 mb/d, led by the Middle East (+150 kb/d).

IEA. All rights reserved.

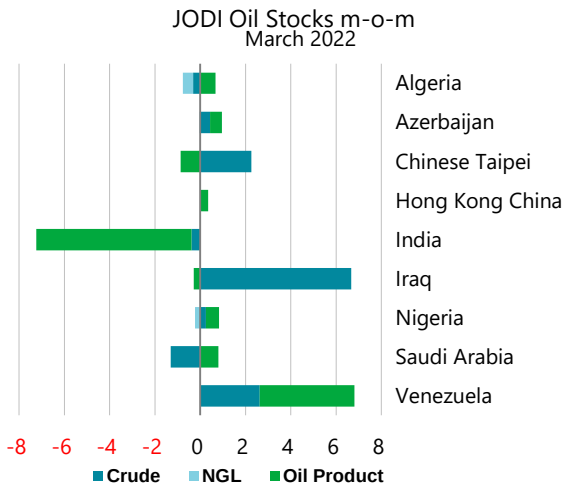
Global crude and condensate floating storage was down by 2.4 mb to 133.7 mb, with West Africa falling to 3.5 mb from 6 mb in the previous month. By contrast, product floating storage increased by 2.8 mb to 54 mb. Middle East, Asia Pacific and West Africa were up by 3.2 mb, 2.3 mb and 2.2mb, respectively, partially offset by decline in other regions.





In Fujairah, independent product stocks increased by 3.1 mb in May, to 19.8 mb, according to data from *FEDCom and S&P Global Platts*. Stocks reached a three-month high, but were 3.9 mb lower y-o-y. Light distillates stocks led the way with a 2.5 mb build in May. Middle distillate inventories were also up by 1 mb after two consecutive monthly declines, while residual fuel stocks fell by 0.4 mb.

Independent product stocks in Singapore, the world's largest bunkering hub, were up by 2.7 mb for the first time since January, according to data from *Enterprise Singapore*. At 43 mb, they were 14% lower than at the same time last year. Residual fuel oil and middle distillates stocks inched higher in May, but at 20.7 mb and 7 mb, they were 4.2 mb and 4.7 mb lower y-o-y, respectively. Light distillate inventories rose for the second straight month, by 1.4 mb to 15.3 mb.



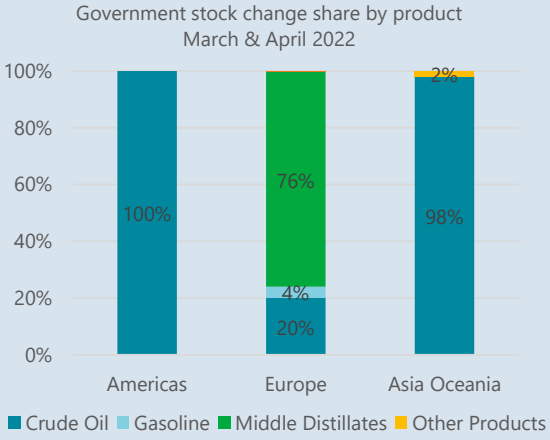
Total oil stocks in 12 non-OECD economies reported to the *JODI-Oil* database rose 10.5 mb m-o-m in March, led by a build in crude oil inventories (+11.9 mb). The largest increase came from Iraq (+6.7 mb) after inventories fell by 3.6 mb in February. Crude stocks also rose in Venezuela (+2.6 mb) and Chinese Taipei (+2.3 mb). By contrast, crude stocks fell in Saudi Arabia by -1.3 mb, possibly linked to higher refinery throughput (+270 kb/d) in March. Oil products stocks fell by 0.7 mb in total. Indian stocks fell by 6.9 mb due to a surge in domestic gasoline and diesel demand. This offset product stock builds in Venezuela (+4.2 mb), and elsewhere.

IEA. All rights reserved.

Box 8. IEA members supplied 50 mb oil from SPR in two months

The IEA's collective actions, agreed by member countries in March and April, are providing welcome barrels to a tight oil market. According to preliminary data, government stocks in OECD countries decreased by 22.1 mb in March and 28.1 mb in April. This includes both public stocks released as part of IEA the collective actions and additional volumes that some countries are releasing independent of the agreement. In total, around 260 mb of oil will be drawn from public stocks over the period of March to end-October 2022.

Of the releases in March and April, the total amount in the US and 98% in Asia Oceania were crude oil supplies. On the other hand, in Europe 80% of the volumes released were petroleum products, with 76% middle distillates, 4% gasoline and the rest was crude oil.



IEA emergency stocks will continue to be released through end-October. The vast majority (98%) of remaining stocks to be released from public stockpiles is estimated to be crude oil. Japan invited a bid for the sale of reserves of as much as 4.8 mb in April and the release is scheduled for after the second half of June. At the end of May, the US announced a bid to sell 40.1 mb by 15 August based on its plan to release 1 mb/d from May to end-October.

Government stock changes in March and April 2022 (mb)

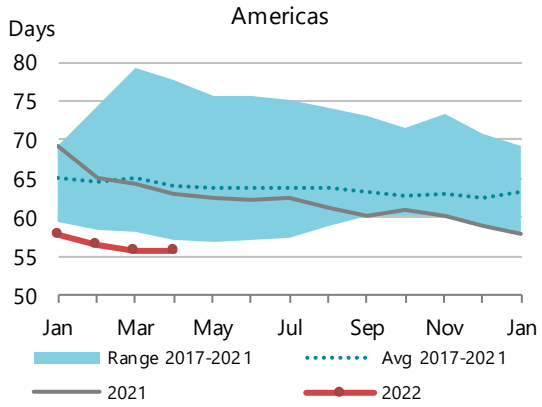
	OECD Americas			OECD Asia Oceania			OECD Europe			Grand Total
	March	April	Total	March	April	Total	March	April	Total	
Crude Oil	12.8	16.6	29.4	2.3	2.8	5.1	0.5	2.7	3.2	37.6
Gasoline								0.6	0.6	0.6
Middle Distillates							6.3	5.5	11.8	11.8
Other Products				0.1		0.1				0.1
Grand Total	12.8	16.6	29.4	2.4	2.8	5.2	6.9	8.7	15.6	50.1

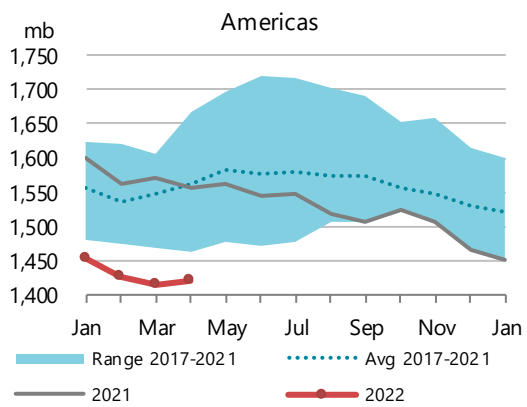
IEA. All rights reserved.

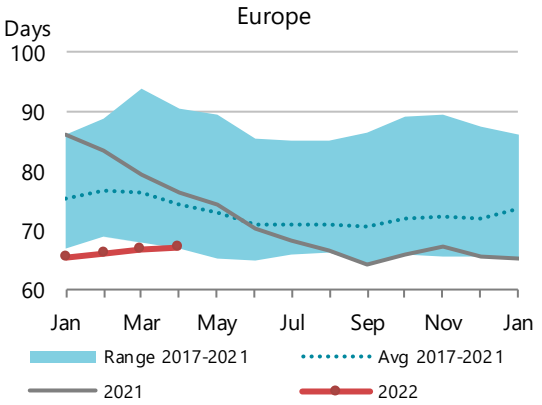
Regional OECD End-of-Month Industry Stocks

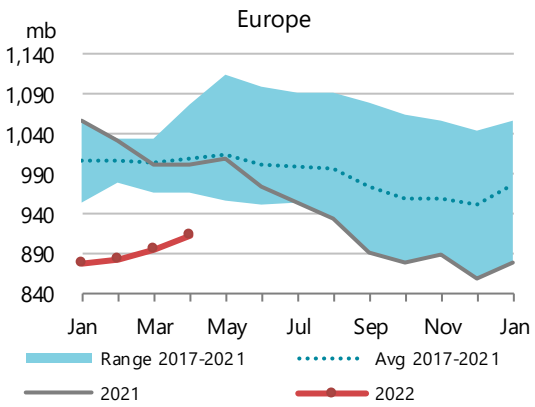
(in days of forward demand and million barrels of total oil)

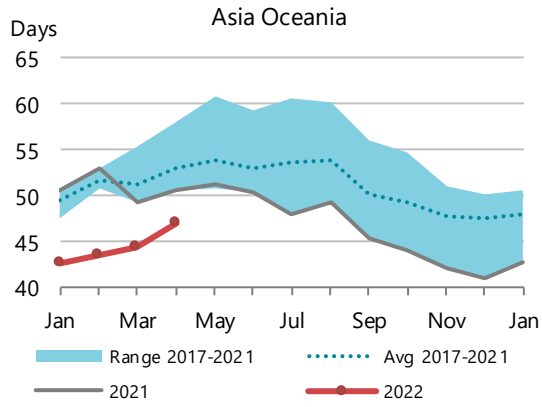
Days[1] **Million Barrels**

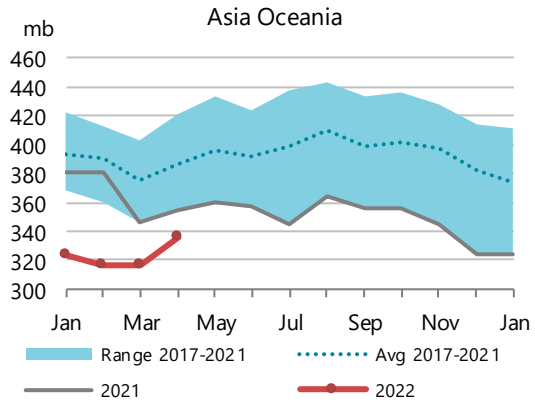


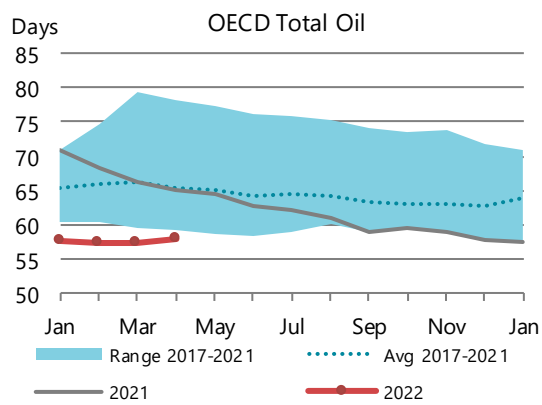


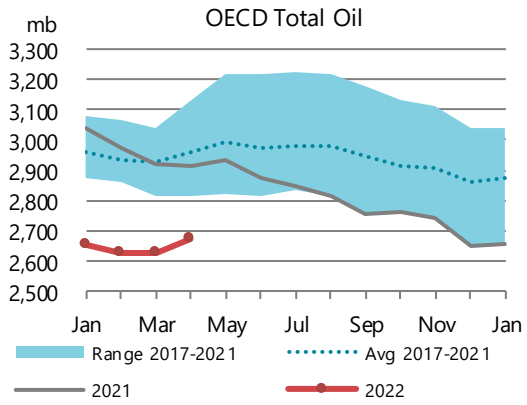












[1] Days of forward demand are based on average OECD demand over the next three months.

IEA. All rights reserved.

Prices

Overview

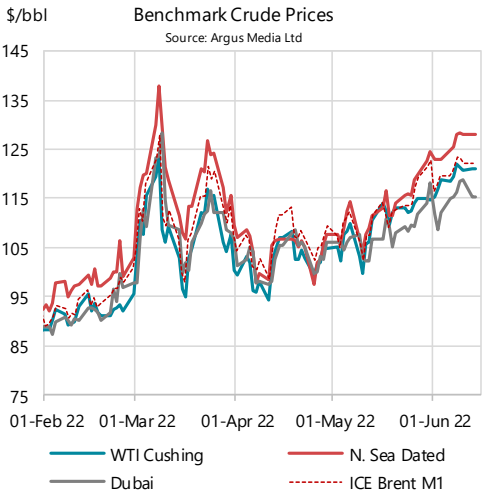
A contraction in Chinese oil demand, a fall in European natural gas prices below oil parity, and rising economic headwinds should have cooled oil prices over the past month. Instead, prices have risen relatively steadily since the beginning of May, gaining $6–8/bbl m-o-m, and even more for physical sweet crude markets. Likewise, the backwardation in crude futures has steepened since end-April by $3-5/bbl over the twelve month strip. Since 6 June, both crude futures contracts have averaged over $120/bbl and North Sea Dated over $127/bbl. The latter reached $127.9/bbl on 13 June.

The broader downward price pressures were eclipsed by tighter prompt market balances as strong light product demand bumped-up against constrained supply, reinforcing the need to maximize refinery throughputs of light sweet crude. This includes the marker crude grades. The market is now concentrated on the looming EU embargo of imports of Russian oil and the ban on insurance and finance of shipping these barrels. While these take effect over six or more months, preparations to accommodate these major changes can't be delayed. These supply concerns are matched by worries over the strength of China's economically stimulated post-lockdown recovery.

Crude Prices and Differentials ($/bbl)

	Month			Week of	Last	Chng May-22	
	May-21	Apr-22	May-22	06 Jun	13 Jun	m-o-m	y-o-y
Crude Futures (M1)							
NYMEX WTI	65.16	101.64	109.26	120.44	120.93	7.62	44.10
ICE Brent	68.31	105.92	111.96	121.75	122.27	6.04	43.65
Crude Marker Grades							
North Sea Dated	68.54	104.25	113.38	126.97	127.88	9.13	44.84
WTI (Cushing)	65.18	101.77	109.61	120.44	120.93	7.84	44.44
Dubai	66.34	102.91	108.08	116.76	115.24	5.17	41.74
Differential to North Sea Dated							
WTI (Cushing)	-3.36	-2.48	-3.76	-6.53	-6.95	-1.29	-0.40
Dubai	-2.20	-1.34	-5.30	-10.21	-12.64	-3.96	-3.10
Differential to ICE Brent							
North Sea Dated	0.23	-1.67	1.42	5.22	5.61	3.09	1.19
NYMEX WTI	-3.15	-4.28	-2.70	-1.31	-1.34	1.58	0.45

Sources: Argus Media Ltd, ICE, NYMEX (NYMEX WTI = NYMEX Light Sweet Crude)



The post Covid-19 economic recovery may be past its peak for much of the world, but growth remains resilient for the moment. The Covid hit to Chinese oil demand and the release of oil from IEA member strategic reserves tempered market tensions in April and early May. However, strong consumer goods uptake and a robust propensity to travel have revived support for oil demand in May despite swingeing prices. Efforts by some governments to shield consumers from the impact of rising prices have also sustained demand strength. To revive its pandemic-ravaged economy, both the Shanghai municipality and China's government have announced measures to rapidly stimulate economic activity, while working to streamline and minimize the impact of recurring lockdowns like those now affecting Beijing. On the supply side, losses of Libyan production as well as heavy maintenance schedules in the North Sea and Kazakhstan have heightened uncertainties.

IEA. All rights reserved.

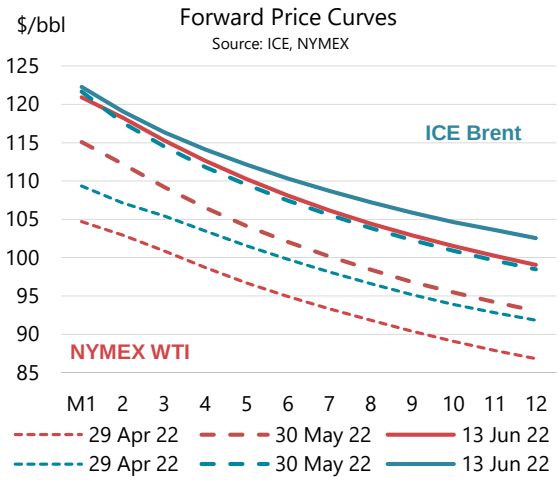
What began as a tight diesel market in 3Q21 has expanded to stretched markets for all middle distillates and gasoline. Tight crude supply and refinery outages, combined with the attempts to reduce uptake of Russian refined product, have prevented a reconstitution of oil product stocks in the OECD ahead of the peak summer demand season for jet and gasoline. Moreover, reshuffling export-import flows for light products to avoid imports of Russian products has added to supply strains and locked-up more barrels in transit as alternative exporters are further afield. Product price differentials to crude (cracks) for gasoline, jet and diesel have reached record levels over the past month, while naphtha and fuel oil have moved to wide discounts.

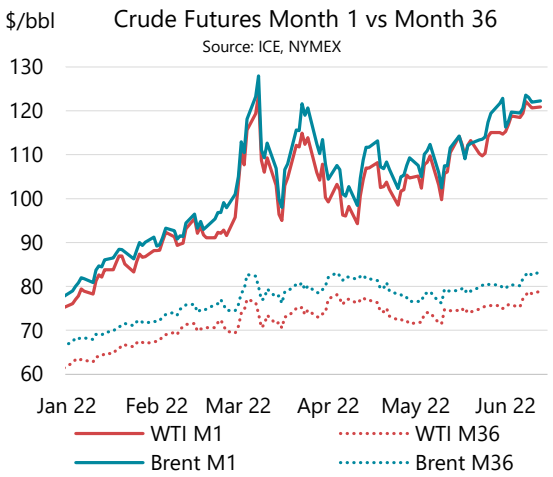
The massive refinery margins arising from the product price tensions have benefited more the light sweet crude grades, those apt to maximize yields of gasoline, jet and diesel. The values of heavier crudes have been pulled down by the weak fuel oil prices. As the key marker crude grades are light and sweet (Brent, WTI and even to some extent Murban), they have been propelled sharply higher in the wake of remarkable strength in light product prices.

Extremely low crude and product stocks have left refiners living hand-to-mouth, heightening the need for access to prompt crude supply. The crude price backwardation has blown out to around $20/bbl on the twelve month strip, of which around $12/bbl over the first to the sixth contracts. Futures trading volumes have fallen and concentrated in the front contracts as volatility and higher margining costs, as well has heightened uncertainty in the outlook, have reduced liquidity in outer months.

Futures markets

Crude futures rose over the month of May, increasing $7.62/bbl to $102.96/bbl for prompt NYMEX WTI contracts and $6.04/bbl to $111.96/bbl for ICE Brent. On 13 June, ICE Brent rose to $122.3/bbl while NYMEX WTI reached $120.9/bbl. Crude futures lagged the gains in physical market prices over the month, as backwardation in the market extended from futures to prompt deliveries, reflecting the tension on prompt availability of supply. The rapid escalation of prices in the second half of May contributed to futures rising ~$14/bbl between the first week of May and the first week of June. Monthly average prices were last at current levels in June 2014 for Brent and April 2011 for WTI. Prices in the first week of June are approaching those of May through July 2008, when they reached the highest monthly levels on record.





IEA. All rights reserved.

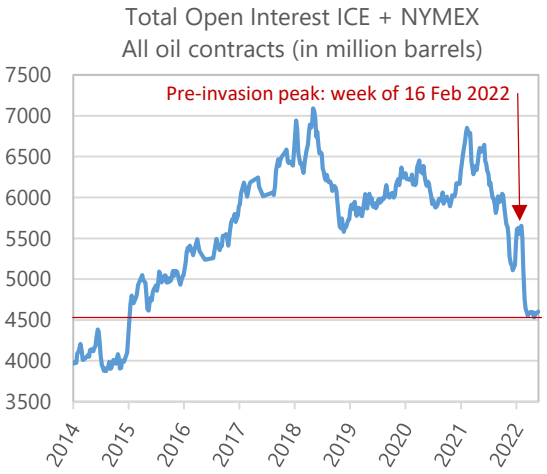
Backwardation in the forward price structure has reached extreme levels. Over the twelve month strip, the backwardation in the week of 30 May rose to roughly $22.0/bbl for both ICE Brent and NYMEX WTI. This is over four times the level of backwardation on 31 May 2021. Only the exceptionally steep backwardation of March 2022 exceeds the high levels in May.

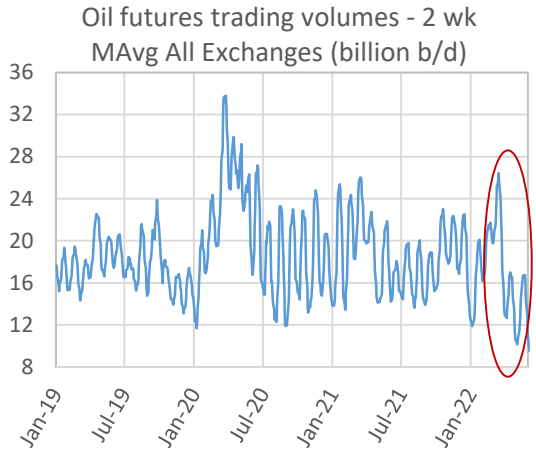
The price for long-dated contracts has remained remarkably stable, at or below $80/bbl for the 36th month contract until 6 June, despite the volatility in the prompt market. This roughly corresponds to the price at which around 75% of upstream projects break even (according to Goldman Sachs' *Top Projects 2022* report of 19 April 2022).

Price volatility over the month has been acute. Prices gained $8/bbl from 3- 6 May, then lost $10/bbl in two sessions to 10 May before rebounding $12-14/bbl by 16 May. Even intraday prices saw gains and losses in the same day of $5-6/bbl.

The extreme backwardation is highly profitable for investors that purchase the third or second contract and sell it when it rolls-up to become the first contract. However, they must bear the risk of substantial flat price volatility. A few dollars gained on the roll-up can be readily lost or amplified by large daily changes in the underlying price.

The volatility combined with higher margining costs imposed by the exchanges has kept the volume of trading as well as contract open interest low (open interest is the number of active open contracts available to trade and holders of these contracts will be billed margining charges on a regular basis as prices change). However, exchanges recently began to reduce their margining, contributing to a rebound in net length on crude futures.





Refiners responding to high gasoil and jet cracks withdrew molecules available to the gasoline pool, tightening the market and in turn boosting gasoline prices. Only limited volume of molecules are mutually compatible with the gasoil, jet and gasoline pools via conversion units. While the ICE Gasoil and NYMEX ULSD contracts increased by around ~$30/bbl from January to April, the NYMEX RBOB gasoline contract only rose by ~$17/bbl. May brought a rebalancing of cracks. ICE Gasoil cracks eased by -$1.71/bbl to $40.25/bbl, NYMEX ULSD by -$5.30/bbl to $55.58/bbl while NYMEX RBOB cracks rose $14.60/bbl to $49.70/bbl. The rebalancing reflects concern about gasoline supply with strong, seasonally rising demand expected over the summer.

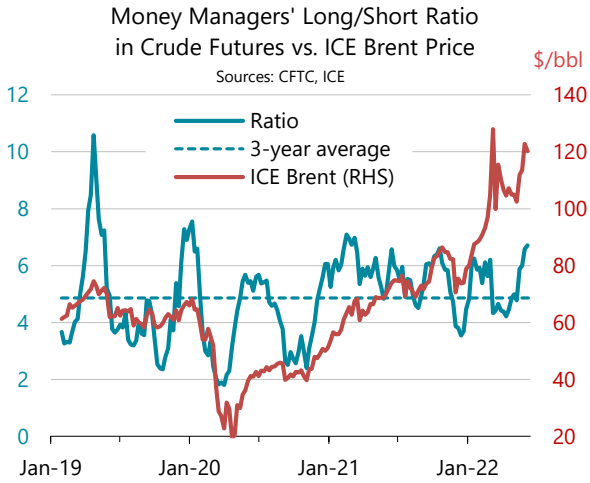
Money Managers' net long positions in futures and options, covering crude and products, rose over May as traders increased market exposure in crude, tracking the trend in prices. Net long positions rose on crude contracts but were stable overall for products.

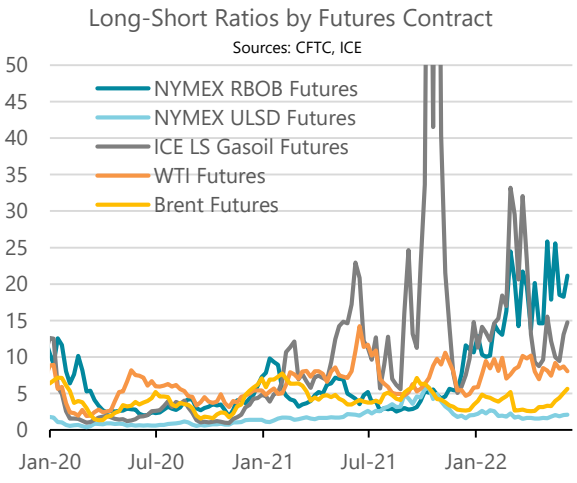
IEA. All rights reserved.

Over the four weeks to 6 June, net long positions on crude futures rose 23% overall, with ICE Brent up 42% and NYMEX WTI by a smaller 11%. While long positions increased for both contracts, Money Managers cut short positions on the ICE Brent contract by 30% and left NYMEX WTI short positions roughly unchanged. As a result, the long-short ratio rose sharply for ICE Brent (+72%) while NYMEX WTI was up only slightly (+8%). Positioning on ICE Brent reflects the expectations of tightening crude markets over the remainder of the year linked to strong light crude demand as well as boycotts and bans of Russian crude use in Europe.

Net long positions on ICE Gasoil were cut by 5% but rose 17% on NYMEX ULSD contracts. Positions on NYMEX RBOB contracts increased by 4%.

The long-short ratios have risen on all product futures contracts. ICE Gasoil rose 21% over the 4 weeks to 4 June and NYMEX ULSD by 13%. NYMEX RBOB by rose 18%, sustained in recent weeks by traders positioning to benefit from the seasonal uptick in gasoline demand.





Prompt Month Oil Futures Prices
(monthly and weekly averages, $/bbl)

	May-21	Mar-22	Apr-22	May-22	May-22		Week Commencing:						Last
					m-o-m Chg	y-o-y Chg	02 May	09 May	16 May	23 May	30 May	06 Jun	13 Jun
NYMEX													
Light Sweet Crude Oil (WTI) 1st contract	65.16	108.26	101.64	109.26	7.62	44.10	106.68	105.04	112.33	111.91	116.42	120.44	120.93
Light Sweet Crude Oil (WTI) 12th contract	60.87	86.41	89.24	89.81	0.57	28.94	89.21	88.44	89.93	91.17	93.99	98.40	99.07
RBOB	89.28	138.40	136.77	158.94	22.17	69.65	151.88	156.39	162.57	162.40	174.25	176.58	169.48
ULSD	84.88	153.39	162.52	164.84	2.32	79.96	172.03	164.27	158.81	162.86	175.59	182.83	179.90
ULSD ($/mmbtu)	15.28	25.93	26.70	28.36	1.66	13.08	28.85	28.12	27.73	28.45	30.69	32.11	31.62
Henry Hub Natural Gas ($/mmbtu)	2.96	4.98	6.71	8.16	1.46	5.20	8.13	7.49	8.20	8.83	8.46	9.03	8.61
ICE													
Brent 1st contract	68.31	112.46	105.92	111.96	6.04	43.65	109.20	106.98	111.97	115.57	119.63	121.75	122.27
Brent 12th contract	64.37	91.40	93.86	94.23	0.37	29.86	93.28	92.54	93.78	95.93	97.96	101.96	102.53
Gasoil	74.55	153.94	147.89	152.21	4.33	77.66	160.15	150.17	143.50	150.40	168.79	182.77	170.86
Prompt Month Differentials													
NYMEX WTI - ICE Brent	-3.15	-4.20	-4.28	-2.70	1.58	0.45	-2.52	-1.94	0.36	-3.66	-3.21	-1.31	-1.34
NYMEX WTI 1st vs. 12th	4.29	21.85	12.40	19.45	7.05	15.16	17.47	16.60	22.40	20.74	22.43	22.04	21.86
ICE Brent 1st - 12th	3.94	21.06	12.06	17.73	5.67	13.79	15.92	14.44	18.19	19.64	21.67	19.79	19.74
NYMEX ULSD - WTI	19.72	45.13	60.88	55.58	-5.30	35.86	65.35	59.23	46.48	50.95	59.17	62.39	58.97
NYMEX RBOB - WTI	24.12	30.14	35.13	49.68	14.55	25.55	45.20	51.35	50.24	50.49	57.83	56.14	48.55
NYMEX 3-2-1 Crack (RBOB)	22.65	35.14	43.71	51.64	7.93	28.99	51.92	53.98	48.99	50.64	58.28	58.22	52.03
NYMEX ULSD - Natural Gas ($/mmbtu)	12.32	20.96	19.99	20.20	0.21	7.87	20.71	20.63	19.53	19.62	22.23	23.09	23.01
ICE Gasoil - ICE Brent	6.24	41.48	41.97	40.25	-1.71	34.01	50.95	43.19	31.53	34.83	49.16	61.02	48.59

Source: ICE, NYMEX.

IEA. All rights reserved.

Spot crude oil prices

Physical crude markets have had a number of key drivers over the past month, all of which combined to push spot prices above futures levels. First, exceptionally strong gasoline and middle distillate cracks have provided a huge incentive for refiners to maximize runs and to prioritise light sweet crudes. Second, the strong backwardation has forced buyers to source crude as close to home as possible. Third, regional European crude supply has been upset by outages in Libya, field maintenance in the North Sea and Kazakhstan, as well as by efforts in Europe and North America to boycott or ban Russian oil. Fourth, the release of crude and oil products from strategic reserves has helped cap price tensions while distorting sweet-sour crude differentials, especially in North America.

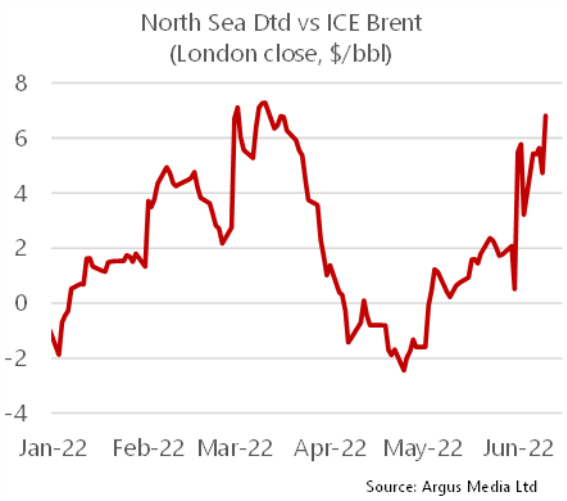
A notable development for the market was the announcement by *S&P Global Platts* that they would incorporate WTI into the BFOE assessments beginning February 2023 for the first barrels to be delivered as part of the Dated Brent assessment in June 2023. Shell has proposed modifying its Suko-90 contract (the reference for the trade of physical and forward North Sea cargoes) to include WTI delivered CIF to Rotterdam. Under the new terms of the contract, starting June 2023 any holder of a North Sea BFOE contract for a forward month can receive a cargo of US WTI Midland in lieu of Brent, Forties, Oseberg, Ekofisk, or Troll. Cargo sizes will be increased from 600 kt to 700 kt. The Shell contract also requires the loading terminal to be vetted for inclusion in the methodology and to regularly publish the loading dates for cargoes to be delivered into the Brent market. A number of parties are discussing amendments to Shell's proposed contract. Vitol recently recommended including WTI on an FOB US Gulf Coast basis (similar to the methodology originally proposed by Platts).

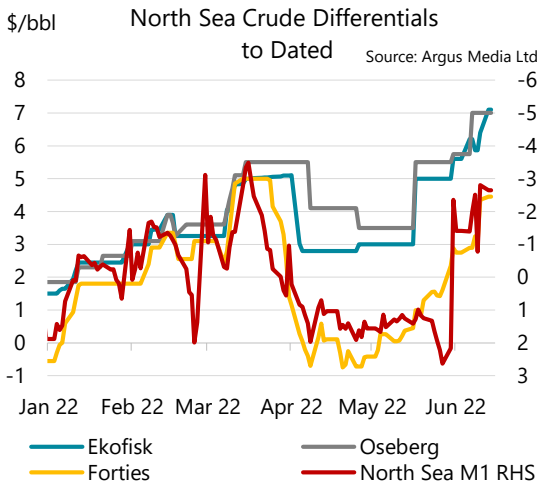
In Europe, the exceptionally strong refinery margins and the roll-off of the refinery maintenance season over the course of May and June have resulted in strong demand for locally produced light sweet crude. Buyers have begun targeting available cargoes as early as possible, before they are announced in loading programmes. The regional supply has tightened with planned maintenance shutdowns at Kashagan in Kazakhstan (45 days from early June) and Johan Sverdrup in Norway. As well, conflict-related outages at fields and ports have undermined Libyan supply since April. The steep backwardation, discouraging traders from bringing cargoes to Europe from East of Suez, has increased demand for barrels from the US Gulf Coast, Brazil, and West Africa. Refinery margin pressure and rising resistance to Russian Urals supply has seen the share of sweet crude in the average European crude slate rise by around 10-15 percentage points.

The North Sea Dated premium to ICE Brent (London close) swung from an average discount of -$0.94/bbl in April to a premium of +$1.07/bbl in May, and reached +$5.31/bbl in June. Thus North Sea Dated averaged $113.38/bbl in May (+$9.13/bbl m-o-m) and $126.97/bbl in the week of 6 June. Front month M1-M2 backwardation on BFOE North Sea forward contracts averaged $2.64/bbl in May (+$2.34/bbl m-o-m) and reached $4.08/bbl in the week of 30 May and $4.27/bbl on 13 June.

North Sea crude price premiums versus North Sea Dated made solid gains from end-April to end-May. Forties rose $3.26/bbl to $2.66/bbl and to $3.56/bbl in the week of 6 June, Ekofisk +$2.44/bbl to $5.40/bbl ($6.10/bbl in June) and Oseberg +$2.05/bbl to $5.67/bbl ($6.75/bbl in June). The gains come in addition to the rise in the backwardation and a higher North Sea Dated premium to ICE Brent futures, underlining the heightened tension in the market.

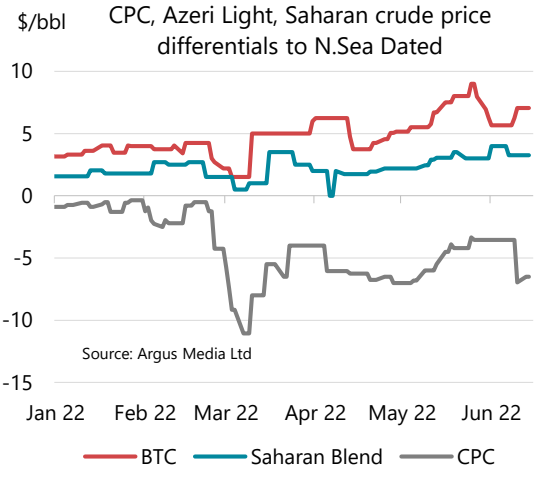
IEA. All rights reserved.

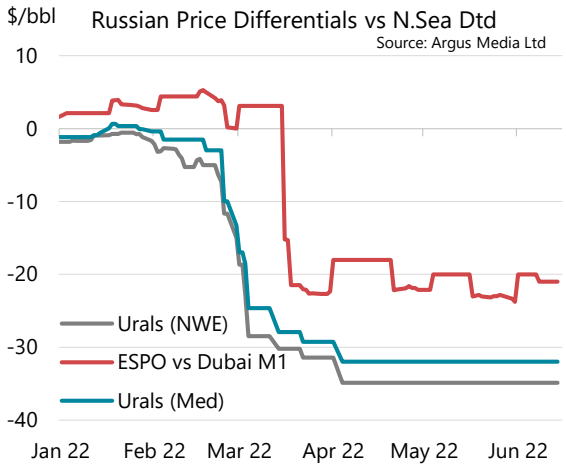




In the Mediterranean market, differentials strengthened under the combined impact of lost Libyan supply and planned maintenance at Kashagan starting at the beginning of June (buyers sought to offset losses with purchases in May for lifting in June). Light sour CPC Blend discounts narrowed by $1.18/bbl m-o-m in May to -$4.97/bbl and -$3.55/bbl in the week of 30 May. Azeri Light and BTC Blend rose $1.73/bbl m-o-m, with differentials peaking at around $8.20/bbl in the week of 23 May. Light sweet Libyan Es Sider was estimated $0.98/bbl m-o-m higher in May at $1.26/bbl.

Trade in Russia's medium sour Urals grade remains obscure. *Argus* has held discounts for the grade constant since early April at -$34.85/bbl for Northwest Europe and -$31.95/bbl for Mediterranean cargoes versus North Sea Dated. However, deals continue unreported. In particular, India has imported some 34 mb of Russian crude since the beginning of the conflict and refiner IOC recently signed a 6-month term agreement with producer Rosneft for supply of 6 mb/month, with an option on an additional 3 mb. Requests for similar deals from other Indian refiners, BPCL and HPCL, have been refused by Rosneft on the grounds that supplementary barrels are not available.





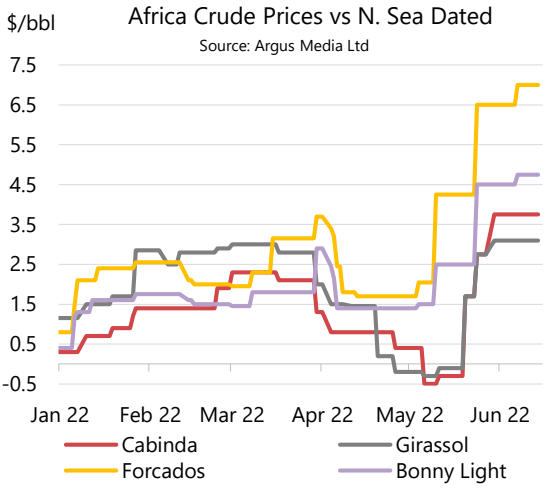
West African premiums versus North Sea Dated made substantial gains over the month. The increases were driven principally by European refiners seeking to fill out their crude slates with light sweet grades to maximize profits from robust refinery margins. The strong backwardation has had little apparent impact on the premiums. Chinese buyers were scarce and dominated by

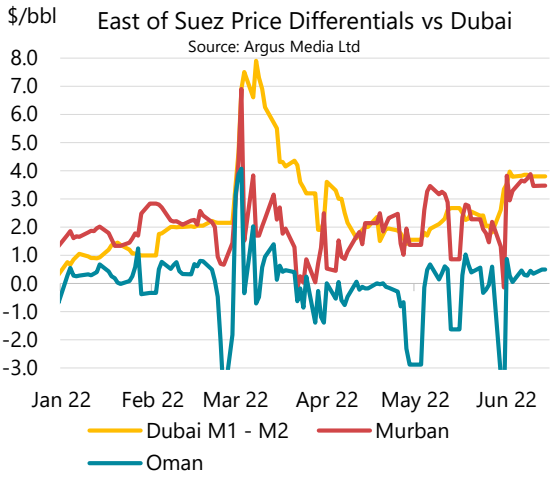
IEA. All rights reserved.

the majors. The heavy sweet Angolan grades were boosted by strong low-sulphur vacuum gasoil (VGO) and low-sulphur fuel oil values for the bunker and refinery feedstock markets, with the latter suffering from the loss of access to Russian VGO and straight-run fuel oil.

While Girassol's differential to North Sea Dated was flat m-o-m at $0.88/bbl and Cabinda's rose just $0.19/bbl m-o-m to $0.93/bbl on average in May, both grades increased by over $3.30/bbl from the last week of April to the week of 30 May, reaching premiums of $3.33/bbl and $3.58/bbl, respectively. Distillate-rich Nigerian Forcados premiums gained $2.98/bbl m-o-m in May to $4.35/bbl and to $6.90/bbl in the week of 6 June. Naphtha rich Nigerian Bonny Light rose $1.25/bbl m-o-m in May to $2.83/bbl and reached $4.75/bbl in the week of 6 June.

Middle East grades traded in May for July delivery suffered from an absence of Chinese and Indian buyers. Chinese refiners held back on purchases, awaiting a clear signal of stronger economic activity and oil demand with an end to Covid lockdowns in Shanghai and Beijing. Indian refiners boosted Russian crude intake and cut use of some Middle East sour grades. As a result, the Dubai discount to North Sea M2 widened by $1.66/bbl to -$3.99/bbl in May. Asian refiners rolling-off refinery maintenance activity in May and June bought Middle East grades. Moreover, Aramco has set very strong premiums in its formulae for Asian customers loading in both June and July, pushing those buyers to boost uptake of Middle East spot grades. Murban premiums to Dubai front month rose +$0.72/bbl m-o-m to $2.29/bbl in May and reached $3.7/bbl in the week of 6 June. Oman increased by +$0.30/bbl on average in May to -$0.20/bbl.

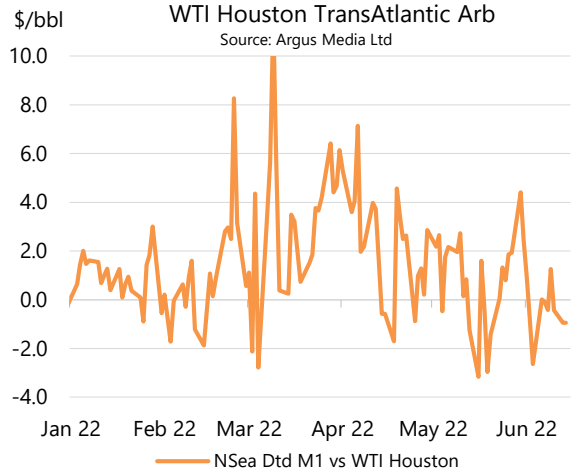


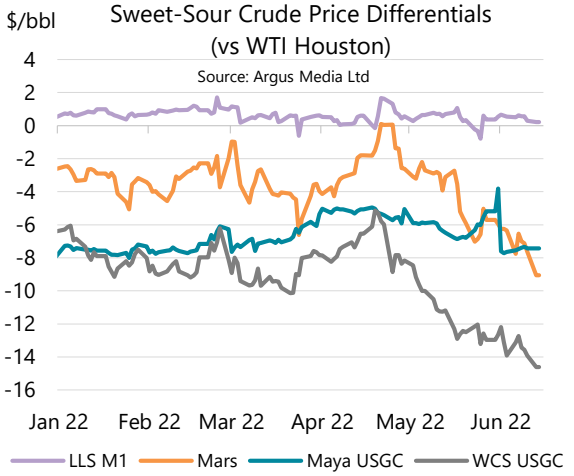


The transatlantic arbitrage improved over the month as European refiners sought more light-sweet WTI and as US SPR barrels offered local refiners an alternative grade. However, US to Europe freight costs remain high. The WTI at Houston discount to forward North Sea Dated M1 widened by $1.30/bbl to $3.91/bbl and reached $5.26/bbl in the week of 30 May. The WTI Houston premium to WTI at Cushing remained relatively flat from April to May at $1.20/bbl.

While light sweet grades in the US Gulf Coast market benefited from strong refinery demand, prices for local sour grades weakened due to competition from the release of SPR sour crude in larger quantities in April, May and June. By late May, weekly SPR drawdown rates reached 1 mb/d. LLS premiums to WTI at Houston were relatively flat around $0.50/bbl. Mars discounts widened by $2.08/bbl in May to -$4.26/bbl and reached -$7.20/bbl in the week of 6 June. The restart of Shell's Ursa platform also contributed to deeper Mars discounts. Discounts for heavy sour Western Canadian Select (WCS) widened by -$4.27/bbl to -$11.47/bbl versus WTI at Houston in May, reaching -$13.35/bbl in the week of 6 June and $14.61/bbl on 13 June.

IEA. All rights reserved.





Spot Crude Oil Prices and Differentials
(monthly and weekly averages, $/bbl)

	May-21	Mar-22	Apr-22	May-22	May-22		Week Commencing:						Last
					m-o-m Chg	y-o-y Chg	02 May	09 May	16 May	23 May	30 May	06 Jun	13 Jun
Crudes													
North Sea Dated	68.54	118.75	104.25	113.38	9.13	44.84	110.52	107.78	113.38	117.19	123.36	126.97	127.88
North Sea Mth 1	68.70	117.45	105.54	114.71	9.17	46.01	112.01	109.05	114.60	119.15	122.82	125.08	125.23
North Sea Mth 2	68.50	113.46	105.24	112.07	6.83	43.58	109.99	107.47	112.11	115.35	118.74	121.48	120.96
WTI (Cushing) Mth 1	65.18	108.52	101.77	109.61	7.84	44.44	106.68	105.04	112.33	113.40	116.42	120.44	120.93
WTI (Cushing) Mth 2	65.11	106.01	100.85	107.49	6.64	42.39	105.12	103.46	109.73	110.77	113.79	118.03	118.25
WTI (Houston) Mth 1	65.85	110.25	102.93	110.80	7.87	44.94	108.06	106.59	113.40	114.16	117.56	121.42	121.91
Urals (NWE)	66.62	89.92	69.58	78.53	8.95	11.91	75.67	72.93	78.53	82.34	88.51	92.12	93.03
Dubai (1st month)	66.34	110.49	102.91	108.08	5.17	41.74	106.00	104.41	108.28	109.61	112.98	116.76	115.24
Differentials to Futures													
North Sead Dated vs. ICE Brent	0.23	6.29	-1.67	1.42	3.09	1.19	1.32	0.80	1.41	1.62	3.73	5.22	5.61
WTI (Cushing) Mth1 vs. NYMEX	0.02	0.26	0.13	0.35	0.22	0.34	0.00	0.00	0.00	1.49	0.00	0.00	0.00
Differentials to Physical Markers													
WTI (Houston) versus North Sea Mth 1	-2.84	-7.20	-2.61	-3.91	-1.30	-1.07	-3.95	-2.46	-1.20	-4.99	-5.26	-3.66	-3.33
WTI (Houston) versus WTI (Cushing) Mth 1	0.67	1.73	1.16	1.18	0.03	0.51	1.38	1.55	1.07	0.75	1.14	0.98	0.97
Urals (NWE) versus North Sea Dated	-1.93	-28.83	-34.67	-34.85	-0.18	-32.92	-34.85	-34.85	-34.85	-34.85	-34.85	-34.85	-34.85
Dubai versus North Sea Mth 2	-2.15	-2.97	-2.34	-3.99	-1.66	-1.84	-3.99	-3.06	-3.84	-5.75	-5.76	-4.72	-5.72
Dubai versus WTI (Cushing) Mth 2	1.24	4.48	2.05	0.59	-1.47	-0.65	0.87	0.96	-1.45	-1.17	-0.81	-1.27	-3.01
Prompt Month Differentials													
Forw ard North Sea Mth1-Mth2	0.20	4.00	0.29	2.64	2.34	2.44	2.02	1.58	2.49	3.79	4.08	3.60	4.27
Forw ard WTI Cushing Mth1-Mth2	0.07	2.51	0.92	2.12	1.21	2.05	1.56	1.58	2.59	2.63	2.63	2.41	2.68
Forw ard Dubai Mth1-Mth2	0.62	4.76	2.13	2.29	0.17	1.67	1.81	2.37	2.40	2.14	3.44	3.82	3.80

Source: Argus Media Ltd, ICE

Freight

Rates for dirty tankers fell m-o-m in May as chartering tensions eased at the start of the month before improving somewhat in the subsequent weeks. After the rejection of Russian oil by European, Canadian and US refiners drove the reallocation of established trade flows, charterers struggled to position ships in a market where inter-regional movements changed faster than charterers could reposition ships. Strong crude price backwardation and high bunker costs have also pressured operators to limit long-haul voyages. However, tankers have now mostly realigned to the new market flows, leading to heightened competition that has pressure rates lower.

More Middle East crude has gone to Europe on both VLCCs and Suezmax tankers, the latter allowing passage via the shortest and fastest route (the Suez Canal), reducing the cost due to backwardation. Increased concentration of VLCCs in the Atlantic Basin has boosted their use on trade into Europe from the US Gulf Coast and from West Africa. Use of VLCCs on these routes requires lightering of crude into and out of the tankers as many European ports of arrival can't accommodate the very large crude carriers (VLCCs). More West African crude has also gone to Europe on Suezmax tankers, more typical of this route.

IEA. All rights reserved.

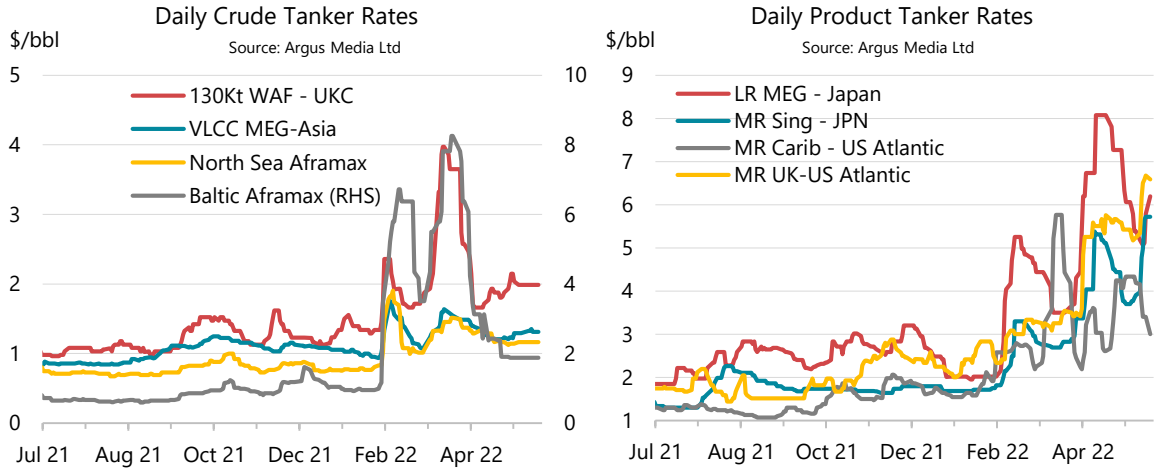
Finally, increased volumes of light sweet WTI has moved to Europe from the US Gulf Coast. These flows have mainly gone on Aframax tankers that provide traders with the maximum degree of flexibility in choosing their final port of arrival if the cargo has not been sold prior to loading. However, Suezmax and even VLCC tankers have increasingly come into service on the route, albeit with some loading and discharging complications due to lightering requirements. The broader mix of tankers has pressured transatlantic rates for Aframaxes.

More generally, Aframax activity has been strongly supported by the shift in a large share of European crude imports from Russia to the US. The US Gulf Coast to Europe route is about four times longer than the Baltic-ARA route, which substantially increases the call on available Aframax tanker capacity. Baltic Aframax chartering rates fell sharply in May as more exports of Russian crude shifted to untendered shipping.

Clean tanker rates rose m-o-m on most routes in May. The reorganisation of Russian clean product trade flows away from Europe and North America to other destinations and their replacement by alternative sources is still underway. The far-flung alternative sources increase the tonne-miles of shipping to move product to Europe, contributing to higher freight rates.

Clean tanker rates increased for transatlantic trade and for trade East of Suez. The increases reflect the surging EU pull on supply from US Gulf Coast refiners (much of which currently takes a shorter route to Latin America) and from Middle East refiners. The latter would normally move to destinations in Asia or East Africa. Voyage times are longer and the flow to Europe reduces the available tanker capacity in Asia.

A key cap on clean product freight rates is the continuing delivery of new-build VLCC tankers. While normally used as dirty tankers, the new ships can carry clean product on their maiden voyages, replacing the capacity of several MR or LR vessels going to Europe. Broker *Barry Roglio Salles* (BRS) expects 19 new VLCCs to be delivered in 3Q22, helping to limit clean tanker rate tensions.



On 3 June, the EU adopted its sixth Russia sanctions package. It phases out imports of Russian crude and products over a 6–8-month period and immediately prohibits EU companies from newly insuring and financing seaborne transport of Russian oil to non-EU countries (with a six-month wind-down for existing contracts). The package also bans reinsurance (used by insurers to help spread risk). There can be no insurance without reinsurance, and most ports will refuse uninsured ships.

IEA. All rights reserved.

The UK is expected to follow the EU's lead, amplifying the impact of the measures since the London and European reinsurance markets are used by insurers globally. This will prevent much of the global fleet from lifting Russian cargoes. The International Group of Protection and Indemnity (P&I) Clubs — an association of mutual insurers providing risk pooling — has 13 members (mostly European) and covers 90% of the world's fleet. Lloyds of London is the principal market for repackaging this risk amongst the members.

The ban will complicate trade in dry bulk and liquid commodities with Russia, raising the cost. It could encourage private deals with tanker owners ready to call at sanctioned ports who might delay scrapping of old ships for dedicated use on these routes. Tankers carrying Russian crude can still be insured based on national clubs and sovereign guarantees provided by countries willing to trade with Russia. The method was previously used during the 2012-2016 sanctions against Iran when half a dozen countries including India, Japan and Taiwan were exempted from US and EU sanctions against Iran. However, the substantial volumes concerned by Russian exports to Europe might overwhelm these untested tanker availabilities and the means to insure them.

Freight Costs

(monthly and weekly averages, $/bbl)

				May-22			Week Commencing					
	May-21	Mar-22	Apr-22	May-22	*m-o-m chg*	*y-o-y chg*	02-May	09-May	16-May	23-May	30-May	06-Jun
Crude Tankers												
VLCC MEG-Asia	0.92	1.33	1.50	1.25	-0.24	0.3	1.33	1.23	1.21	1.24	1.29	1.32
130Kt WAF - UKC	1.00	1.86	3.06	1.88	-1.18	0.9	1.68	1.88	1.84	2.06	1.98	1.98
Baltic Aframax	0.74	5.37	6.35	2.25	-4.10	1.5	2.87	2.42	2.10	1.89	1.88	1.88
North Sea Aframax	0.70	1.27	1.39	1.21	-0.18	0.5	1.33	1.25	1.17	1.14	1.16	1.16
Product Tankers												
LR MEG - Japan	1.95	4.50	4.22	7.22	3.00	5.3	7.18	8.08	7.41	6.73	5.71	5.25
MR Sing - JPN	1.82	2.80	3.02	4.52	1.50	2.7	4.91	5.18	4.54	3.93	3.80	5.02
MR Carib - US Atlantic	1.44	2.61	3.84	3.49	-0.35	2.0	3.45	2.79	3.34	4.19	4.30	3.61
MR UK-US Atlantic	2.01	3.06	3.66	5.52	1.85	3.5	5.46	5.54	5.64	5.49	5.28	6.26

Source: Argus Media Ltd

IEA. All rights reserved.

Tables

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

	2019	2020	1Q21	2Q21	3Q21	4Q21	2021	1Q22	2Q22	3Q22	4Q22	2022	1Q23	2Q23	3Q23	4Q23	2023
OECD DEMAND																	
Americas	25.5	22.6	22.8	24.4	24.8	25.0	24.3	24.8	25.4	25.1	25.0	25.1	25.0	25.4	25.3	25.2	25.2
Europe	14.3	12.4	11.9	12.6	13.8	13.9	13.1	13.1	13.4	13.8	13.6	13.5	13.1	13.7	14.0	13.7	13.6
Asia Oceania	7.9	7.1	7.7	7.0	7.1	7.8	7.4	7.9	7.1	7.3	7.7	7.5	8.1	7.3	7.4	7.9	7.7
Total OECD	**47.8**	**42.1**	**42.4**	**44.0**	**45.8**	**46.8**	**44.8**	**45.8**	**45.9**	**46.2**	**46.3**	**46.1**	**46.2**	**46.4**	**46.8**	**46.7**	**46.5**
NON-OECD DEMAND																	
FSU	4.7	4.5	4.6	4.7	4.9	5.0	4.8	4.7	4.5	4.6	4.6	4.6	4.5	4.5	4.7	4.7	4.6
Europe	0.8	0.7	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	13.9	14.3	15.0	15.7	15.7	15.7	15.5	15.5	14.5	15.7	15.9	15.4	16.0	16.2	16.3	16.8	16.3
Other Asia	14.0	12.6	13.5	12.8	12.5	13.6	13.1	13.8	13.7	13.2	13.8	13.6	14.3	14.2	13.7	14.4	14.2
Americas	6.3	5.6	5.8	5.9	6.2	6.2	6.1	6.0	6.1	6.2	6.2	6.1	6.1	6.2	6.3	6.3	6.2
Middle East	8.8	8.3	8.4	8.6	9.0	8.6	8.7	8.7	8.7	9.1	8.7	8.8	8.6	8.8	9.2	8.7	8.8
Africa	4.2	3.7	4.0	3.9	3.9	4.1	4.0	4.1	4.0	4.0	4.1	4.1	4.1	4.1	4.1	4.2	4.1
Total Non-OECD	**52.7**	**49.8**	**52.0**	**52.3**	**53.0**	**54.0**	**52.8**	**53.5**	**52.3**	**53.5**	**54.0**	**53.3**	**54.3**	**54.8**	**55.1**	**56.0**	**55.1**
Total Demand[1]	**100.4**	**91.9**	**94.4**	**96.4**	**98.8**	**100.8**	**97.6**	**99.3**	**98.2**	**99.8**	**100.4**	**99.4**	**100.5**	**101.1**	**101.9**	**102.7**	**101.6**
OECD SUPPLY																	
Americas	24.8	23.8	23.3	24.2	24.3	25.3	24.3	25.0	25.5	26.2	26.7	25.9	26.9	27.1	27.3	27.6	27.2
Europe	3.4	3.6	3.6	3.1	3.4	3.4	3.4	3.3	3.2	3.2	3.4	3.3	3.4	3.3	3.4	3.5	3.4
Asia Oceania	0.5	0.5	0.5	0.5	0.6	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[4]	**28.6**	**27.9**	**27.4**	**27.8**	**28.3**	**29.2**	**28.2**	**28.8**	**29.2**	**30.0**	**30.6**	**29.6**	**30.8**	**30.8**	**31.1**	**31.6**	**31.1**
NON-OECD SUPPLY																	
FSU	14.6	13.5	13.4	13.7	13.7	14.3	13.8	14.4	13.2	13.1	12.4	13.3	11.7	11.7	11.6	11.7	11.7
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	3.9	4.0	4.1	4.1	4.1	4.0	4.1	4.2	4.3	4.2	4.2	4.2	4.3	4.3	4.3	4.2	4.3
Other Asia	3.3	3.0	3.0	2.9	2.8	2.8	2.9	2.8	2.7	2.7	2.7	2.7	2.7	2.7	2.6	2.6	2.7
Americas	5.3	5.3	5.3	5.3	5.4	5.2	5.3	5.4	5.4	5.7	5.8	5.6	5.8	5.9	5.9	5.9	5.9
Middle East	3.0	3.0	3.1	3.1	3.1	3.1	3.1	3.2	3.2	3.2	3.2	3.2	3.3	3.3	3.3	3.3	3.3
Africa	1.5	1.4	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
Total Non-OECD[4]	**31.8**	**30.3**	**30.2**	**30.5**	**30.5**	**30.8**	**30.5**	**31.4**	**30.3**	**30.4**	**29.8**	**30.5**	**29.1**	**29.2**	**29.1**	**29.1**	**29.1**
Processing gains[3]	2.4	2.1	2.1	2.2	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.4	2.4	2.4	2.4
Global Biofuels	2.8	2.6	2.2	2.9	3.2	2.7	2.8	2.5	3.0	3.3	2.9	2.9	2.6	3.1	3.4	3.0	3.0
Total Non-OPEC Supply	**65.6**	**63.0**	**61.9**	**63.5**	**64.3**	**65.0**	**63.7**	**64.9**	**64.7**	**66.0**	**65.6**	**65.3**	**64.8**	**65.5**	**66.0**	**66.1**	**65.6**
OPEC[2]																	
Crude	29.6	25.7	25.4	25.6	27.0	27.8	26.4	28.5									
NGLs	5.3	5.1	5.1	5.1	5.1	5.2	5.1	5.3	5.4	5.4	5.4	5.4	5.4	5.4	5.5	5.5	5.5
Total OPEC	**35.0**	**30.8**	**30.4**	**30.7**	**32.1**	**33.0**	**31.5**	**33.8**									
Total Supply	**100.6**	**93.8**	**92.4**	**94.1**	**96.4**	**98.0**	**95.2**	**98.7**									
STOCK CHANGES AND MISCELLANEOUS																	
Reported OECD																	
Industry	0.1	0.4	-1.3	-0.5	-1.3	-1.2	-1.1	-0.2									
Government	0.0	0.0	0.0	-0.2	-0.1	-0.3	-0.2	-0.5									
Total	**0.0**	**0.4**	**-1.3**	**-0.7**	**-1.4**	**-1.5**	**-1.2**	**-0.7**									
Floating storage/Oil in transit	0.1	0.0	-0.5	-0.5	-0.3	1.1	-0.1	-0.6									
Miscellaneous to balance[5]	0.0	1.5	-0.3	-1.0	-0.7	-2.4	-1.1	0.6									
Total Stock Ch. & Misc	**0.1**	**1.9**	**-2.0**	**-2.3**	**-2.4**	**-2.8**	**-2.4**	**-0.6**									
Memo items:																	
Call on OPEC crude + Stock ch.[6]	29.5	23.8	27.4	27.8	29.4	30.6	28.8	29.1	28.1	28.3	29.4	28.7	30.3	30.2	30.4	31.2	30.5

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.

IEA. All rights reserved.

Table 1a
WORLD OIL SUPPLY AND DEMAND: CHANGES FROM LAST MONTH'S TABLE 1
(million barrels per day)

	2019	2020	1Q21	2Q21	3Q21	4Q21	2021	1Q22	2Q22	3Q22	4Q22	2022	1Q23	2Q23	3Q23	4Q23	2023
OECD DEMAND																	
Americas	-	-	-	-	-	-	-	0.4	0.6	0.1	-	0.3					
Europe	-	-	-	-	-	-	-	-	-	-	-	-					
Asia Oceania	-	-	-	-	-	-	-	-	-0.1	-0.1	-0.1	-0.1					
Total OECD	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**0.3**	**0.4**	**-0.1**	**-0.1**	**0.1**					
NON-OECD DEMAND																	
FSU	-	-	-	-	-	-	-	-	0.2	0.1	0.1	0.1					
Europe	-	-	-	-	-	-	-	-	-	-	-	-					
China	-	-	-	-	-	-	-	-	-0.6	-0.3	-0.1	-0.3					
Other Asia	-0.1	-0.1	-0.1	-	-0.1	-	-	-	-0.1	-0.1	-0.1	-0.1					
Americas	-	-	-	-	-	-	-	-	0.1	-	-	-					
Middle East	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2					
Africa	-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 Non-OECD	**-**	**-**	**0.1**	**0.1**	**-**	**0.1**	**0.1**	**0.2**	**-0.4**	**-0.2**	**0.1**	**-0.1**					
Total Demand	**-**	**-**	**0.1**	**0.1**	**-**	**0.1**	**0.1**	**0.5**	**0.1**	**-0.3**	**-0.1**	**0.1**					
OECD SUPPLY																	
Americas	-	-	-	-	-	-	-	0.2	0.1	0.1	-	0.1					
Europe	-	-	-	-	-	-	-	-	-	-	-	-					
Asia Oceania	-	-	-	-	-	-	-	-	-	-	-	-					
Total OECD	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**0.2**	**0.1**	**0.1**	**-**	**0.1**					
NON-OECD SUPPLY																	
FSU	-	-	-	-	-	-	-	-	0.7	1.5	0.7	0.7					
Europe	-	-	-	-	-	-	-	-	-	-	-	-					
China	-	-	-	-	-	-	-	-	-	-	-	-					
Other Asia	-	-	-	-	-	-	-	-	-	-	-	-					
Americas	-	-	-	-	-	-	-	-	-	-	-	-					
Middle East	-	-	-	-	-	-	-	-	-	-	-	-					
Africa	-	-	-	-	-	-	-	-	-	-	-	-					
Total Non-OECD	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**0.7**	**1.5**	**0.6**	**0.7**					
Processing gains	-	-	-	-	-	-	-	-	-	-	-	-					
Global Biofuels	-	-	-	-	-	-	-	-	-	-	-	-					
Total Non-OPEC Supply	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**0.2**	**0.7**	**1.6**	**0.7**	**0.8**					
OPEC																	
Crude	-	-	-	-	-	-	-	-									
NGLs	-	-	-	-	-	-	-	-	-	-	-	-					
Total OPEC	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**									
Total Supply	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**0.3**									
STOCK CHANGES AND MISCELLANEOUS																	
REPORTED OECD																	
Industry	-	-	-	-	-	-	-	-									
Government	-	-	-	-	-	-	-	-									
Total	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**									
Floating storage/Oil in transit	-	-	-	-0.1	0.1	-	-	0.2									
Miscellaneous to balance	0.1	-	-0.1	-	-0.1	-0.1	-0.1	-0.5									
Total Stock Ch. & Misc	**-**	**-**	**-0.1**	**-0.1**	**-**	**-0.1**	**-0.1**	**-0.3**									
Memo items:																	
Call on OPEC crude + Stock ch.	-	-	0.1	0.1	-	0.1	0.1	0.3	-0.7	-1.9	-0.8	-0.8					

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

IEA. All rights reserved.

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

	2019	2020	1Q21	2Q21	3Q21	4Q21	2021	1Q22	2Q22	3Q22	4Q22	2022	1Q23	2Q23	3Q23	4Q23	2023
Total Demand	**100.4**	**91.9**	**94.4**	**96.4**	**98.8**	**100.8**	**97.6**	**99.3**	**98.2**	**99.8**	**100.4**	**99.4**	**100.5**	**101.1**	**101.9**	**102.7**	**101.6**
OECD SUPPLY																	
Americas[2]	22.8	21.9	21.4	22.3	22.4	23.3	22.3	23.0	23.5	24.2	24.6	23.8	24.8	25.0	25.2	25.5	25.2
Europe	3.4	3.6	3.6	3.1	3.4	3.4	3.4	3.3	3.2	3.2	3.4	3.3	3.4	3.3	3.4	3.5	3.4
Asia Oceania	0.5	0.5	0.5	0.5	0.6	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+)	**26.7**	**26.0**	**25.5**	**25.9**	**26.3**	**27.2**	**26.2**	**26.8**	**27.2**	**28.0**	**28.5**	**27.6**	**28.7**	**28.8**	**29.1**	**29.5**	**29.0**
NON-OECD SUPPLY																	
FSU[3]	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Europe	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
China	3.9	4.0	4.1	4.1	4.1	4.0	4.1	4.2	4.3	4.2	4.2	4.2	4.3	4.3	4.3	4.2	4.3
Other Asia[4]	2.5	2.3	2.2	2.2	2.2	2.1	2.2	2.1	2.1	2.1	2.0	2.1	2.0	2.0	2.0	2.0	2.0
Latin America	5.3	5.3	5.3	5.3	5.4	5.2	5.3	5.4	5.4	5.7	5.8	5.6	5.8	5.9	5.9	5.9	5.9
Middle East[5]	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.0	2.0	1.9	2.0	2.0	2.0	2.0	2.0
Africa[6]	1.2	1.2	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
Total Non-OECD (non-OPEC+)	**15.3**	**15.1**	**15.1**	**15.1**	**15.2**	**14.8**	**15.0**	**15.2**	**15.2**	**15.5**	**15.5**	**15.4**	**15.6**	**15.6**	**15.6**	**15.6**	**15.6**
Processing Gains	2.4	2.1	2.1	2.2	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.4	2.4	2.4	2.4
Global Biofuels	2.8	2.6	2.2	2.9	3.2	2.7	2.8	2.5	3.0	3.3	2.9	2.9	2.6	3.1	3.4	3.0	3.0
Total Non-OPEC+	**47.2**	**45.8**	**44.9**	**46.1**	**47.0**	**47.0**	**46.3**	**46.8**	**47.7**	**49.1**	**49.3**	**48.2**	**49.2**	**49.9**	**50.5**	**50.5**	**50.0**
OPEC+ CRUDE																	
Algeria	1.0	0.9	0.9	0.9	0.9	1.0	0.9	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Angola	1.4	1.3	1.1	1.1	1.1	1.1	1.1	1.2	1.2	1.1	1.1	1.1	1.1	1.1	1.1	1.0	1.1
Azerbaijan	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	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	2.4	2.0	2.3	2.4	2.5	2.5	2.4	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Iraq	4.7	4.0	3.9	3.9	4.1	4.2	4.0	4.3	4.4	4.5	4.6	4.5	4.6	4.6	4.7	4.7	4.6
Kazakhstan	1.6	1.5	1.5	1.5	1.4	1.7	1.5	1.6	1.4	1.5	1.7	1.6	1.7	1.7	1.6	1.7	1.6
Kuwait	2.7	2.4	2.3	2.4	2.4	2.5	2.4	2.6	2.7	2.8	2.8	2.7	2.8	2.8	2.8	2.8	2.8
Libya	1.1	0.4	1.2	1.2	1.2	1.1	1.1	1.1	0.7	0.8	1.2	0.9	1.2	1.2	1.2	1.2	1.2
Malaysia	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Mexico	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.6	1.6	1.6	1.7	1.6	1.7	1.7	1.7	1.6	1.7
Nigeria	1.7	1.5	1.4	1.3	1.3	1.2	1.3	1.3	1.2	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
Oman	0.8	0.8	0.7	0.7	0.8	0.8	0.8	0.8	0.8	0.9	0.9	0.8	0.9	0.9	0.9	0.9	0.9
Russia	10.4	9.4	9.3	9.5	9.7	10.0	9.6	10.0	9.3	9.0	8.1	9.1	7.5	7.5	7.5	7.5	7.5
Saudi Arabia	9.9	9.2	8.5	8.6	9.6	9.9	9.1	10.2	10.5	10.9	11.0	10.7	11.0	11.0	11.0	11.0	11.0
South Sudan	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.1	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1
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	3.2	2.9	2.7	2.7	2.8	2.9	2.8	3.0	3.1	3.2	3.2	3.1	3.2	3.2	3.2	3.2	3.2
Venezuela	0.9	0.5	0.5	0.5	0.6	0.8	0.6	0.7	0.7	0.8	0.8	0.7	0.8	0.8	0.8	0.8	0.8
OPEC+ Crude	**45.9**	**40.6**	**40.0**	**40.5**	**42.0**	**43.3**	**41.5**	**44.1**	**43.1**	**43.9**	**43.9**	**43.7**	**43.2**	**43.2**	**43.1**	**43.1**	**43.1**
OPEC+ NGLs & Condensate	7.4	7.2	7.4	7.4	7.3	7.5	7.4	7.7	7.7	7.8	7.8	7.8	7.8	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+	**53.4**	**47.9**	**47.5**	**48.0**	**49.4**	**51.0**	**49.0**	**51.9**	**51.0**	**51.8**	**51.8**	**51.6**	**51.1**	**51.1**	**51.1**	**51.1**	**51.1**
Total Supply Oil	**100.6**	**93.8**	**92.4**	**94.1**	**96.4**	**98.0**	**95.2**	**98.7**	**98.7**	**100.8**	**101.1**	**99.8**	**100.3**	**101.0**	**101.6**	**101.6**	**101.1**
Memo items:																	
Call on OPEC+ crude + Stock	45.8	38.7	42.1	42.8	44.4	46.1	43.8	44.7	42.7	42.8	43.2	43.3	43.4	43.3	43.4	44.3	43.6

1 From Jun 2022, OPEC+ supply reflects latest OPEC+ deal and individual country's sustainable capacity. Libya, Iran, Venezuela held at most recent level through 2023.

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

IEA. All rights reserved.

Table 2
SUMMARY OF GLOBAL OIL DEMAND

	2020	1Q21	2Q21	3Q21	4Q21	2021	1Q22	2Q22	3Q22	4Q22	2022	1Q23	2Q23	3Q23	4Q23	2023
Demand (mb/d)																
Americas	22.56	22.82	24.38	24.83	25.05	24.27	24.84	25.35	25.10	25.01	25.08	24.99	25.38	25.34	25.20	25.23
Europe	12.43	11.91	12.64	13.85	13.91	13.08	13.09	13.45	13.84	13.59	13.49	13.13	13.66	14.04	13.66	13.62
Asia Oceania	7.14	7.66	7.04	7.11	7.82	7.41	7.91	7.11	7.28	7.73	7.50	8.08	7.33	7.41	7.89	7.67
Total OECD	**42.13**	**42.40**	**44.05**	**45.79**	**46.77**	**44.77**	**45.83**	**45.91**	**46.21**	**46.33**	**46.07**	**46.20**	**46.36**	**46.80**	**46.75**	**46.53**
Asia	26.86	28.44	28.51	28.19	29.39	28.63	29.32	28.15	28.86	29.73	29.02	30.30	30.36	30.02	31.22	30.48
Middle East	8.33	8.41	8.60	9.05	8.59	8.66	8.66	8.73	9.15	8.65	8.80	8.59	8.80	9.23	8.73	8.84
Americas	5.64	5.84	5.91	6.25	6.21	6.05	6.00	6.12	6.22	6.20	6.14	6.08	6.21	6.32	6.29	6.23
FSU	4.50	4.57	4.67	4.91	4.99	4.79	4.65	4.55	4.58	4.57	4.59	4.53	4.53	4.70	4.74	4.63
Africa	3.73	4.01	3.92	3.87	4.07	3.97	4.11	4.04	3.97	4.12	4.06	4.11	4.13	4.07	4.22	4.13
Europe	0.71	0.73	0.73	0.75	0.76	0.74	0.73	0.74	0.76	0.77	0.75	0.74	0.76	0.78	0.79	0.77
Total Non-OECD	**49.76**	**52.00**	**52.34**	**53.03**	**53.99**	**52.84**	**53.48**	**52.33**	**53.54**	**54.04**	**53.35**	**54.35**	**54.78**	**55.13**	**56.00**	**55.07**
World	**91.88**	**94.40**	**96.39**	**98.81**	**100.76**	**97.61**	**99.31**	**98.24**	**99.75**	**100.37**	**99.42**	**100.55**	**101.15**	**101.92**	**102.74**	**101.60**
of which:																
United States[1]	18.19	18.45	20.03	20.21	20.41	19.78	20.22	20.55	20.25	20.28	20.32	20.30	20.50	20.35	20.36	20.38
Europe five[2]	6.92	6.68	7.08	7.67	7.82	7.32	7.37	7.48	7.67	7.65	7.55	7.43	7.60	7.74	7.67	7.61
China	14.30	14.97	15.68	15.68	15.74	15.52	15.50	14.49	15.69	15.88	15.39	15.98	16.15	16.32	16.82	16.32
Japan	3.33	3.73	3.08	3.18	3.67	3.42	3.73	3.10	3.23	3.57	3.41	3.86	3.26	3.33	3.66	3.52
India	4.51	4.97	4.42	4.46	4.95	4.70	5.18	5.02	4.65	5.05	4.98	5.23	5.11	4.72	5.13	5.05
Russia	3.42	3.50	3.58	3.76	3.76	3.65	3.63	3.49	3.50	3.43	3.51	3.45	3.42	3.56	3.54	3.49
Brazil	2.93	2.98	2.98	3.20	3.13	3.07	2.99	3.02	3.08	3.09	3.05	2.96	3.00	3.06	3.07	3.02
Saudi Arabia	3.52	3.29	3.58	3.81	3.49	3.54	3.37	3.50	3.82	3.49	3.55	3.27	3.53	3.85	3.51	3.54
Canada	2.30	2.26	2.24	2.50	2.40	2.35	2.33	2.42	2.54	2.46	2.44	2.41	2.44	2.64	2.54	2.51
Korea	2.44	2.55	2.50	2.59	2.70	2.59	2.74	2.54	2.61	2.67	2.64	2.80	2.61	2.66	2.77	2.71
Mexico	1.58	1.62	1.64	1.60	1.71	1.64	1.75	1.89	1.84	1.80	1.82	1.76	1.94	1.88	1.81	1.85
Iran	1.88	2.02	1.92	1.93	1.93	1.95	2.04	1.95	1.95	1.93	1.97	2.01	1.94	1.94	1.92	1.95
Total	**65.32**	**67.01**	**68.73**	**70.59**	**71.71**	**69.53**	**70.87**	**69.46**	**70.83**	**71.30**	**70.62**	**71.46**	**71.50**	**72.03**	**72.81**	**71.95**
% of World	**71.1%**	**71.0%**	**71.3%**	**71.4%**	**71.2%**	**71.2%**	**71.4%**	**70.7%**	**71.0%**	**71.0%**	**71.0%**	**71.1%**	**70.7%**	**70.7%**	**70.9%**	**70.8%**
Annual Change (% per annum)																
Americas	-11.7	-6.5	22.0	9.4	8.3	7.6	8.8	4.0	1.1	-0.1	3.3	0.6	0.1	1.0	0.8	0.6
Europe	-13.1	-10.6	14.7	7.6	11.2	5.2	9.8	6.4	-0.1	-2.3	3.1	0.3	1.5	1.5	0.5	1.0
Asia Oceania	-10.0	-2.5	6.7	5.4	6.4	3.8	3.2	1.0	2.3	-1.2	1.3	2.1	3.0	1.9	2.1	2.3
Total OECD	**-11.8**	**-7.0**	**17.2**	**8.2**	**8.8**	**6.3**	**8.1**	**4.2**	**0.9**	**-0.9**	**2.9**	**0.8**	**1.0**	**1.3**	**0.9**	**1.0**
Asia	-3.6	11.3	9.3	3.8	2.8	6.6	3.1	-1.3	2.4	1.2	1.3	3.3	7.9	4.0	5.0	5.0
Middle East	-5.6	-0.8	11.7	3.6	2.4	4.0	3.0	1.5	1.1	0.8	1.6	-0.8	0.8	1.0	0.8	0.5
Americas	-10.8	0.7	16.7	8.7	4.6	7.4	2.7	3.6	-0.5	0.0	1.4	1.2	1.5	1.6	1.5	1.5
FSU	-4.8	-0.1	14.4	5.2	6.9	6.4	1.9	-2.7	-6.6	-8.4	-4.1	-2.6	-0.4	2.6	3.7	0.8
Africa	-10.5	-0.8	15.6	6.0	6.3	6.4	2.4	3.2	2.4	1.4	2.3	0.0	2.1	2.5	2.5	1.8
Europe	-9.4	1.8	10.6	4.4	2.6	4.7	0.6	1.7	1.0	1.3	1.1	1.1	2.3	2.6	2.5	2.1
Total Non-OECD	**-5.5**	**5.8**	**11.4**	**4.6**	**3.5**	**6.2**	**2.8**	**-0.0**	**1.0**	**0.1**	**1.0**	**1.6**	**4.7**	**3.0**	**3.6**	**3.2**
World	**-8.5**	**-0.4**	**14.0**	**6.2**	**5.9**	**6.2**	**5.2**	**1.9**	**0.9**	**-0.4**	**1.9**	**1.2**	**3.0**	**2.2**	**2.4**	**2.2**
Annual Change (mb/d)																
Americas	-2.98	-1.58	4.40	2.13	1.91	1.72	2.02	0.98	0.27	-0.03	0.80	0.16	0.03	0.24	0.19	0.15
Europe	-1.88	-1.41	1.62	0.97	1.40	0.65	1.17	0.81	-0.01	-0.32	0.41	0.04	0.21	0.20	0.07	0.13
Asia Oceania	-0.80	-0.19	0.44	0.36	0.47	0.27	0.24	0.07	0.16	-0.09	0.10	0.17	0.22	0.13	0.16	0.17
Total OECD	**-5.65**	**-3.19**	**6.46**	**3.46**	**3.78**	**2.64**	**3.43**	**1.86**	**0.43**	**-0.44**	**1.31**	**0.37**	**0.45**	**0.58**	**0.42**	**0.46**
Asia	-1.00	2.89	2.42	1.02	0.79	1.78	0.88	-0.36	0.67	0.34	0.38	0.98	2.21	1.16	1.50	1.46
Middle East	-0.50	-0.07	0.90	0.31	0.20	0.34	0.25	0.13	0.10	0.07	0.14	-0.07	0.07	0.09	0.07	0.04
Americas	-0.68	0.04	0.84	0.50	0.27	0.41	0.16	0.22	-0.03	0.00	0.08	0.07	0.09	0.10	0.09	0.09
FSU	-0.23	0.00	0.59	0.24	0.32	0.29	0.09	-0.13	-0.32	-0.42	-0.20	-0.12	-0.02	0.12	0.17	0.04
Africa	-0.44	-0.03	0.53	0.22	0.24	0.24	0.10	0.13	0.09	0.06	0.09	0.00	0.08	0.10	0.10	0.07
Europe	-0.07	0.01	0.07	0.03	0.02	0.03	0.00	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.02	0.02
Total Non-OECD	**-2.91**	**2.84**	**5.35**	**2.33**	**1.85**	**3.09**	**1.48**	**-0.01**	**0.51**	**0.05**	**0.51**	**0.87**	**2.46**	**1.59**	**1.95**	**1.72**
World	**-8.56**	**-0.35**	**11.81**	**5.79**	**5.63**	**5.73**	**4.91**	**1.85**	**0.94**	**-0.39**	**1.81**	**1.24**	**2.91**	**2.17**	**2.37**	**2.17**
Revisions to Oil Demand from Last Month's Report (mb/d)																
Americas	0.00	0.00	0.00	0.00	0.00	0.00	0.35	0.59	0.05	0.03	0.25					
Europe	0.00	0.00	0.00	0.00	0.01	0.00	-0.01	-0.03	-0.01	-0.05	-0.03					
Asia Oceania	0.00	0.00	0.00	0.00	0.00	0.00	0.01	-0.14	-0.10	-0.10	-0.08					
Total OECD	**-**	**0.00**	**0.00**	**0.00**	**0.01**	**0.00**	**0.35**	**0.41**	**-0.06**	**-0.11**	**0.14**					
Asia	-0.08	-0.06	-0.04	-0.09	-0.01	-0.05	0.01	-0.72	-0.41	-0.15	-0.32					
Middle East	0.12	0.15	0.13	0.15	0.14	0.14	0.17	0.18	0.16	0.17	0.17					
Americas	0.01	0.02	0.02	0.02	0.02	0.02	0.05	0.08	0.02	0.01	0.04					
FSU	0.00	0.01	0.01	0.01	0.01	0.01	0.03	0.22	0.13	0.11	0.12					
Africa	-0.08	-0.07	-0.07	-0.07	-0.07	-0.07	-0.09	-0.11	-0.09	-0.09	-0.10					
Europe	0.00	0.01	0.01	0.00	0.01	0.01	0.01	0.00	0.00	0.01	0.00					
Total Non-OECD	**-0.03**	**0.06**	**0.06**	**0.02**	**0.10**	**0.06**	**0.19**	**-0.35**	**-0.19**	**0.06**	**-0.07**					
World	**-0.03**	**0.06**	**0.06**	**0.02**	**0.10**	**0.06**	**0.54**	**0.06**	**-0.25**	**-0.05**	**0.07**					
Revisions to Oil Demand Growth from Last Month's Report (mb/d)																
World	-0.02	0.19	-0.02	0.06	0.15	0.10	0.48	0.00	-0.27	-0.16	0.01					

1 US figures exclude US territories.
2 France, Germany, Italy, Spain and UK

IEA. All rights reserved.

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

	2020	2021	2Q21	3Q21	4Q21	1Q22	Jan 22	Feb 22	Mar 22 [2]	Latest month vs. Feb 22	Latest month vs. Mar 21
Americas											
LPG and ethane	3.56	3.71	3.58	3.59	3.94	4.23	4.53	4.39	3.77	-0.62	0.21
Naphtha	0.25	0.25	0.27	0.26	0.24	0.22	0.24	0.20	0.22	0.02	-0.01
Motor gasoline	9.55	10.34	10.57	10.73	10.58	10.06	9.47	10.20	10.53	0.34	0.39
Jet and kerosene	1.23	1.55	1.48	1.72	1.72	1.68	1.65	1.63	1.76	0.13	0.45
Gasoil/diesel oil	4.93	5.08	5.05	5.02	5.16	5.35	5.19	5.42	5.45	0.03	0.23
Residual fuel oil	0.40	0.53	0.49	0.54	0.58	0.58	0.55	0.55	0.63	0.09	0.05
Other products	2.64	2.82	2.93	2.96	2.83	2.72	2.60	2.78	2.80	0.02	0.06
Total	**22.56**	**24.27**	**24.38**	**24.83**	**25.05**	**24.84**	**24.22**	**25.16**	**25.16**	**0.01**	**1.38**
Europe											
LPG and ethane	1.08	1.09	1.06	1.10	1.07	1.10	1.02	1.20	1.09	-0.11	-0.04
Naphtha	1.07	1.14	1.02	1.11	1.19	1.16	1.27	1.21	1.01	-0.20	-0.12
Motor gasoline	1.75	1.93	1.92	2.19	2.01	1.87	1.74	1.94	1.95	0.01	0.23
Jet and kerosene	0.73	0.84	0.67	1.01	1.05	0.99	0.94	1.00	1.05	0.05	0.46
Gasoil/diesel oil	5.96	6.26	6.13	6.52	6.69	6.14	5.64	6.42	6.38	-0.04	0.21
Residual fuel oil	0.68	0.71	0.69	0.73	0.71	0.74	0.74	0.71	0.76	0.05	0.06
Other products	1.15	1.13	1.14	1.19	1.17	1.09	1.04	1.08	1.14	0.07	0.05
Total	**12.43**	**13.08**	**12.64**	**13.85**	**13.91**	**13.09**	**12.38**	**13.55**	**13.37**	**-0.17**	**0.86**
Asia Oceania											
LPG and ethane	0.78	0.79	0.77	0.73	0.79	0.96	0.95	1.01	0.92	-0.10	0.10
Naphtha	1.82	1.99	1.86	2.02	2.09	1.96	2.06	1.92	1.89	-0.04	-0.14
Motor gasoline	1.35	1.36	1.37	1.36	1.40	1.31	1.30	1.32	1.31	-0.01	-0.06
Jet and kerosene	0.61	0.61	0.47	0.43	0.72	0.88	0.97	0.94	0.72	-0.22	0.08
Gasoil/diesel oil	1.79	1.83	1.82	1.77	1.92	1.88	1.83	1.93	1.89	-0.04	0.04
Residual fuel oil	0.43	0.46	0.41	0.44	0.49	0.53	0.56	0.51	0.53	0.02	0.05
Other products	0.35	0.37	0.35	0.36	0.40	0.39	0.35	0.44	0.38	-0.06	0.02
Total	**7.14**	**7.41**	**7.04**	**7.11**	**7.82**	**7.91**	**8.03**	**8.07**	**7.64**	**-0.44**	**0.10**
OECD											
LPG and ethane	5.43	5.59	5.41	5.43	5.80	6.28	6.50	6.60	5.78	-0.83	0.27
Naphtha	3.14	3.37	3.15	3.38	3.52	3.34	3.56	3.33	3.12	-0.22	-0.28
Motor gasoline	12.66	13.62	13.86	14.29	13.99	13.24	12.51	13.45	13.79	0.34	0.57
Jet and kerosene	2.57	3.00	2.62	3.16	3.49	3.55	3.55	3.57	3.53	-0.04	1.00
Gasoil/diesel oil	12.68	13.17	13.00	13.31	13.77	13.37	12.66	13.77	13.72	-0.05	0.49
Residual fuel oil	1.50	1.70	1.59	1.71	1.79	1.85	1.85	1.76	1.93	0.16	0.16
Other products	4.14	4.32	4.42	4.52	4.41	4.20	3.99	4.29	4.32	0.03	0.14
Total	**42.13**	**44.77**	**44.05**	**45.79**	**46.77**	**45.83**	**44.63**	**46.78**	**46.18**	**-0.60**	**2.35**

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

IEA. All rights reserved.

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

	2020	2021	2Q21	3Q21	4Q21	1Q22	Jan 22	Feb 22	Mar 22 [2]	Latest month vs. Feb 22	Latest month vs. Mar 21
United States[3]											
LPG and ethane	2.74	2.85	2.76	2.73	3.07	3.37	3.62	3.46	3.05	-0.41	0.29
Naphtha	0.18	0.19	0.21	0.20	0.18	0.15	0.16	0.14	0.16	0.02	-0.01
Motor gasoline	8.05	8.80	9.07	9.13	8.96	8.47	7.98	8.60	8.86	0.26	0.28
Jet and kerosene	1.08	1.38	1.34	1.52	1.49	1.46	1.44	1.40	1.52	0.12	0.36
Gasoil/diesel oil	3.78	3.94	3.93	3.87	4.00	4.14	4.08	4.18	4.16	-0.02	0.13
Residual fuel oil	0.21	0.31	0.25	0.33	0.41	0.38	0.33	0.36	0.44	0.07	0.14
Other products	2.13	2.32	2.47	2.43	2.30	2.24	2.11	2.30	2.33	0.03	0.12
Total	**18.19**	**19.78**	**20.03**	**20.21**	**20.41**	**20.22**	**19.73**	**20.44**	**20.51**	**0.08**	**1.31**
Japan											
LPG and ethane	0.41	0.42	0.40	0.37	0.43	0.51	0.52	0.54	0.48	-0.06	0.01
Naphtha	0.68	0.73	0.68	0.70	0.79	0.66	0.72	0.67	0.60	-0.07	-0.15
Motor gasoline	0.76	0.74	0.71	0.78	0.76	0.70	0.69	0.69	0.72	0.03	-0.02
Jet and kerosene	0.36	0.36	0.24	0.21	0.45	0.57	0.64	0.63	0.45	-0.18	0.04
Diesel	0.40	0.40	0.39	0.39	0.42	0.40	0.38	0.42	0.42	0.00	0.00
Other gasoil	0.30	0.31	0.28	0.27	0.33	0.36	0.35	0.38	0.35	-0.02	0.02
Residual fuel oil	0.21	0.24	0.21	0.23	0.26	0.29	0.30	0.28	0.28	0.00	0.01
Other products	0.20	0.22	0.18	0.23	0.25	0.25	0.21	0.28	0.24	-0.04	0.04
Total	**3.33**	**3.42**	**3.08**	**3.18**	**3.67**	**3.73**	**3.80**	**3.87**	**3.54**	**-0.33**	**-0.04**
Germany											
LPG and ethane	0.11	0.12	0.13	0.12	0.11	0.11	0.11	0.11	0.11	0.00	-0.02
Naphtha	0.29	0.34	0.31	0.32	0.36	0.36	0.38	0.39	0.31	-0.09	-0.01
Motor gasoline	0.45	0.45	0.44	0.48	0.46	0.42	0.41	0.42	0.45	0.03	0.01
Jet and kerosene	0.10	0.13	0.11	0.16	0.16	0.15	0.15	0.15	0.16	0.01	0.06
Diesel	0.71	0.71	0.71	0.77	0.75	0.67	0.64	0.63	0.73	0.10	0.03
Other gasoil	0.36	0.28	0.26	0.26	0.36	0.28	0.26	0.28	0.30	0.02	0.05
Residual fuel oil	0.05	0.05	0.04	0.05	0.06	0.05	0.07	0.04	0.05	0.00	-0.01
Other products	0.08	0.07	0.06	0.07	0.08	0.05	0.05	0.06	0.05	-0.01	0.00
Total	**2.15**	**2.14**	**2.07**	**2.23**	**2.34**	**2.10**	**2.05**	**2.09**	**2.15**	**0.06**	**0.12**
Italy											
LPG and ethane	0.09	0.10	0.09	0.09	0.11	0.12	0.11	0.13	0.12	-0.01	0.03
Naphtha	0.10	0.10	0.10	0.09	0.11	0.11	0.11	0.12	0.11	-0.01	0.00
Motor gasoline	0.14	0.17	0.17	0.19	0.18	0.16	0.14	0.17	0.17	0.00	0.03
Jet and kerosene	0.04	0.04	0.04	0.07	0.05	0.04	0.05	0.04	0.04	-0.01	0.02
Diesel	0.42	0.49	0.49	0.52	0.52	0.49	0.44	0.52	0.52	-0.01	0.06
Other gasoil	0.06	0.06	0.06	0.07	0.06	0.04	0.02	0.04	0.05	0.01	-0.01
Residual fuel oil	0.06	0.06	0.05	0.06	0.06	0.05	0.05	0.05	0.06	0.01	0.00
Other products	0.14	0.15	0.16	0.16	0.16	0.15	0.13	0.15	0.16	0.00	0.00
Total	**1.05**	**1.18**	**1.15**	**1.25**	**1.25**	**1.16**	**1.05**	**1.23**	**1.22**	**-0.01**	**0.13**
France											
LPG and ethane	0.11	0.12	0.13	0.11	0.10	0.12	0.12	0.13	0.13	0.00	0.00
Naphtha	0.12	0.14	0.12	0.13	0.15	0.13	0.15	0.14	0.11	-0.03	-0.04
Motor gasoline	0.17	0.21	0.20	0.24	0.22	0.21	0.19	0.22	0.22	0.00	0.03
Jet and kerosene	0.09	0.09	0.07	0.11	0.11	0.10	0.10	0.09	0.10	0.00	0.04
Diesel	0.67	0.73	0.72	0.78	0.76	0.71	0.64	0.74	0.75	0.01	0.00
Other gasoil	0.14	0.13	0.09	0.11	0.15	0.16	0.17	0.17	0.13	-0.04	-0.01
Residual fuel oil	0.03	0.03	0.03	0.03	0.03	0.03	0.04	0.04	0.03	-0.01	0.00
Other products	0.09	0.09	0.09	0.12	0.09	0.08	0.06	0.08	0.09	0.01	0.01
Total	**1.42**	**1.54**	**1.45**	**1.63**	**1.61**	**1.54**	**1.46**	**1.61**	**1.56**	**-0.05**	**0.04**
United Kingdom											
LPG and ethane	0.13	0.11	0.09	0.10	0.11	0.12	0.11	0.12	0.12	0.00	-0.01
Naphtha	0.02	0.00	0.01	0.00	0.00	0.00	0.01	0.00	0.00	0.00	-0.01
Motor gasoline	0.22	0.25	0.26	0.28	0.28	0.26	0.26	0.28	0.25	-0.03	0.04
Jet and kerosene	0.19	0.18	0.14	0.16	0.24	0.24	0.22	0.25	0.25	0.00	0.09
Diesel	0.43	0.48	0.50	0.50	0.50	0.47	0.44	0.51	0.46	-0.05	0.00
Other gasoil	0.11	0.13	0.14	0.14	0.12	0.11	0.10	0.12	0.11	-0.01	-0.01
Residual fuel oil	0.02	0.02	0.01	0.02	0.02	0.02	0.02	0.01	0.02	0.00	0.00
Other products	0.10	0.11	0.11	0.11	0.10	0.11	0.10	0.11	0.12	0.01	0.02
Total	**1.21**	**1.27**	**1.25**	**1.31**	**1.37**	**1.33**	**1.26**	**1.41**	**1.33**	**-0.08**	**0.12**
Canada											
LPG and ethane	0.47	0.50	0.49	0.50	0.49	0.48	0.54	0.55	0.36	-0.19	-0.11
Naphtha	0.03	0.03	0.03	0.03	0.03	0.03	0.04	0.03	0.03	0.01	0.00
Motor gasoline	0.77	0.80	0.78	0.87	0.80	0.77	0.75	0.80	0.77	-0.03	-0.03
Jet and kerosene	0.07	0.08	0.05	0.10	0.11	0.09	0.08	0.10	0.10	0.00	0.05
Diesel	0.27	0.27	0.27	0.27	0.26	0.27	0.26	0.29	0.26	-0.03	0.00
Other gasoil	0.34	0.35	0.33	0.37	0.35	0.36	0.34	0.39	0.34	-0.06	-0.02
Residual fuel oil	0.03	0.03	0.03	0.02	0.03	0.04	0.05	0.03	0.04	0.01	0.00
Other products	0.32	0.31	0.27	0.35	0.34	0.29	0.31	0.29	0.28	-0.01	-0.02
Total	**2.30**	**2.35**	**2.24**	**2.50**	**2.40**	**2.33**	**2.36**	**2.48**	**2.18**	**-0.30**	**-0.13**

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.

IEA. All rights reserved.

Table 3
WORLD OIL PRODUCTION
(million barrels per day)

	2021	2022	2023	1Q22	2Q22	3Q22	4Q22	1Q23	Mar 22	Apr 22	May 22
OPEC											
Crude Oil											
Saudi Arabia	9.15			10.20					10.28	10.43	10.50
Iran	2.42			2.56					2.58	2.55	2.55
Iraq	4.03			4.29					4.33	4.43	4.38
UAE	2.76			3.03					3.05	3.05	3.07
Kuwait	2.42			2.61					2.64	2.65	2.67
Angola	1.12			1.16					1.14	1.18	1.16
Nigeria	1.31			1.30					1.25	1.23	1.11
Libya	1.15			1.08					1.10	0.90	0.77
Algeria	0.91			0.99					1.00	1.00	1.01
Congo	0.27			0.27					0.26	0.26	0.28
Gabon	0.18			0.19					0.20	0.19	0.19
Equatorial Guinea	0.10			0.09					0.09	0.10	0.10
Venezuela	0.61			0.71					0.72	0.76	0.73
Total Crude Oil	**26.43**			**28.47**					**28.64**	**28.73**	**28.52**
of which Neutral Zone [1]	*0.25*			*0.27*					*0.28*	*0.29*	*0.28*
Total NGLs [2]	**5.12**	**5.37**	**5.46**	**5.28**	**5.37**	**5.41**	**5.41**	**5.44**	**5.31**	**5.36**	**5.37**
Total OPEC [3]	**31.55**			**33.75**					**33.95**	**34.09**	**33.89**
NON-OPEC [4]											
OECD											
Americas	24.29	25.86	27.21	24.97	25.50	26.24	26.69	26.90	25.57	25.00	25.61
United States	16.73	18.00	19.14	17.23	17.80	18.30	18.64	18.71	17.73	17.38	17.90
Mexico	1.95	2.01	2.05	2.00	1.99	2.01	2.05	2.06	2.00	1.99	1.99
Canada	5.60	5.83	6.01	5.73	5.70	5.92	5.99	6.11	5.83	5.62	5.72
Chile	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Europe	3.38	3.29	3.39	3.34	3.18	3.24	3.39	3.40	3.32	3.27	3.24
UK	0.89	0.92	0.85	0.91	0.91	0.92	0.92	0.89	0.90	0.93	0.90
Norway	2.04	1.92	2.11	1.96	1.82	1.88	2.03	2.08	1.95	1.90	1.90
Others	0.46	0.45	0.43	0.47	0.45	0.44	0.44	0.43	0.47	0.45	0.45
Asia Oceania	0.51	0.49	0.48	0.49	0.49	0.49	0.49	0.49	0.50	0.49	0.49
Australia	0.44	0.42	0.41	0.42	0.42	0.42	0.42	0.42	0.43	0.42	0.42
Others	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
Total OECD	**28.19**	**29.64**	**31.08**	**28.80**	**29.17**	**29.98**	**30.58**	**30.78**	**29.40**	**28.76**	**29.35**
NON-OECD											
Former USSR	13.77	13.28	11.70	14.41	13.24	13.07	12.41	11.73	14.34	13.21	13.43
Russia	10.87	10.37	8.71	11.37	10.51	10.24	9.38	8.71	11.35	10.42	10.55
Azerbaijan	0.70	0.69	0.68	0.70	0.68	0.69	0.70	0.70	0.70	0.69	0.69
Kazakhstan	1.85	1.89	1.99	1.98	1.73	1.82	2.01	2.01	1.95	1.78	1.88
Others	0.36	0.33	0.31	0.36	0.32	0.32	0.32	0.32	0.34	0.31	0.32
Asia	6.91	6.97	6.93	7.02	7.00	6.98	6.91	6.95	7.05	6.98	6.98
China	4.06	4.23	4.27	4.23	4.26	4.23	4.19	4.27	4.25	4.22	4.26
Malaysia	0.57	0.57	0.57	0.58	0.55	0.58	0.58	0.57	0.59	0.57	0.53
India	0.73	0.70	0.69	0.72	0.71	0.70	0.69	0.68	0.72	0.71	0.71
Indonesia	0.68	0.65	0.62	0.66	0.66	0.65	0.64	0.63	0.66	0.66	0.66
Others	0.88	0.82	0.77	0.83	0.83	0.82	0.81	0.79	0.83	0.84	0.82
Europe	0.11	0.11	0.10	0.11	0.11	0.10	0.10	0.10	0.11	0.11	0.11
Americas	5.30	5.60	5.87	5.43	5.44	5.72	5.81	5.81	5.45	5.52	5.39
Brazil	3.00	3.12	3.30	3.09	3.01	3.19	3.21	3.23	3.09	3.11	2.95
Argentina	0.64	0.70	0.72	0.69	0.70	0.71	0.71	0.72	0.69	0.70	0.70
Colombia	0.74	0.74	0.73	0.75	0.74	0.74	0.75	0.74	0.75	0.74	0.74
Ecuador	0.48	0.48	0.46	0.47	0.48	0.48	0.47	0.47	0.48	0.48	0.48
Others	0.43	0.55	0.66	0.44	0.51	0.60	0.66	0.66	0.44	0.49	0.51
Middle East	3.09	3.21	3.27	3.16	3.22	3.23	3.23	3.27	3.19	3.21	3.20
Oman	0.98	1.07	1.11	1.04	1.07	1.08	1.08	1.10	1.05	1.06	1.07
Qatar	1.82	1.84	1.87	1.82	1.85	1.85	1.85	1.87	1.82	1.85	1.85
Others	0.29	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.31	0.31	0.28
Africa	1.31	1.28	1.27	1.27	1.27	1.29	1.29	1.28	1.28	1.24	1.26
Egypt	0.57	0.57	0.56	0.57	0.57	0.57	0.57	0.56	0.57	0.57	0.57
Others	0.74	0.71	0.71	0.71	0.70	0.73	0.72	0.71	0.71	0.67	0.70
Total Non-OECD	**30.50**	**30.45**	**29.14**	**31.40**	**30.27**	**30.39**	**29.75**	**29.14**	**31.41**	**30.27**	**30.37**
Processing gains [5]	2.25	2.31	2.37	2.28	2.28	2.33	2.33	2.34	2.28	2.25	2.28
Global biofuels	2.75	2.92	3.04	2.45	3.01	3.30	2.93	2.55	2.51	2.69	3.09
TOTAL NON-OPEC	**63.70**	**65.32**	**65.62**	**64.93**	**64.73**	**66.00**	**65.59**	**64.82**	**65.61**	**63.98**	**65.09**
TOTAL SUPPLY	**95.24**			**98.68**					**99.56**	**98.07**	**98.98**

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.

IEA. All rights reserved.

Table 3a
OIL SUPPLY IN OECD COUNTRIES[1]
(thousand of barrels per day)

	2021	2022	2023	1Q22	2Q22	3Q22	4Q22	1Q23	Mar 22	Apr 22	May 22
United States											
Alaska	437	451	438	446	463	434	459	436	440	464	478
California	369	342	329	348	344	341	337	334	346	345	344
Texas	4771	5182	5498	4885	5169	5324	5343	5315	4972	5077	5201
Federal Gulf of Mexico[2]	1701	1719	1956	1673	1751	1724	1726	1985	1690	1706	1734
Other US Lower 48	3909	4322	4632	4096	4169	4472	4545	4567	4208	3941	4214
NGLs[3]	5397	5800	6077	5614	5724	5824	6031	5881	5909	5663	5747
Other Hydrocarbons	142	183	208	167	180	184	200	193	170	180	180
Total	**16727**	**17998**	**19138**	**17229**	**17800**	**18303**	**18641**	**18711**	**17734**	**17377**	**17898**
Canada											
Alberta Light/Medium/Heavy	436	484	496	469	494	489	485	501	489	506	485
Alberta Bitumen	1921	2096	2243	1926	2035	2283	2136	2270	1955	1922	2153
Saskatchewan	437	442	432	445	444	441	437	438	457	442	445
Other Crude	456	428	470	441	421	420	429	470	451	420	422
NGLs	993	1021	1044	1050	1018	1013	1002	1075	1066	1022	1038
Other Upgraders	180	183	178	188	173	171	201	183	189	176	158
Synthetic Crudes	1181	1180	1149	1210	1112	1102	1296	1177	1218	1131	1015
Total	**5603**	**5833**	**6013**	**5729**	**5696**	**5918**	**5986**	**6114**	**5825**	**5617**	**5715**
Mexico											
Crude	1780	1847	1897	1825	1825	1847	1891	1901	1834	1821	1822
NGLs	170	161	149	166	162	159	156	153	163	164	161
Total	**1954**	**2014**	**2052**	**1997**	**1993**	**2012**	**2053**	**2060**	**2003**	**1991**	**1988**
UK											
Brent Fields	25	25	22	29	28	21	23	26	29	28	28
Forties Fields	211	227	193	250	217	209	231	225	248	245	215
Ninian Fields	24	20	17	21	21	20	19	19	23	21	21
Flotta Fields	50	46	42	48	44	46	45	44	48	47	38
Other Fields	511	525	501	487	528	550	532	507	477	513	522
NGLs	67	73	70	74	73	72	72	71	76	71	74
Total	**888**	**915**	**846**	**909**	**911**	**919**	**923**	**892**	**902**	**925**	**897**
Norway[5]											
Ekofisk-Ula Area	141	112	115	130	70	122	125	123	128	130	129
Oseberg-Troll Area	212	205	228	211	210	176	224	226	171	215	203
Statfjord-Gullfaks Area	262	243	225	249	246	241	236	232	259	246	245
Haltenbanken Area	284	276	281	283	279	270	273	277	277	281	278
Sleipner-Frigg Area	822	833	988	862	780	809	879	935	846	790	857
Other Fields	67	55	87	19	35	69	98	91	70	31	-14
NGLs	249	201	187	209	203	196	196	193	200	206	202
Total	**2037**	**1925**	**2111**	**1964**	**1822**	**1882**	**2031**	**2077**	**1951**	**1899**	**1900**
Other OECD Europe											
Denmark	66	65	63	67	66	64	63	61	67	66	66
Italy	100	124	121	125	125	124	123	122	124	125	126
Turkey	66	64	64	64	64	64	64	64	66	64	64
Other	99	88	81	91	89	87	86	84	83	90	89
NGLs	7	7	6	8	7	7	7	7	7	8	7
Non-Conventional Oils	120	100	96	111	97	96	96	96	125	97	94
Total	**457**	**449**	**432**	**466**	**449**	**443**	**438**	**434**	**472**	**448**	**447**
Australia											
Gippsland Basin	4	4	3	4	4	4	3	3	4	4	4
Cooper-Eromanga Basin	23	19	18	20	20	19	19	19	20	20	20
Carnarvon Basin	112	112	103	116	113	111	108	106	115	114	113
Other Crude	195	180	181	171	180	182	186	184	170	179	178
NGLs	109	107	105	107	107	107	107	106	123	106	106
Total	**444**	**422**	**410**	**417**	**424**	**423**	**423**	**418**	**431**	**422**	**420**
Other OECD Asia Oceania											
New Zealand	18	17	15	17	17	17	16	16	18	17	17
Japan	4	4	4	4	4	4	4	4	4	4	4
NGLs	11	10	9	12	10	10	10	10	12	10	10
Non-Conventional Oils	37	40	40	41	40	40	40	40	39	39	40
Total	**71**	**70**	**68**	**73**	**70**	**70**	**69**	**69**	**72**	**70**	**71**
OECD											
Crude Oil	19517	20558	21745	19825	20256	20986	21149	21584	20091	19875	20502
NGLs	7010	7388	7657	7249	7312	7397	7589	7504	7564	7258	7352
Non-Conventional Oils[4]	1664	1691	1677	1722	1607	1598	1838	1695	1747	1628	1493
Total	**28191**	**29637**	**31079**	**28795**	**29174**	**29981**	**30576**	**30784**	**29401**	**28761**	**29347**

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.

IEA. All rights reserved.

Table 3b
WORLD OIL PRODUCTION (Including OPEC+ based on current agreement[1])
(million barrels per day)

	2020	2021	2022	1Q21	2Q21	3Q21	4Q21	1Q22	Mar 22	Apr 22	May 22
OPEC+											
Crude Oil											
Algeria	0.90	0.91	1.00	0.87	0.89	0.92	0.96	0.99	1.00	1.00	1.01
Angola	1.27	1.12	1.13	1.14	1.12	1.11	1.12	1.16	1.14	1.18	1.16
Azerbaijan	0.61	0.59	0.57	0.59	0.60	0.60	0.59	0.58	0.58	0.58	0.57
Bahrain	0.17	0.17	0.19	0.17	0.17	0.18	0.18	0.18	0.20	0.19	0.17
Brunei	0.08	0.08	0.09	0.09	0.09	0.08	0.08	0.08	0.08	0.09	0.09
Congo	0.30	0.27	0.28	0.28	0.27	0.27	0.26	0.27	0.26	0.26	0.28
Equatorial Guinea	0.11	0.10	0.10	0.11	0.11	0.10	0.08	0.09	0.09	0.10	0.10
Gabon	0.20	0.18	0.19	0.17	0.18	0.18	0.19	0.19	0.20	0.19	0.19
Iran	2.00	2.42	2.55	2.32	2.40	2.47	2.48	2.56	2.58	2.55	2.55
Iraq	4.05	4.03	4.46	3.88	3.94	4.06	4.24	4.29	4.33	4.43	4.38
Kazakhstan	1.50	1.52	1.55	1.49	1.52	1.41	1.66	1.63	1.60	1.47	1.56
Kuwait	2.41	2.42	2.72	2.34	2.35	2.44	2.53	2.61	2.64	2.65	2.67
Libya	0.35	1.15	0.91	1.15	1.15	1.16	1.12	1.08	1.10	0.90	0.77
Malaysia	0.46	0.42	0.42	0.45	0.43	0.39	0.40	0.42	0.43	0.41	0.38
Mexico	1.66	1.66	1.64	1.67	1.69	1.65	1.65	1.64	1.63	1.61	1.62
Nigeria	1.49	1.31	1.28	1.39	1.34	1.27	1.24	1.30	1.25	1.23	1.11
Oman	0.76	0.75	0.84	0.73	0.74	0.76	0.78	0.82	0.83	0.84	0.84
Russia	9.42	9.62	9.10	9.26	9.54	9.72	9.95	10.04	10.00	9.15	9.30
Saudi Arabia	9.21	9.15	10.67	8.51	8.56	9.60	9.91	10.20	10.28	10.43	10.50
South Sudan	0.16	0.15	0.15	0.14	0.16	0.16	0.16	0.14	0.13	0.14	0.14
Sudan	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
UAE	2.87	2.76	3.11	2.65	2.68	2.80	2.90	3.03	3.05	3.05	3.07
Venezuela	0.53	0.61	0.75	0.55	0.55	0.59	0.76	0.71	0.72	0.76	0.73
Total Crude Oil	**40.57**	**41.47**	**43.75**	**40.02**	**40.54**	**41.98**	**43.31**	**44.05**	**44.17**	**43.27**	**43.26**
of which Neutral Zone	*0.11*	*0.22*		*0.23*	*0.26*	*0.24*	*0.28*		*0.28*	*0.29*	*0.28*
Total NGLs	**7.36**	**7.50**	**7.87**	**7.48**	**7.48**	**7.39**	**7.64**	**7.85**	**7.92**	**7.84**	**7.83**
TOTAL OPEC+	**47.9**	**49.0**	**51.6**	**47.5**	**48.0**	**49.4**	**51.0**	**51.9**	**52.1**	**51.1**	**51.1**
NON-OPEC+											
OECD											
Americas[2]	21.91	22.34	23.84	21.35	22.27	22.39	23.32	22.97	23.57	23.01	23.62
United States	16.56	16.73	18.00	15.68	16.88	16.79	17.54	17.23	17.73	17.38	17.90
Canada	5.35	5.60	5.83	5.67	5.39	5.60	5.76	5.73	5.83	5.62	5.72
Chile	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Europe	3.56	3.38	3.29	3.63	3.13	3.39	3.38	3.34	3.32	3.27	3.24
UK	1.08	0.89	0.92	1.03	0.77	0.88	0.88	0.91	0.90	0.92	0.90
Norway	2.01	2.04	1.92	2.14	1.92	2.05	2.04	1.96	1.95	1.90	1.90
Others	0.47	0.46	0.45	0.47	0.45	0.46	0.46	0.47	0.47	0.45	0.45
Asia Oceania	0.53	0.51	0.49	0.52	0.46	0.56	0.52	0.49	0.50	0.49	0.49
Australia	0.46	0.44	0.42	0.45	0.39	0.48	0.46	0.42	0.43	0.42	0.42
Others	0.07	0.07	0.07	0.07	0.07	0.08	0.07	0.07	0.07	0.07	0.07
Total OECD (non-OPEC+)	26.00	26.24	27.62	25.50	25.86	26.35	27.22	26.80	27.40	26.77	27.36
Non-OECD											
FSU	0.36	0.36	0.33	0.35	0.35	0.36	0.36	0.36	0.34	0.31	0.32
Asia	6.27	6.24	6.30	6.29	6.28	6.25	6.15	6.34	6.36	6.31	6.34
China	3.97	4.06	4.23	4.06	4.09	4.08	4.01	4.23	4.25	4.22	4.26
India	0.75	0.73	0.70	0.74	0.72	0.73	0.72	0.72	0.72	0.71	0.71
Indonesia	0.73	0.68	0.65	0.70	0.68	0.68	0.67	0.66	0.66	0.66	0.66
Others	0.82	0.77	0.72	0.79	0.79	0.76	0.74	0.73	0.73	0.73	0.72
Europe	0.12	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
Americas	5.32	5.30	5.60	5.27	5.31	5.42	5.18	5.43	5.45	5.52	5.39
Brazil	3.04	3.00	3.12	2.95	3.04	3.10	2.93	3.09	3.09	3.11	2.95
Argentina	0.61	0.64	0.70	0.62	0.63	0.64	0.67	0.69	0.69	0.70	0.70
Colombia	0.79	0.74	0.74	0.75	0.72	0.75	0.75	0.75	0.75	0.74	0.74
Ecuador	0.48	0.48	0.48	0.51	0.50	0.49	0.40	0.47	0.48	0.48	0.48
Others	0.4	0.4	0.6	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5
Middle East	1.87	1.93	1.95	1.92	1.92	1.93	1.93	1.93	1.93	1.95	1.95
Qatar	1.77	1.82	1.84	1.82	1.82	1.82	1.83	1.82	1.82	1.85	1.85
Others	0.10	0.10	0.10	0.10	0.10	0.10	0.11	0.11	0.11	0.11	0.10
Africa	1.2	1.1	1.1	1.11	1.11	1.08	1.09	1.08	1.09	1.04	1.06
Egypt	0.60	0.57	0.57	0.57	0.58	0.56	0.57	0.57	0.57	0.57	0.57
Others	0.57	0.53	0.51	0.54	0.53	0.52	0.52	0.51	0.53	0.48	0.50
Total non-OECD (non-OPEC+)	**15.11**	**15.03**	**15.36**	**15.06**	**15.09**	**15.15**	**14.82**	**15.24**	**15.28**	**15.25**	**15.17**
Processing gains	2.11	2.25	2.31	2.13	2.22	2.34	2.32	2.28	2.28	2.25	2.28
Global biofuels	2.63	2.75	2.92	2.18	2.94	3.19	2.69	2.45	2.51	2.69	3.09
TOTAL NON-OPEC+	45.85	46.27	48.21	44.87	46.11	47.03	47.04	46.78	47.47	46.96	47.90
TOTAL SUPPLY	93.78	95.24	99.83	92.37	94.13	96.39	97.99	98.68	99.56	98.07	98.98

1 From Jun 2022, OPEC+ supply reflects latest OPEC+ deal and individual country's sustainable capacity. Libya, Iran, Venezuela held at most recent level through 2023.

2 Excludes Mexico

IEA. All rights reserved.

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			
	Dec2021	Jan2022	Feb2022	Mar2022	Apr2022[3]	Apr2019	Apr2020	Apr2021	2Q2021	3Q2021	4Q2021	1Q2022
OECD INDUSTRY-CONTROLLED STOCKS[1]												
OECD Americas												
Crude	588.5	570.5	564.7	574.0	579.7	618.0	687.0	652.2	-0.58	-0.33	0.07	-0.16
Motor Gasoline	259.8	280.8	279.9	266.6	257.4	262.1	287.0	267.3	-0.02	-0.13	0.07	0.08
Middle Distillate	195.4	193.7	190.9	179.2	170.9	201.9	222.5	207.4	-0.01	-0.12	-0.09	-0.18
Residual Fuel Oil	31.9	33.7	34.7	34.5	33.9	33.4	42.4	38.4	-0.01	-0.04	-0.03	0.03
Total Products[4]	725.9	725.7	705.4	683.2	683.9	742.2	805.7	743.9	0.26	-0.03	-0.40	-0.47
Total[4]	**1465.8**	**1452.2**	**1424.9**	**1415.4**	**1420.7**	**1525.9**	**1668.3**	**1557.4**	**-0.29**	**-0.39**	**-0.45**	**-0.56**
OECD Europe												
Crude	303.2	297.7	313.7	329.4	332.9	357.9	374.0	341.5	-0.12	-0.38	-0.03	0.29
Motor Gasoline	85.6	93.6	91.3	90.3	93.3	88.4	103.6	95.5	-0.04	-0.07	0.06	0.05
Middle Distillate	244.0	255.7	244.3	239.7	246.8	270.6	313.5	314.4	-0.06	-0.37	-0.31	-0.05
Residual Fuel Oil	59.5	61.0	62.3	62.3	65.0	59.0	71.0	66.2	-0.03	-0.01	-0.04	0.03
Total Products[4]	486.0	508.4	495.2	489.4	504.9	529.6	609.8	580.1	-0.19	-0.44	-0.31	0.04
Total[5]	**858.2**	**878.1**	**882.8**	**895.6**	**912.7**	**970.6**	**1076.0**	**1001.9**	**-0.31**	**-0.89**	**-0.37**	**0.42**
OECD Asia Oceania												
Crude	99.4	97.6	97.9	105.5	113.7	156.7	151.6	127.8	0.01	-0.17	-0.11	0.07
Motor Gasoline	24.0	27.0	27.6	25.6	26.4	26.1	29.1	29.0	0.00	-0.03	-0.03	0.02
Middle Distillate	64.2	61.8	60.8	56.2	58.8	65.7	65.3	62.5	0.02	0.07	-0.09	-0.09
Residual Fuel Oil	16.9	16.9	18.0	15.4	16.5	20.1	18.4	19.1	0.00	0.02	-0.02	-0.02
Total Products[4]	162.7	168.8	165.4	158.2	163.9	163.6	169.7	168.2	0.05	0.15	-0.23	-0.05
Total[5]	**323.6**	**323.7**	**317.2**	**315.8**	**335.9**	**381.6**	**385.4**	**354.9**	**0.12**	**-0.02**	**-0.34**	**-0.09**
Total OECD												
Crude	991.1	965.7	976.3	1008.9	1026.3	1132.6	1212.6	1121.6	-0.69	-0.88	-0.07	0.20
Motor Gasoline	369.3	401.4	398.8	382.5	377.1	376.6	419.8	391.8	-0.06	-0.22	0.10	0.15
Middle Distillate	503.6	511.3	496.1	475.1	476.4	538.1	601.3	584.2	-0.04	-0.42	-0.48	-0.32
Residual Fuel Oil	108.3	111.6	115.0	112.2	115.4	112.4	131.7	123.7	-0.04	-0.03	-0.09	0.04
Total Products[4]	1374.5	1402.8	1365.9	1330.8	1352.6	1435.3	1585.2	1492.2	0.11	-0.33	-0.94	-0.49
Total[5]	**2647.6**	**2654.0**	**2624.8**	**2626.8**	**2669.3**	**2878.1**	**3129.8**	**2914.1**	**-0.48**	**-1.30**	**-1.17**	**-0.23**
OECD GOVERNMENT-CONTROLLED STOCKS[6]												
OECD Americas												
Crude	593.7	588.3	578.9	566.1	549.5	648.6	637.8	633.4	-0.18	-0.04	-0.26	-0.31
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	200.3	199.6	198.8	198.3	195.6	209.4	209.2	205.9	-0.02	0.00	-0.05	-0.02
Products	277.0	276.5	274.8	268.5	262.4	277.9	276.7	281.4	-0.05	-0.01	-0.01	-0.09
OECD Asia Oceania												
Crude	370.1	370.1	370.1	367.8	365.0	378.6	377.3	374.6	0.00	-0.05	0.01	-0.03
Products	38.9	38.4	38.0	37.9	37.9	38.8	38.9	38.8	0.00	0.00	0.00	-0.01
Total OECD												
Crude	1164.0	1158.0	1147.8	1132.2	1110.1	1236.6	1224.3	1213.9	-0.20	-0.10	-0.31	-0.35
Products	317.9	316.9	314.8	308.3	302.3	318.6	317.6	322.3	-0.05	-0.01	-0.01	-0.11
Total[5]	**1483.8**	**1476.4**	**1464.2**	**1442.1**	**1414.0**	**1557.5**	**1543.3**	**1538.4**	**-0.24**	**-0.12**	**-0.31**	**-0.46**

1 Stocks are primary national territory stocks on land (excluding utility stocks and including pipeline and entrepot stocks where known) and include stocks held by industry to meet IEA, EU and national emergency reserve commitments and are subject to government control in emergencies.
2 Closing stock levels.
3 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.

IEA. All rights reserved.

Table 4a
INDUSTRY STOCKS[1] ON LAND IN SELECTED COUNTRIES

(million barrels)

	November			December			January			February			March		
	2020	2021	%	2020	2021	%	2021	2022	%	2021	2022	%	2021	2022	%
United States[2]															
Crude	500.8	434.0	-13.3	485.5	421.4	-13.2	475.9	414.3	-12.9	493.2	409.1	-17.1	501.9	414.4	-17.4
Motor Gasoline	241.2	220.6	-8.5	243.4	232.2	-4.6	255.1	251.8	-1.3	241.1	250.4	3.9	237.6	238.5	0.4
Middle Distillate	197.5	171.0	-13.4	202.5	168.0	-17.0	207.8	165.3	-20.5	185.3	162.2	-12.5	186.4	151.5	-18.7
Residual Fuel Oil	31.1	27.6	-11.3	30.2	25.4	-15.9	32.0	26.7	-16.6	31.2	27.5	-11.9	30.9	27.9	-9.7
Other Products	273.2	239.3	-12.4	241.9	217.2	-10.2	213.5	195.4	-8.5	198.5	178.0	-10.3	199.6	179.8	-9.9
Total Products	743.0	658.5	-11.4	718.0	642.8	-10.5	708.4	639.2	-9.8	656.1	618.1	-5.8	654.5	597.7	-8.7
Other[3]	144.9	136.1	-6.1	139.9	129.6	-7.4	145.7	136.4	-6.4	145.6	138.2	-5.1	145.3	141.5	-2.6
Total	**1388.7**	**1228.6**	**-11.5**	**1343.4**	**1193.8**	**-11.1**	**1330.0**	**1189.9**	**-10.5**	**1294.9**	**1165.4**	**-10.0**	**1301.7**	**1153.6**	**-11.4**
Japan															
Crude	79.6	78.1	-1.9	79.8	72.9	-8.6	77.0	69.2	-10.1	77.0	70.7	-8.2	64.5	76.0	17.8
Motor Gasoline	12.5	10.4	-16.8	12.5	10.4	-16.8	13.5	11.3	-16.3	13.0	10.9	-16.2	12.4	9.8	-21.0
Middle Distillate	38.6	36.9	-4.4	34.6	33.0	-4.6	33.5	30.8	-8.1	30.1	26.7	-11.3	27.4	23.3	-15.0
Residual Fuel Oil	7.0	6.5	-7.1	6.6	7.3	10.6	6.9	7.0	1.4	7.1	6.5	-8.5	6.5	5.7	-12.3
Other Products	35.5	36.4	2.5	32.3	33.0	2.2	31.0	34.6	11.6	32.9	32.2	-2.1	31.6	32.0	1.3
Total Products	93.6	90.2	-3.6	86.0	83.7	-2.7	84.9	83.7	-1.4	83.1	76.3	-8.2	77.9	70.8	-9.1
Other[3]	52.4	50.9	-2.9	49.9	51.1	2.4	50.1	47.6	-5.0	49.1	43.7	-11.0	47.3	42.0	-11.2
Total	**225.6**	**219.2**	**-2.8**	**215.7**	**207.7**	**-3.7**	**212.0**	**200.5**	**-5.4**	**209.2**	**190.7**	**-8.8**	**189.7**	**188.8**	**-0.5**
Germany															
Crude	50.1	47.0	-6.2	51.9	46.2	-11.0	52.7	46.1	-12.5	49.5	47.3	-4.4	52.7	48.2	-8.5
Motor Gasoline	11.7	10.6	-9.4	10.9	10.7	-1.8	12.6	11.0	-12.7	11.6	10.6	-8.6	8.9	10.7	20.2
Middle Distillate	24.3	22.4	-7.8	23.3	21.8	-6.4	27.5	23.1	-16.0	25.7	21.6	-16.0	22.7	24.1	6.2
Residual Fuel Oil	7.2	8.5	18.1	6.6	8.4	27.3	7.1	8.5	19.7	7.6	8.6	13.2	7.5	7.9	5.3
Other Products	9.1	10.5	15.4	9.3	10.7	15.1	9.3	10.2	9.7	9.4	10.0	6.4	9.5	10.1	6.3
Total Products	52.3	52.0	-0.6	50.1	51.6	3.0	56.5	52.8	-6.5	54.3	50.8	-6.4	48.6	52.8	8.6
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	**102.4**	**99.0**	**-3.3**	**102.0**	**97.8**	**-4.1**	**109.2**	**98.9**	**-9.4**	**103.8**	**98.1**	**-5.5**	**101.3**	**101.0**	**-0.3**
Italy															
Crude	36.7	36.1	-1.6	40.1	33.0	-17.7	37.4	29.9	-20.1	34.3	30.4	-11.4	39.9	32.7	-18.0
Motor Gasoline	12.8	11.3	-11.7	11.9	10.0	-16.0	11.6	12.7	9.5	10.6	11.3	6.6	9.8	11.3	15.3
Middle Distillate	29.3	23.8	-18.8	26.9	23.7	-11.9	29.0	26.4	-9.0	28.1	23.8	-15.3	28.6	23.1	-19.2
Residual Fuel Oil	7.6	7.5	-1.3	7.9	7.1	-10.1	8.4	7.5	-10.7	7.7	8.1	5.2	8.1	7.9	-2.5
Other Products	19.9	10.9	-45.2	19.3	10.0	-48.2	16.2	11.2	-30.9	14.0	11.3	-19.3	12.3	11.0	-10.6
Total Products	69.6	53.5	-23.1	66.0	50.8	-23.0	65.2	57.8	-11.3	60.4	54.5	-9.8	58.8	53.3	-9.4
Other[3]	17.0	14.5	-14.7	16.6	13.1	-21.1	15.1	13.5	-10.6	14.5	13.1	-9.7	15.1	14.7	-2.6
Total	**123.3**	**104.1**	**-15.6**	**122.7**	**96.9**	**-21.0**	**117.7**	**101.2**	**-14.0**	**109.2**	**98.0**	**-10.3**	**113.8**	**100.7**	**-11.5**
France															
Crude	13.3	11.9	-10.5	12.4	8.8	-29.0	13.4	9.2	-31.3	12.3	12.4	0.8	12.8	12.1	-5.5
Motor Gasoline	6.1	4.1	-32.8	4.8	4.5	-6.3	4.9	5.1	4.1	5.4	4.5	-16.7	3.9	4.2	7.7
Middle Distillate	24.1	18.0	-25.3	21.5	18.6	-13.5	23.4	20.1	-14.1	25.2	16.5	-34.5	22.3	18.6	-16.6
Residual Fuel Oil	1.7	1.7	0.0	2.3	0.9	-60.9	2.1	1.3	-38.1	1.8	1.3	-27.8	2.0	0.7	-65.0
Other Products	4.3	3.4	-20.9	3.4	3.4	0.0	3.5	3.4	-2.9	3.5	3.5	0.0	3.5	3.6	2.9
Total Products	36.2	27.2	-24.9	32.0	27.4	-14.4	33.9	29.9	-11.8	35.9	25.8	-28.1	31.7	27.1	-14.5
Other[3]	7.6	6.5	-14.5	6.5	6.9	6.2	7.0	7.2	2.9	7.9	7.1	-10.1	7.9	7.1	-10.1
Total	**57.1**	**45.6**	**-20.1**	**50.9**	**43.1**	**-15.3**	**54.3**	**46.3**	**-14.7**	**56.1**	**45.3**	**-19.3**	**52.4**	**46.3**	**-11.6**
United Kingdom															
Crude	26.1	23.4	-10.3	27.9	26.2	-6.1	27.5	22.7	-17.5	24.2	26.2	8.3	26.5	26.3	-0.8
Motor Gasoline	10.7	9.8	-8.4	11.3	10.1	-10.6	12.1	10.6	-12.4	10.3	9.6	-6.8	9.3	9.2	-1.1
Middle Distillate	30.6	22.1	-27.8	30.7	21.0	-31.6	31.6	20.4	-35.4	29.4	19.8	-32.7	26.0	18.2	-30.0
Residual Fuel Oil	1.1	1.6	45.5	1.2	1.3	8.3	1.5	1.2	-20.0	1.2	1.5	25.0	1.4	1.4	0.0
Other Products	6.5	6.1	-6.2	6.9	6.1	-11.6	6.8	6.0	-11.8	6.3	6.3	0.0	5.9	5.8	-1.7
Total Products	48.9	39.6	-19.0	50.1	38.5	-23.2	52.0	38.2	-26.5	47.2	37.2	-21.2	42.6	34.6	-18.8
Other[3]	8.7	9.1	4.6	7.4	8.1	9.5	7.3	7.6	4.1	7.1	7.9	11.3	7.8	7.7	-1.3
Total	**83.7**	**72.1**	**-13.9**	**85.4**	**72.8**	**-14.8**	**86.8**	**68.5**	**-21.1**	**78.5**	**71.3**	**-9.2**	**76.9**	**68.6**	**-10.8**
Canada[4]															
Crude	122.2	137.5	12.5	124.4	132.3	6.4	124.0	121.7	-1.9	124.8	122.4	-1.9	129.0	125.4	-2.8
Motor Gasoline	17.5	16.1	-8.0	17.3	16.0	-7.5	17.8	17.5	-1.7	16.4	16.6	1.2	16.2	16.7	3.1
Middle Distillate	18.2	17.6	-3.3	19.6	18.3	-6.6	20.7	18.7	-9.7	20.3	18.0	-11.3	19.7	19.2	-2.5
Residual Fuel Oil	2.6	2.2	-15.4	2.3	2.1	-8.7	2.7	1.7	-37.0	2.3	2.2	-4.3	3.0	2.4	-20.0
Other Products	11.2	12.0	7.1	10.8	11.8	9.3	11.9	12.2	2.5	12.5	12.9	3.2	12.5	13.3	6.4
Total Products	49.5	47.9	-3.2	50.0	48.2	-3.6	53.1	50.1	-5.6	51.5	49.7	-3.5	51.4	51.6	0.4
Other[3]	29.4	23.8	-19.0	27.3	21.7	-20.5	23.8	19.4	-18.5	20.2	16.4	-18.8	17.9	16.6	-7.3
Total	**201.1**	**209.2**	**4.0**	**201.7**	**202.2**	**0.2**	**200.9**	**191.2**	**-4.8**	**196.5**	**188.5**	**-4.1**	**198.3**	**193.6**	**-2.4**

1 Stocks are primary national territory stocks on land (excluding utilitity stocks and including pipeline and entrepot stocks where known) and include stocks held by industry to meet IEA, EU and national emergency reserve commitments and are subject to government control in emergencies.
2 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.

IEA. All rights reserved.

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

	End March 2021		End June 2021		End September 2021		End December 2021		End March 2022 [3]	
	Stock Level	Days Fwd[2] Demand	Stock Level	Days Fwd Demand	Stock Level	Days Fwd Demand	Stock Level	Days Fwd Demand	Stock Level	Days Fwd Demand
OECD Americas										
Canada	198.3	89	201.6	81	198.3	82	202.3	87	193.5	-
Chile	9.7	30	11.7	31	10.4	28	10.8	29	10.5	-
Mexico	38.1	27	36.4	26	36.0	24	36.7	24	35.7	-
United States[4]	1941.5	97	1894.8	94	1860.5	91	1789.5	89	1721.7	-
Total[4]	**2209.7**	**91**	**2166.6**	**88**	**2127.3**	**86**	**2061.5**	**84**	**1983.5**	**78**
OECD Asia Oceania										
Australia	43.3	40	39.6	40	40.9	38	37.6	36	40.1	-
Israel	-	-	-	-	-	-	-	-	-	-
Japan	506.5	164	528.6	166	525.1	143	519.4	139	500.5	-
Korea	201.5	81	194.9	75	189.3	70	168.8	62	174.6	-
New Zealand	8.3	57	7.6	56	8.3	54	6.8	45	6.2	-
Total	**759.5**	**108**	**770.7**	**108**	**763.5**	**98**	**732.6**	**93**	**721.5**	**101**
OECD Europe[5]										
Austria	23.6	97	23.0	84	21.1	83	20.9	87	24.1	-
Belgium	51.2	82	51.0	83	47.1	70	43.3	67	42.9	-
Czech Republic	23.1	108	21.8	93	21.7	97	22.5	107	22.2	-
Denmark	31.7	229	28.1	189	25.3	171	23.8	168	20.8	-
Estonia	2.9	107	2.9	99	2.7	102	2.5	104	2.6	-
Finland	39.1	230	39.5	209	37.3	191	36.2	188	38.4	-
France	162.1	112	163.0	100	157.3	98	151.6	99	148.8	-
Germany	278.0	134	275.7	123	270.4	116	268.9	128	269.0	-
Greece	34.4	144	30.5	100	26.4	90	29.4	107	29.4	-
Hungary	25.8	147	25.6	135	25.9	138	27.0	148	28.0	-
Ireland	11.7	87	12.0	83	10.6	66	10.8	70	10.6	-
Italy	126.8	110	128.9	103	118.0	94	112.5	97	116.3	-
Latvia	3.0	82	3.0	70	2.7	75	2.6	76	2.8	-
Lithuania	7.8	116	8.5	113	9.1	131	8.2	136	9.8	-
Luxembourg	0.6	12	0.8	13	0.5	9	0.6	10	0.5	-
Netherlands	158.1	196	147.2	181	125.8	160	109.5	138	123.9	-
Norway	28.2	146	23.6	99	20.2	81	21.4	106	31.4	-
Poland	82.7	126	80.0	103	78.1	104	80.6	112	82.8	-
Portugal	20.7	98	19.9	90	19.0	82	20.9	87	21.3	-
Slovak Republic	12.3	144	12.3	136	12.2	138	12.2	147	12.8	-
Slovenia	5.3	117	5.3	104	4.9	99	5.2	108	4.6	-
Spain	121.7	107	118.8	96	111.6	89	104.9	84	106.6	-
Sweden	48.8	162	45.2	144	38.3	123	30.1	102	27.9	-
Switzerland	33.7	192	32.9	178	33.4	156	31.5	169	30.2	-
Turkey	84.4	91	85.1	74	85.6	82	87.4	96	87.6	-
United Kingdom	76.9	61	76.2	58	71.6	52	72.8	55	68.6	-
Total	**1494.9**	**118**	**1461.0**	**106**	**1377.0**	**99**	**1337.2**	**102**	**1364.0**	**101**
Total OECD	**4464.1**	**102**	**4398.3**	**97**	**4267.9**	**92**	**4131.3**	**91**	**4068.9**	**89**
DAYS OF IEA Net Imports[6]	**-**	**240**	**-**	**167**	**-**	**160**	**-**	**156**	**-**	**156**

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 March 2022 forward demand figures are IEA Secretariat forecasts.
4 US figures exclude US territories. Total includes US territories.
5 Data not available for Iceland.
6 Reflects stock levels and prior calendar year's net imports adjusted according to IEA emergency reserve definitions (see www.iea.org/netimports.asp). Net exporting IEA countries are excluded.

TOTAL OECD STOCKS

CLOSING STOCKS	Total	Government[1] controlled	Industry	Total	Government[1] controlled	Industry
		Millions of Barrels			*Days of Fwd. Demand*[2]	
1Q2019	4430	1557	2874	94	33	61
2Q2019	4483	1549	2934	93	32	61
3Q2019	4488	1544	2944	94	32	62
4Q2019	4429	1535	2894	98	34	64
1Q2020	4519	1537	2982	121	41	80
2Q2020	4779	1561	3217	113	37	76
3Q2020	4733	1551	3182	111	36	74
4Q2020	4579	1541	3038	109	37	72
1Q2021	4464	1546	2918	102	35	67
2Q2021	4398	1524	2875	97	33	63
3Q2021	4268	1513	2755	92	33	59
4Q2021	4131	1484	2648	91	33	58
1Q2022	4069	1442	2627	89	31	57

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 1Q2022 (where latest forecasts are used).

IEA. All rights reserved.

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

	2019	2020	2021	2Q21	3Q21	4Q21	1Q22	Jan 22	Feb 22	Mar 22	Year Earlier Mar 21	Year Earlier change
Saudi Light & Extra Light												
Americas	0.20	0.26	0.34	0.31	0.45	0.43	0.44	0.36	0.45	0.51	0.27	0.24
Europe	0.68	0.59	0.48	0.40	0.55	0.55	0.53	0.51	0.48	0.61	0.38	0.23
Asia Oceania	1.42	1.39	1.30	1.12	1.18	1.48	1.57	1.65	1.59	1.48	1.22	0.26
Saudi Medium												
Americas	0.12	0.14	0.01	-	-	-	-	-	-	-	-	-
Europe	0.02	0.02	0.01	-	0.02	-	0.00	-	-	0.01	-	-
Asia Oceania	0.23	0.25	0.21	0.17	0.19	0.26	0.20	0.25	0.17	0.18	0.25	-0.08
Canada Heavy												
Americas	2.27	2.39	2.59	2.43	2.47	2.82	2.69	2.49	2.92	2.70	2.70	-0.01
Europe	0.04	0.03	0.03	0.03	0.04	0.03	0.03	0.02	0.02	0.04	0.02	0.02
Asia Oceania	0.00	0.00	0.02	0.04	0.01	0.00	0.01	-	0.01	0.02	0.02	-0.01
Iraqi Basrah Light[2]												
Americas	0.31	0.11	0.08	0.05	0.04	0.17	0.16	0.21	0.15	0.13	0.17	-0.04
Europe	0.85	0.58	0.62	0.63	0.60	0.68	0.45	0.30	0.49	0.58	0.61	-0.03
Asia Oceania	0.37	0.22	0.17	0.17	0.16	0.19	0.17	0.12	0.21	0.19	0.09	0.10
Kuwait Blend												
Americas	-	-	-	-	-	-	-	-	-	-	-	-
Europe	0.11	0.04	-	-	-	-	-	-	-	-	-	-
Asia Oceania	0.61	0.55	0.48	0.45	0.47	0.52	0.58	0.61	0.56	0.57	0.47	0.10
Iranian Light												
Americas	-	-	-	-	-	-	-	-	-	-	-	-
Europe	0.00	-	-	-	-	-	-	-	-	-	-	-
Asia Oceania	0.00	-	-	-	-	-	-	-	-	-	-	-
Iranian Heavy[3]												
Americas	-	-	-	-	-	-	-	-	-	-	-	-
Europe	0.04	-	-	-	-	-	-	-	-	-	-	-
Asia Oceania	0.14	-	-	-	-	-	-	-	-	-	-	-
BFOE												
Americas	0.00	-	0.00	0.00	0.01	-	-	-	-	-	-	-
Europe	0.37	0.42	0.36	0.28	0.36	0.40	0.38	0.48	0.31	0.35	0.35	0.00
Asia Oceania	0.01	0.03	0.05	0.07	-	0.05	0.02	-	0.08	-	-	-
Kazakhstan												
Americas	-	-	0.01	0.03	-	-	-	-	-	-	-	-
Europe	0.76	0.74	0.70	0.73	0.68	0.66	0.83	0.88	0.78	0.82	0.83	-0.02
Asia Oceania	0.18	0.07	0.09	0.10	0.10	0.10	0.14	0.10	0.15	0.17	0.04	0.13
Venezuelan 22 API and heavier												
Americas	0.05	-	-	-	-	-	-	-	-	-	-	-
Europe	0.09	0.04	-	-	-	-	-	-	-	-	-	-
Asia Oceania	-	-	-	-	-	-	-	-	-	-	-	-
Mexican Maya												
Americas	0.51	0.48	0.40	0.45	0.45	0.32	0.36	0.40	0.32	0.36	0.35	0.01
Europe	0.19	0.16	0.14	0.15	0.13	0.12	0.11	0.13	0.10	0.10	0.11	-0.02
Asia Oceania	0.13	0.12	0.14	0.12	0.14	0.13	0.08	0.09	0.11	0.03	0.13	-0.10
Russian Urals												
Americas	0.01	-	-	-	-	-	-	-	-	-	-	-
Europe	1.37	1.12	1.05	0.99	1.08	1.14	1.04	1.23	1.06	0.84	0.81	0.02
Asia Oceania	-	-	0.01	-	0.03	-	-	-	-	-	-	-
Cabinda and Other Angola												
North America	0.01	0.01	-	-	-	-	-	-	-	-	-	-
Europe	0.15	0.12	0.03	0.04	0.03	0.04	0.06	0.03	0.03	0.13	0.03	0.10
Pacific	0.00	-	-	-	-	-	-	-	-	-	-	-
Nigerian Light[4]												
Americas	0.03	-	0.02	0.06	0.03	-	-	-	-	-	-	-
Europe	0.51	0.49	0.41	0.30	0.40	0.52	0.47	0.38	0.45	0.58	0.52	0.06
Asia Oceania	0.02	0.02	0.01	0.01	-	0.01	-	-	-	-	-	-
Libya Light and Medium												
Americas	0.00	-	0.02	0.03	0.06	-	-	-	-	-	-	-
Europe	0.67	0.19	0.79	0.79	0.87	0.76	0.61	0.44	0.80	0.61	0.69	-0.08
Asia Oceania	0.03	0.01	0.02	0.02	0.01	0.03	0.02	0.03	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).

IEA. All rights reserved.

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

	2019	2020	2021	2Q20	3Q20	4Q20	1Q21	Jan 22	Feb 22	Mar 22	Year Earlier Mar 21	Year Earlier % change
Crude Oil												
Americas	2726	1896	2077	2135	1671	1622	1695	2095	2075	2119	1740	22%
Europe	9872	8349	8519	7891	8145	8053	7780	8897	9492	8697	7923	10%
Asia Oceania	6542	5603	5527	5298	5237	5511	5332	6189	6120	6018	4781	26%
Total OECD	**19139**	**15848**	**16123**	**15324**	**15053**	**15186**	**14808**	**17181**	**17687**	**16833**	**14444**	**17%**
LPG												
Americas	26	28	21	28	26	26	21	30	52	35	23	54%
Europe	434	422	404	301	430	429	394	471	493	444	427	4%
Asia Oceania	582	559	563	551	532	506	642	664	669	707	542	31%
Total OECD	**1042**	**1009**	**988**	**880**	**988**	**961**	**1057**	**1165**	**1214**	**1186**	**992**	**20%**
Naphtha												
Americas	5	7	8	7	10	5	7	7	3	6	12	-49%
Europe	347	409	512	469	339	410	526	426	397	346	492	-30%
Asia Oceania	993	1005	1149	1044	981	889	1087	1169	1096	979	1130	-13%
Total OECD	**1345**	**1422**	**1669**	**1521**	**1330**	**1303**	**1620**	**1602**	**1495**	**1331**	**1633**	**-19%**
Gasoline[3]												
Americas	822	577	803	540	695	565	597	401	549	505	860	-41%
Europe	112	109	106	123	92	108	102	119	116	95	37	157%
Asia Oceania	114	126	156	111	175	116	155	168	136	197	157	25%
Total OECD	**1048**	**812**	**1065**	**775**	**961**	**789**	**853**	**687**	**801**	**797**	**1054**	**-24%**
Jet & Kerosene												
Americas	174	159	164	151	175	145	108	127	122	113	82	37%
Europe	520	337	334	324	302	295	281	276	307	392	251	56%
Asia Oceania	76	63	74	35	41	58	100	73	88	61	59	5%
Total OECD	**770**	**559**	**572**	**510**	**518**	**498**	**489**	**476**	**517**	**566**	**392**	**44%**
Gasoil/Diesel												
Americas	118	134	197	114	90	256	266	124	269	91	346	-74%
Europe	1300	1192	1192	1226	1105	1178	1117	1130	1108	1072	1048	2%
Asia Oceania	262	328	352	346	365	320	335	267	311	334	366	-9%
Total OECD	**1680**	**1655**	**1741**	**1687**	**1560**	**1754**	**1717**	**1521**	**1688**	**1497**	**1759**	**-15%**
Heavy Fuel Oil												
Americas	116	143	102	153	136	129	116	62	206	157	73	114%
Europe	223	295	374	267	318	310	369	276	350	343	396	-13%
Asia Oceania	101	88	119	46	118	80	109	135	153	67	85	-22%
Total OECD	**440**	**526**	**594**	**466**	**571**	**519**	**594**	**473**	**709**	**566**	**554**	**2%**
Other Products												
Americas	716	591	580	540	606	514	505	442	485	560	493	14%
Europe	865	574	575	601	541	491	515	571	810	640	618	4%
Asia Oceania	268	241	261	215	229	232	247	227	266	254	268	-5%
Total OECD	**1849**	**1406**	**1416**	**1356**	**1376**	**1238**	**1267**	**1240**	**1561**	**1454**	**1379**	**5%**
Total Products												
Americas	1978	1639	1875	1534	1738	1641	1620	1193	1685	1467	1889	-22%
Europe	3800	3339	3496	3311	3126	3221	3304	3270	3582	3332	3267	2%
Asia Oceania	2397	2410	2674	2349	2440	2200	2674	2702	2718	2599	2607	0%
Total OECD	**8175**	**7388**	**8045**	**7194**	**7304**	**7061**	**7598**	**7164**	**7985**	**7397**	**7763**	**-5%**
Total Oil												
Americas	4703	3535	3952	3668	3409	3262	3315	3288	3760	3586	3629	-1%
Europe	13672	11688	12016	11203	11271	11274	11084	12166	13074	12029	11190	7%
Asia Oceania	8939	8014	8201	7647	7677	7711	8006	8891	8839	8616	7388	17%
Total OECD	**27314**	**23236**	**24168**	**22518**	**22357**	**22247**	**22406**	**24345**	**25673**	**24230**	**22207**	**9%**

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.

IEA. All rights reserved.

Table 7a
REGIONAL OECD IMPORTS FROM NON-OECD COUNTRIES[1,2]
(thousand barrels per day)

	2019	2020	2021	2Q20	3Q20	4Q20	1Q21	Jan 22	Feb 22	Mar 22	Year Earlier Mar 21	Year Earlier % change
Crude Oil												
Americas	2576	1835	1982	2048	1643	1544	1613	2029	1998	2070	1615	28%
Europe	8913	7115	7268	6787	6869	6786	6643	7586	8117	7361	6811	8%
Asia Oceania	5914	5076	4917	4799	4816	5003	4713	5559	5390	5505	4193	31%
Total OECD	**17403**	**14027**	**14168**	**13634**	**13328**	**13333**	**12969**	**15175**	**15505**	**14936**	**12619**	**18%**
LPG												
Americas	23	22	20	22	23	18	19	24	52	35	23	54%
Europe	303	252	242	226	246	231	244	228	285	246	242	2%
Asia Oceania	74	57	46	57	61	65	58	74	85	109	61	80%
Total OECD	**400**	**331**	**309**	**306**	**330**	**314**	**321**	**326**	**423**	**390**	**326**	**20%**
Naphtha												
Americas	2	1	4	2	1	1	4	5	0	4	8	-46%
Europe	320	390	425	458	328	377	427	331	377	292	390	-25%
Asia Oceania	898	835	977	831	840	744	870	950	990	897	854	5%
Total OECD	**1220**	**1226**	**1406**	**1291**	**1169**	**1122**	**1301**	**1285**	**1367**	**1193**	**1252**	**-5%**
Gasoline[3]												
Americas	308	195	248	217	226	167	174	77	99	154	274	-44%
Europe	108	104	100	118	87	103	98	93	106	79	33	138%
Asia Oceania	88	109	152	81	152	116	144	168	136	197	155	27%
Total OECD	**504**	**408**	**500**	**416**	**465**	**386**	**416**	**339**	**342**	**430**	**463**	**-7%**
Jet & Kerosene												
Americas	41	55	63	64	53	47	31	51	47	30	41	-26%
Europe	464	297	298	287	259	278	248	275	300	391	249	57%
Asia Oceania	76	63	74	35	41	58	100	73	88	61	59	5%
Total OECD	**581**	**415**	**435**	**387**	**353**	**382**	**378**	**399**	**436**	**482**	**349**	**38%**
Gasoil/Diesel												
Americas	86	103	134	92	69	190	203	61	172	36	260	-86%
Europe	1126	1062	1109	1110	914	1082	1045	1078	1015	1019	987	3%
Asia Oceania	261	324	352	340	358	316	335	267	311	334	366	-9%
Total OECD	**1473**	**1489**	**1595**	**1543**	**1341**	**1588**	**1582**	**1406**	**1497**	**1388**	**1613**	**-14%**
Heavy Fuel Oil												
Americas	102	110	86	107	113	97	105	62	121	144	73	98%
Europe	202	279	347	253	298	295	341	258	346	321	357	-10%
Asia Oceania	100	88	119	46	118	80	109	135	153	67	85	-22%
Total OECD	**404**	**477**	**552**	**406**	**529**	**472**	**555**	**456**	**620**	**531**	**515**	**3%**
Other Products												
Americas	543	513	530	451	525	466	469	403	449	512	431	19%
Europe	629	352	398	374	335	334	358	405	616	479	430	12%
Asia Oceania	184	164	183	144	152	162	177	172	178	176	171	3%
Total OECD	**1356**	**1029**	**1110**	**969**	**1012**	**962**	**1004**	**981**	**1243**	**1167**	**1031**	**13%**
Total Products												
Americas	1106	1000	1084	956	1011	986	1005	684	941	915	1110	-17%
Europe	3152	2735	2920	2826	2466	2699	2760	2669	3046	2827	2688	5%
Asia Oceania	1681	1640	1903	1535	1722	1540	1792	1839	1941	1840	1751	5%
Total OECD	**5939**	**5375**	**5907**	**5317**	**5199**	**5225**	**5557**	**5191**	**5927**	**5582**	**5548**	**1%**
Total Oil												
Americas	3682	2835	3067	3004	2654	2530	2618	2713	2938	2985	2724	10%
Europe	12064	9850	10188	9613	9336	9485	9403	10255	11163	10188	9499	7%
Asia Oceania	7595	6716	6820	6334	6538	6543	6506	7398	7331	7345	5944	24%
Total OECD	**23342**	**19401**	**20075**	**18951**	**18528**	**18558**	**18527**	**20366**	**21432**	**20518**	**18168**	**13%**

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

IEA. All rights reserved.

Table 7b
INTER-REGIONAL OECD TRANSFERS[1,2]
(thousand barrels per day)

	2019	2020	2021	2Q20	3Q20	4Q20	1Q21	Jan 22	Feb 22	Mar 22	Year Earlier Mar 21	Year Earlier % change
Crude Oil												
Americas	149	60	95	86	28	78	83	66	78	49	125	-61%
Europe	959	1234	1251	1105	1276	1268	1137	1310	1375	1335	1112	20%
Asia Oceania	628	527	610	499	421	508	619	630	730	513	588	-13%
Total OECD	**1736**	**1821**	**1956**	**1690**	**1724**	**1853**	**1839**	**2007**	**2182**	**1897**	**1824**	**4%**
LPG												
Americas	3	6	1	6	4	8	3	6	0	0	0	-100%
Europe	131	171	162	75	184	197	150	243	208	198	185	7%
Asia Oceania	508	501	516	494	470	442	584	590	584	599	481	24%
Total OECD	**642**	**678**	**679**	**574**	**658**	**647**	**736**	**839**	**791**	**796**	**666**	**20%**
Naphtha												
Americas	3	6	4	5	9	4	3	2	3	2	4	-54%
Europe	27	20	87	11	12	33	99	95	19	54	102	-47%
Asia Oceania	96	170	172	213	140	144	217	219	106	82	276	-70%
Total OECD	**125**	**196**	**263**	**229**	**161**	**181**	**319**	**317**	**128**	**137**	**382**	**-64%**
Gasoline[3]												
Americas	514	382	555	323	469	398	423	323	450	351	586	-40%
Europe	4	5	6	5	5	5	3	26	10	16	4	317%
Asia Oceania	26	18	5	30	23	0	11	0	0	0	2	-100%
Total OECD	**544**	**404**	**565**	**358**	**496**	**403**	**437**	**349**	**460**	**367**	**591**	**-38%**
Jet & Kerosene												
Americas	133	103	101	87	123	99	77	75	75	83	42	99%
Europe	56	40	35	37	43	18	33	2	7	1	1	-36%
Asia Oceania	0	0	0	0	0	0	0	0	0	0	0	-100%
Total OECD	**190**	**144**	**137**	**124**	**165**	**116**	**111**	**77**	**82**	**84**	**43**	**95%**
Gasoil/Diesel												
Americas	32	31	63	22	21	66	63	63	97	55	86	-36%
Europe	174	131	82	116	191	96	72	52	94	54	60	-11%
Asia Oceania	1	4	0	6	7	3	0	0	0	0	0	na
Total OECD	**207**	**166**	**146**	**144**	**219**	**166**	**135**	**115**	**191**	**109**	**146**	**-26%**
Heavy Fuel Oil												
Americas	14	33	16	46	22	33	11	0	84	13	0	5800%
Europe	21	16	26	15	20	15	29	18	4	22	39	-44%
Asia Oceania	1	0	0	0	0	0	0	0	0	0	0	na
Total OECD	**36**	**49**	**42**	**61**	**42**	**47**	**39**	**18**	**89**	**35**	**39**	**-12%**
Other Products												
Americas	173	78	50	89	80	48	37	39	35	49	63	-22%
Europe	236	222	177	227	206	158	157	165	194	161	188	-15%
Asia Oceania	83	77	78	70	77	70	70	54	88	78	97	-19%
Total OECD	**493**	**377**	**306**	**386**	**364**	**276**	**263**	**259**	**318**	**288**	**347**	**-17%**
Total Products												
Americas	872	639	790	578	727	655	615	509	744	552	779	-29%
Europe	649	604	577	485	660	522	543	601	536	505	579	-13%
Asia Oceania	716	770	771	813	718	660	882	863	777	759	856	-11%
Total OECD	**2236**	**2013**	**2138**	**1877**	**2105**	**1836**	**2040**	**1973**	**2058**	**1815**	**2215**	**-18%**
Total Oil												
Americas	1021	699	885	665	755	732	698	574	822	600	905	-34%
Europe	1608	1838	1828	1590	1935	1789	1681	1911	1911	1840	1691	9%
Asia Oceania	1343	1297	1381	1312	1139	1168	1501	1494	1508	1272	1444	-12%
Total OECD	**3972**	**3835**	**4093**	**3567**	**3829**	**3689**	**3879**	**3980**	**4240**	**3712**	**4039**	**-8%**

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

IEA. All rights reserved.

Table 8
REGIONAL OECD CRUDE IMPORTS BY SOURCE[1]
(thousand barrels per day)

	2019	2020	2021	2Q21	3Q21	4Q21	1Q22	Jan 22	Feb 22	Mar 22	Year Earlier Mar 21	Year Earlier change
OECD Americas												
Venezuela	81	-	-	-	-	-	-	-	-	-	-	-
Other Central & South America	868	745	719	689	809	731	780	768	826	749	542	207
North Sea	148	59	92	93	92	101	64	66	78	49	125	-77
Other OECD Europe	2	1	3	11	-	-	-	-	-	-	-	-
Non-OECD Europe	-	-	-	-	-	-	-	-	-	-	-	-
Former Soviet Union	192	91	229	295	307	185	103	63	110	136	206	-70
Saudi Arabia	621	588	427	370	483	520	571	554	517	637	404	233
Kuwait	45	21	21	20	36	20	24	46	13	12	-	-
Iran	-	-	3	-	-	-	6	16	-	-	33	-
Iraq	331	177	152	172	128	192	225	254	235	187	135	52
Oman	-	-	-	-	-	-	-	-	-	-	-	-
United Arab Emirates	3	5	17	-	44	22	10	30	-	-	-	-
Other Middle East	-	-	-	-	-	-	-	-	-	-	-	-
West Africa[2]	267	145	228	272	255	180	171	143	178	193	207	-14
Other Africa	137	45	161	172	167	157	144	156	117	156	71	85
Asia	32	17	25	16	46	22	-	-	-	-	16	-
Other	0	3	-	-	-	-	-	-	-	-	-	-
Total	**2726**	**1896**	**2077**	**2109**	**2367**	**2129**	**2097**	**2095**	**2075**	**2119**	**1740**	**378**
of which Non-OECD	**2576**	**1835**	**1982**	**2006**	**2275**	**2028**	**2033**	**2029**	**1998**	**2070**	**1615**	**455**
OECD Europe												
Canada	60	95	83	81	89	55	79	88	100	51	104	-53
Mexico + USA	900	1139	1168	1191	1204	1245	1260	1222	1274	1284	1008	277
Venezuela	106	44	-	-	-	-	-	-	-	-	-	-
Other Central & South America	118	208	219	272	263	194	217	198	180	270	231	38
Non-OECD Europe	14	25	23	19	28	23	20	20	26	15	24	-9
Former Soviet Union	4239	3504	3538	3466	3525	3849	3958	4121	4528	3280	3303	-23
Saudi Arabia	792	756	522	484	587	501	512	498	459	575	466	109
Kuwait	97	48	0	-	0	0	-	-	-	-	-	-
Iran	74	6	1	-	6	-	-	-	-	-	-	-
Iraq	1124	814	912	916	927	1018	668	556	662	786	860	-74
Oman	-	-	-	-	-	-	-	-	-	-	-	-
United Arab Emirates	2	-	-	-	-	-	-	-	-	-	-	-
Other Middle East	3	8	9	12	12	6	-	-	-	-	12	-
West Africa[2]	1140	1074	822	719	842	947	807	760	694	958	929	29
Other Africa	1180	596	1197	1204	1228	1282	929	874	975	941	954	-13
Asia	-	0	0	-	0	-	5	-	-	15	-	-
Other	13	11	1	-	-	5	520	502	558	504	-	-
Total	**9863**	**8329**	**8496**	**8364**	**8712**	**9126**	**8976**	**8840**	**9456**	**8679**	**7891**	**788**
of which Non-OECD	**8913**	**7115**	**7268**	**7109**	**7455**	**7850**	**7674**	**7586**	**8117**	**7361**	**6811**	**550**
OECD Asia Oceania												
Canada	5	1	16	38	5	3	9	-	11	16	33	-17
Mexico + USA	613	477	496	483	554	463	582	614	642	497	523	-26
Venezuela	-	-	-	-	-	-	-	-	-	-	-	-
Other Central & South America	48	91	110	145	93	97	129	141	84	159	102	56
North Sea	10	49	98	90	87	97	30	17	77	-	32	-
Other OECD Europe	-	-	-	-	-	-	-	-	-	-	-	-
Non-OECD Europe	-	-	-	-	-	-	-	-	-	-	-	-
Former Soviet Union	435	300	335	372	265	376	405	423	403	388	351	37
Saudi Arabia	1878	1867	1766	1574	1601	2020	2029	2156	2025	1907	1660	247
Kuwait	666	584	506	484	493	563	624	633	624	615	466	149
Iran	137	-	-	-	-	-	-	-	-	-	-	-
Iraq	364	224	167	165	160	192	172	124	207	189	93	95
Oman	59	22	32	43	49	22	28	16	18	49	-	-
United Arab Emirates	1256	1096	1083	1094	1143	1184	1145	1081	1084	1265	841	424
Other Middle East	449	387	362	383	371	301	442	471	425	429	388	41
West Africa[2]	56	65	71	103	67	79	52	60	35	59	36	23
Other Africa	90	42	56	44	85	39	42	50	22	52	72	-20
Non-OECD Asia	220	161	175	177	161	153	126	128	137	113	236	-122
Other	255	234	248	264	285	288	284	266	323	268	-52	320
Total	**6542**	**5602**	**5522**	**5457**	**5418**	**5877**	**6100**	**6181**	**6117**	**6005**	**4781**	**1225**
of which Non-OECD	**5914**	**5076**	**4917**	**4850**	**4780**	**5320**	**5488**	**5559**	**5390**	**5505**	**4193**	**1312**
Total OECD Trade	**19130**	**15826**	**16096**	**15930**	**16497**	**17132**	**17173**	**17115**	**17648**	**16803**	**14412**	**2391**
of which Non-OECD	**17403**	**14027**	**14168**	**13965**	**14510**	**15198**	**15195**	**15175**	**15505**	**14936**	**12619**	**2317**

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 Guniea, Congo and Democratic Republic of Congo.

IEA. All rights reserved.

Table 9
REGIONAL OECD GASOLINE IMPORTS BY SOURCE[1]
(thousand barrels per day)

	2019	2020	2021	2Q21	3Q21	4Q21	1Q22	Jan 22	Feb 22	Mar 22	Year Earlier Mar 21	Year Earlier change
OECD Americas												
Venezuela	4	-	-	-	-	-	-	-	-	-	-	-
Other Central & South America	83	40	41	67	37	51	12	9	6	21	10	11
ARA (Belgium Germany Netherlands)	190	149	193	312	240	93	124	107	128	137	208	-71
Other Europe	296	213	326	380	380	268	221	197	291	182	344	-161
FSU	79	57	82	98	92	57	31	12	40	43	133	-90
Saudi Arabia	7	6	24	50	41	-	6	-	-	17	6	11
Algeria	-	4	1	-	-	-	-	-	-	-	10	-
Other Middle East & Africa	14	13	13	12	15	4	8	5	7	13	34	-21
Singapore	5	1	4	3	8	3	-	-	-	-	10	-
OECD Asia Oceania	28	21	37	52	43	30	27	19	30	32	34	-2
Non-OECD Asia (excl. Singapore)	116	72	81	99	116	60	53	52	46	60	71	-11
Other	0	-	0	-	-	-	-	-	-	-	-	-
Total[2]	**822**	**577**	**803**	**1074**	**973**	**565**	**483**	**401**	**549**	**505**	**860**	**-355**
of which Non-OECD	**308**	**195**	**248**	**330**	**312**	**174**	**111**	**77**	**99**	**154**	**274**	**-120**
OECD Europe												
OECD Americas	3	3	5	5	3	8	17	23	10	16	3	13
Venezuela	0	0	2	1	5	-	2	4	-	2	-	-
Other Central & South America	3	4	7	2	11	5	14	5	30	10	19	-9
Non-OECD Europe	18	16	10	16	10	6	5	9	1	4	10	-5
FSU	54	31	8	7	9	2	7	12	7	3	6	-4
Saudi Arabia	0	8	3	-	13	0	0	-	-	1	-	-
Algeria	0	1	-	-	-	-	-	-	-	-	-	-
Other Middle East & Africa	8	3	5	6	3	2	7	3	9	8	6	2
Singapore	3	2	0	-	0	0	1	1	1	1	-	-
OECD Asia Oceania	1	1	1	2	1	1	1	3	-	-	1	-
Non-OECD Asia (excl. Singapore)	0	0	3	2	2	3	3	3	3	2	2	0
Other	21	37	62	117	15	61	53	57	55	46	-10	56
Total[2]	**112**	**107**	**106**	**159**	**75**	**89**	**110**	**119**	**116**	**95**	**37**	**58**
of which Non-OECD	**108**	**104**	**100**	**152**	**70**	**80**	**92**	**93**	**106**	**79**	**33**	**46**
OECD Asia Oceania												
OECD Americas	6	4	1	0	0	0	0	-	0	0	0	0
Venezuela	-	-	-	-	-	-	-	-	-	-	-	-
Other Central & South America	-	-	-	-	-	-	-	-	-	-	-	-
ARA (Belgium Germany Netherlands)	14	4	4	7	0	0	0	0	-	-	2	-
Other Europe	5	10	0	0	0	0	-	-	-	-	0	-
FSU	0	0	-	-	-	-	-	-	-	-	-	-
Saudi Arabia	1	-	-	-	-	-	-	-	-	-	-	-
Algeria	-	-	-	-	-	-	-	-	-	-	-	-
Other Middle East & Africa	-	1	-	-	-	-	-	-	-	-	-	-
Singapore	46	51	100	98	96	120	135	125	112	164	97	67
Non-OECD Asia (excl. Singapore)	21	37	29	58	19	0	14	23	3	14	39	-25
Other	21	19	23	33	19	19	20	19	21	19	19	0
Total[2]	**114**	**126**	**156**	**196**	**135**	**140**	**168**	**168**	**136**	**197**	**157**	**40**
of which Non-OECD	**88**	**109**	**152**	**189**	**135**	**140**	**168**	**168**	**136**	**197**	**155**	**41**
Total OECD Trade[2]	**1048**	**810**	**1065**	**1429**	**1183**	**794**	**761**	**687**	**801**	**797**	**1054**	**-258**
of which Non-OECD	**504**	**408**	**500**	**671**	**517**	**394**	**371**	**339**	**342**	**430**	**463**	**-33**

1 Based on Monthly Oil Questionnaire data submitted by OECD countries in tonnes.
2 Total figure excludes intra-regional trade.

IEA. All rights reserved.

Table 10
REGIONAL OECD GASOIL/DIESEL IMPORTS BY SOURCE[1]
(thousand barrels per day)

	2019	2020	2021	2Q21	3Q21	4Q21	1Q22	Jan 22	Feb 22	Mar 22	Year Earlier Mar 21	Year Earlier change
OECD Americas												
Venezuela	1	-	-	-	-	-	-	-	-	-	-	-
Other Central and South America	38	34	28	30	24	20	3	7	-	-	40	-
ARA (Belgium Germany Netherlands)	5	11	34	31	30	22	39	24	76	21	81	-60
Other Europe	2	4	5	9	1	10	2	0	8	-	5	-
FSU	6	12	25	21	10	33	25	-	77	4	61	-57
Saudi Arabia	3	8	15	9	11	18	18	6	52	-	36	-
Algeria	-	-	-	-	-	-	-	-	-	-	-	-
Other Middle East and Africa	2	9	25	8	18	26	8	-	19	5	26	-21
Singapore	0	-	2	2	8	-	2	7	-	-	-	-
OECD Asia Oceania	24	16	25	15	29	44	29	39	13	34	-	-
Non-OECD Asia (excl. Singapore)	30	34	27	16	12	31	0	0	-	-	82	-
Other	7	6	12	8	11	18	31	41	23	27	15	12
Total[2]	**118**	**134**	**197**	**149**	**154**	**222**	**158**	**124**	**269**	**91**	**346**	**-255**
of which Non-OECD	**86**	**103**	**134**	**94**	**94**	**146**	**87**	**61**	**172**	**36**	**260**	**-224**
OECD Europe												
OECD Americas	138	99	40	38	55	33	31	18	52	27	21	6
Venezuela	-	-	-	-	-	-	-	-	-	-	-	-
Other Central and South America	0	3	1	1	1	3	1	-	-	2	-	-
Non-OECD Europe	41	30	35	40	30	32	34	40	22	39	41	-2
FSU	608	627	611	687	546	516	592	550	608	619	689	-71
Saudi Arabia	205	193	140	128	142	153	97	174	39	73	91	-18
Algeria	0	2	-	-	-	-	-	-	-	-	-	-
Other Middle East and Africa	83	71	158	143	198	222	137	208	103	96	44	52
Singapore	27	17	19	18	24	22	33	1	79	22	5	17
OECD Asia Oceania	36	32	42	39	48	44	34	34	42	27	39	-12
Non-OECD Asia (excl. Singapore)	152	101	126	112	122	195	88	60	90	115	84	31
Other	10	15	20	7	6	42	56	44	73	51	33	19
Total[2]	**1300**	**1190**	**1192**	**1213**	**1173**	**1263**	**1103**	**1130**	**1108**	**1070**	**1047**	**23**
of which Non-OECD	**1126**	**1062**	**1109**	**1136**	**1070**	**1186**	**1038**	**1078**	**1015**	**1019**	**987**	**31**
OECD Asia Oceania												
OECD Americas	1	4	0	-	0	-	-	-	-	-	-	-
Venezuela	-	-	-	-	-	-	-	-	-	-	-	-
Other Central and South America	-	0	-	-	-	-	-	-	-	-	-	-
ARA (Belgium Germany Netherlands)	-	0	0	0	0	0	0	-	0	-	-	-
Other Europe	-	-	0	-	-	0	-	-	-	-	-	-
FSU	4	2	1	1	2	1	-	-	-	-	1	-
Saudi Arabia	-	-	-	-	-	-	-	-	-	-	-	-
Algeria	-	-	-	-	-	-	-	-	-	-	-	-
Other Middle East and Africa	7	13	4	0	0	3	-	-	-	-	-	-
Singapore	111	91	109	91	153	110	127	83	141	158	94	64
Non-OECD Asia (excl. Singapore)	133	208	200	220	141	227	144	143	137	151	239	-89
Other	5	10	9	11	9	5	9	5	11	10	21	-12
Total[2]	**262**	**328**	**324**	**322**	**304**	**346**	**280**	**231**	**290**	**319**	**356**	**-37**
of which Non-OECD	**261**	**324**	**352**	**351**	**344**	**378**	**304**	**267**	**311**	**334**	**366**	**-32**
Total OECD Trade[2]	**1680**	**1653**	**1712**	**1684**	**1630**	**1831**	**1540**	**1485**	**1667**	**1480**	**1748**	**-269**
of which Non-OECD	**1473**	**1489**	**1595**	**1581**	**1508**	**1710**	**1428**	**1406**	**1497**	**1388**	**1613**	**-225**

1 Based on Monthly Oil Questionnaire data submitted by OECD countries in tonnes.
2 Total figure excludes intra-regional trade.

IEA. All rights reserved.

Table 11
REGIONAL OECD JET AND KEROSENE IMPORTS BY SOURCE[1]
(thousand barrels per day)

	2019	2020	2021	2Q21	3Q21	4Q21	1Q22	Jan 22	Feb 22	Mar 22	Year Earlier Mar 21	Year Earlier change
OECD Americas												
Venezuela	0	-	-	-	-	-	-	-	-	-	-	-
Other Central and South America	7	5	1	-	-	-	-	-	-	-	3	-
ARA (Belgium Germany Netherlands)	-	-	5	0	14	-	-	-	-	-	-	-
Other Europe	0	4	6	5	6	7	0	-	-	0	-	-
FSU	-	0	4	0	0	16	3	2	9	-	-	-
Saudi Arabia	2	6	6	4	4	17	5	1	6	8	-	-
Algeria	-	1	4	0	3	5	-	-	-	-	15	-
Other Middle East and Africa	10	11	18	31	14	22	11	11	11	12	1	10
Singapore	3	4	2	2	5	-	2	2	3	-	-	-
OECD Asia Oceania	133	100	91	98	122	76	78	75	75	83	42	41
Non-OECD Asia (excl. Singapore)	16	23	27	25	34	33	17	21	18	10	22	-11
Other	3	4	1	-	4	-	5	14	-	-	-	-
Total[2]	**174**	**159**	**164**	**166**	**207**	**175**	**120**	**127**	**122**	**113**	**82**	**31**
of which Non-OECD	**41**	**55**	**63**	**63**	**65**	**93**	**43**	**51**	**47**	**30**	**41**	**-11**
OECD Europe												
OECD Americas	20	13	3	2	1	9	1	0	2	1	1	-1
Venezuela	-	-	-	-	-	-	-	-	-	-	-	-
Other Central and South America	1	0	0	-	-	1	-	-	-	-	-	-
Non-OECD Europe	2	0	0	-	-	0	-	-	-	-	-	-
FSU	41	21	27	24	30	21	20	15	30	16	37	-20
Saudi Arabia	105	40	27	39	11	21	37	46	21	41	21	20
Algeria	11	9	5	8	6	-	3	-	11	-	8	-
Other Middle East and Africa	199	155	155	136	179	168	151	161	133	158	154	4
Singapore	29	10	11	4	23	15	6	3	-	16	-	-
OECD Asia Oceania	36	27	32	17	39	40	2	1	5	0	0	0
Non-OECD Asia (excl. Singapore)	73	50	62	59	59	113	78	27	80	127	20	107
Other	2	10	9	2	1	22	27	23	25	33	1	32
Total[2]	**520**	**336**	**333**	**291**	**349**	**411**	**326**	**276**	**307**	**391**	**242**	**150**
of which Non-OECD	**464**	**297**	**298**	**273**	**309**	**362**	**323**	**275**	**300**	**391**	**249**	**142**
OECD Asia Oceania												
OECD Americas	-	-	0	0	0	0	-	-	-	-	0	-
Venezuela	-	-	-	-	-	-	-	-	-	-	-	-
Other Central and South America	-	-	-	-	-	-	-	-	-	-	-	-
ARA (Belgium Germany Netherlands)	-	-	0	-	-	-	-	-	-	-	-	-
Other Europe	-	-	0	-	0	-	-	-	-	-	-	-
FSU	-	-	-	-	-	-	-	-	-	-	-	-
Saudi Arabia	-	-	-	-	-	-	-	-	-	-	-	-
Algeria	-	-	-	-	-	-	-	-	-	-	-	-
Other Middle East and Africa	-	-	1	-	-	-	-	-	-	-	-	-
Singapore	21	14	16	18	19	19	26	22	31	24	6	18
Non-OECD Asia (excl. Singapore)	29	28	32	36	9	27	17	17	14	20	34	-15
Other	26	21	24	17	8	37	28	32	34	18	18	0
Total[2]	**76**	**63**	**72**	**70**	**36**	**82**	**71**	**72**	**79**	**61**	**59**	**3**
of which Non-OECD	**76**	**63**	**74**	**70**	**42**	**85**	**74**	**73**	**88**	**61**	**59**	**3**
Total OECD Trade[2]	**770**	**558**	**569**	**527**	**593**	**669**	**517**	**475**	**509**	**566**	**383**	**183**
of which Non-OECD	**581**	**415**	**435**	**405**	**417**	**540**	**439**	**399**	**436**	**482**	**349**	**134**

1 Based on Monthly Oil Questionnaire data submitted by OECD countries in tonnes.
2 Total figure excludes intra-regional trade.

IEA. All rights reserved.

Table 12
REGIONAL OECD RESIDUAL FUEL OIL IMPORTS BY SOURCE[1]
(thousand barrels per day)

	2019	2020	2021	2Q21	3Q21	4Q21	1Q22	Jan 22	Feb 22	Mar 22	Year Earlier Mar 21	Year Earlier change
OECD Americas												
Venezuela	7	-	-	-	-	-	-	-	-	-	-	-
Other Central and South America	50	52	34	25	39	44	55	13	60	94	24	70
ARA (Belgium Germany Netherlands)	6	12	6	2	9	9	6	-	17	1	-	-
Other Europe	8	21	10	10	4	18	25	-	67	12	0	12
FSU	29	43	34	36	19	18	46	50	60	31	44	-14
Saudi Arabia	2	2	0	0	-	2	1	-	0	2	-	-
Algeria	8	2	7	4	3	13	-	-	-	-	4	-
Other Middle East and Africa	5	10	8	11	15	0	6	-	1	18	1	16
Singapore	1	1	0	-	2	-	-	-	-	-	-	-
OECD Asia Oceania	-	-	0	-	1	-	-	-	-	-	-	-
Non-OECD Asia (excl. Singapore)	0	-	2	8	0	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-	-	-
Total[2]	**116**	**143**	**102**	**96**	**91**	**104**	**139**	**62**	**206**	**157**	**73**	**84**
of which Non-OECD	**102**	**110**	**86**	**84**	**78**	**77**	**109**	**62**	**121**	**144**	**73**	**71**
OECD Europe												
OECD Americas	7	12	24	32	14	20	13	18	4	15	38	-23
Venezuela	-	-	-	-	-	-	-	-	-	-	-	-
Other Central and South America	5	6	4	1	10	1	1	2	-	1	-	-
Non-OECD Europe	21	13	12	12	12	11	14	16	5	21	12	9
FSU	144	141	247	150	315	279	216	152	290	214	302	-87
Saudi Arabia	-	2	-	-	-	-	-	-	-	-	-	-
Algeria	0	2	2	-	2	3	-	-	-	-	-	-
Other Middle East and Africa	19	13	14	10	18	13	11	13	11	8	26	-18
Singapore	1	3	3	7	2	2	-	-	-	-	-	-
OECD Asia Oceania	14	4	3	2	5	5	2	-	-	7	1	6
Non-OECD Asia (excl. Singapore)	3	-	-	-	-	-	-	-	-	-	-	-
Other	8	93	59	94	54	40	62	76	36	71	2	69
Total[2]	**222**	**288**	**367**	**308**	**432**	**374**	**320**	**276**	**348**	**338**	**380**	**-43**
of which Non-OECD	**202**	**279**	**347**	**280**	**417**	**350**	**307**	**258**	**346**	**321**	**357**	**-36**
OECD Asia Oceania												
OECD Americas	1	-	-	-	-	-	-	-	-	-	-	-
Venezuela	-	-	-	-	-	-	-	-	-	-	-	-
Other Central and South America	-	0	-	-	-	-	-	-	-	-	-	-
ARA (Belgium Germany Netherlands)	-	-	0	-	0	-	-	-	-	-	-	-
Other Europe	-	-	-	-	-	-	-	-	-	-	-	-
FSU	6	5	0	-	-	-	-	-	-	-	-	-
Saudi Arabia	1	1	13	14	13	25	12	8	9	20	-	-
Algeria	-	-	-	-	-	-	-	-	-	-	-	-
Other Middle East and Africa	27	38	30	27	31	30	6	-	-	18	19	-1
Singapore	25	18	29	44	22	23	34	63	19	19	44	-24
Non-OECD Asia (excl. Singapore)	40	26	47	30	56	51	64	63	125	10	22	-13
Other	1	-	-	-	-	-	-	-	-	-	-	-
Total[2]	**101**	**88**	**119**	**116**	**121**	**129**	**117**	**135**	**153**	**67**	**85**	**-19**
of which Non-OECD	**100**	**88**	**119**	**116**	**121**	**129**	**117**	**135**	**153**	**67**	**85**	**-19**
Total OECD Trade[2]	**439**	**519**	**588**	**520**	**645**	**606**	**576**	**473**	**706**	**561**	**539**	**22**
of which Non-OECD	**404**	**477**	**552**	**480**	**616**	**555**	**533**	**456**	**620**	**531**	**515**	**16**

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

2 Total figure excludes intra-regional trade.

IEA. All rights reserved.

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

	2019	2020	2021	2Q21	3Q21	4Q21	1Q22	Dec 21	Jan 22	Feb 22	Mar 22	Apr 22	May 22
CRUDE OIL PRICES													
IEA CIF Average Import[1]													
IEA Americas	56.93	37.31	64.78	63.76	67.32	73.13	86.94	68.22	74.95	84.04	100.98		
IEA Europe	64.25	42.91	69.96	67.23	72.11	78.43	96.50	74.41	84.08	95.12	110.42		
IEA Asia Oceania	66.38	46.28	70.41	67.63	74.07	80.92	89.86	81.65	81.59	89.56	98.74		
IEA Total	**62.75**	**42.19**	**68.55**	**66.29**	**71.18**	**77.54**	**92.00**	**74.52**	**80.90**	**90.42**	**104.59**		
FOB Spot													
North Sea Dated	64.12	41.76	70.82	74.57	73.42	79.67	102.12	74.01	87.10	98.01	118.75	104.25	113.38
Brent (Asia) Mth 1	64.86	44.86	71.49	75.36	74.09	80.47	101.21	74.82	86.18	97.89	117.53	106.07	114.98
WTI (Cushing) Mth 1	57.03	39.25	68.10	72.69	70.54	77.33	95.18	71.53	83.13	91.74	108.52	101.77	109.61
Urals (Mediterranean)	64.31	41.93	69.47	73.21	71.32	78.39	91.49	73.07	86.76	94.94	92.59	72.44	81.43
Dubai (1st month)	63.49	42.36	69.35	72.59	71.60	78.23	96.06	73.25	83.34	92.48	110.49	102.91	108.08
Tapis (Dated)	69.16	43.28	72.80	75.89	75.30	83.38	108.06	78.88	91.73	104.62	125.65	111.36	122.00
PRODUCT PRICES													
Rotterdam, Barges FOB													
Premium Unl 10 ppm	71.35	44.65	80.25	83.13	85.64	90.71	110.45	82.88	94.85	106.55	127.41	125.68	149.51
Naphtha	56.27	39.64	71.14	72.12	74.61	82.00	99.54	78.27	86.87	96.44	113.24	101.44	99.33
Jet/Kerosene	79.24	44.79	76.50	77.82	78.87	90.15	121.79	85.18	100.65	109.98	150.44	153.17	160.14
ULSD 10ppm	79.45	49.32	78.52	80.27	80.81	92.06	125.05	86.38	101.18	112.77	156.47	151.46	152.37
Gasoil 0.1 %	77.73	48.10	77.12	79.15	79.41	90.20	121.77	84.69	99.18	110.26	151.41	145.48	149.25
LSFO 1%	62.21	42.78	70.18	70.75	72.12	78.63	96.33	74.57	83.98	91.90	110.94	98.73	101.82
HSFO 3.5%	50.31	34.43	62.07	64.39	63.95	68.68	85.42	64.43	75.42	81.00	97.98	91.93	98.33
Mediterranean, FOB Cargoes													
Premium Unl 10 ppm	71.31	45.59	80.69	82.76	86.49	91.08	111.91	84.94	96.68	108.01	128.55	126.02	148.77
Naphtha	54.43	37.81	69.60	70.86	73.44	80.04	97.03	75.50	84.89	93.90	110.29	97.78	94.86
Jet Aviation Fuel	77.76	43.28	75.26	76.77	77.96	88.66	119.87	83.07	99.21	108.03	148.12	150.30	157.01
ULSD 10ppm	79.05	48.76	78.00	79.93	80.64	91.16	122.64	85.03	99.81	110.31	153.21	147.98	148.76
Gasoil 0.1 %	77.70	47.60	76.89	78.92	79.60	89.87	119.44	83.90	99.18	109.08	146.07	142.97	145.18
LSFO 1%	63.90	44.06	71.27	71.55	73.10	80.24	99.17	76.33	86.30	93.09	115.65	105.01	107.86
HSFO 3.5%	52.17	34.36	60.50	62.46	62.69	67.23	83.38	62.67	73.78	78.87	95.64	89.21	94.15
US Gulf, FOB Pipeline													
Super Unleaded	79.24	50.64	91.17	95.46	97.57	99.76	121.45	92.61	104.58	116.46	140.25	142.72	171.62
Unleaded	72.28	46.02	86.46	89.30	91.72	95.12	116.65	88.83	100.62	112.28	134.21	132.98	157.28
Jet/Kerosene	78.81	46.20	77.91	78.81	79.86	92.09	121.50	87.63	102.12	112.50	145.78	156.86	161.40
ULSD 10 ppm	79.09	50.17	84.69	86.97	87.33	97.51	126.65	91.78	106.71	118.06	151.09	160.12	163.40
No. 6 3%[2]	52.57	34.63	59.90	61.72	62.33	67.41	83.38	63.04	74.91	80.13	93.44	89.41	94.62
Singapore, FOB Cargoes													
Premium Unleaded	72.55	46.65	80.49	81.81	83.45	93.71	113.98	87.92	98.04	110.72	131.07	126.73	146.88
Naphtha	57.15	40.77	70.99	71.26	73.93	82.09	97.77	77.82	84.56	95.75	111.42	97.75	95.76
Jet/Kerosene	77.26	44.83	75.26	76.78	77.10	88.47	113.09	83.47	95.78	106.17	134.32	134.35	142.90
Gasoil 0.05%	77.23	48.43	76.12	77.73	77.16	89.64	116.43	84.94	97.84	109.91	138.51	139.18	145.08
HSFO 180 CST	58.62	39.32	64.53	65.77	68.34	71.42	88.05	65.86	76.17	82.63	103.13	110.91	104.74
HSFO 380 CST 4%	57.57	38.25	63.22	64.70	66.13	70.14	85.45	64.79	74.15	81.08	99.20	104.14	98.48

1IEA CIF Average Import price for March 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
Copyright © 2022 Argus Media Ltd - All rights reserved

IEA. All rights reserved.

Table 14
MONTHLY AVERAGE END-USER PRICES FOR PETROLEUM PRODUCTS

May 2022

	NATIONAL CURRENCY *						US DOLLARS					
	Total Price	% change from Apr-22	% change from May-21	Ex-Tax Price	% change from Apr-22	% change from May-21	Total Price	% change from Apr-22	% change from May-21	Ex-Tax Price	% change from Apr-22	% change from May-21
GASOLINE [1] (per litre)												
France	1.898	5.2	24.6	1.041	8.1	80.1	2.008	3.0	8.5	1.101	5.9	56.8
Germany	2.127	4.4	38.5	1.132	7.1	78.0	2.250	2.3	20.5	1.197	4.9	54.9
Italy	1.834	3.4	15.5	1.025	5.0	78.6	1.940	1.3	0.5	1.084	2.9	55.5
Spain	1.903	13.6	41.3	1.227	17.3	91.7	2.013	11.3	23.0	1.298	14.9	66.9
United Kingdom	1.660	2.5	30.5	0.853	4.2	77.7	2.066	-1.3	15.3	1.062	0.3	57.0
Japan	169.6	- 2.3	11.7	97.6	-3.6	19.8	1.316	-4.2	-5.5	0.757	-5.4	1.4
Canada	1.980	12.6	48.6	1.447	16.0	67.7	1.541	10.7	40.2	1.126	14.0	58.2
United States	1.174	8.1	48.8	1.043	9.2	57.8	1.174	8.1	48.8	1.043	9.2	57.8
AUTOMOTIVE DIESEL FOR NON COMMERCIAL USE (per litre)												
France	1.877	0.8	35.2	1.105	1.1	101.6	1.986	-1.3	17.7	1.169	-1.0	75.5
Germany	2.047	0.8	54.3	1.250	1.1	93.8	2.165	-1.3	34.3	1.322	-1.0	68.7
Italy	1.817	2.6	25.6	1.122	3.4	97.2	1.922	0.5	9.3	1.187	1.3	71.7
Spain	1.878	10.3	56.0	1.299	11.7	110.9	1.987	8.1	35.8	1.374	9.4	83.6
United Kingdom	1.798	2.0	37.4	0.968	3.2	89.1	2.238	-1.7	21.3	1.205	-0.6	67.0
Japan	149.6	- 2.4	13.3	104.0	-3.2	18.2	1.161	-4.3	-4.1	0.807	-5.1	0.0
Canada	2.224	13.2	75.9	1.715	15.7	102.7	1.731	11.3	66.0	1.335	13.7	91.2
United States	1.472	8.8	73.2	1.321	9.9	88.4	1.472	8.8	73.2	1.321	9.9	88.4
DOMESTIC HEATING OIL (per litre)												
France	1.528	1.7	78.3	1.117	2.0	100.3	1.616	-0.4	55.2	1.182	-0.1	74.3
Germany	1.344	- 2.3	90.5	1.068	-2.4	101.0	1.422	-4.3	65.9	1.130	-4.4	75.0
Italy	1.816	3.0	45.7	1.085	4.2	75.5	1.921	0.9	26.9	1.148	2.0	52.8
Spain	1.361	1.9	98.2	1.028	2.1	118.3	1.439	-0.2	72.5	1.087	0.0	90.1
United Kingdom	1.001	- 5.5	78.5	0.846	-5.8	100.2	1.246	-9.0	57.7	1.053	-9.3	76.8
Japan [2]	112.1	- 1.9	24.6	99.1	-2.0	25.4	0.870	-3.9	5.4	0.769	-3.9	6.2
Canada	2.180	12.4	86.2	1.947	12.6	91.4	1.696	10.4	75.6	1.515	10.6	80.5
United States	-	-	-	-	-	-	-	-	-	-	-	-
LOW SULPHUR FUEL OIL FOR INDUSTRY [3] (per kg)												
France	0.838	1.0	48.7	0.698	1.2	64.7	0.886	-1.1	29.4	0.739	-0.9	43.3
Germany	-	-	-	-	-	-	-	-	-	-	-	-
Italy	0.804	2.4	60.7	0.772	2.5	64.8	0.850	0.3	39.9	0.817	0.4	43.4
Spain	0.708	6.6	66.5	0.691	6.7	69.3	0.749	4.4	45.0	0.731	4.5	47.4
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.

IEA. All rights reserved.

Table 15
IEA/KBC Global Indicator Refining Margins[1]
($/bbl)

	Monthly Average					Change	Average for week ending:				
	Feb 22	Mar 22	Apr 22	May 22		May-Apr	13 May	20 May	27 May	03 Jun	10 Jun
NW Europe											
Brent (Cracking)	3.28	11.84	22.33	23.13	↑	0.80	25.25	19.42	21.02	28.75	30.63
Urals (Cracking)	7.04	38.78	55.01	54.64	↓	-0.37	56.79	51.13	52.43	58.39	60.00
Brent (Hydroskimming)	-0.37	6.26	14.30	12.09	↓	-2.21	14.16	9.20	9.68	14.24	14.74
Urals (Hydroskimming)	0.76	29.76	45.32	43.00	↓	-2.32	45.32	40.47	40.57	42.24	41.98
Mediterranean											
Es Sider (Cracking)	4.21	15.62	24.45	22.33	↓	-2.12	26.11	19.30	17.58	23.57	28.31
Urals (Cracking)	5.16	38.66	55.11	52.71	↓	-2.40	56.06	49.70	48.36	53.24	58.02
Es Sider (Hydroskimming)	0.79	9.46	16.61	13.48	↓	-3.13	16.72	11.59	9.26	12.82	14.78
Urals (Hydroskimming)	-2.40	26.15	41.65	38.71	↓	-2.95	41.52	36.94	35.22	35.98	37.23
US Gulf Coast											
Mars (Cracking)	8.11	11.76	16.98	23.15	↑	6.17	26.04	20.01	21.95	25.29	29.13
50/50 HLS/LLS (Coking)	17.29	27.01	36.25	42.86	↑	6.61	48.66	37.22	38.30	45.12	52.22
50/50 Maya/Mars (Coking)	12.33	18.13	25.71	31.55	↑	5.84	37.21	26.72	26.85	33.39	40.12
ASCI (Coking)	14.73	22.13	30.24	36.60	↑	6.36	41.48	31.36	33.24	39.94	46.58
US Midwest											
30/70 WCS/Bakken (Cracking)	9.14	16.10	24.20	34.60	↑	10.41	34.37	32.29	36.57	47.66	41.59
Bakken (Cracking)	11.05	20.22	30.39	41.45	↑	11.06	41.84	38.22	42.18	55.98	50.04
WTI (Coking)	11.89	22.74	34.23	45.24	↑	11.01	47.26	40.65	44.97	60.87	56.00
30/70 WCS/Bakken (Coking)	12.22	21.75	31.79	43.65	↑	11.86	43.94	40.25	45.09	59.43	54.12
Singapore											
Dubai (Hydroskimming)	-1.47	2.11	11.86	8.35	↓	-3.50	10.08	5.75	5.88	5.35	5.79
Tapis (Hydroskimming)	-0.76	2.82	15.45	13.60	↓	-1.84	16.94	12.42	8.73	13.38	16.32
Dubai (Hydrocracking)	10.35	16.87	23.58	26.89	↑	3.31	27.27	24.21	25.24	30.66	34.67
Tapis (Hydrocracking)	-1.02	3.12	17.80	15.84	↓	-1.96	20.47	14.33	9.71	13.58	16.66

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)

IEA. All rights reserved.

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

	Jan-22	Feb-22	Mar-22	Mar-21	Mar 22 vs Previous Month	Mar 22 vs Previous Year	Mar 22 vs 5 Year Average	5 Year Average
OECD Americas								
Naphtha	1.1	1.1	1.1	1.1	0.0	0.0	-0.4	1.4
Motor gasoline	46.8	45.6	44.4	45.6	-1.3	-1.3	-0.7	45.1
Jet/kerosene	8.5	8.3	7.9	6.6	-0.5	1.3	-0.7	8.5
Gasoil/diesel oil	27.9	28.3	29.3	29.0	1.0	0.3	0.7	28.6
Residual fuel oil	3.2	2.9	3.3	3.5	0.4	-0.2	0.0	3.3
Petroleum coke	4.2	4.2	4.2	4.1	0.0	0.1	-0.3	4.5
Other products	11.6	11.8	12.9	13.2	1.1	-0.3	0.3	12.6
OECD Europe								
Naphtha	8.5	8.9	8.5	9.6	-0.4	-1.0	-0.4	9.0
Motor gasoline	21.3	21.4	21.3	19.7	-0.1	1.6	1.5	19.8
Jet/kerosene	7.4	7.7	6.7	5.1	-1.1	1.6	-1.0	7.6
Gasoil/diesel oil	39.9	39.4	41.2	41.3	1.8	0.0	1.0	40.2
Residual fuel oil	9.3	8.6	8.0	8.6	-0.6	-0.6	-1.7	9.7
Petroleum coke	1.7	1.7	1.4	1.5	-0.3	0.0	0.0	1.4
Other products	14.5	15.2	15.6	17.0	0.4	-1.4	0.8	14.9
OECD Asia Oceania								
Naphtha	15.8	15.7	16.7	16.0	1.0	0.7	0.8	15.9
Motor gasoline	21.4	21.4	21.5	22.5	0.1	-1.0	-0.2	21.7
Jet/kerosene	14.3	13.9	12.7	11.6	-1.3	1.0	-1.9	14.6
Gasoil/diesel oil	29.6	30.1	30.4	30.9	0.3	-0.5	1.0	29.4
Residual fuel oil	8.4	9.0	8.7	8.1	-0.3	0.6	1.0	7.7
Petroleum coke	0.4	0.5	0.5	0.3	0.0	0.2	0.1	0.4
Other products	12.2	12.3	12.1	12.5	-0.1	-0.4	-0.2	12.3
OECD Total								
Naphtha	6.1	6.2	6.1	6.4	-0.1	-0.3	-0.3	6.5
Motor gasoline	34.1	33.6	33.2	33.4	-0.4	-0.2	0.5	32.7
Jet/kerosene	9.2	9.1	8.3	7.0	-0.8	1.3	-1.0	9.3
Gasoil/diesel oil	32.0	32.1	33.2	33.2	1.1	0.0	0.7	32.4
Residual fuel oil	6.1	5.8	5.7	5.9	-0.1	-0.2	-0.4	6.1
Petroleum coke	2.7	2.8	2.7	2.6	-0.1	0.1	-0.1	2.7
Other products	12.6	12.9	13.6	14.3	0.7	-0.6	0.4	13.3

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

IEA. All rights reserved.

Table 17
WORLD BIOFUELS PRODUCTION
(thousand barrels per day)

	2019	2020	2021	3Q21	4Q21	1Q22	Mar 22	Apr 22	May 22
ETHANOL									
OECD Americas[1]	**1063**	**934**	**1010**	**993**	**1092**	**1058**	**1054**	**1016**	**1016**
United States	1029	906	979	963	1061	1023	1019	980	980
Other	34	28	30	30	30	35			
OECD Europe[2]	**97**	**93**	**103**	**118**	**117**	**121**	**129**	**101**	**101**
France	21	17	18	25	22	27	30	18	18
Germany	12	11	12	15	15	23	24	11	11
Spain	9	8	10	10	10	5	5	11	11
United Kingdom	5	5	9	9	16	17	18	6	6
Other	50	52	54	59	54	48			
OECD Asia Oceania[3]	**4**	**4**	**4**	**3**	**4**	**4**	**6**	**4**	**4**
Australia	4	4	4	3	4	4	6	4	4
Other	0	0	0	0	0	0			
Total OECD Ethanol	**1165**	**1031**	**1117**	**1114**	**1213**	**1184**	**1188**	**1121**	**1121**
Total Non-OECD Ethanol	**809**	**735**	**703**	**1130**	**515**	**312**	**305**	**519**	**918**
Brazil	621	560	515	942	327	100	93	308	706
China	67	69	76	76	76	79			
Argentina	19	15	18	18	18	21			
Other	102	91	94	94	94	112	212	212	212
TOTAL ETHANOL	**1974**	**1766**	**1820**	**2245**	**1728**	**1496**	**1493**	**1641**	**2039**
BIODIESEL									
OECD Americas[1]	**151**	**159**	**168**	**163**	**197**	**196**	**231**	**240**	**240**
United States	145	153	160	156	190	194	229	229	229
Other	7	6	7	7	7	2			
OECD Europe[2]	**295**	**281**	**313**	**328**	**314**	**288**	**313**	**338**	**338**
France	43	41	43	48	43	52	57	46	46
Germany	69	61	66	74	66	56	61	69	69
Italy	18	28	30	31	31	21			
Spain	42	30	39	40	38	29	27	44	44
Other	123	121	136	136	136	131	144	144	144
OECD Asia Oceania[3]	**15**	**12**	**12**	**15**	**8**	**11**	**14**	**12**	**12**
Australia	0	0	0	0	0	0	0	0	0
Other	15	12	12	15	8	11			
Total OECD Biodiesel	**461**	**452**	**493**	**506**	**520**	**495**	**558**	**589**	**589**
Total Non-OECD Biodiesel	**405**	**411**	**439**	**439**	**439**	**464**	**464**	**464**	**464**
Brazil	102	111	116	117	114	101	101	105	105
Argentina*	42	27	36	36	36	42			
Other	261	274	287	287	289	321			
TOTAL BIODIESEL	**866**	**863**	**932**	**945**	**959**	**958**	**1022**	**1053**	**1053**
GLOBAL BIOFUELS	**2839**	**2630**	**2752**	**3190**	**2687**	**2454**	**2515**	**2694**	**3092**

* monthly data not available.

IEA. All rights reserved.

Source: IEA 2022. All Rights Reserved

Without prejudice to the terms and conditions on the IEA website at **www.iea.org/t&c/termsandconditions/** (the Terms), which also apply to this Oil Market Report (OMR) and its related publications, the Executive Director and the Secretariat of the IEA are responsible for the publication of the OMR. Although some of the data are supplied by IEA Member-country governments, largely on the basis of information they in turn receive from oil companies, neither these governments nor these oil companies necessarily share the Secretariat's views or conclusions as expressed in the OMR. The OMR is prepared for general circulation and is distributed for general information only. Neither the information nor any opinion expressed in the OMR constitutes an offer, or an invitation to make an offer, to buy or sell any securities or any options, futures or other derivatives related to such securities.

As set out in the Terms, the IEA owns the copyright in this OMR. However, in relation to the edition of OMR made available to Subscribers (as defined in the Terms), all Argus information is sourced as Copyright © 2022 Argus Media Limited and is published here with the permission of Argus. The spot crude and product price assessments are based on daily Argus prices, converted when appropriate to USD per barrel according to the Argus specification of products. Argus Media Limited reserves all rights in relation to all Argus information. Any reproduction of Argus information requires the express prior written permission of Argus. Argus shall not be liable to any party for any inaccuracy, error or omission contained or provided in Argus information contained in this OMR or for any loss, or damage, whether or not due to reliance placed by that party on information in this OMR.

International Energy Agency

Oil Market Team

Editor	Toril Bosoni +33 (0)1 40 57 67 18 Toril.Bosoni@iea.org	Analyst	Jenny Thomson +33 (0)1 40 57 67 11 Jenny.Thomson@iea.org
Demand	Alexander Bressers +33 (0)1 40 57 65 16 Alexander.Bressers@iea.org	Data Management	Luis Fernando Rosa +33 (0)1 40 57 65 56 LuisFernando.Rosa@iea.org
	Ciarán Healy +33 (0)1 40 57 67 58 Ciaran.Healy@iea.org	Data Scientist	Tsuyoshi Deguchi +33 (0)1 40 57 65 78 Tsuyoshi.Deguchi@iea.org
OPEC Supply	Peg Mackey +33 (0)1 40 57 65 81 Peg.Mackey@iea.org	Data Officer	Olaoye Oloyede +33 (0)1 40 57 65 03 Olaoye.Oloyede@iea.org
Non-OPEC Supply	Jacob Messing +33 (0)1 40 57 66 98 Jacob.Messing@iea.org	OIM Assistant	Deven Mooneesawmy +33 (0)1 40 57 65 03 Deven.Mooneesawmy@iea.org
Refining	Kristine Petrosyan +33 (0)1 40 57 66 05 Kristine.Petrosyan@iea.org	Data Enquiries to Oil Market Report: OilMarketReport@iea.org	
Stocks	Yuya Akizuki +33 (0)1 40 57 67 30 Yuya.Akizuki@iea.org	Subscription & Delivery Enquiries +33 (0)1 40 57 66 90 OMRSubscriptions@iea.org	
Prices	Joel R. Couse +33 (0)1 40 57 67 22 Joel.Couse@iea.org	Media Enquiries/IEA Press Office +33 (0)1 40 57 66 94 ieapressoffice@iea.org	

Next Issue: 13 July 2022

For information on the data sources, definitions, technical terms and general approach used in preparing the Oil Market Report (OMR), Market Report Series_Oil and Annual Statistical Supplement (current issue of the Statistical Supplement dated 12 August 2021), readers are referred to the Users' Guide at https://www.iea.org/articles/oil-market-report-glossary. It should be noted that the spot crude and product price assessments are based on daily Argus prices, converted when appropriate to US$ per barrel according to the Argus specification of products (Copyright © 2022 Argus Media Limited - all rights reserved)