International Energy Agency

Oil Market Report

13 September 2023

- World oil demand remains on track to grow by 2.2 mb/d in 2023 to 101.8 mb/d, led by resurgent Chinese consumption, jet fuel and petrochemical feedstocks. In 2024, naphtha and LPG/ethane, especially in China, will dominate an overall increase of a more modest 990 kb/d, to 102.8 mb/d, reflecting below-trend GDP growth and a structural decline in road transport fuel use in major markets.

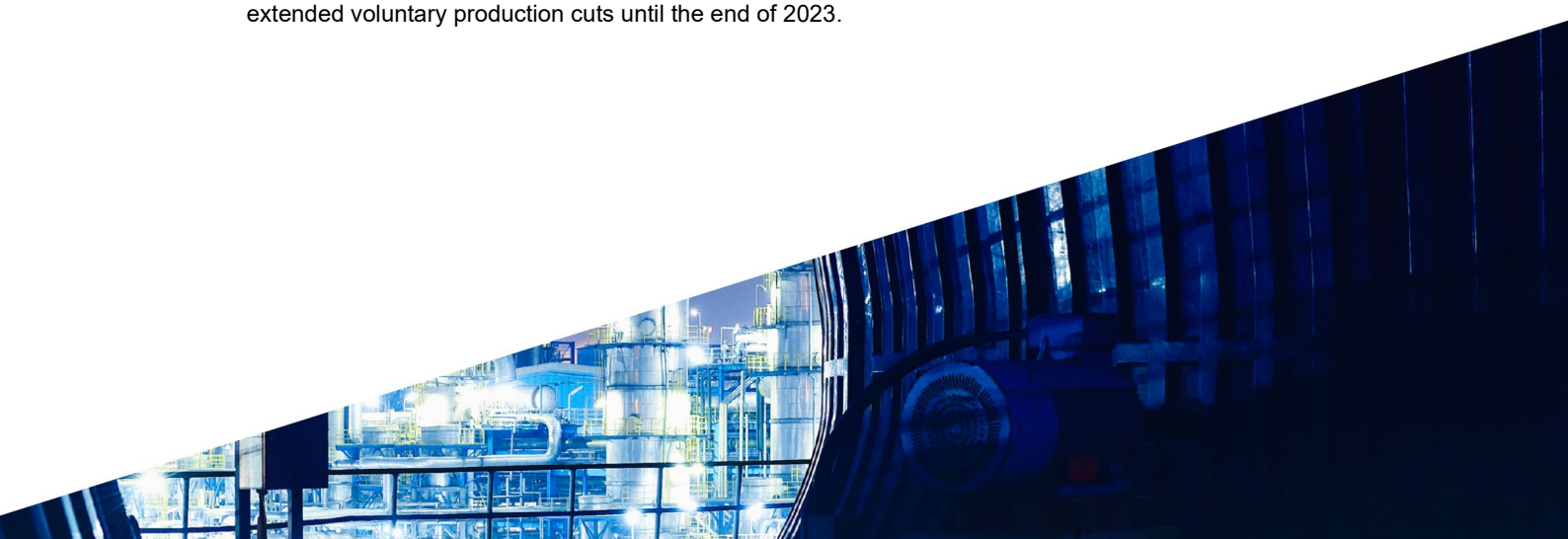
- The extension of output cuts by Saudi Arabia and Russia through year-end will lock in a substantial market deficit through 4Q23. So far this year, OPEC+ output has fallen by 2 mb/d with overall losses tempered by sharply higher Iranian flows. Non-OPEC+ supply rose by 1.9 mb/d to a record 50.5 mb/d by August. World supply in 2023 will rise by 1.5 mb/d, with the US, Iran and Brazil top sources of growth.

- Russian oil export revenues surged by $1.8 bn to $17.1 bn in August, as higher prices more than offset lower shipments. Led by a decline in product shipments, total Russian oil exports eased by 150 kb/d last month, to 7.2 mb/d, 570 kb/d below a year-ago. Shipments to China and India slumped to 3.9 mb/d from 4.7 mb/d in April and May but accounted for more than half the total volumes.

- Refinery margins hit an eight-month high in August as refiners struggled to keep up with oil demand growth, especially for middle distillates. Product cracks and margins reached near-record levels due to unplanned outages, feedstock quality issues, supply chain bottlenecks and low stocks. Global refinery runs are forecast to rise by 1.7 mb/d to 82.4 mb/d in 2023 and by 1.2 mb/d to 83.6 mb/d next year.

- Global observed oil inventories plummeted by 76.3 mb to a 13-month low in August, led by a hefty decline in oil on water. Non-OECD oil stocks fell by 20.8 mb with the largest draw seen in China, while OECD inventories eased by 3.2 mb. In July, OECD industry stocks rose by 26.7 mb to 2 814 mb but remained 102.6 mb below their five-year average.

- Oil prices traded in a narrow range throughout August, with North Sea Dated hovering around $85/bbl and price volatility at multi-year lows. Prices moved higher by end-month as fundamentals came to the fore once again and breached $90/bbl for the first time in 10 months after Saudi Arabia and Russia extended voluntary production cuts until the end of 2023.



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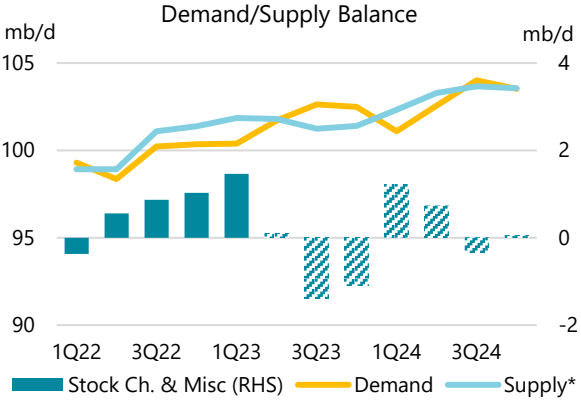
40 years on

The very first edition of the IEA's benchmark Oil Market Report (OMR) was published 40 years ago, in September 1983. The international oil market complex has since grown exponentially. But then, as now, energy security concerns were critical. The IEA was created in response to the energy security challenges triggered by the 1973-1974 oil embargo when major producers pushed prices to historic levels. Launched to provide greater market transparency, the OMR has since become one of the world's most authoritative sources for comprehensive analysis and timely statistics on oil market fundamentals, crucial to strengthening energy security globally.

Russia's invasion of Ukraine in February 2022 upended oil and gas markets, creating the first truly global energy crisis amid the uneven economic recovery from the Covid-19 pandemic. Russia's membership in the OPEC+ bloc has complicated efforts by the international community to navigate the crisis and address the major inflationary impacts of higher oil prices on economies around the world, especially in developing countries.



* Assumes extra Saudi and Russia cuts maintained through 2023, OPEC+ targets and voluntary cuts in place through 2024.

The Saudi-Russian alliance is proving a formidable challenge for oil markets. After oil prices traded in relative calm during August, with volatility at multi-year lows, the decision by Saudi Arabia and Russia in early September to extend output cuts of a combined 1.3 mb/d through year-end triggered a price spike in North Sea Dated above $90/bbl to a 10-month high. As forecast in this *Report* for some time, oil markets were already tightening and in August observed global inventories plunged by a sharp 76.3 mb, or 2.46 mb/d.

An expected rise in global oil demand of 1.5 mb/d in 2H23 over 1H23 levels will eclipse supply by 1.24 mb/d. Despite its difficult economic situation, China looks on track to account for 75% of the increase in world oil demand this year, or 1.6 mb/d of the 2.2 mb/d total. But global demand growth is set to slow sharply to around 1 mb/d in 2024 as the recovery runs out of steam and with efficiency gains, EV penetration and working from home further suppressing consumption.

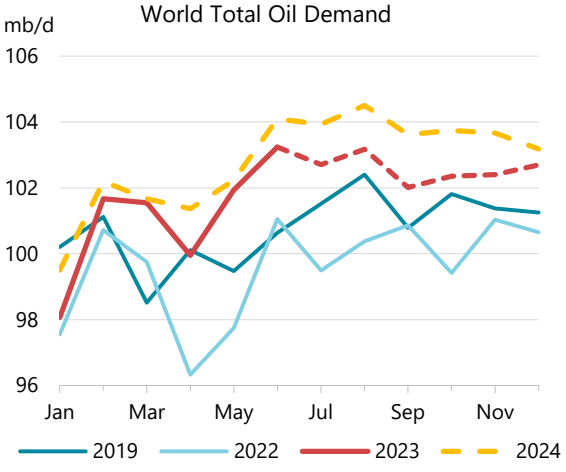
Refiners are struggling to meet increased demand, especially for distillates. Surging product cracks and refinery margins near all-time highs have failed to spur a meaningful increase in throughputs. Sub-optimal crude allocations following embargoes on Russian crude and products and OPEC+ oil supply cuts have kept European and OECD Asian refinery runs well below year-earlier levels.

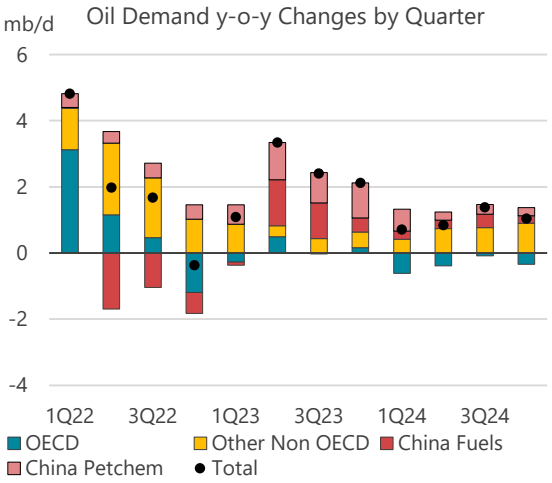
Output curbs by OPEC+ members of more than 2.5 mb/d since the start of 2023 have so far been offset by higher supplies from producers outside the alliance. Record US and Brazilian supply underpin a 1.9 mb/d increase in non-OPEC+ production from January to August, while Iran, still under sanctions, boosted output by around 600 kb/d. But from September onwards, the loss of OPEC+ production, led by Saudi Arabia, will drive a significant supply shortfall through the fourth quarter. Unwinding cuts at the start of 2024 would shift the balance to a surplus. However, oil stocks will be at uncomfortably low levels, increasing the risk of another surge in volatility that would be in the interest of neither producers nor consumers, given the fragile economic environment.

Demand

Overview

Global oil demand remains on track to grow by 2.2 mb/d to 101.8 mb/d in 2023, comfortably surpassing 2019 levels as the protracted post-Covid rebound approaches completion. Led by resurgent Chinese consumption, jet fuel and petrochemical feedstocks are dominating gains and propelled June demand to the highest monthly mark on record. In 2024, naphtha and LPG/ethane, especially in China, will be the mainstays of an overall increase in global demand of a more modest 990 kb/d, to 102.8 mb/d, reflecting below trend GDP growth.





Global macroeconomic sentiment continued to worsen in August, as pessimism about China's economy mounted and bond yields soared. The outlook for China remains lacklustre and was exacerbated by a flare-up of the cash crunch that has engulfed the country's property developers, epitomised by builder Country Garden's failure to meet bond payments. Concerns were amplified by resilient US economic data that sent sovereign bond yields to their highest since 2008, as investors worried the Federal Reserve's restrictive stance may remain in place for longer. As a consequence, the global growth outlook remains subdued, with analyst consensus of worldwide GDP growth well below trend for 2023 and 2024, at 2.7% and 2.6%, respectively. In this regard, China is the main wild card, as its economic troubles heighten the risk of global contagion among developing nations. Any abrupt weakening of China's industrial activity and oil demand is likely to spill over globally, making for a more challenging climate for emerging markets in Asia, Africa and Latin America.

China's oil demand has so far remained remarkably unaffected by its economic downturn. For the third time this year, its demand set another all-time monthly record – reaching 16.7 mb/d in July. To a large extent, this resilience has been the result of the expansion of the country's petrochemical activity, where China is crowding out international suppliers of feedstocks and polymers. Robust consumption of gasoline and jet/kerosene – where demand has plateaued after 1H23's post-pandemic mobility and travel rebound – was the other main factor buttressing demand. Jet/kerosene use reached a record monthly high in July, with average 2023 use anticipated to regain its pre-pandemic level. We see 2023 Chinese demand growth averaging 1.6 mb/d year-on-year (y-o-y), before slowing sharply to 640 kb/d in 2024 as a more challenging macroeconomic environment materialises, with traditional demand drivers such as GDP reasserting their influence after the turmoil of the pandemic period (see *Chinese oil demand arrives home after long march*).

Global Demand by Region (thousand barrels per day)								
	Demand				Annual Chg (kb/d)		Annual Chg (%)	
	2021	2022	2023	2024	2023	2024	2023	2024
Africa	4 045	4 277	4 268	4 426	- 8	158	-0.2	3.7
Americas	30 323	31 044	31 284	31 085	240	- 199	0.8	-0.6
Asia/Pacific	35 960	36 099	38 087	39 105	1 988	1 018	5.5	2.7
Europe	13 964	14 295	14 224	14 135	- 71	- 89	-0.5	-0.6
FSU	4 891	4 942	4 954	4 927	13	- 28	0.3	-0.6
Middle East	8 375	8 912	8 995	9 128	82	133	0.9	1.5
World	**97 560**	**99 570**	**101 813**	**102 807**	**2 243**	**994**	**2.3**	**1.0**
OECD	44 851	45 725	45 815	45 459	90	- 356	0.2	-0.8
Non-OECD	52 709	53 845	55 998	57 347	2 153	1 349	4.0	2.4

With the post-pandemic rebound in global fuel use running out of steam, petrochemical feedstocks are moving into their heavily foreshadowed role as the main long-term pillar of oil demand. Across the final three quarters of 2023, aggregate naphtha, LPG and ethane demand is set to rise by 1.1 mb/d y-o-y and in 2024 is expected to average 620 kb/d (62% of the total increase). However, acute inequalities in how this growth is distributed reflect major shifts in the petrochemical industry itself. This year the US and especially China will capture virtually all of the increase – the fruit of many years of large-scale, strategic investments in new plants, while producers in other regions are suffering painful drops in operating levels and feedstock use.

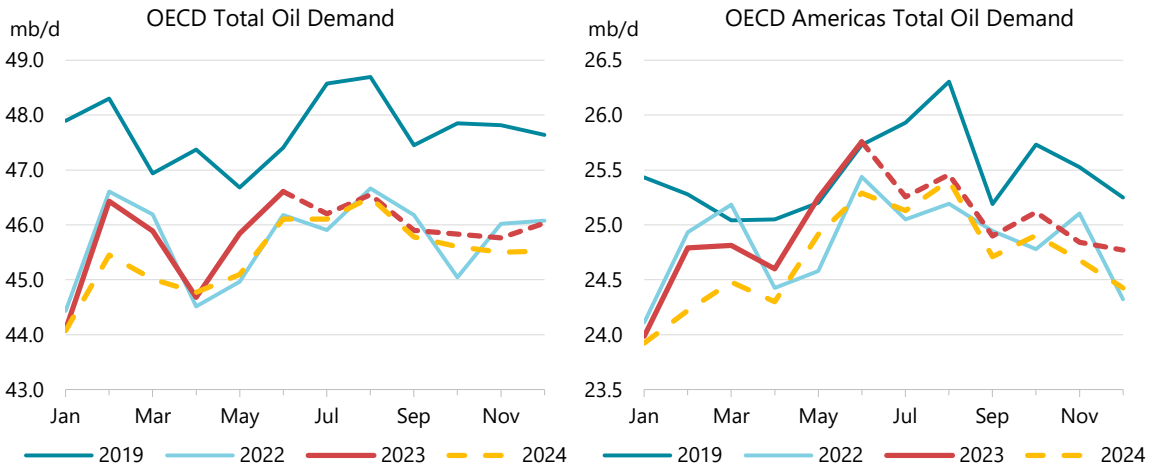
Global Demand by Product (thousand barrels per day)								
	Demand				Annual Chg (kb/d)		Annual Chg (%)	
	2021	2022	2023	2024	2023	2024	2023	2024
LPG & Ethane	13 726	14 141	14 699	14 940	558	242	3.9	1.6
Naphtha	7 013	6 795	7 079	7 462	285	383	4.2	5.4
Motor Gasoline	25 762	26 307	26 802	26 772	496	- 31	1.9	-0.1
Jet Fuel & Kerosene	5 175	6 133	7 151	7 235	1 018	84	16.6	1.2
Gas/Diesel Oil	27 418	28 206	28 307	28 490	101	184	0.4	0.6
Residual Fuel Oil	6 248	6 504	6 530	6 613	26	83	0.4	1.3
Other Products	12 219	11 485	11 245	11 294	- 240	49	-2.1	0.4
Total Products	**97 560**	**99 570**	**101 813**	**102 807**	**2 243**	**994**	**2.3**	**1.0**

OECD

Total OECD demand rose by 490 kb/d y-o-y in 2Q23, reverting to growth after two quarters of decline. This was powered by the continuing resurgence of jet/kerosene (+410 kb/d), especially apparent in Asia Oceania, gasoline demand (+230 kb/d) and US ethane consumption for steam cracking. Nevertheless, demand looks set to go into reverse in 3Q23 (-30 kb/d) as waning naphtha consumption and a downturn in road fuel use outweigh expansions for jet fuel and LPG. On average, 2023 should nonetheless post narrow overall growth (+90 kb/d) but we expect this to reverse into the first in a long run of annual declines in 2024 (-360 kb/d).

Deliveries in **OECD Americas** climbed by 390 kb/d y-o-y in 2Q23, underpinned by solid gasoline demand (+100 kb/d) and rising ethane consumption by US petrochemical companies (LPG/ethane +250 kb/d). This expansion is set to continue, albeit at a slightly slower rate, in 3Q23 (+140 kb/d) and 4Q23 (+180 kb/d), dominated by rebounding ethane requirements. For the year as a whole, demand is projected to reach just shy of 25 mb/d (+130 kb/d) before beginning a structural decline in 2024 (-260 kb/d). Gasoline demand (+40 kb/d in 2023 and -210 kb/d in 2024) will remain about

550 kb/d below 2019 levels in 2023 and the combination of burgeoning EV sales, rising efficiencies and the persistent impact of widespread teleworking will continue to weigh on consumption (see *Working from home continues to undermine road fuel demand*).

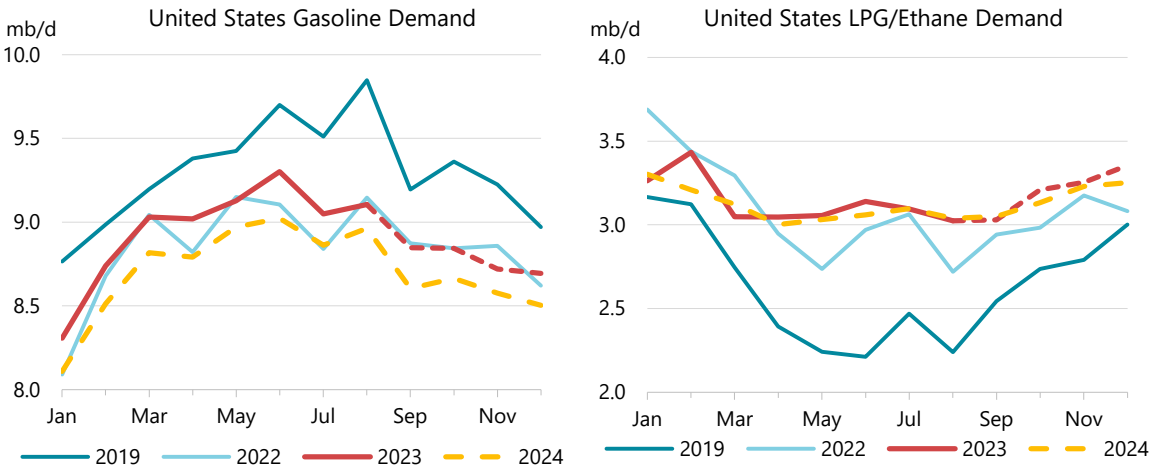


The region's major oil consumers appear to be moving in opposite directions. While **Mexico** was the mainstay of growth in 2022 (+260 kb/d out of 520 kb/d) and 1Q23 (+110 kb/d amid a 220 kb/d regional decline), this situation has reversed. In 2Q23 Mexico contracted y-o-y by 140 kb/d while its northern neighbours posted increases (US +360 kb/d, Canada +160 kb/d). In 2022, Mexican deliveries benefitted from a belated post-Covid release of pent-up demand, becoming the second largest global oil demand growth driver, behind India. As in many other countries, this initial surge has proved difficult to maintain and consumption has largely steadied since 3Q22. **Canadian** deliveries are set to rise y-o-y by 60 kb/d in 3Q23 and for the year as a whole. Jet/kerosene will be the main source of growth (+20 kb/d) in both cases.

Revisions to **US** deliveries data, flagged by the US Energy Information Administration (EIA) and in this *Report*, reduce demand for 2022 and year-to-date for 2023 by an average of 270 kb/d. The changes primarily concern the 'other products' category, and eliminate light hydrocarbons, which are actually being blended into crude oil, from 'product supplied' (the EIA's proxy for demand). We have now incorporated these revisions into our *Report*.

June 2023 data for US deliveries were robust, confirming the strong start to the driving season implied by provisional EIA weekly estimates and indicating that ethane-fed steam crackers consolidated their recent upturn in operating levels. At 20.8 mb/d, total demand was the highest for any month since October 2019 and up by 250 kb/d y-o-y. Gasoline demand was 200 kb/d higher y-o-y. Nonetheless, this comparison to the underwhelming 2022 driving season risks overstating the current strength of the sector, with June gasoline deliveries 80 kb/d below 2021 and 400 kb/d behind 2019. The erosion of road fuel demand by structural factors is expected to accelerate in the coming years and 2024 gasoline demand will drop by 200 kb/d.

Weekly estimates, which have generally anticipated reported deliveries well this year, also indicate that this strong start to the summer faded somewhat in July and August. Month-on-month (m-o-m) gasoline demand likely dropped by 250 kb/d in July (200 kb/d faster than the normal seasonal change). It then looks to have regained only 60 kb/d of this in August (typically the peak month for gasoline consumption) for a y-o-y fall of 40 kb/d relative to the extremely lacklustre 2022 baseline.

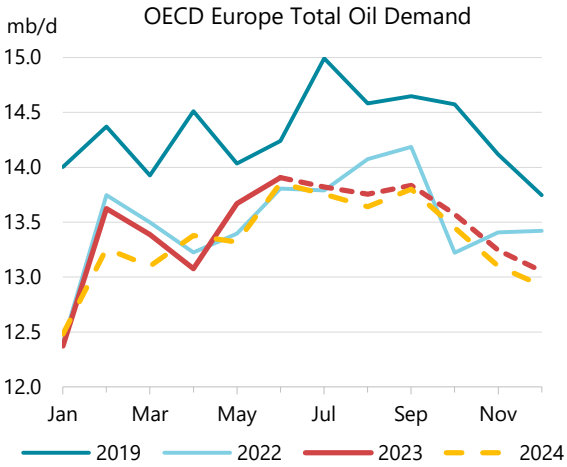


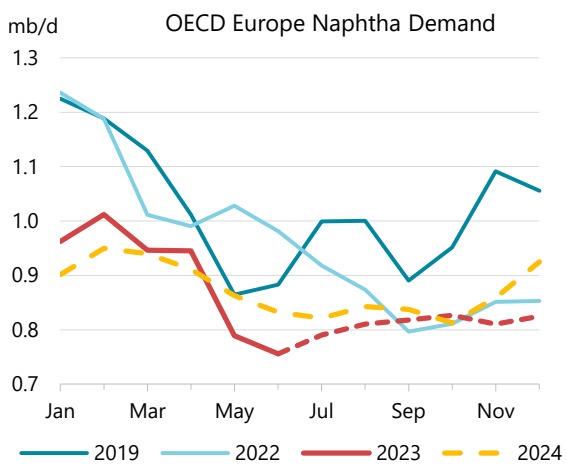
Gasoil demand once again outperformed preliminary indications in June, as has been the case all year, but still fell 100 kb/d short of year-earlier levels. July volumes are expected to be close to their 2022 equivalent, but declines will likely set in for the rest of the year. There is a growing consensus that the US will avoid a hard landing and GDP growth assumptions have increased by 0.3 percentage points for 2H23. Still, manufacturers remain under pressure. In a sign that the Federal Reserve's interest rate hikes may be beginning to bite, the *S&P Global US Manufacturing Purchasing Managers' Index* (PMI) shows deteriorating sentiment despite ebbing inflation (falling to 47.9 in August compared with 49 in July). The August *Services PMI* remains in narrow expansion at 50.5 (down from 52.3 in July). Overall, 2023 gasoil demand is set to drop by 100 kb/d.

US steam cracker operators saw utilisation rates consolidate at solid, if unspectacular, levels, having shrugged off a dreary 2022 during the spring. Ethane use was up y-o-y by 140 kb/d in 2Q23 and the US is the only major producing region outside of China to see such a positive trend. Subsequent dramatic price fluctuations may have distorted July and August deliveries somewhat, but likely reflect healthy domestic consumption as well as brisk trade. An enormous structural increase in the ability to process ethane is the overwhelming reason that US demand for the 2Q23 was ahead of 2019 levels. Ethane intake increased by 690 kb/d over this period to exceed 10% of total US oil deliveries (2.2 mb/d), with overall US demand a mere 60 kb/d higher. If US ethane crackers were a separate country, they would have ranked 10th in 2Q23 demand by volume – ahead of Germany and Mexico and only 150 kb/d behind Korea.

OECD Europe returned to y-o-y growth in the second quarter (+80 kb/d), but we expect this to be short-lived. To a large extent, 2Q23 profited from the comparison to the rather anaemic period of demand in the immediate aftermath of Russia's invasion of Ukraine and the relatively low-hanging fruit of rebounding jet/kerosene demand (+150 kb/d). Jet fuel use recovered markedly from mid-2022 onwards, meaning that y-o-y gains are set to dwindle. A bleak macroeconomic outlook is likely to see gasoil demand, the region's dominant oil product, go further into reverse during 2H23 (-230 kb/d).

Europe will likely be the only OECD region to suffer a contraction in demand during 2023. It will fall by 70 kb/d to 13.4 mb/d. Gasoil (-180 kb/d) and naphtha consumption (-100 kb/d) exemplify the parlous status of manufacturing, only partially offset by a 130 kb/d rise in jet/kerosene. Total demand will fall further in 2024 (-100 kb/d), dominated by gasoil (-130 kb/d), as drivers continue to shift away from diesel engine vehicles. The rebound in jet fuel consumption will be virtually complete and we do not foresee a meaningful recovery in petrochemical operations.





Nonetheless, June data suggest a relatively robust picture, with overall demand rising by 100 kb/d. However, this represents a slowdown from May's 270 kb/d expansion and the 230 kb/d m-o-m increase was about half of the seasonal average rise. Gasoil increased by 70 kb/d despite continued dismal industrial conditions. By August, the *HCOB Eurozone Manufacturing PMI* had recovered slightly to 43.5 (up from 42.7 in July), meaning that the index has now been in contraction for 15 months running. However, this domestic weakness combined with escalating competitive pressures in the global petrochemical industry and attractive LPG pricing saw naphtha demand plumb new depths. At 760 kb/d (-230 kb/d), June naphtha use was at another multi-decade low and projected 2023 demand of 860 kb/d would be the lowest since the mid-1970s.

June fuel oil demand fell by 90 kb/d y-o-y, following a drop of 60 kb/d in May. Much of the decline was concentrated in southern European countries like Spain, Italy and Portugal. Last year, demand for power generation spiked as electricity grids struggled to deal with a heatwave. Although the very high temperatures were repeated this year, less constrained electricity supply – with gas prices below fuel oil on an energy equivalent basis – meant that back-up oil generation was not required in the same way to manage peak cooling demand.

OECD Demand based on Adjusted Preliminary Submissions - July 2023

(million barrels per day)

	Gasoline		Jet/Kerosene		Diesel		Other Gasoil		LPG/Ethane		RFO		Other		Total Products	
	mb/d	% pa	mb/d	% pa	mb/d	% pa	mb/d	% pa	mb/d	% pa	mb/d	% pa	mb/d	% pa	mb/d	% pa
OECD Americas	**10.68**	**1.7**	**2.02**	**5.5**	**3.20**	**-1.5**	**1.73**	**1.2**	**4.00**	**0.8**	**0.49**	**-13.5**	**3.14**	**-0.1**	**25.25**	**0.8**
US*	9.05	2.4	1.70	4.8	2.35	-0.6	1.41	1.3	3.10	1.0	0.33	-7.2	2.42	-0.6	20.35	1.4
Canada	0.81	1.9	0.19	3.3	0.30	2.7	0.25	0.3	0.52	-2.8	0.02	-38.8	0.52	1.6	2.60	0.4
Mexico	0.74	-6.1	0.10	4.8	0.38	-11.6	0.07	1.7	0.33	3.8	0.13	-24.5	0.17	0.0	1.92	-6.0
OECD Europe	**2.22**	**3.9**	**1.60**	**8.7**	**4.93**	**-0.2**	**1.14**	**-3.1**	**1.11**	**-2.4**	**0.78**	**-2.2**	**2.04**	**-4.1**	**13.82**	**0.2**
Germany	0.51	7.0	0.21	-2.3	0.73	-0.3	0.26	-10.7	0.11	-4.1	0.06	2.8	0.34	-8.7	2.21	-1.7
United Kingdom	0.28	4.0	0.30	13.1	0.44	-2.0	0.14	-10.0	0.08	-15.1	0.02	-27.3	0.12	2.6	1.38	0.1
France	0.27	6.7	0.17	11.5	0.72	-3.0	0.07	9.5	0.12	4.0	0.04	11.3	0.24	-0.6	1.64	1.6
Italy	0.22	8.8	0.13	21.7	0.52	1.3	0.06	7.6	0.09	4.5	0.05	-22.1	0.22	2.2	1.30	3.7
Spain	0.15	4.2	0.17	11.3	0.48	4.4	0.17	5.7	0.06	18.5	0.13	-11.2	0.15	-14.3	1.33	1.6
OECD Asia & Oceania	**1.52**	**0.1**	**0.60**	**20.1**	**1.48**	**5.3**	**0.41**	**4.4**	**0.71**	**2.2**	**0.46**	**-2.4**	**1.95**	**-6.6**	**7.12**	**0.8**
Japan	0.86	0.3	0.23	5.6	0.43	0.0	0.27	-5.2	0.33	10.8	0.25	5.4	0.75	-5.8	3.11	0.0
Korea	0.27	-0.5	0.17	32.4	0.45	9.8	0.08	49.0	0.31	-6.0	0.18	-13.3	1.06	-8.0	2.50	-1.4
Australia	0.27	1.8	0.15	37.3	0.55	7.3	-	-	0.05	1.8	0.02	-5.0	0.10	-1.7	1.14	7.8
OECD Total	**14.42**	**1.8**	**4.22**	**8.6**	**9.61**	**0.2**	**3.27**	**0.0**	**5.82**	**0.3**	**1.73**	**-5.7**	**7.13**	**-3.1**	**46.20**	**0.6**

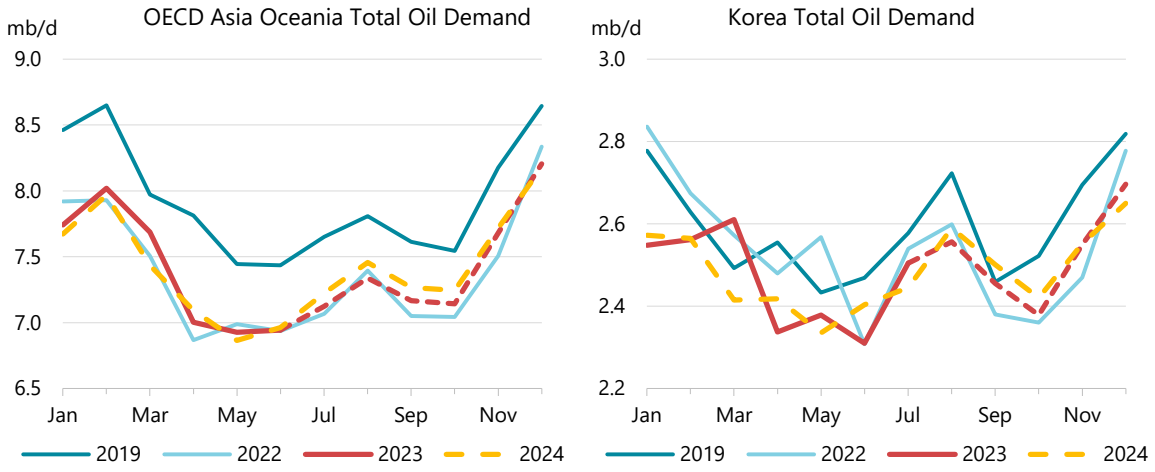
* Including US territories.

The **German** economy exemplifies many of the deep challenges faced by the rest of the continent and its oil demand is set to contract by 80 kb/d (-3.5%) in 2023 on the back of a 60 kb/d (-2.5%) decrease last year. A third straight annual decline is set to follow in 2024 (-20 kb/d). Europe's largest economy also has its poorest PMI readings (at a lamentable 39.1 in August) while industrial output

fell by 2.1% y-o-y in July. Our forecast assumes a 0.3% contraction in national GDP for 2023. Use of gasoil and naphtha, key industrial inputs, are each set to fall by a little over 30 kb/d this year.

OECD Asia Oceania is expected to post modest overall y-o-y growth in oil demand in each of the four quarters of 2023 and averaged an increase of 30 kb/d in 2Q23. However, this is compared to an anaemic 2022 baseline and extremely reliant on jet/kerosene (average +110 kb/d for 2023). Total 2023 demand will rise by only 30 kb/d, to reach 7.4 mb/d (520 kb/d or 6.5% below 2019), with naphtha use dropping 60 kb/d amid withering competition from Chinese chemical plants.

June and July typified many of these trends. Jet/kerosene demand surged during the midsummer months, rising by 150 kb/d (Japan +60 kb/d, Australia +40 kb/d, Korea +30 kb/d). Air traffic in major OECD countries in the western Pacific was slow to recover from the pandemic, in part due to persistently tight national restrictions and in part due to the almost total absence of international flights to and from China until early 2023. Prior to the pandemic, more tourists travelled to Japan and Korea from China than from any other country, with the two nations in second place on one another's lists. International connections to China have steadily gathered momentum this year and total flight numbers were up sharply y-o-y in July across the region's three major countries (Korea +40%, Japan +25%, Australia +10%).



While Chinese tourists may be boosting demand across East Asia, its petrochemical plants are doing the reverse. Naphtha demand in both Korea and Japan has taken a hammering over the last 18 months and in July fell by 120 kb/d and 90 kb/d, respectively. Combined regional LPG/ethane and naphtha use is set to fall by 70 kb/d this year, with little prospect for a major recovery in 2024 (+10 kb/d).

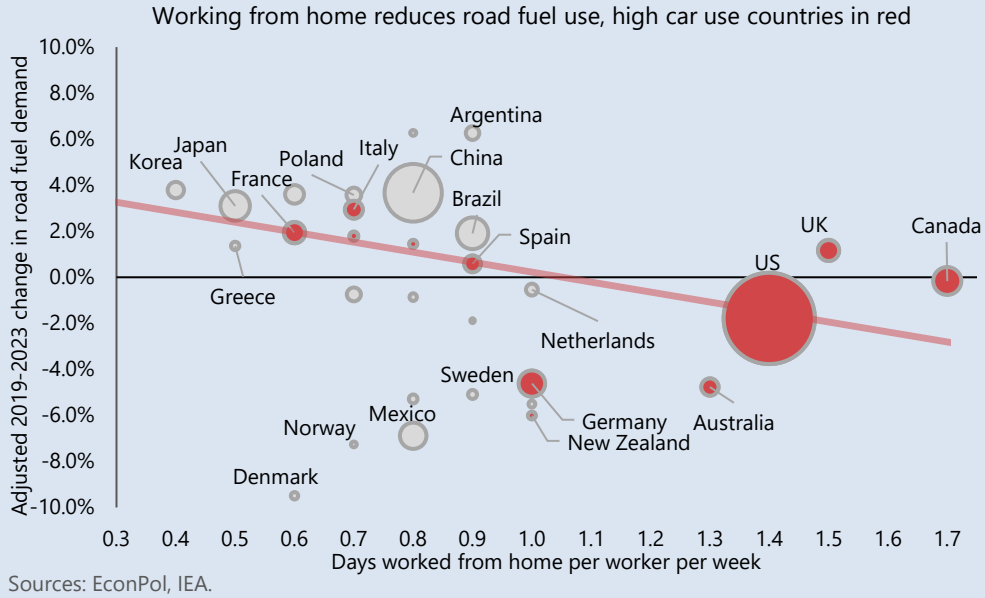
Korea is the largest naphtha consumer in the OECD (projected at 1.2 mb/d in 2023) and the second largest in the world. Slowing economic growth and falling exports, coinciding with growing global overcapacity, have weighed particularly heavily on the country's steam crackers. Several units are reportedly idled or subject to major rate cuts and naphtha intake fell by 80 kb/d y-o-y in 2Q23. We project this decline to extend into 3Q23 (-60 kb/d) and to be the major factor behind a 60 kb/d fall in total national 2023 demand. Gasoil demand is faring slightly better, set to rise by 20 kb/d from the weak 2022 baseline in 3Q23 and to edge higher on average during 2023. Korean total exports extended their annual decline in August, dropping by 8.4% and the *Manufacturing PMI* slipped further, down to 48.9 from 49.4 in July.

Japanese deliveries also declined, by 40 kb/d y-o-y in June (the first monthly fall since January) and are expected to show a small decrease in July based on preliminary figures. Resurgent jet/kerosene

is roughly balanced by slumping naphtha use. A steady contraction in fuel oil consumption (-30 kb/d in June) is likely driven by the decline in global LNG prices from their 2022 peaks and the reduced incentive for oil use in power generation. While positive, annual demand growth is expected to remain very low, close to 20 kb/d in both 2023 and 2024. The *au Jibun Bank Japan Manufacturing PMI* continued to show a slight contraction in August (unchanged from July at 49.6) but conditions have been better than most OECD economies. The Bank of Japan has maintained a uniquely easy monetary policy with inflation less severe than elsewhere. We assume GDP growth of 1.6% this year and 0.6% in 2024.

Working from home continues to undermine road fuel demand

Now that almost all outright pandemic-era restrictions on personal mobility have been repealed, the most persistent remaining Covid impact on oil use comes from working from home (WFH). A recent study from European think tank EconPol, *Working from Home Around the Globe,* reveals that WFH remains widespread, but with significant gaps between different societies. Comparing the extent of WFH with the change in fuel demand since 2019 in various countries suggests that where it is common, teleworking has substantially depressed road fuel demand and was comparable in scale to the impact of EV sales or efficiency improvements over the same period.



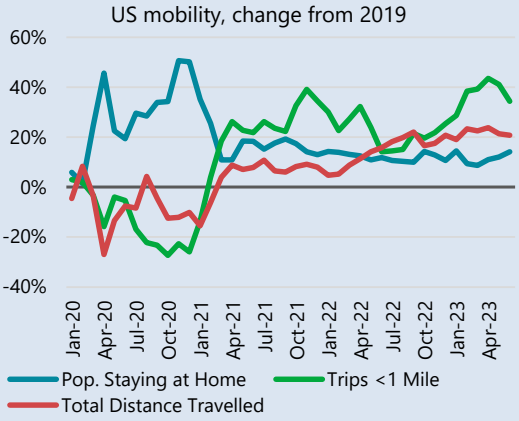
Sources: EconPol, IEA.

The report from EconPol, who are associated with Germany's Ifo Institute, is based on the responses of more than 42 000 people across 34 countries. It estimates that the average adult worker spends about 0.9 days per week WFH, with English-speaking countries (Canada 1.7 days, UK 1.5, US 1.4, Australia 1.3) showing the highest levels. East Asian societies (Korea 0.4, Japan 0.5) have lower WFH values, with European and Latin American states in between. In general, respondents say that they would like to spend more time WFH, desiring an average of almost two days a week.

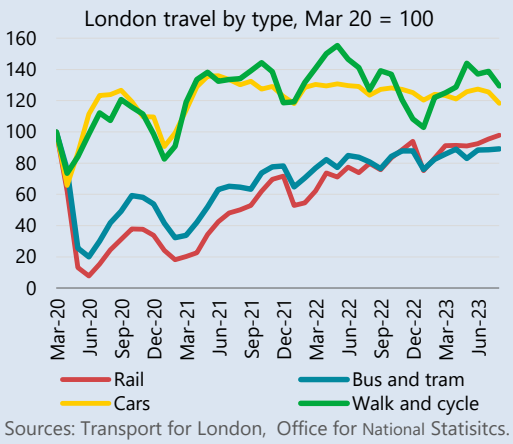
There is a relatively clear relationship between the days of WFH in a country and its observed 1H19-1H23 change in estimated fuel demand for light duty vehicle (LDV), corrected for the impact of GDP growth and efficiency improvements. This analysis suggests that for every additional day a week WFH per worker, overall LDV fuel demand dropped by about 4%, with a stronger effect amongst the countries where commuting is most dominated by automobiles. For the economies covered by this analysis, these fuels accounted for a little over 21 mb/d of oil consumption in 1H19, suggesting an

overall saving in usage of around 800 kb/d. Because of the size of the US fuel market and its high incidence of WFH, this is highly concentrated in the United States, where 500 kb/d of fuel use is theoretically being avoided. Combined savings are comparable to the estimated total impact of EVs sold up to January 2023 (950 kb/d), casting increased WFH as a major structural factor behind underwhelming road fuel use since 2019.

Since the pandemic, the previously consistent relationship between the US *Federal Highways Administration* (FHWA) vehicle miles travelled (VMT) data and GDP has changed, with fewer miles now being driven per dollar of output. This decline in intensity closely mirrors the estimated impact of WFH and on adjusted fuel usage. The VMT marks for 2021 and 2022 both fall short of the previous trend by close to the 5% implied by our analysis of EconPol's study. Furthermore, the US *Bureau of Transportation Statistics* (BTS) data show that for March and April 2023, the number of Americans staying at home each day increased by 9% compared with the same period in 2019. At the same time, the number of very short trips by any form of transport (less than one mile) increased by 24%, while the number of trips in some major medium and longer distance categories fell. These apparent behavioural changes imply substantially reduced car use for commuting and as well as for other everyday activities.



Source: US Bureau of Transportation Statistics.



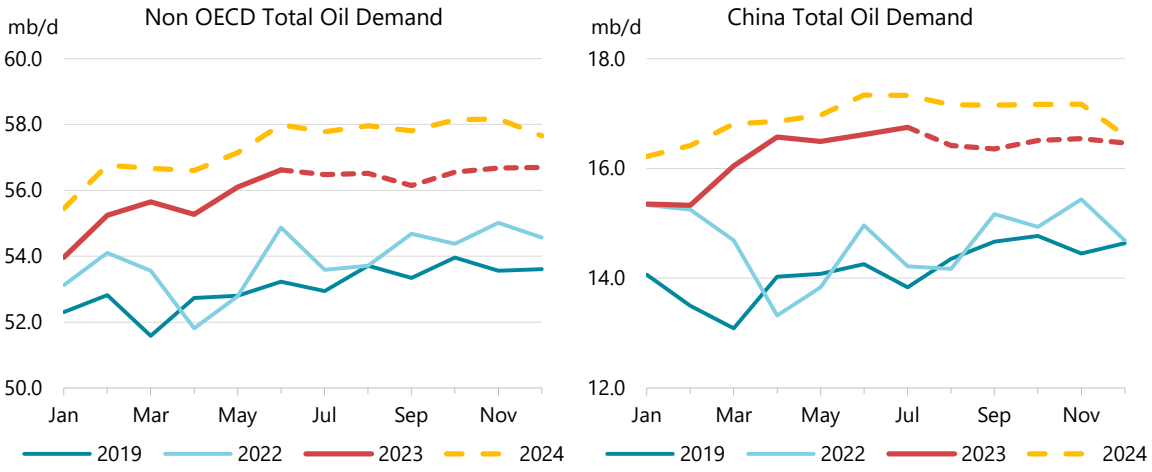
Sources: Transport for London, Office for National Statisitcs.

There are some countries, especially in northern Europe and East Asia, where high incidence of active (walking and cycling) or public transport means that there is a weaker relationship between additional WFH and road fuel use. The strongest impacts of WFH (and the highest levels of WFH) are visible in the most car-dependent countries. It appears that where cars compete with alternative mobility options, most of the overall reduction in transport demand is borne by public transport. In London, where detailed data are available for both mass transit and road use, rail (about 10% below March 2020 levels during 2023) and bus (15% lower) options have been much slower to recover than other road traffic (23% higher). The preference to avoid crowded public spaces during the pandemic combined with less intense congestion on the city's roads likely pushed more travellers into their cars. Similarly, reduced tourist numbers and the dependence of workers in dense city-centre office districts on mass transit also contributed.

Combined with the widespread appetite of employees for additional WFH, the fact that these behavioural shifts may be saving demand on a similar scale to more celebrated measures (such as EVs) highlights the possibility that meaningful further reductions might be achievable in the future. In this context, various forms of government promotion of WFH could provide useful tools in restricting domestic oil consumption or cutting CO_2 emissions.

Non-OECD

Total non-OECD oil demand rose by 2.9 mb/d y-o-y in 2Q23 to 56 mb/d, with China accounting for the bulk of the increase, propelled by rebounding mobility and stellar petrochemical deliveries. Y-o-y gains will slow in 2H23, and average 2.2 mb/d for 2023 as a whole before decelerating further into 2024 to 1.3 mb/d, mainly due to more challenging economic conditions.



Chinese apparent oil demand built on its recent strength in July with robust deliveries across all product categories. Oil consumption reached yet another all-time monthly record of 16.7 mb/d – the third this year, after earlier highs in March and June. This marks a m-o-m gain of 130 kb/d (2.5 mb/d y-o-y), 500 kb/d ahead of our forecast in last month's *Report.* Average growth estimates for both 2023 and 2024 have been raised by about 50 kb/d, to 1.6 mb/d and 640 kb/d, respectively.

July's usage benefited particularly from strong deliveries of gasoline and jet/kerosene, exceeding our forecast by 150 kb/d and 90 kb/d, respectively, and sending monthly jet/kerosene use above 1 mb/d for the first time. This dovetails with robust mobility indicators that have consolidated near their summer highs. Interprovincial travel based on *Baidu* mobility data stabilised at around 30% higher y-o-y in the June-August period. Flight numbers show a similar trend, with domestic and international flights plateauing at about 133% and 85%, respectively, of pre-pandemic levels. We see growth for jet/kerosene averaging 330 kb/d y-o-y in 2023 – at 890 kb/d, this is virtually equal to 2019's demand level.

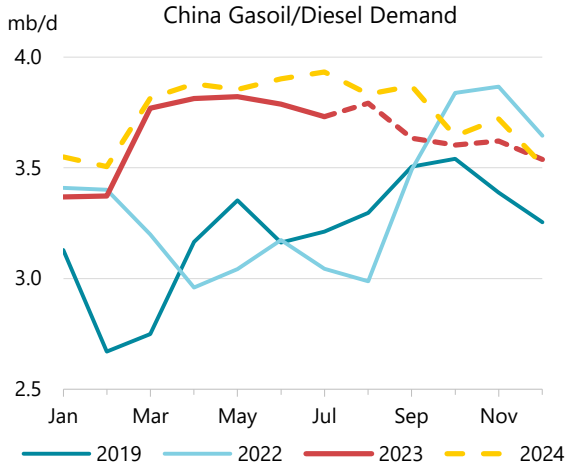
China: Demand by Product
(thousand barrels per day)

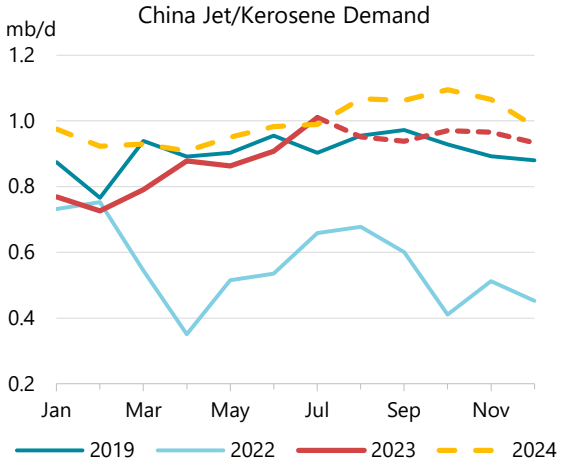
	Demand				Annual Chg (kb/d)		Annual Chg (%)	
	2021	**2022**	**2023**	**2024**	**2023**	**2024**	**2023**	**2024**
LPG & Ethane	1 943	2 116	2 537	2 644	421	107	19.9	4.2
Naphtha	1 577	1 817	2 321	2 573	504	252	27.8	10.9
Motor Gasoline	3 513	3 373	3 588	3 644	216	56	6.4	1.6
Jet Fuel & Kerosene	787	561	893	994	332	102	59.2	11.4
Gas/Diesel Oil	3 242	3 337	3 656	3 752	319	96	9.6	2.6
Residual Fuel Oil	545	592	627	624	35	- 3	5.9	-0.5
Other Products	3 480	2 867	2 668	2 701	- 199	33	-6.9	1.2
Total Products	**15 088**	**14 662**	**16 290**	**16 932**	**1 628**	**642**	**11.1**	**3.9**

Petrochemical feedstock demand remained elevated in July, with deliveries for LPG/ethane and naphtha up by 480 kb/d and 640 kb/d y-o-y, respectively. This extends the buoyancy that began in

2Q23 amid the continuation of a structural shift in polymer trade flows. China's capacity additions and firm run rates are displacing imports of polymers and synthetic fibres, thereby squeezing international suppliers to China. In a testament to this structural shift, the feedstocks will remain the main drivers of demand growth by far in years to come, with LPG/ethane and naphtha accounting for more than half of average gains in both 2023 (930 kb/d) and 2024 (360 kb/d).

Gasoil deliveries were steady in July and came in 150 kb/d ahead of forecast, up 690 kb/d y-o-y. However, we see this strength dissipating in 2H23, with y-o-y growth ending the year in negative territory as China's economic troubles continue to mount amid a general slump in business and consumer confidence. Economic data (where available – China suspended publication of statistics for youth unemployment after a record high of 21% in June) remain tepid. Exports plunged 8.8% y-o-y in August, while retail sales increased by 2.5% y-o-y in July, their slowest pace since Covid restrictions were lifted. These came in well below expectations, as did industrial production, which rose by 3.7% y-o-y in July. August also saw a flare-up in China's property cash crunch – almost two years after developer Evergrande's 2021 default sparked the liquidity crisis. As part of its ongoing attempts to restructure its massive debts, the company applied for US bankruptcy protection in August. Fellow developer Country Garden's subsequent failure to meet interest payments on its international debt triggered a wider sell-off in real estate shares. A glut of vacant, unfinished or unsold apartments is a testament to the sector's meltdown.



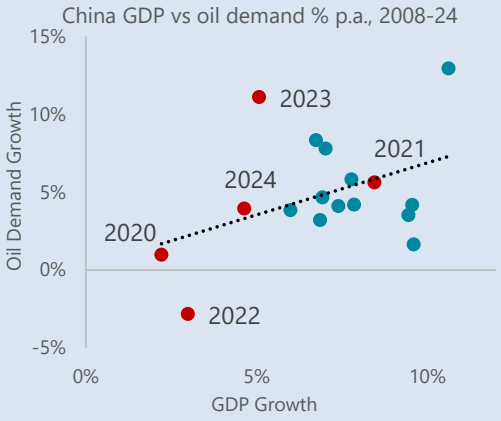


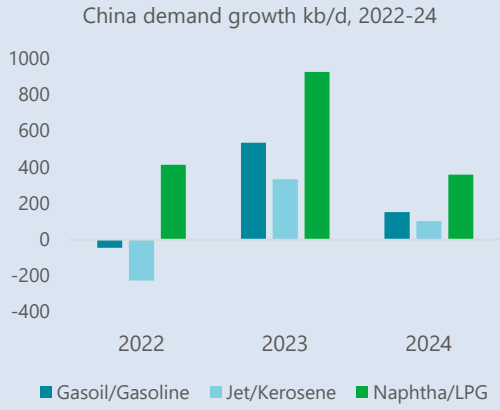
The slew of bad news has raised concerns about Beijing's ability to hit its official 5% 2023 GDP growth target. Global banks have slashed their forecasts by more than a point since April, to an average estimate of 4.8%. Fiscal and monetary stimulus to counter the slump has so far been underwhelming, epitomised by August's 0.1% cut in the benchmark one-year lending rate. Instead, financial markets took heart from a reduction in stamp duty and plans to reduce IPO listings, prompting an end-of-month stock market recovery. Still, while other major indices have rallied this year, the benchmark CSI 300 index is down about 5%. On balance, we have left our estimate for 2023 gasoil demand growth unchanged at 320 kb/d y-o-y, before falling to 100 kb/d in 2024.

Chinese oil demand arrives home after long march

China's oil consumption has oscillated enormously since Covid emerged, both on an aggregate and an individual product basis. The biggest gyrations occurred in the mobility-related fuels such as gasoline and jet/kerosene, where usage saw unprecedented swings in the wake of Beijing's policy responses to

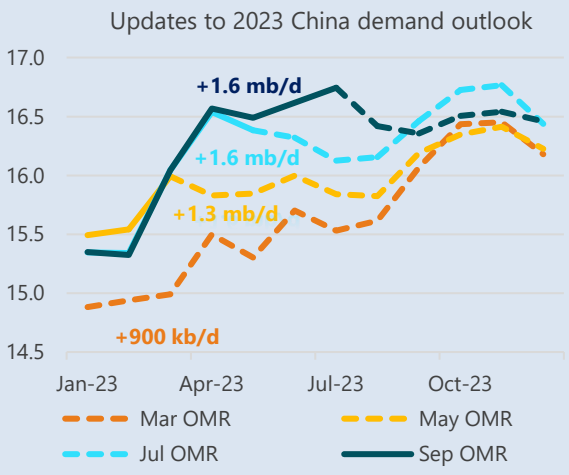
the pandemic. The lockdowns upended the hitherto reliable relationship between macroeconomic variables such as GDP and the transport fuels. While in 2021 oil demand growth was in line with its GDP-implied value, oil use collapsed in 2022 despite a rise in economic output after the Omicron outbreak sent Shanghai into full lockdown – and oil demand into its first annual contraction in several decades. Consumption then soared in 2023 despite subpar GDP growth, retaking lost ground after restrictions were lifted, prompting a massive release of pent-up travel and sending oil consumption to a record 1.6 mb/d y-o-y increase. Finally, we expect to see oil use recalibrate back to its GDP-derived level in 2024 as the rebound dissipates and baselines normalise.





Turbulent jet/kerosene and gasoline use contrasts with steady gains in the petrochemical feedstocks, where demand has been relatively unaffected by macroeconomic factors. With Beijing's policies increasingly emphasising self-sufficiency, China has greatly expanded its petrochemical capacity while reducing its reliance on polymer imports. Consequently, LPG/ethane and naphtha have emerged as key structural drivers of demand growth, accounting for around 90% of aggregate gains between 2021 and 2024.

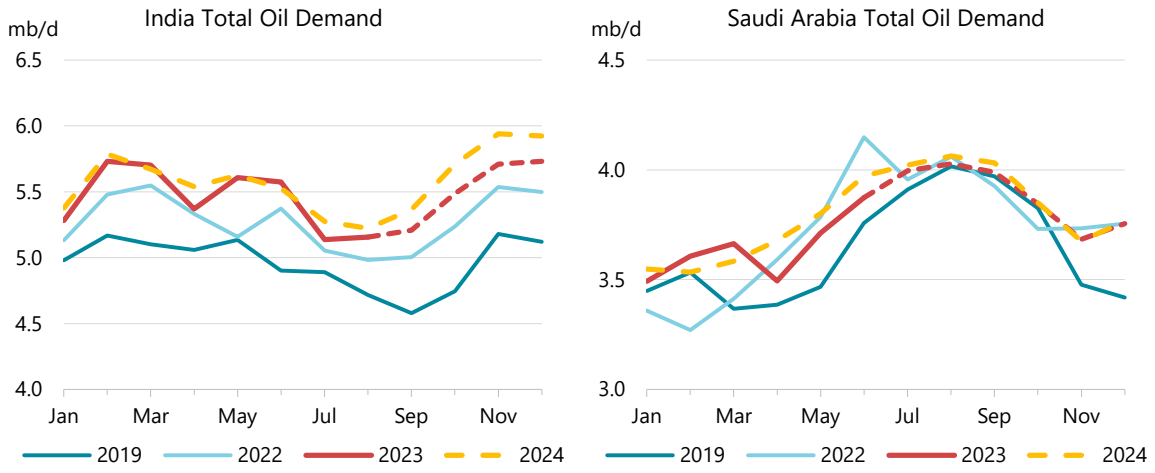
Lastly, a more muted economic outlook has weighed on oil usage now that Beijing has abandoned the debt-fuelled manufacturing model that characterised the 1980-2010 boom years, in favour of a less leveraged consumption-led one. Combined with adverse demographics and a deflating property bubble, this makes for current yearly GDP growth of 4-5% – decidedly subdued compared to earlier decades.



This combination of volatile transport fuels, stalwart petrochemicals and a slowing economy crystalise in the 2023 demand outlook. Our growth outlook has roughly doubled since restrictions were lifted in December, to its current level of 1.6 mb/d y-o-y, propelled by the post-pandemic rebound in travel. However, this recovery has largely run its course and its gains are by now effectively realised. Conversely, our estimate for 4Q23 has remained little changed as China's economic outlook deteriorated. These more adverse conditions carry forward into 2024, as demand growth slows to 640 kb/d y-o-y, near its GDP-implied level.

China's fast-depreciating currency (the offshore yuan has lost 5% against the US dollar this year and is trading near record lows) is another indication of China's slowdown. This weakness, like that of the Russian rouble, is hampering both countries' efforts to shift away from the dollar in international trade. Nevertheless, plans for de-dollarization were discussed extensively at the August Johannesburg BRICS summit (Brazil, Russia, India, China and South Africa).

According to preliminary data, **Indian** oil use rose by 120 kb/d m-o-m in August (280 kb/d y-o-y), well ahead of its typical seasonal slump. Economic data readings remain stellar, bucking the weakness in other major economies. The *S&P Global India Manufacturing PMI* remained comfortably in expansionary territory in August, at 58.6, its 26th straight month of growth. GDP grew by 7.7% y-o-y during 2Q23 – the quickest rate in a year – buoyed by record government spending, often on labour-intensive infrastructure projects. Inflation soared to 7.4% y-o-y in July, a 15-month high and coming in well above consensus. This was largely driven by the food segment (11.5%, the highest in more than three years) which accounts for almost half the consumer basket. Erratic weather (after a slow start, the monsoon season brought heavy rainfall in July, followed by the driest August in more than a century) has sent prices soaring for staple grains and vegetables such as onions, tomatoes, rice and wheat. Here too, government authorities intervened in a bid to subdue prices, imposing levies or outright export bans. By contrast, regulated retail prices, partly enabled by discounted imports from Russia, are a haven of calm: gasoline and diesel pump prices have remained unchanged since June 2022. Our estimates for 2023 and 2024 average demand growth are practically unchanged, at 210 kb/d and 110 kb/d, respectively.



Argentina's oil deliveries fell by 30 kb/d y-o-y in July. This was largely due to weakness in LPG as a relatively mild winter reduced heating requirements and propane use (which was lower by around 8% y-o-y between June and August). Already in the midst of economic chaos (with inflation above 100% and a drought-induced soybean crop failure), Argentina's woes came into sharper focus in August after radical libertarian Javier Milei's surprise win in a primary vote ahead of October's presidential election. The congressman's economic program involves the dollarization of Argentina's economy, slashing spending, cutting taxes and shutting the central bank. The shock vote triggered a bond and currency sell-off, prompting the government to hike its benchmark interest rate by 21 points to 118% and devalue the peso by 18%, the largest amount in four years. As economic uncertainty surges, authorities face an uphill struggle to ward off economic chaos ahead of the election. Our forecast assumes stagnating consumption in both 2023 and 2024, with oil demand declining by 10 kb/d in both years.

Brazilian deliveries fell by 40 kb/d m-o-m (+70 kb/d y-o-y) in July. The country's economic data remained upbeat, as GDP expanded by 3.4% y-o-y in 2Q23. Brazil's outlook benefits from a booming

agribusiness sector, as 2023 brought record or near-record crops in soybeans, corn and sugar. Additionally, a revision in August of the outdated tax framework is likely to lift government spending on welfare and infrastructure. Our forecast for demand growth in 2023 (+100 kb/d y-o-y) and 2024 (+30 kb/d) assumes a more challenging economic outlook. While Brazil has, so far, remained largely unaffected by China's economic woes, the country's rapidly deteriorating economic outlook will be felt in lower external demand from key trading partners.

Non-OECD: Demand by Product

(thousand barrels per day)

	Demand				Annual Chg (kb/d)		Annual Chg (%)	
	2021	2022	2023	2024	2023	2024	2023	2024
LPG & Ethane	8 179	8 457	8 880	9 145	423	264	5.0%	3.0%
Naphtha	3 623	3 757	4 204	4 563	448	358	11.9%	8.5%
Motor Gasoline	12 106	12 369	12 767	12 982	397	216	3.2%	1.7%
Jet Fuel & Kerosene	2 150	2 318	2 983	3 054	664	71	28.7%	2.4%
Gas/Diesel Oil	14 233	14 840	15 226	15 558	386	332	2.6%	2.2%
Residual Fuel Oil	4 522	4 683	4 764	4 822	81	58	1.7%	1.2%
Other Products	7 896	7 422	7 175	7 225	- 247	50	-3.3%	0.7%
Total Products	**52 709**	**53 845**	**55 998**	**57 347**	**2 153**	**1 349**	**4.0%**	**2.4%**

Saudi oil use was down by 280 kb/d y-o-y in June, settling below 2022's record levels. Crude burn in power generation fell by 140 kb/d y-o-y, partly due to substitution by gasoil, fuel oil and, especially, natural gas as the Kingdom expands output from its non-associated gas fields. In addition, a more challenging economic climate eased the overall industrial power demand load. Saudi GDP grew by 1.1% annualised in 2Q23, down from 3.8% in the first quarter, as lower oil prices and output cuts pressured growth. In view of the economic slowdown, we have reduced our average demand growth estimates for 2023 and 2024 to 30 kb/d (-10 kb/d) and 30 kb/d (-40 kb/d), respectively.

Iraqi demand set a new all-time high of 910 kb/d in June (+60 kb/d y-o-y), propelled by record use of direct crude burn and fuel oil in power generation. In a repeat of last year, a sweeping heatwave is straining Iraq's rickety power grid, with temperatures regularly exceeding 50 degrees Celsius. Iraq has announced its intention to import natural gas from Turkmenistan, as its struggles to pay for its Iranian imports due to US sanctions, prompting Iran to cut exports. We see 2023 demand growth of 40 kb/d y-o-y eventually dissipating to zero in 2024.

Non-OECD: Demand by Region

(thousand barrels per day)

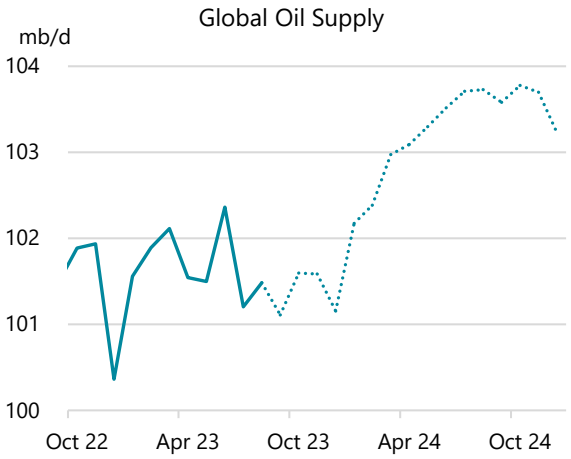
	Demand				Annual Chg (kb/d)		Annual Chg (%)	
	2021	2022	2023	2024	2023	2024	2023	2024
Africa	4 045	4 277	4 268	4 426	- 8	158	-0.2	3.7
Asia	28 624	28 722	30 675	31 683	1 953	1 008	6.8	3.3
FSU	4 891	4 942	4 954	4 927	13	- 28	0.3	-0.6
Latin America	6 003	6 208	6 323	6 385	115	63	1.9	1.0
Middle East	8 375	8 912	8 995	9 128	82	133	0.9	1.5
Non-OECD Europe	770	784	783	799	- 1	15	-0.1	1.9
Total Products	**52 709**	**53 845**	**55 998**	**57 347**	**2 153**	**1 349**	**4.0**	**2.4**

Egyptian oil use climbed seasonally by 40 kb/d m-o-m in June but remained 30 kb/d below year-ago levels. The annual decline was largely due to lower fuel oil use (-40 kb/d y-o-y) as power generation switched to natural gas imported from Israel. However, Egypt resumed fuel oil imports in July, as natural gas shortages contributed to blackouts amid a heatwave. Trade data from *Kpler* showed that fuel oil imports climbed to 90 kb/d in August, a 2023 high. We see negative demand growth of 40 kb/d in 2023 as Egypt struggles to avert an acute cash crunch by way of asset sales. For 2024, a modest recovery to growth (10 kb/d y-o-y) is expected.

Supply

Overview

World oil production rose by 280 kb/d to 101.5 mb/d in August, driven by higher flows from Canada, Iran and China. But global oil supply is expected to decline by 330 kb/d between August and the end of the year as non-OPEC+ output falls and Riyadh and Moscow extend extra output cuts through the end of 2023, locking world oil markets into substantial deficit.

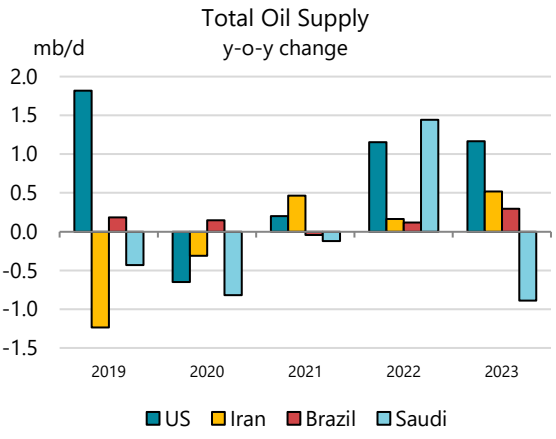


Oil Supply by Select Producers
(million barrels per day)

	2023	Δ Jan - Aug	Δ Aug - Dec
US	19.1	0.8	0.0
Biofuels	3.1	1.0	-0.7
Non-OPEC+ Other	27.6	0.2	0.2
Non-OPEC+	**49.8**	**1.9**	**-0.5**
Saudi Arabia	11.5	-1.4	0.0
Russia	10.9	-0.5	0.1
Iran	4.2	0.6	0.0
OPEC+ Other	25.1	-0.6	0.1
OPEC+	**51.8**	**-2.0**	**0.2**
Total Supply	**101.6**	**-0.1**	**-0.3**

Note: Total oil, including condensates and NGLs for all countries.

Output from the OPEC+ alliance plunged by 2 mb/d from January through August on the back of hefty voluntary reductions from Saudi Arabia along with smaller cuts from Russia. The overall decline was tempered by Iran, exempt from cuts, which pumped roughly 600 kb/d more. In August, OPEC+ oil supply edged up 110 kb/d to nearly 51 mb/d. By the end of 2023, OPEC+ could be producing around 200 kb/d more than in August provided Kazakhstan and Nigeria rebound from maintenance and operational issues. On an annual basis, OPEC+ oil output is expected to decline by close to 500 kb/d compared to 2022.



* Includes condensates and NGLs.

While 2023 has been a year of restraint for the OPEC+ bloc, producers outside the alliance (non-OPEC+) have seen considerable expansion. From January to August, non-OPEC+ cranked up supply by 1.9 mb/d, with the US alone churning out nearly 800 kb/d more. August was also another record-breaking month for non-OPEC+, with output rising 170 kb/d m-o-m to 50.5 mb/d. That may prove to be a near-term peak as non-OPEC+ supply is forecast to drop by about 500 kb/d between August and the end of the year due to stalling US growth and a seasonal decline in biofuels. For the year as a whole, non-OPEC+ oil production is projected to grow by around 2 mb/d, with the US accounting for roughly 60%.

Taken altogether, world oil output this year is projected to expand by 1.5 mb/d to a record 101.6 mb/d, with the US, Iran – despite international sanctions – and Brazil ranking as the world's top three sources of growth. Saudi Arabia will post the biggest decline, with its sharp voluntary curbs knocking the Kingdom's production down by close to 900 kb/d versus 2022. Next year, global supply is projected to grow by around 1.7 mb/d, with non-OPEC+ accounting for 1.3 mb/d and OPEC+ adding around 400 kb/d if voluntary reductions are unwound at the end of this year and targets remain in place through 2024.

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

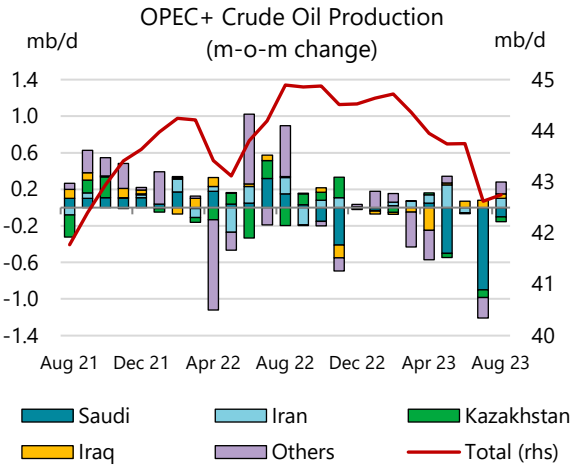
	2022	1Q23	2Q23	3Q23	4Q23	2023	1Q24	2Q24	3Q24	4Q24	2024
Africa	7.1	7.2	7.1	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2
Latin America	6.4	6.8	6.9	7.1	7.1	7.0	7.4	7.5	7.5	7.6	7.5
North America	25.7	26.7	26.8	27.1	27.4	27.0	27.3	27.5	27.7	27.8	27.6
China	4.2	4.3	4.3	4.2	4.2	4.3	4.4	4.4	4.3	4.3	4.3
Other Asia	3.2	3.2	3.1	3.1	3.1	3.1	3.1	3.1	3.0	3.0	3.1
Europe	3.3	3.4	3.3	3.3	3.4	3.3	3.4	3.3	3.3	3.4	3.4
FSU	13.9	14.2	13.8	13.5	13.7	13.8	13.7	13.8	13.7	13.8	13.7
Middle East	31.1	31.2	30.8	29.8	29.8	30.4	30.8	30.8	30.8	30.8	30.8
Total Oil Production	**94.8**	**96.9**	**96.2**	**95.4**	**95.9**	**96.1**	**97.3**	**97.5**	**97.6**	**97.9**	**97.6**
Processing Gains	2.3	2.3	2.3	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
Global Biofuels	2.9	2.7	3.3	3.5	3.1	3.1	2.8	3.4	3.7	3.3	3.3
Total Supply	**100.1**	**101.9**	**101.8**	**101.3**	**101.4**	**101.6**	**102.5**	**103.3**	**103.7**	**103.6**	**103.3**
OPEC Crude	*29.1*	*29.4*	*28.9*	*27.9*	*27.9*	*28.5*	*28.9*	*28.9*	*28.9*	*28.9*	*28.9*
*OPEC NGLs**	*5.4*	*5.5*	*5.5*	*5.6*	*5.6*	*5.5*	*5.6*	*5.6*	*5.6*	*5.6*	*5.6*
Non-OPEC OPEC+	*17.7*	*18.0*	*17.7*	*17.5*	*17.7*	*17.7*	*17.7*	*17.7*	*17.6*	*17.7*	*17.6*
Total OPEC+	*52.2*	*52.9*	*52.1*	*50.9*	*51.1*	*51.8*	*52.2*	*52.2*	*52.1*	*52.1*	*52.1*
Demand	99.6	100.4	101.7	102.6	102.5	101.8	101.1	102.6	104.0	103.5	102.8
Balance	0.5	1.5	0.1	-1.4	-1.0	-0.2	1.4	0.7	-0.3	0.0	0.5

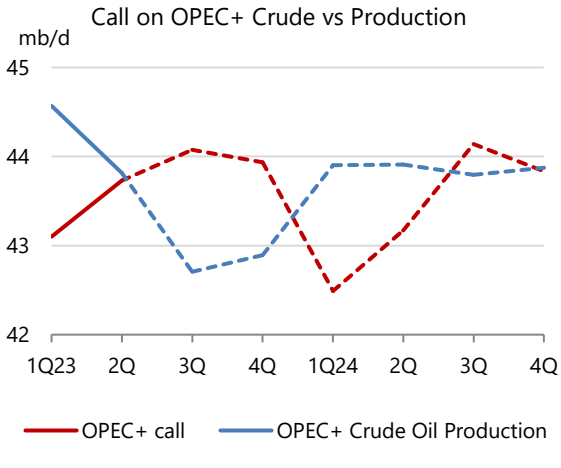
* Includes condensates reported by OPEC countries, oil from non-conventional sources, e.g. GTL in Nigeria and non-oil inputs to Saudi Arabian MTBE.

OPEC+ crude supply

OPEC+ crude oil output from all 23 member countries rose from a near two-year low to 42.75 mb/d in August, up 130 kb/d m-o-m, after higher flows from Iran, Nigeria, Iraq and Bahrain more than offset lower output from Saudi Arabia and Kazakhstan. Russia, with supply flat at around 9.5 mb/d, outranked Saudi Arabia as the bloc's largest crude producer for a second straight month and – after Riyadh extended its extra cut through December – looks set to hold that position through the rest of 2023.

Supply from the 13 OPEC countries rose 90 kb/d to 27.96 mb/d in August, while output from non-OPEC members in the OPEC+ group crept up 40 kb/d to 14.79 mb/d. Overall production from the 19 members subject to quotas was 20 kb/d lower at 35.99 mb/d. That left the bloc's effective spare capacity, excluding Russia and volumes of crude oil shut in by sanctions on Iran, at 5.6 mb/d, with Saudi Arabia holding roughly 60% of the surplus. The Kingdom has promised on 5 September to limit its crude production to around 9 mb/d through the end of this year by maintaining a voluntary cut of 1 mb/d on top of coordinated OPEC+ cuts. Russia says it will maintain its 300 kb/d export reduction through the end of 2023. The Saudi-Russian adjustments – which are to be reviewed monthly and could be amended – are on top of a 3.7 mb/d reduction already agreed by OPEC+, including a 2 mb/d cut to its production ceiling in November 2022 and 1.7 mb/d of extra curbs from some members starting in May. The 23-member producer group is scheduled to hold an interim monitoring session on 4 October and gather for a full ministerial meeting on 26 November.





The extension of additional cuts from Riyadh, along with Moscow, looks set to keep the oil market in a substantial deficit, which could see the bloc pump around 1 mb/d below the requirement for its crude in the fourth quarter. That's a slightly looser balance compared to the third quarter, when OPEC+ is projected to produce about 1.4 mb/d below the call on its crude.

OPEC+ Crude Oil Production[1]

(million barrels per day)

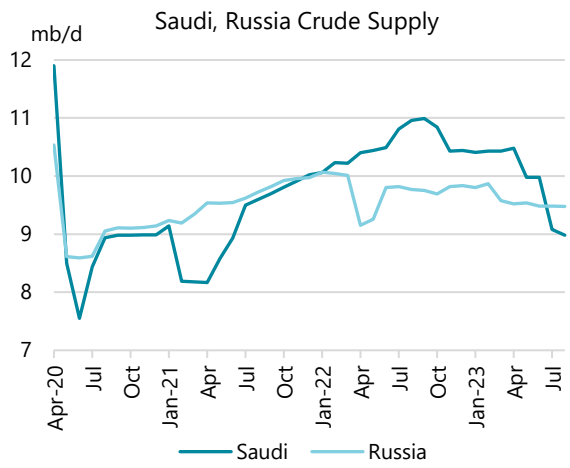
	Jul 2023 Supply	Aug 2023 Supply	Aug Prod vs Target	Aug 2023 Target	Sustainable Capacity[2]	Eff Spare Cap vs Aug[3]
Algeria	0.96	0.93	-0.08	1.01	1.0	0.1
Angola	1.15	1.13	-0.33	1.46	1.1	0.0
Congo	0.28	0.27	-0.04	0.31	0.3	0.0
Equatorial Guinea	0.06	0.07	-0.05	0.12	0.1	0.0
Gabon	0.22	0.22	0.04	0.18	0.2	0.0
Iraq	4.27	4.32	-0.11	4.43	4.7	0.4
Kuwait	2.55	2.55	-0.13	2.68	2.8	0.3
Nigeria	1.10	1.18	-0.56	1.74	1.3	0.2
Saudi Arabia	9.08	8.98	-1.50	10.48	12.2	3.3
UAE	3.22	3.22	0.20	3.02	4.2	1.0
Total OPEC-10	**22.89**	**22.87**	**-2.55**	**25.42**	**28.0**	**5.2**
Iran[4]	3.04	3.14			3.8	
Libya[4]	1.13	1.16			1.2	0.1
Venezuela[4]	0.81	0.79			0.8	0.0
Total OPEC	**27.87**	**27.96**			**33.8**	**5.3**
Azerbaijan	0.50	0.50	-0.18	0.68	0.5	0.0
Kazakhstan	1.52	1.46	-0.17	1.63	1.7	0.2
Mexico[5]	1.64	1.67		1.75	1.7	0.0
Oman	0.80	0.80	-0.04	0.84	0.9	0.0
Russia	9.48	9.48	-0.47	9.95	10.0	
Others[6]	0.82	0.87	-0.18	1.06	0.9	0.0
Total Non-OPEC	**14.75**	**14.79**	**-1.04**	**15.91**	**15.6**	**0.3**
OPEC+ 19 in Nov 2022 deal[4]	**36.01**	**35.99**	**-3.59**	**39.57**	**41.9**	**5.5**
Total OPEC+	**42.62**	**42.75**			**49.4**	**5.6**

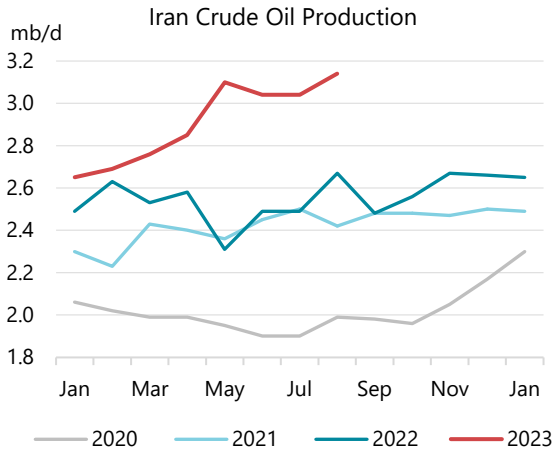
1 Excludes condensates.
2 Capacity levels can be reached within 90 days and sustained for extended period.
3 Excludes shut in Iranian, Russian crude.
4 Iran, Libya, Venezuela exempt from cuts.
5 Mexico excluded from OPEC+ compliance.
6 Bahrain, Brunei, Malaysia, Sudan and South Sudan.

Saudi Arabia tightened the taps to 8.98 mb/d in August, down 100 kb/d m-o-m. Riyadh has vowed to stick with its additional 1 mb/d cut through the fourth quarter, which would leave its crude supply at the lowest level since 2011 – with the exception of the 2020-21 Covid-19 period.

Crude oil production from the Kingdom's Gulf neighbours was relatively stable, apart from **Bahrain** where crude oil supply increased by 70 kb/d to 190 kb/d after output recovered from the Abu Safah field. **Kuwaiti** production held at 2.55 mb/d. Supply in the **UAE** was flat m-o-m at 3.22 mb/d, 200 kb/d above its OPEC+ target, while **Omani** flows were steady at 800 kb/d.

Iraqi production rose 50 kb/d to 4.32 mb/d in August on higher internal consumption and as output from the northern Kurdish region inched up. Flows from the Kurdistan Regional Government (KRG) remain largely shut in due to a more than five-month halt to the Iraq-Türkiye export pipeline that had been shipping some 450 kb/d to world markets. As part of its commitment to adhere to a new federal budget law, the semi-autonomous Kurdish region reportedly raised deliveries to Baghdad's northern refineries to around 85 kb/d, up 35 kb/d from July. Baghdad and Ankara have meanwhile intensified efforts to end the stalemate over the pipeline's suspension. On 22 August, Turkish Energy Minister Alparslan Bayraktar met in Ankara with Iraqi Oil Minister Hayan Abd al-Ghani to discuss the resumption of oil flows. Türkiye stopped shipments of northern Iraqi oil on 25 March after an arbitration ruling by the International Chamber of Commerce ordered Ankara to pay Baghdad $1.5 billion in damages for unauthorised exports by the KRG between 2014 and 2018.





In **Iran**, crude oil supply rose 100 kb/d in August to 3.14 mb/d, the highest since October 2018. At the time of writing, *Kpler* tanker tracking data showed the country's oil exports in August at around 1.5 mb/d – a level that, apart from July, appears to have been sustained since May. Shipments are primarily destined for China, which seems to be lapping up competitively priced Iranian barrels. Iran's condensates and NGLs output also looks set to rise after Tehran started up Phase 11 of South Pars, the world's largest gas field. The project was to have been developed by a consortium led by TotalEnergies, but the company quit the project after the US re-imposed sanctions in 2018. Production capacity is 2 billion cubic feet per day of gas and, when fully developed, is expected to deliver 70 kb/d of condensate. Before the former US administration withdrew from the Joint Comprehensive Plan of Action (JCPOA) nuclear deal in 2018, exports of Iranian oil, including condensates, had been running above 2 mb/d. Official talks to revive the 2015 Iran nuclear deal, which would ease sanctions, have been paused since September 2022.

Russian crude oil output was broadly steady in August at close to 9.5 mb/d. Russia agreed to reduce oil exports in August by 500 kb/d versus the average May-June level, as indicated by Deputy Prime Minister Alexander Novak. Crude oil exports, estimated at 4.8 mb/d August, were down around 200 kb/d from the May-June average. However, total oil exports were nearly 500 kb/d lower over the same period. From September through the end of 2023, Russia has promised to curb exports by 300 kb/d – tapering the cut from the 500 kb/d in August. Total output of crude oil, condensates and NGLs in August was 10.75 mb/d, down 40 kb/d m-o-m on lower condensate output. We expect average oil production of 10.9 mb/d in 2023, down 160 kb/d y-o-y. Meanwhile, top Russian producer Rosneft said it pumped 4 mb/d of liquids in 1H23, up almost 7% y-o-y, on the back of higher drilling rates. Output in 2Q23 fell 2% versus 1Q23, to 3.9 mb/d due to OPEC+ cuts, it said.

Russian oil export revenues extend their rise into August, boosted by stronger prices

Russian oil export revenues surged by $1.8 bn in August to their highest level since October 2022. While overall export volumes fell 150 kb/d m-o-m, the weighted average price of Russian crude increased by $9.30/bbl (+14.4%). Crude export revenues saw the biggest gains, up $1.4 bn m-o-m while products increased by only +$0.4 bn (+$0.1 bn y-o-y). Overall, estimated export revenues remained $1.6 bn below year-ago levels.

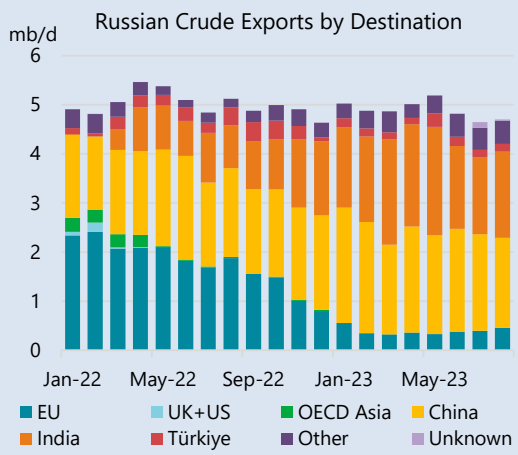
Russian Oil Exports (mb/d)

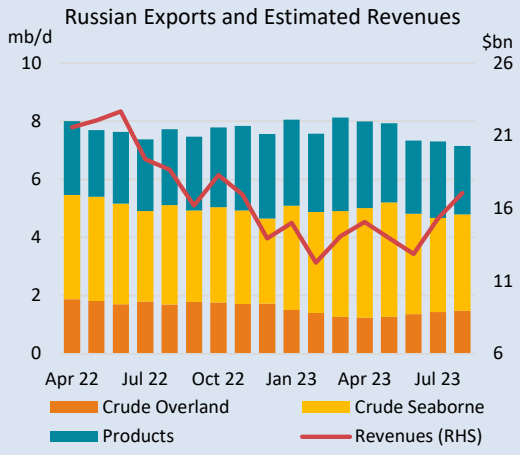
	EU	UK+US	Türkiye	China	India	OECD Asia	Middle East	Africa	L.America	Other	Unknown	Total	Crude	Products	Export Revenue $bn
2021 avg	3.4	0.7	0.2	1.6	0.1	0.5	0.1	0.1	0.1	0.8	0.0	**7.5**	4.6	2.9	**15.7**
2022 avg	3.1	0.2	0.4	1.9	0.9	0.2	0.2	0.1	0.1	0.7	0.0	**7.7**	5.0	2.7	**19.6**
Aug 2022	2.9	0.0	0.6	2.0	1.0	0.1	0.3	0.2	0.0	0.6	0.0	**7.7**	5.1	2.6	**18.7**
Sep 2022	2.5	0.0	0.6	1.9	1.1	0.0	0.2	0.1	0.1	0.8	0.0	**7.5**	4.9	2.5	**16.2**
Oct 2022	2.5	0.0	0.6	2.0	1.2	0.1	0.2	0.2	0.1	0.9	0.1	**7.8**	5.0	2.7	**18.3**
Nov 2022	2.3	0.0	0.5	2.0	1.5	0.1	0.3	0.2	0.1	0.8	0.0	**7.8**	4.9	2.9	**16.9**
Dec 2022	2.0	0.0	0.4	2.1	1.7	0.1	0.2	0.3	0.0	0.8	0.0	**7.6**	4.7	2.9	**13.9**
Jan 2023	1.4	0.0	0.5	2.6	1.8	0.0	0.3	0.4	0.1	0.9	0.0	**8.1**	5.1	3.0	**15.0**
Feb 2023	0.5	0.0	0.5	2.5	1.9	0.0	0.4	0.5	0.1	1.0	0.0	**7.6**	4.9	2.7	**12.3**
Mar 2023	0.6	0.0	0.6	2.2	2.3	0.1	0.6	0.5	0.2	1.1	0.0	**8.1**	4.9	3.2	**14.1**
Apr 2023	0.5	0.0	0.6	2.5	2.2	0.1	0.5	0.4	0.2	0.9	0.0	**8.0**	5.0	3.0	**15.1**
May 2023	0.5	0.0	0.7	2.4	2.3	0.0	0.4	0.3	0.2	1.0	0.0	**7.9**	5.2	2.7	**13.9**
Jun 2023	0.5	0.0	0.7	2.2	1.8	0.0	0.5	0.4	0.2	1.0	0.0	**7.3**	4.8	2.5	**12.9**
Jul 2023	0.5	0.0	0.6	2.1	1.7	0.0	0.5	0.3	0.2	1.0	0.3	**7.3**	4.7	2.6	**15.3**
Aug 2023	0.6	0.0	0.6	2.1	1.9	0.0	0.2	0.4	0.2	0.9	0.3	**7.2**	4.8	2.4	**17.1**
M-o-M chg	0.1	0.0	0.0	-0.1	0.1	0.0	-0.3	0.1	0.0	-0.1	0.0	**-0.2**	0.1	-0.3	1.8
Y-o-Y chg	-2.3	0.0	0.1	0.1	0.9	0.0	-0.1	0.2	0.2	0.3	0.2	**-0.6**	-0.3	-0.2	-1.6

Sources: IEA, *Argus Media Group, Kpler*.

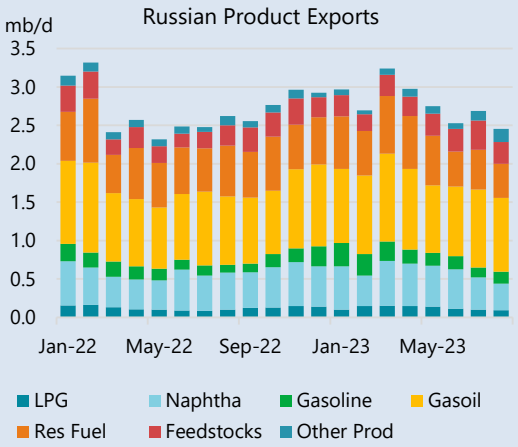
Note: Data in this table were derived by granular analysis and estimates of country of origin data in cases where shipments transit via third countries. They may differ from customs information due to calculation methodology and estimates updates.

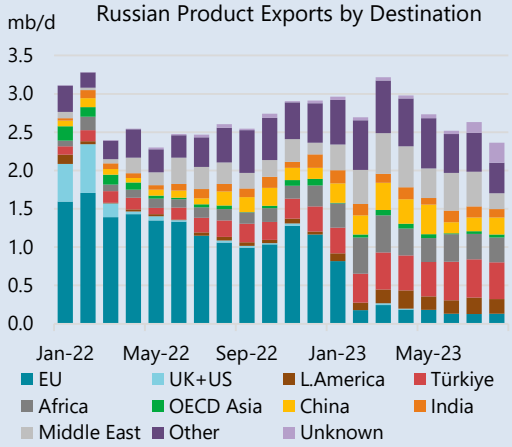
Total oil exports fell by 150 kb/d m-o-m, with a 120 kb/d m-o-m rise in crude exports more than offset by a 270 kb/d m-o-m decline for products. Total shipments in August were 900 kb/d below their pre-war levels and down 570 kb/d y-o-y. Crude volumes were marginally higher with declines in seaborne trade to China more than offset by increased exports to India. China and India still buy the majority of Russian crude. However, their combined share has eroded to 75% in August versus an average 81% from January to May 2023 as other buyers have emerged. Russian crude prices above the price cap in August do not appear to have significantly impacted destinations.



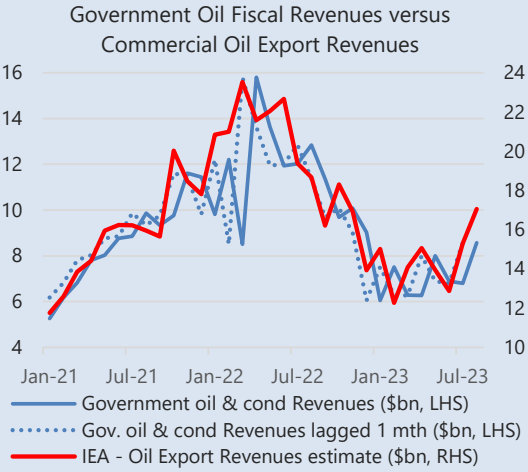


Outbound product trade fell m-o-m for VGO (-100 kb/d), fuel oil (-50 kb/d) and gasoil (-65 kb/d) while a rise in gasoline (+28 kb/d) partly offset the continued fall in naphtha exports (-70 kb/d). The trends reflect, in part, the end of maintenance on downstream units, bringing back online conversion capacity (transforming VGO and straight-run fuel into light products) and reformers (transforming naphtha into gasoline). The largest declines y-o-y are for naphtha (-125 kb/d) and fuel oil (-160 kb/d) that are only partially offset by increased exports of gasoline and gasoil (+80 kb/d each). However, Russian refinery crude throughputs are estimated to be slightly lower overall m-o-m (-100 kb/d).





Product exports remain robust to the UAE, India and Brazil but have fallen to Saudi Arabia and China. The decline in product shipments appears to have impacted mainly the Middle East (-240 kb/d to 210 kb/d), but this could increase still once the destination of the 250 kb/d of product headed to "unknown" destinations is ascertained. Flows eased to Türkiye (-25 kb/d m-o-m to 470 kb/d) and India (-20 kb/d to 120 kb/d) but remained flat to Africa (320 kb/d). China, India, Türkiye and the Middle East take roughly a third of Russian product exports, in some cases using it to displace domestic supply which they export instead.



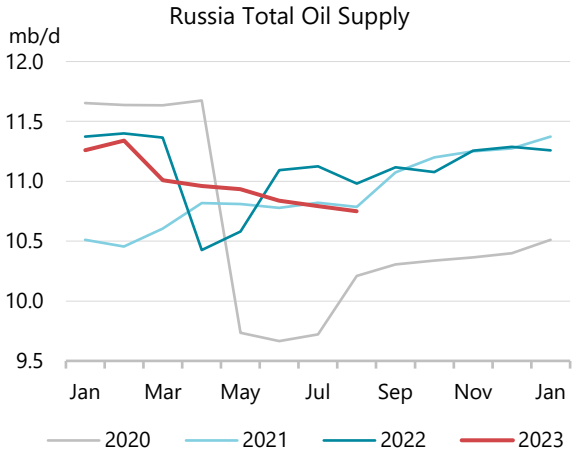
Russian Government Oil & Gas Condensate Revenues
(monthly totals in $ billions)

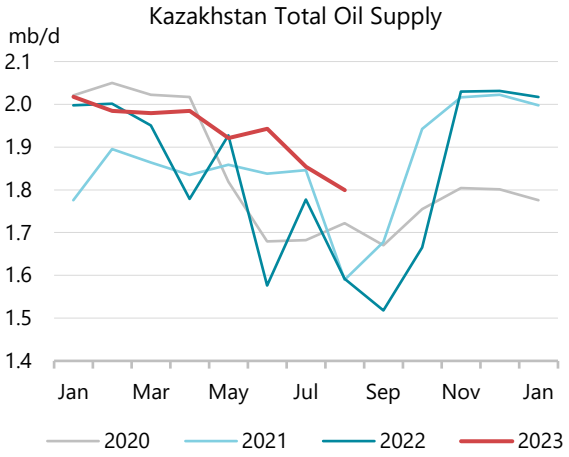
	Aug-23	Jul-23	Aug-22	%ch m-o-m	%ch y-o-y
Urals ($/bbl) *	71.0	61.0	71.9	16.3%	-1.3%
Rbls/US Dollar **	96.0	90.7	61.4	5.9%	56.4%
Commercial Oil Export Revenues					
IEA Estimate	17.1	15.3	18.7	11.5%	-8.6%
Government Revenues from Oil Production and Exports					
Mining Tax (MET)	8.2	6.5	11.6	26.3%	-29.5%
Export Duties	0.4	0.3	1.3	25.4%	-67.6%
Total	8.6	6.8	12.8	26.2%	-33.2%

Source: Russian Ministry of Finance.
* Urals FOB Primorsk (*Argus Media Group*), ** *Wall Street Journal*.

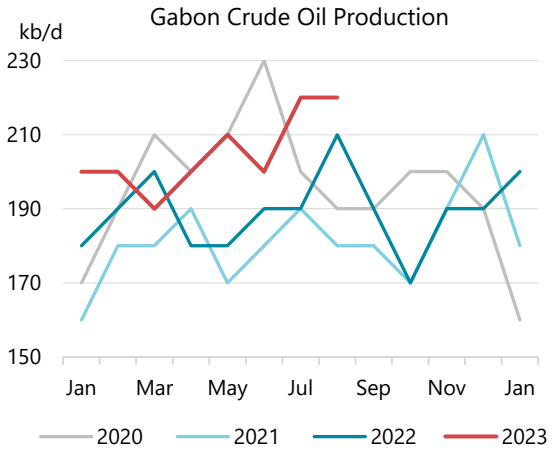
Russian government revenues from oil (in US dollars) rose 26% m-o-m in August (+33% in rubles) but remained 33% lower y-o-y (+4% y-o-y in rubles), reflecting the falling exchange rate (-6% m-o-m, -56% y-o-y). August's rise in export revenues signals a further increase in fiscal revenues in September. The government subsidy to refiners for domestic diesel and gasoline deliveries will drop by 50% from September, which will offset some of the y-o-y losses in government fiscal receipts.

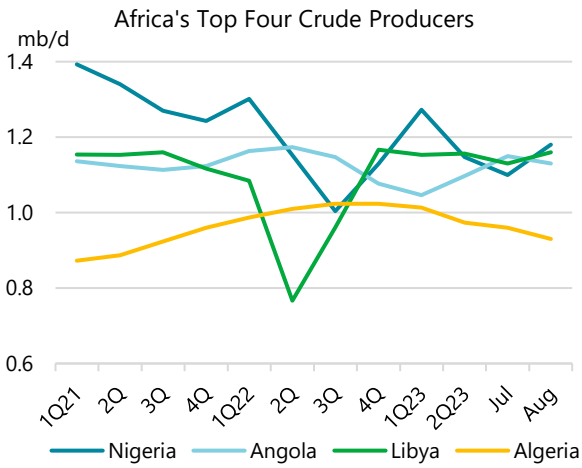
Kazakh crude oil production fell 60 kb/d to 1.46 mb/d in August due to scheduled maintenance at the Tengiz field, the country's largest producer. Work at Tengiz, with capacity of nearly 700 kb/d, started at the beginning of August and is due to finish in mid-September. The Karachaganak field is also due for maintenance this month after scheduled work was reportedly brought forward by a month to 11 September. **Azeri** crude oil supply held steady at 500 kb/d.





Combined output from African members of OPEC+ edged up 50 kb/d in August. A military coup in **Gabon** at the end of August had no apparent impact on production, with output flat m-o-m at 220 kb/d. The leader of the coup that removed President Ali Bongo was sworn in as interim president on 4 September. The Bongo family had been in power for more than five decades. International companies working in Gabon include TotalEnergies, Perenco and Maurel & Prom.



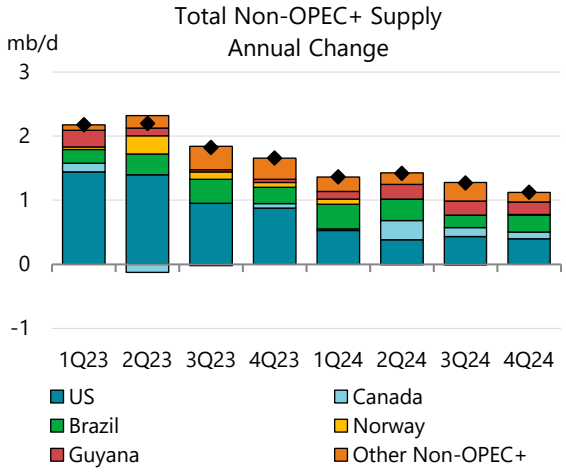


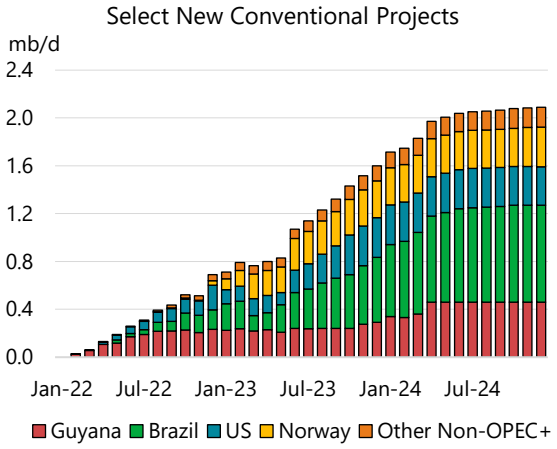
Output in **Nigeria** recovered to 1.18 mb/d, up 80 kb/d m-o-m, after Shell resumed exports of Forcados on 13 August, roughly a month after shipments were halted due to a potential leak at the export terminal. Production of the key grade rose 30 kb/d in August to 120 kb/d. Output of Bonny Light, another major export stream, was up 50 kb/d to 110 kb/d. Crude supply in **Angola** dipped to 1.13 mb/d. **Algeria** more than delivered on the extra cut of 20 kb/d it had promised for August, with supply declining by 30 kb/d to 930 kb/d. **Libyan** crude oil production rose by 30 kb/d to 1.16 mb/d. Output from the North African producer has been relatively stable owing to the Tripoli-Benghazi pact of last July that ended an oil blockade.

Mexico's crude oil output recovered from a platform fire, rising 40 kb/d to 1.67 mb/d in August. Supply in **Venezuela** eased 20 kb/d to 790 kb/d.

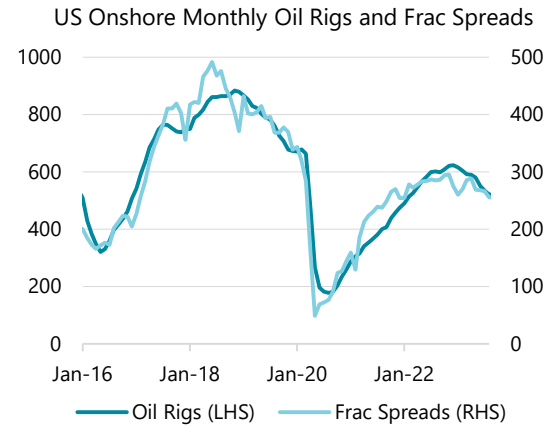
Non-OPEC+

Increased production from Canada and China, along with seasonally higher biofuel output, boosted non-OPEC+ supply by 170 kb/d m-o-m to a record 50.5 mb/d in August. This is slightly above June and July when the US and Brazil, respectively, reached all-time production highs, according to official government data. The US, Brazil, Norway and Guyana lead non-OPEC+ gains this year, accounting for close to 90% of the increase. Next year, non-OPEC+ growth slows to 1.3 mb/d from 1.9 mb/d in 2023 as Brazil, Guyana and Canada continue to add barrels while shale producers slow down and Norway's Johan Sverdrup produces up to its capacity. Supply from producers outside the bloc is forecast at 49.8 mb/d this year and 51.1 mb/d in 2024.

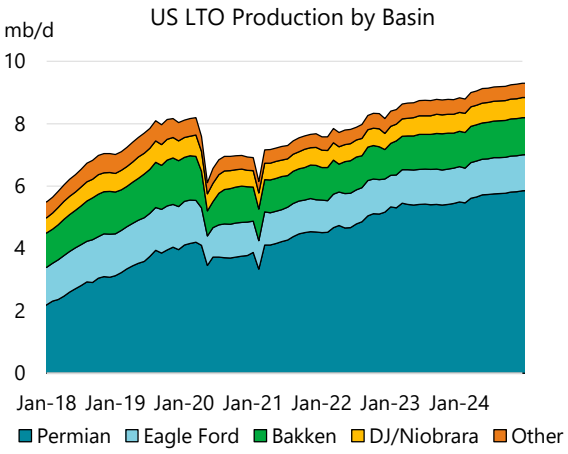




US supply was flat in August at 19.3 mb/d as small gains in crude, led by the Gulf of Mexico, offset an equivalent drop in NGLs. Production rose 1.1 mb/d compared with a year ago and 760 kb/d year-to-date. From August through the end of the year, US liquids are expected to drop by 40 kb/d as NGLs see seasonal losses of 160 kb/d. Annual increases will decelerate from 1.2 mb/d in 2023 to 430 kb/d next year as light tight oil (LTO) growth slows to 430 kb/d and NGLs to 80 kb/d. Total supply in 2024 is forecast to reach 19.5 mb/d, with crude accounting for 13.1 mb/d and NGLs for 6.4 mb/d.

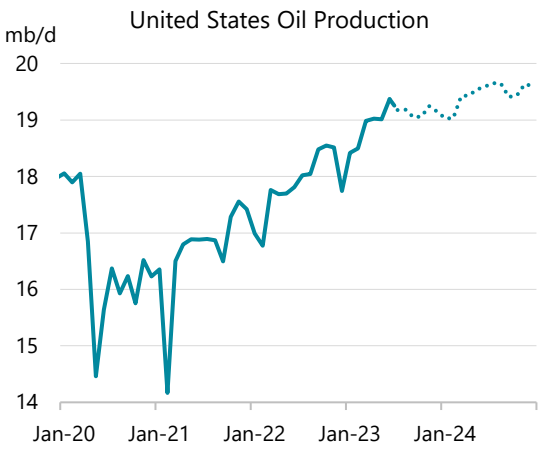


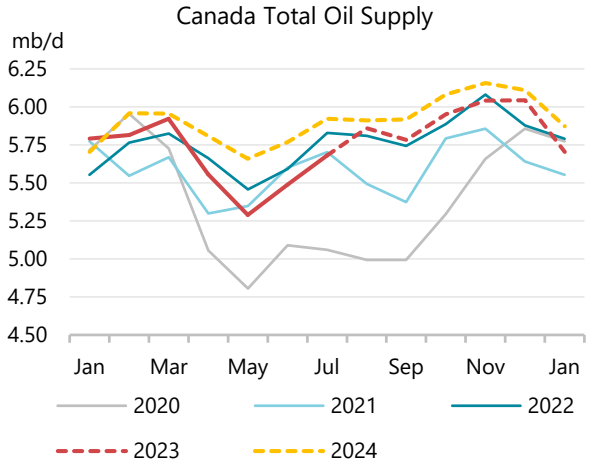
Sources: Primary Vision, Baker Hughes.



US LTO is expected to rise 740 kb/d this year, with the Permian basin accounting for 580 kb/d and the Bakken, the second largest source of gains, adding 80 kb/d. US LTO production growth is set to slow next year, as oilfield activity stabilises close to current levels with drilling activity and completion crews down 17% and 14% from a year ago, respectively. Recent increases in price realisations and data from Enverus that shows oilfield service price inflation beginning to roll over in 3Q23 lend support to current LTO activity levels.

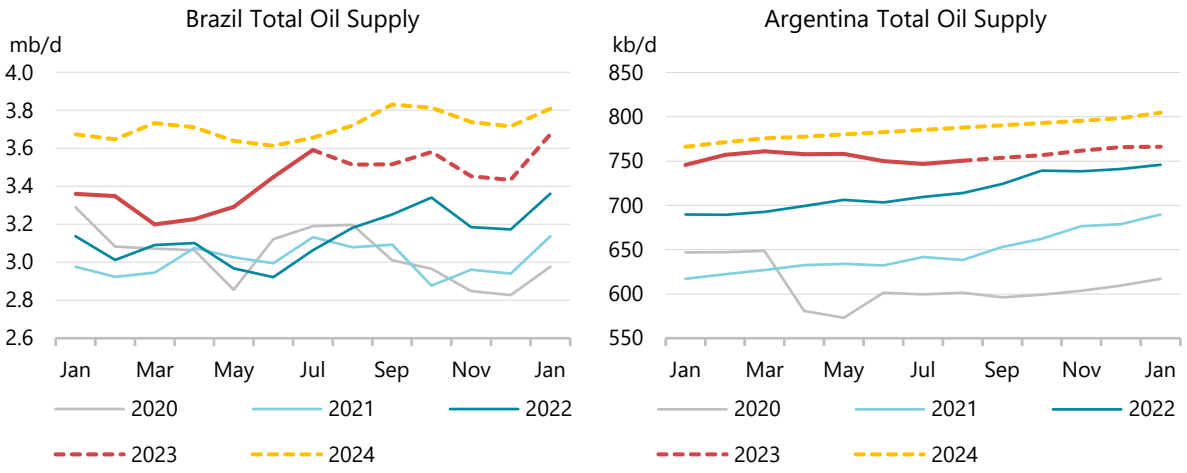
In June, the last month for which official data from the Energy Information Administration (EIA) is available, total oil supply jumped by 370 kb/d to a record 19.4 mb/d. NGL production was also at an all-time peak of 6.5 mb/d, while crude reached 12.8 mb/d – only 160 kb/d below the November 2019 record and the highest monthly output since February 2020. Crude and NGL production rose by 210 kb/d and 150 kb/d respectively, with crude boosted by solid output in the Gulf of Mexico and strong onshore performance in Texas and North Dakota.





Canadian oil supply is estimated to have risen by 190 kb/d m-o-m in July to 5.7 mb/d, based on data from the Alberta Energy Regulator, primarily from increases in bitumen mining and upgrader output. A cyberattack in late June on Suncor interrupted its data submission to Canadian regulators. This *Report* has kept Suncor bitumen mining and upgrading volumes flat for both June and July. Total Canadian oil production in August continued to climb, up by an estimated 180 kb/d, with higher bitumen and NGL volumes leading the gains. For the year, supply is forecast to average 5.8 mb/d, marginally higher than 2022. Next year will see growth of 140 kb/d to 5.9 mb/d. The commissioning of the Trans Mountain Expansion (TMX) pipeline will help debottleneck Alberta's crude production, opening access to new markets and stronger crude marketing fundamentals. Additional volumes will also come from Terra Nova in the Atlantic Offshore as production restarts after the platform was taken offline in December 2019.

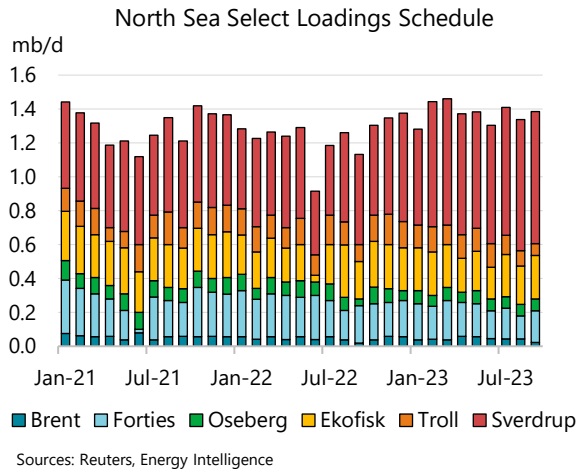
Brazilian output fell by 80 kb/d m-o-m to 3.5 mb/d in August, based on provisional daily data from the Agencia Nacional do Petroleo (ANP) and export data from *Kpler*. This follows official July ANP data that showed a second monthly surge of 150 kb/d, to 3.6 mb/d, toppling the previous month's record high. Gains were primarily driven by production returning at Marlim Sul and Tupi, as well as the ramping up of two new installations – the Anna Nery in the Marlim complex and the Almirante Barroso at the Búzios field. Five new floating production, storage and offloading (FPSO) vessels have been commissioned since the start of 2022, adding 370 kb/d of new supply in July. Total annual volumes are projected to increase by 290 kb/d both this year and next, to reach 3.4 mb/d and 3.7 mb/d, respectively.



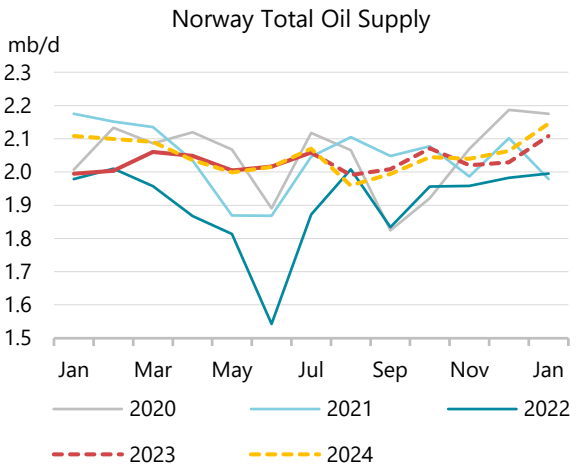
Argentinean supply held steady at 750 kb/d in August, having fallen slightly from a plateau of 760 kb/d seen from February through May. Fracking activity also fell in August, down 11% from both last-month and year-ago levels to 1 224 frack stages, according to *NCS Multistage*, with companies targeting both liquid and gas-rich wells – a different strategy than seen in US LTO over the course of this year. By the end of September, state-backed YPF is expected to commission the Vaca Muerta Norte Pipeline, allowing for a tripling of deliveries to 110 kb/d on the recently re-serviced Transandean Pipeline. Outside of the Neuquén Basin, Equinor announced its intent to drill Argentina's first deepwater exploration well by 1Q24. This will be the first step in exploring the North Argentine Basin, which shares similar geology to Namibian waters, home to a series of recent large discoveries. Argentinean total oil production is forecast to rise by 40 kb/d this year and 30 kb/d in 2024, to average 760 kb/d and 780 kb/d, respectively.

Ecuador voted to stop all oil activities at the 55 kb/d Ishpingo, Tambococha and Tiputini fields (ITT) located in the protected Yasuní National Park in the eastern Amazon via a referendum in August. Application of the referendum will be the responsibility of the next government, to be chosen in a runoff election this October. According to statements from the current energy minister, the referendum's results may be constitutionally challenged and eventually voided. Possible appeal aside, the ministry and Petroecuador, the state-owned operator of ITT, are preparing to decommission the field, with production ceasing in roughly one year from now and the removal of the remaining facilities taking up to five years. This *Report* will wait for the new government's confirmation and the results of a possible appeal before adjusting our forecast. Ecuador produced 460 kb/d of oil in August and is expected to produce 450 kb/d annually this year.

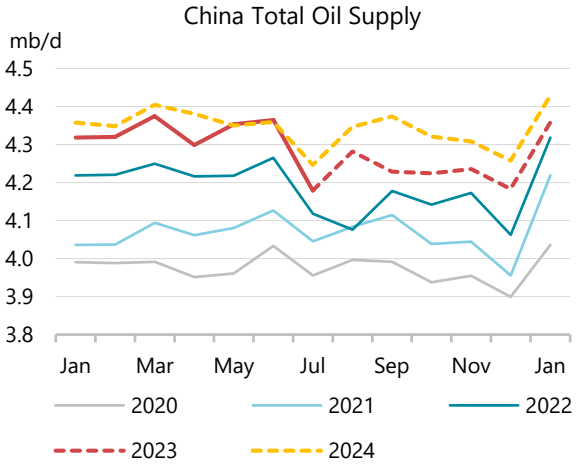
Data from the **Norwegian** Petroleum Directorate show that production rose by 40 kb/d in July to 2.1 mb/d, as gains in NGLs outpaced those in crude. August volumes fell by 70 kb/d as loadings from the Ekofisk and Troll-Oseberg systems declined. In late August, Equinor commissioned its Statfjord Ost project, six months ahead of schedule. The field produces light sweet crude, similar in quality to Brent but with lower sulphur. Loadings in September are set for 50 kb/d. For 2023, Norwegian annual output is expected to rise 130 kb/d to 2 mb/d. Next year sees additional gains of 20 kb/d.

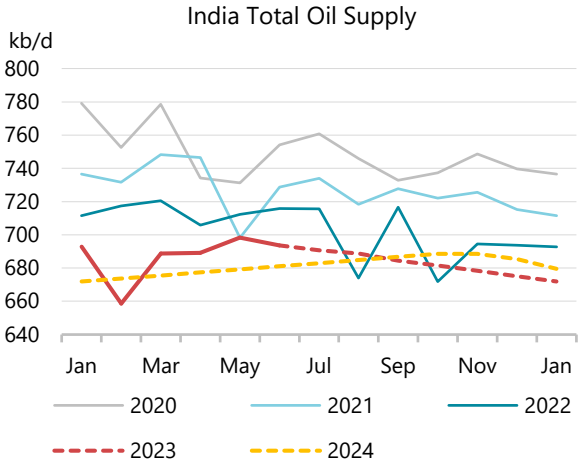


Sources: Reuters, Energy Intelligence



Chinese oil supply averaged 4.3 mb/d for the first half of 2023, 110 kb/d above 1H22. July output fell 190 kb/d m-o-m, according to official data from the National Bureau of Statistics of China, slightly exceeding the normal seasonal decline. September production is forecast to be 50 kb/d below August as Typhoon Saola is estimated to have forced the shut in of 350 kb/d of output for close to a week. 2023 production is forecast to reach 4.3 mb/d, 100 kb/d higher than last year.



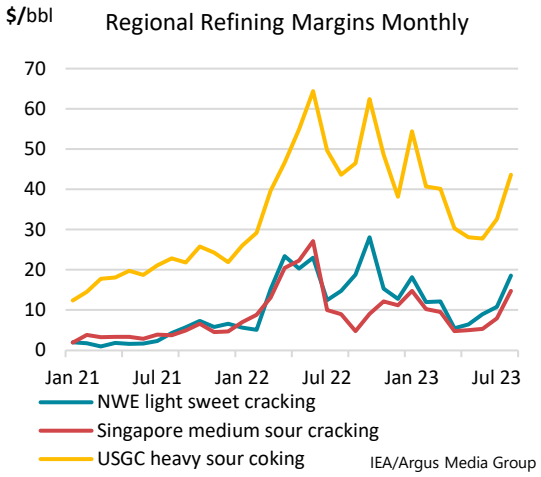


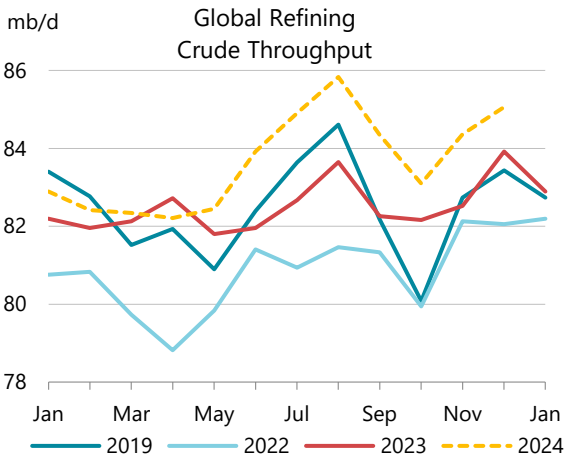
Elsewhere, **Indian** production has been revised down by 10 kb/d as the start-up date for CKG-DWN-98/2 was further delayed into 2024 due to damaged subsea infrastructure. In **Australia**, labour strikes began at both Wheatstone and Gorgon. While these two facilities represent a combined 5% of global LNG capacity, the impact on liquids output is expected to be around 15 kb/d with both plants normally producing 55 kb/d. Conversely, Eni produced first oil from its **Cote d'Ivoire** Baleine Phase 1 project. At 15 kb/d, this FPSO is the first of three phases that will eventually lift production to 150 kb/d. The project is also notable as the timeframe from discovery to first oil was a lightning-fast two years and the development is also the first Scope 1 and Scope 2 emissions-free production project in Africa.

Refining

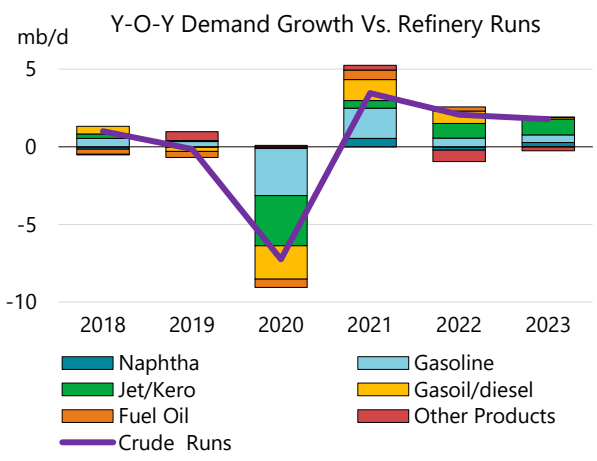
Overview

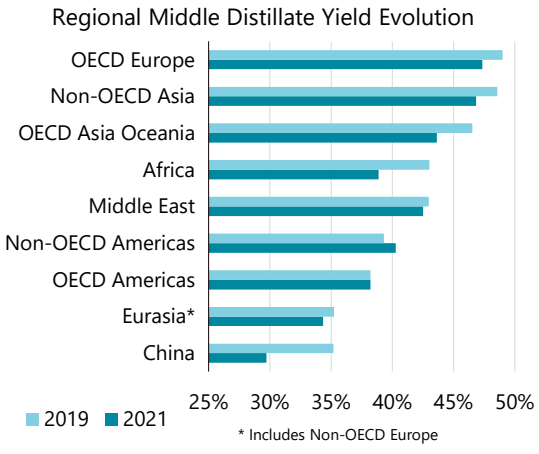
Refinery margins hit eight-month highs as refined product cracks strengthened further in August. Unplanned plant outages supported diesel, jet fuel and gasoline premiums. But these extremely elevated margins are also symptomatic of the more structural problem of robust middle distillate demand growth, low product inventories, stretched supply chains and insufficient access to medium and heavy sour crude, especially for European refineries. Light sweet cracking margin assessments for the US Gulf Coast, Northwest Europe and Singapore stand at their 95th percentile for the post-2010 period.





Middle distillate cracks vaulted back above gasoline cracks in late July and maintained their premium throughout August. Resurgent aviation demand continues to tighten the middle distillate market balance as refiners struggle to match the increase. In 2023, combined jet fuel and gasoil demand will contribute 1.1 mb/d to the total 1.7 mb/d increase in global refined products consumption.





This bias in the growth profile presents a challenge to refineries when middle distillate yields are on average closer to 40% of refinery output (on a volumetric basis) and runs are forecast to rise by

1.7 mb/d. Furthermore, regions with higher middle distillate yields, such as Europe and OECD Asia Oceania, have seen persistently lower runs thus far this year.

The recent increase in margins to near record levels has failed to spur much of a response from the global refining industry. July OECD refinery utilisation reached a new high for the year at 85% but remained 2% points lower than a year ago. OECD Americas continues to achieve higher utilisation rates in both absolute terms and relative to a year ago. Conversely, Europe and Asia Oceania are both down by 4-5% y-o-y. Factors limiting the refining industry's ability to respond to shifting product demand and crude supply dynamics include the loss of Russian crude and feedstock imports and other crude supply dynamics. More broadly, G7 sanctions have stretched supply chains and contributed to increased product cracks as market pricing signals the need for additional product availabilities.

Global throughput estimates for 2023 are trimmed by 70 kb/d from last month's *Report*, with 2023 runs set to rise by 1.7 mb/d to 82.4 mb/d. The forecast for 2024 is lifted by 40 kb/d, with throughput rates forecast to increase by 1.2 mb/d y-o-y to 83.6 mb/d. July preliminary data was in line with expectations for the OECD, but significantly weaker than estimates for the non-OECD. Consequently, 3Q23 forecasts are lowered from last month's *Report* by 490 kb/d.

Global Refinery Crude Throughput[1]

(million barrels per day)

	2019	2020	2021	2022	2Q23	3Q23	Aug-23	Sep-23	Oct-23	Nov-23	4Q23	1Q24	2023	2024
Americas	**19.1**	**16.6**	**17.7**	**18.7**	19.0	19.3	19.5	19.0	18.4	18.9	18.7	18.0	**18.8**	**18.5**
Europe	**12.2**	**10.7**	**11.0**	**11.5**	11.1	11.5	11.7	11.5	11.5	11.1	11.3	10.8	**11.3**	**11.2**
Asia Oceania	**6.8**	**5.9**	**5.8**	**6.1**	5.6	5.6	5.8	5.6	5.9	6.2	6.1	6.0	**5.9**	**5.8**
Total OECD	**38.1**	**33.1**	**34.5**	**36.2**	35.7	36.4	37.0	36.1	35.8	36.1	36.2	34.9	**36.0**	**35.5**
FSU	**6.9**	**6.5**	**6.8**	**6.5**	6.5	6.5	6.6	6.4	6.5	6.6	6.6	6.6	**6.6**	**6.7**
Non-OECD Europe	**0.5**	**0.4**	**0.4**	**0.5**	0.4	0.5	0.5	0.5	0.4	0.4	0.4	0.4	**0.4**	**0.4**
China	**13.4**	**13.7**	**14.4**	**13.6**	15.0	15.1	15.2	15.1	15.2	15.0	15.1	15.3	**15.0**	**15.3**
Other Asia	**10.4**	**9.4**	**9.7**	**10.2**	10.7	10.1	10.3	9.9	10.1	9.9	10.3	10.9	**10.5**	**10.7**
Latin America	**3.2**	**3.0**	**3.3**	**3.5**	3.7	3.7	3.7	3.7	3.5	3.6	3.5	3.6	**3.6**	**3.6**
Middle East	**7.9**	**7.1**	**7.8**	**8.3**	8.4	8.7	8.6	8.8	9.0	9.1	9.0	9.1	**8.7**	**9.3**
Africa	**2.0**	**1.9**	**1.8**	**1.8**	1.6	1.7	1.7	1.7	1.6	1.7	1.6	1.7	**1.7**	**2.0**
Total Non-OECD	**44.3**	**42.0**	**44.1**	**44.4**	46.4	46.3	46.6	46.1	46.3	46.3	46.6	47.6	**46.5**	**48.1**
Total	**82.4**	**75.1**	**78.6**	**80.7**	82.1	82.8	83.5	82.2	82.1	82.4	82.8	82.5	**82.4**	**83.6**
Year-on-year change	***-0.1***	***-7.2***	***3.5***	***2.1***	*2.1*	*1.6*	*2.2*	*0.9*	*2.2*	*0.4*	*1.5*	*0.5*	*1.7*	***1.2***

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

On paper, global refinery distillation capacity of 103 mb/d is sufficient to meet refined product demand. While the industry has added approximately 2.1 mb/d over the past 12 months, not all of this is running at full capacity yet, including Kuwait's Al Zour refinery. Nevertheless, capacity closures of 3.9 mb/d over the preceding three years have undoubtedly left a void that needs to be filled. The loss of Russian crude supplies to European refineries and the curtailment of sour Middle Eastern exports since the start of the year has also forced some plant operators to select crudes that limit their processing rates. The rise in US light sweet crude exports has exacerbated this constraint.

Product cracks and refinery margins

Refining margins posted the highest levels in eight months in August, thanks to stronger middle distillate and gasoline cracks. Profits rose across all three major refining regions that are tracked in this *Report*, with increases in the Atlantic Basin slightly outpacing those achieved in Singapore.

IEA Global Indicator Refining Margins										
	Monthly Average				Change	Average for week starting:				
$/bbl	May 23	Jun 23	Jul 23	Aug 23	Jul - Aug	07 Aug	14 Aug	21 Aug	28 Aug	04 Sep
NW Europe										
Light sweet hydroskimming	4.06	6.61	8.24	14.96	6.72	13.42	14.75	17.40	14.98	12.62
Light sweet cracking	6.44	8.95	10.82	18.58	7.77	17.17	18.24	21.19	18.37	16.38
Light sweet cracking + Petchem	6.56	7.93	9.99	17.99	8.00	16.36	17.83	20.75	17.67	15.69
Medium sour cracking*	10.64	13.75	16.00	25.35	9.35	24.26	24.54	28.27	24.76	22.93
US Gulf Coast										
Light sweet cracking	18.13	19.72	23.51	30.40	6.89	30.63	31.10	31.82	28.75	24.88
Medium sour cracking	22.27	23.71	26.58	35.19	8.62	35.01	35.19	37.30	34.05	31.00
Heavy sour coking	28.05	27.74	32.59	43.60	11.00	42.14	44.22	47.22	43.69	40.38
Singapore										
Light sweet cracking	2.54	4.16	5.99	11.93	5.94	10.52	11.47	13.42	13.22	9.81
Light sweet cracking + Petchem	3.94	5.37	6.73	12.34	5.61	10.70	12.03	13.99	13.71	10.25
Medium sour cracking	4.99	5.33	7.91	14.77	6.86	13.72	14.59	15.77	14.96	13.05
Medium sour cracking + Petchem	6.37	6.53	8.63	15.17	6.54	13.90	15.14	16.33	15.45	13.48

Note: Mediterranean and US Midcontinent margins are available in Table 15 of this *Report*.

Source: IEA/Argus Media Group prices.

Methodology notes are avaialble at https://www.iea.org/topics/oil-market-report#methodology

*From 1/12/2022, the basis has changed from Urals NWE to Argus Brent Sour

Sour crude refining margins universally improved by more than those for sweet crudes. Heavy sour US Gulf Coast (USGC) coking margins led the way, increasing $11/bbl m-o-m versus $6-8/bbl for light sweet cracking and hydroskimming plants. The USGC outperformance reflects the wider Western Canadian Select (WCS) differentials seen in the second half of August. As Canadian supply disruptions eased, the grade slipped to a $9/bbl discount to WTI on the USGC from a sub-$2/bbl discount in early July. More broadly, refinery profits returned to levels last seen at the start of the year. Excluding 2022, refining margins are at, or close to, record levels in the regions we track.

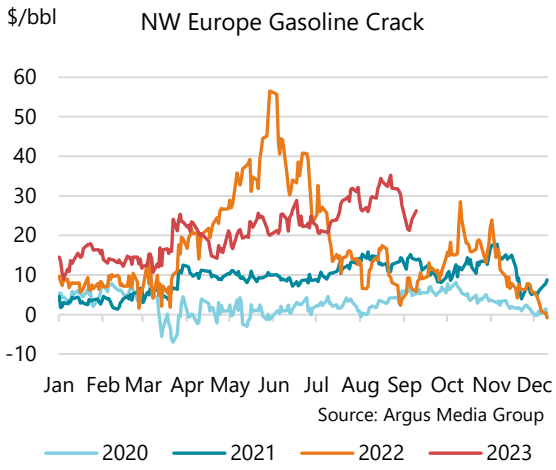
August average hydroskimming margins of $15/bbl on light sweet crude in Europe – a level only exceeded in the immediate aftermath of Russia's invasion of Ukraine – indicate just how tight product markets are. Although light sweet crude availability is starting to tighten, it is nowhere near as constrained as the sour crude and middle distillate markets.

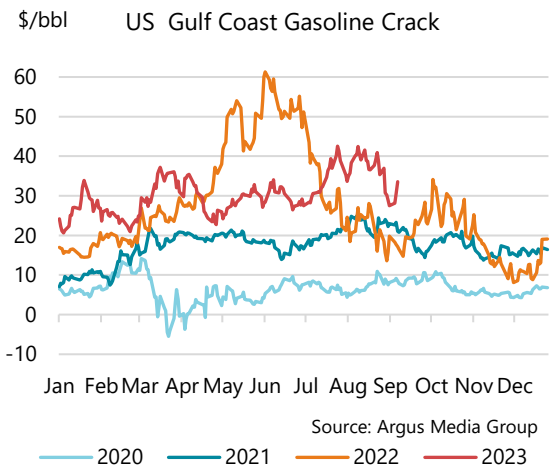
Product Prices and Differentials ($/bbl)												
	Prices			Differentials				Week Starting				
	Jun	Jul	Aug	Jun	Jul	Aug	Jul-Aug chg	07-Aug	14-Aug	21-Aug	28-Aug	04-Sep
Northwest Europe				to North Sea Dated								
Gasoline	98.12	105.34	116.85	23.39	25.25	30.67	5.42	27.88	32.43	33.19	30.18	22.51
Diesel	96.34	105.24	122.52	21.61	25.15	36.33	11.18	35.38	35.01	39.26	35.58	36.27
Jet/Kero	94.64	106.12	124.27	19.91	26.03	38.09	12.06	37.35	37.07	41.58	37.28	36.24
Naphtha	61.81	64.42	72.14	-12.92	-15.67	-14.04	1.63	-14.71	-14.64	-12.52	-13.84	-15.43
HSFO	69.68	73.63	85.20	-5.05	-6.46	-0.98	5.48	1.76	-2.18	-2.67	-3.54	-3.76
0.5% Fuel Oil	78.84	81.92	89.91	4.11	1.83	3.73	1.90	4.01	3.05	2.89	1.98	-1.39
US Gulf Coast				to WTI Houston								
Gasoline	101.70	112.06	120.82	29.87	34.15	37.85	3.70	39.42	39.80	38.14	34.39	28.75
Diesel	98.68	109.56	128.02	26.85	31.65	45.05	13.40	43.62	44.07	48.25	45.69	44.78
Jet/Kero	94.14	105.09	125.34	22.31	27.18	42.37	15.19	40.34	42.38	46.40	42.34	38.35
Naphtha	72.30	69.63	71.31	0.47	-8.29	-11.66	-3.37	-9.45	-12.40	-12.49	-12.71	-12.27
HSFO	65.53	72.69	79.81	-6.30	-5.22	-3.16	2.06	-2.38	-4.42	-4.82	-2.63	-4.70
0.5% Fuel Oil	80.06	84.63	94.78	8.23	6.71	11.81	5.09	11.47	12.15	12.79	13.20	11.65
Singapore				to Dubai								
Gasoline	87.43	93.13	101.68	11.02	11.51	14.10	2.59	12.35	14.93	16.04	14.90	12.10
Diesel	92.31	101.79	119.07	15.91	20.17	31.49	11.32	30.00	30.87	32.44	32.20	30.49
Jet/Kero	90.06	98.85	116.28	13.65	17.22	28.70	11.48	26.85	28.71	31.12	30.77	28.86
Naphtha	57.01	62.43	70.65	-19.39	-19.20	-16.93	2.28	-17.51	-17.50	-16.06	-16.46	-18.75
HSFO	66.28	74.54	83.93	-10.13	-7.08	-3.65	3.44	-3.31	-3.02	-3.85	-7.71	-8.96
0.5% Fuel Oil	87.25	86.94	95.78	10.84	5.31	8.21	2.89	7.69	9.21	8.14	7.22	5.42

Product cracks rallied during August, reaching a peak late in the month, before retreating into early September. Gains in diesel and jet fuel outpaced those for gasoline, with USGC cracks registering

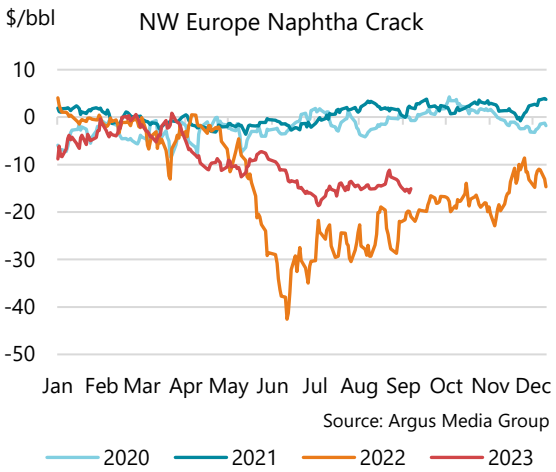
the largest increase. High sulphur fuel oil cracks turned positive in Europe, reaching their best levels since at least 2010. Diesel cracks retained a premium to jet fuel in Singapore and on the USGC. Conversely, European jet fuel cracks in August maintained their narrow premium to diesel.

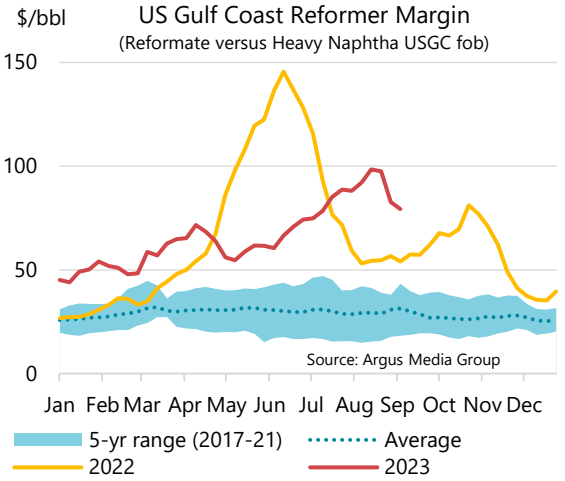
Gasoline cracks rallied through mid-August in tandem with middle distillates. Gains were more subdued in the United States and Singapore, while European cracks rose by $5.42/bbl on average versus July. Threats to supply from Atlantic Basin hurricanes and unplanned outages on the USGC spurred some of the strength in cracks mid-month, but as these risks faded, so too did gasoline cracks, which retraced $10/bbl. Nevertheless, at more than $30/bbl, USGC gasoline cracks are at the 97th percentile for the period since 2010.





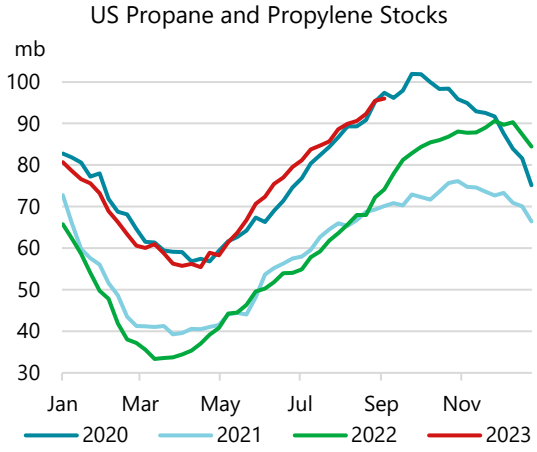
Naphtha cracks improved by around $2/bbl on the month in Europe and Singapore, but retained their steep discounts versus benchmark crudes. Naphtha prices remain tethered by low propane prices, as petrochemical feedstock competition limits uptake. Currently, propane cracks are around -$45/bbl versus Brent in Europe and naphtha prices on a per tonne basis are close to their feedstock breakeven value. At the same time, the incentive to blend or reform aromatic naphtha into the gasoline pool is close to record highs. Having peaked at close to $100/bbl in mid-August, the spread fell back to around $80/bbl in early September. The shift to winter specification gasoline material in the coming weeks could ease the fuel's tightness and put downward pressure on cracks.

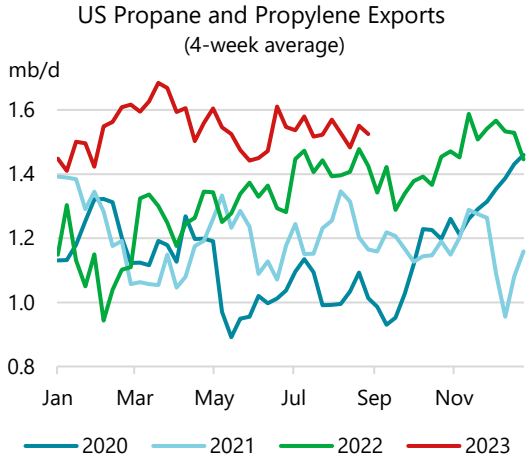




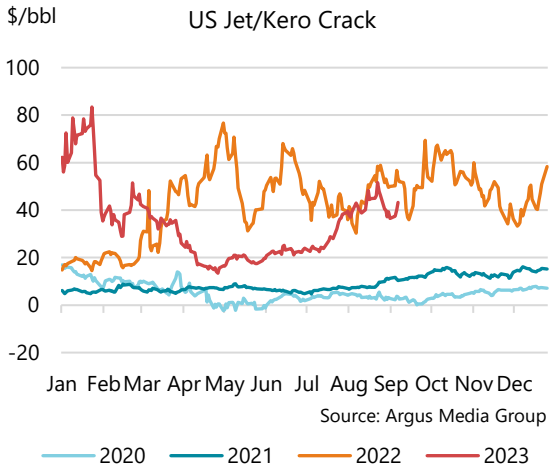
The rise in US NGL production is pushing US inventory levels towards seasonally adjusted all-time highs, despite record exports, weighing on propane and naphtha prices (see OMR July 2023, *LPG*

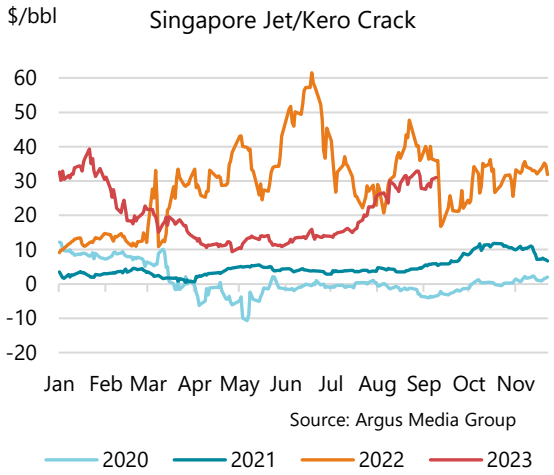
and naphtha markets caught between US NGL growth and the petrochemical industry cycle). Weekly US EIA data point to strong seasonal builds in the combined NGL and propane/propylene inventory position, with only 2020 registering a sharper increase.





Jet fuel cracks increased by more than any other product on average in August. They continue to trade above diesel and gasoline in Europe and Singapore, signalling a need for refineries to raise yields to meet the rebound in demand. Higher prices should also dampen demand, but resurgent airline profitability and substantial jet fuel hedging programmes insulate companies from the full impact of soaring jet fuel costs. Arguably this makes demand slightly less elastic with respect to price changes. Consequently, adjustments that can bring the market back into balance must centre on the refining side, resulting in exaggerated price movements to elicit the necessary supply response.

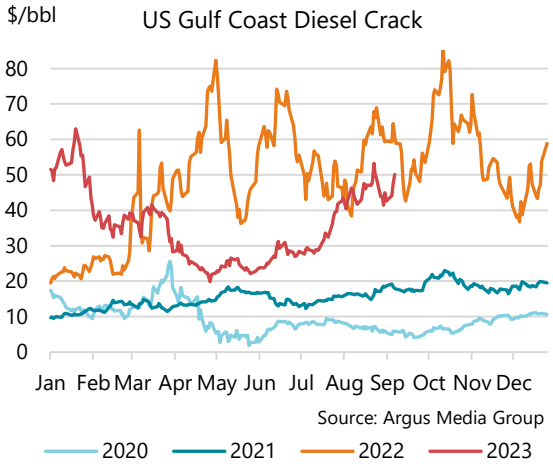


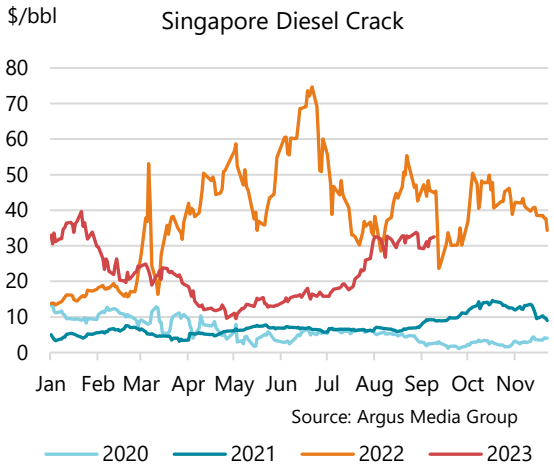


Diesel cracks rallied for much of August but retraced their steps late in the month in line with the changes to jet fuel and, to a lesser extent, gasoline cracks. The correlation between diesel and jet/kero cracks point to competition between the grades for a greater share of refinery output. Furthermore, the influence of external factors, such as unplanned refinery outages, is also visible. On the USGC, diesel cracks averaged $45/bbl in August, but recovered to $50/bbl by early September.

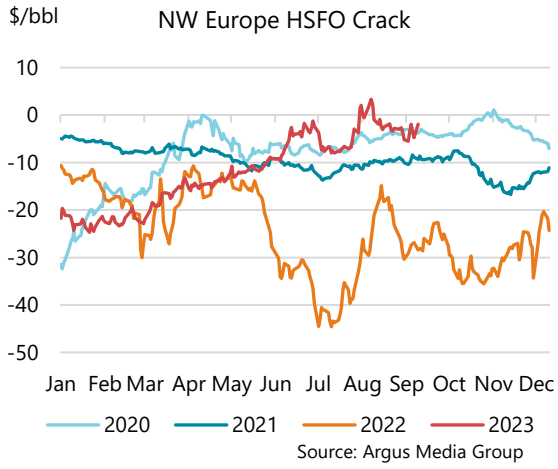
European diesel cracks returned a similar performance, while Singapore saw more muted changes in values. Competition between Asian and European markets for the marginal export barrel of diesel leaving the Middle East remains intense, although industry reports in late August raised the potential

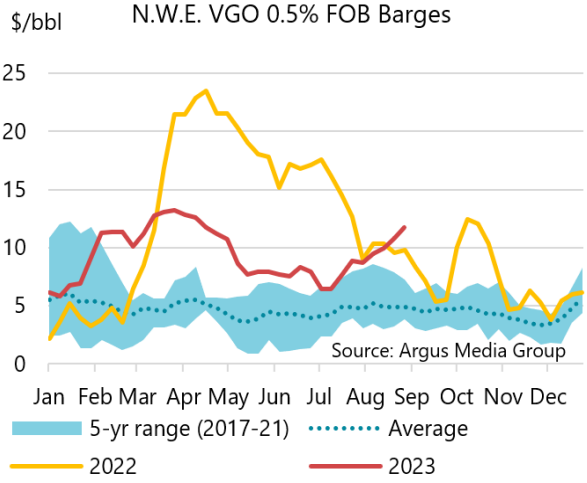
that producing winter specification European diesel could be problematic for some Middle East exporters. If validated, this eventuality could further tighten European diesel markets ahead of 1Q24.



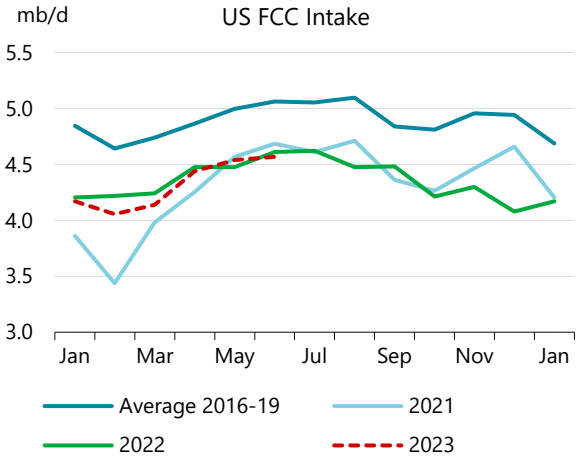


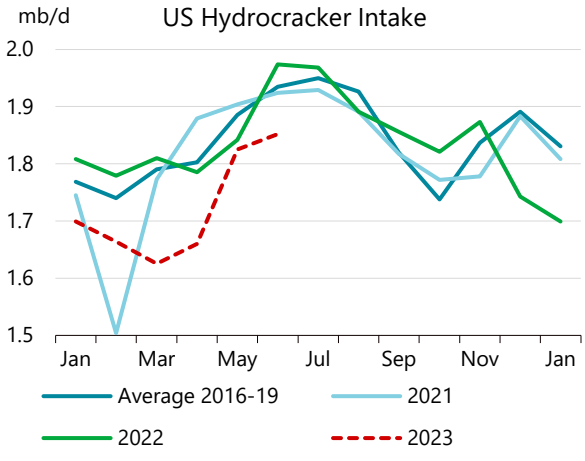
Fuel oil cracks are currently providing significant support to refining margins, especially for the less complex hydroskimming configuration. High sulphur cracks in August were close to ten-year highs, reflecting the tight sour crude market, falling inventories, and buoyant demand. Similarly, limited availability of feedstock for upgrading units have pushed low and high sulphur VGO cracks towards historical highs, potentially depressing margins for upgrading units, or necessitating higher light and middle distillate product cracks.





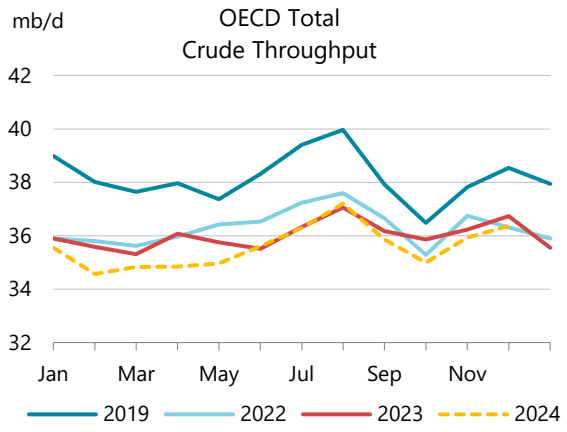
In normal times, refineries boost light and middle distillate production through upgrading fuel oil yields into gasoline, jet fuel and diesel by processing vacuum gasoil or vacuum residue in catalytic cracking, hydrocracking and coking units. Data from the US EIA indicates that in 1H23, US refinery intake across all three upgrading unit types declined y-o-y. Planned maintenance could explain the 1-2% y-o-y decline for cracking and coking units, while the 6% y-o-y fall in hydrocracker intake is harder to reconcile with the healthy middle distillate cracks.

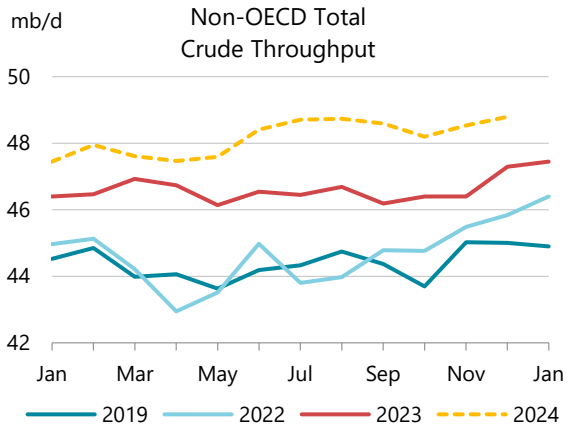




Regional refining developments

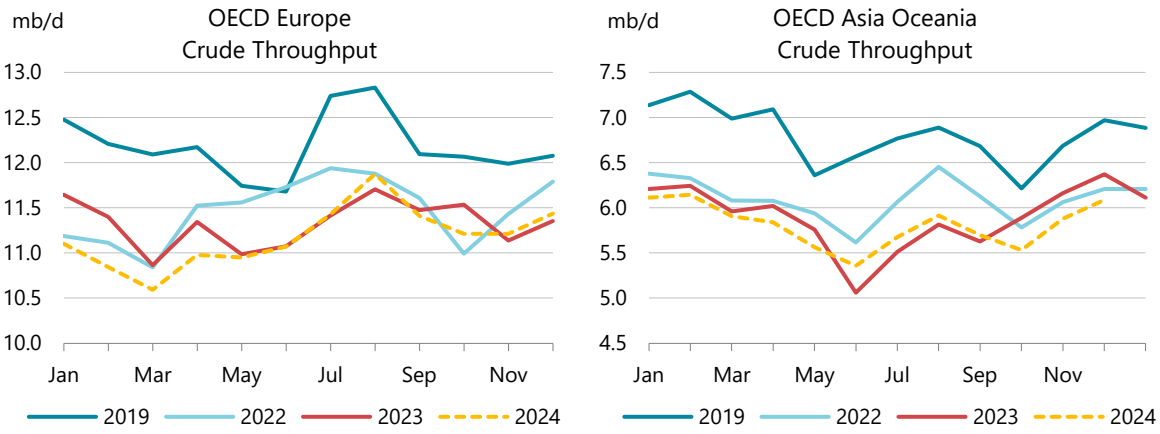
Global crude runs are forecast to average 82.4 mb/d this year and 83.6 mb/d in 2024. Annual growth is trimmed by 120 kb/d to 1.7 mb/d in 2023 and lifted by 40 kb/d to 1.2 mb/d for 2024. The 2023 runs forecast is 70 kb/d lower on average versus last month's *Report*. This downward revision to growth partly reflects a 50 kb/d upward adjustment to the prior-year baseline, following the incorporation of annual data for several countries. That said, July data came in lower than expected, with revisions of -800 kb/d, largely stemming from weaker Chinese, Indian and Russia data.





OECD July crude runs rebounded by 800 kb/d from June levels and were 60 kb/d ahead of last month's assessment, albeit with significant regional variations. Despite the rise in July, OECD throughout rates were still a sharp 920 kb/d below year-ago levels. **Asia Oceania** throughput was 410 kb/d weaker than expected, but this shortfall was more than offset by runs in Europe and the Americas being 230 and 240 kb/d, respectively, above expectations. Consequently, we have raised the 2H23 OECD forecasts by 360 kb/d. Stronger-than-expected throughputs in the **Americas** for July came mainly from the United States and Canada. Weekly data for Canada and the United States also point to strong crude runs in August. The OECD July utilisation rate of 85% was below last year's 87%, but marginally ahead of the five-year average of 83%. European refineries processed 11.4 mb/d of crude in July, some 340 kb/d higher than June. However, utilisation rates averaged 83%, 4% below last year and 1% below the five-year average. **European** crude runs declined by 520 kb/d y-o-y, the third straight month where crude processing has contracted by more 500 kb/d

y-o-y. Low processing rates were widespread, although Italy stands out as being particularly weak. Hot weather depressed runs as it reduced the effective air cooling on distillation units. German crude runs were also down nearly 150 kb/d y-o-y, even though July represents the highest activity level this year.



July **OECD Asia Oceania** crude throughputs rebounded by 450 kb/d m-o-m to 5.5 mb/d. Having reached a multi-decade seasonal low in June of 5.1 mb/d, runs remain below average levels, with utilisation in July of just 75%, versus the five-year average of 78%. Preliminary weekly data for August indicate that Japanese crude throughputs rose by 260 kb/d m-o-m.

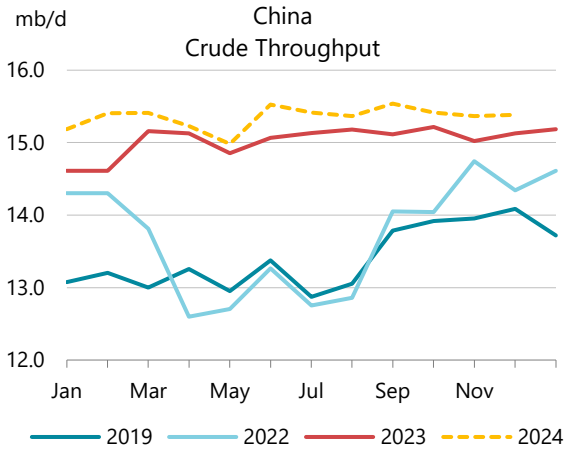
Refinery Crude Throughput and Utilisation in OECD Countries
(million barrels per day)

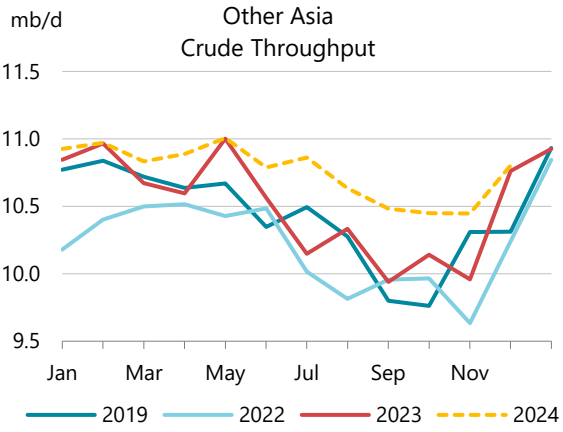
							Change from		Utilisation rate	
	Feb 23	Mar 23	Apr 23	May 23	Jun 23	Jul 23	*Jun 23*	*Jul 22*	Jul 23	Jul 22
US[1]	15.13	15.51	15.84	16.21	16.39	16.56	0.16	0.20	92%	92%
Canada	1.73	1.75	1.61	1.68	1.80	1.79	-0.01	-0.07	98%	102%
Chile	0.19	0.19	0.21	0.19	0.14	0.19	0.05	0.08	85%	49%
Mexico	0.81	0.95	0.97	0.85	0.97	0.77	-0.19	-0.06	48%	51%
OECD Americas[1]	**17.87**	**18.40**	**18.64**	**18.93**	**19.30**	**19.31**	**0.01**	**0.16**	**89%**	**90%**
France	1.00	0.52	0.66	0.96	0.99	1.04	0.05	0.07	85%	80%
Germany	1.66	1.58	1.55	1.54	1.68	1.72	0.03	-0.14	84%	91%
Italy	1.17	1.31	1.42	1.17	1.18	1.16	-0.02	-0.26	67%	82%
Netherlands	1.11	0.95	1.12	1.05	0.98	0.95	-0.03	-0.07	76%	81%
Spain	1.19	1.16	1.27	1.18	1.17	1.29	0.12	-0.04	88%	91%
United Kingdom	1.02	1.03	1.04	1.05	0.94	1.00	0.06	0.04	84%	80%
Other OECD Europe[2]	4.24	4.30	4.26	4.04	4.11	4.24	0.13	-0.11	88%	90%
OECD Europe	**11.39**	**10.85**	**11.33**	**10.98**	**11.06**	**11.41**	**0.34**	**-0.52**	**83%**	**87%**
Japan	2.79	2.65	2.62	2.33	2.18	2.39	0.21	-0.18	74%	74%
Korea	2.90	2.80	2.88	2.97	2.43	2.69	0.26	-0.29	75%	84%
Other Asia Oceania[3]	0.54	0.50	0.51	0.44	0.44	0.43	-0.01	-0.08	82%	98%
OECD Asia Oceania	**6.23**	**5.95**	**6.01**	**5.75**	**5.05**	**5.50**	**0.45**	**-0.55**	**75%**	**80%**
OECD Total	**35.49**	**35.21**	**35.98**	**35.66**	**35.42**	**36.22**	**0.80**	**-0.92**	**85%**	**87%**

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

Non-OECD crude runs reached 46.3 mb/d in July but fell short of expectations by 870 kb/d, with much of the deficit in Asia. Downward revisions were primarily concentrated in China (-250 kb/d), India (-160 kb/d), and Russia (-170 kb/d) and largely reflects heavier-than-expected maintenance schedules. **Chinese** runs were essentially unchanged m-o-m at 15.1 mb/d, despite a sequential monthly decline in planned maintenance. August crude runs likely approached record levels, even

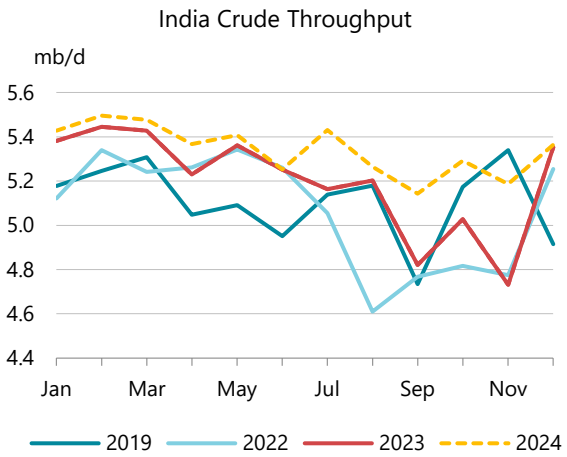
as refineries had reportedly exhausted their product export quotas. Given the weaker macroeconomic backdrop for China, we have trimmed 3Q23 estimates by 330 kb/d from last month's *Report*.

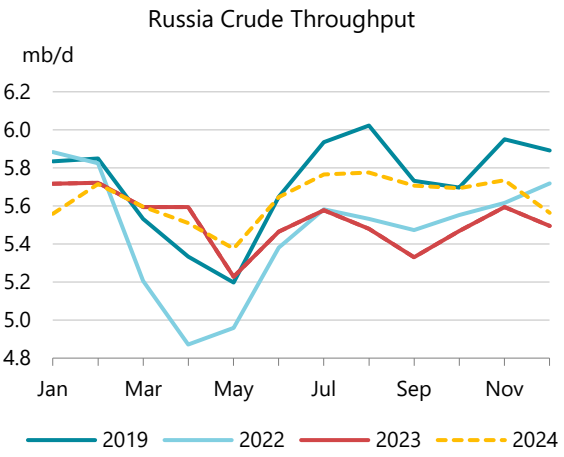




Late August saw the issuance of a third tranche of product export quotas - totalling 12 Mt (equal to approximately 1 mb/d of transport fuel over a quarter) - which takes the year-to-date total to 40 Mt. This pushes 2023 quotas above last year's full allocation. The government initiative to raise quotas should help lift runs despite concerns about weak domestic demand, as healthy international product cracks incentivise additional crude processing for exports. However, government support appears far from universal for additional quotas and, in conjunction with seasonal autumn maintenance, runs may come under pressure as we approach year-end if further export quotas are not forthcoming.

Indian crude throughput reached a fresh seasonal high of 5.2 mb/d in July, up 2% y-o-y, albeit still below February's record level of 5.4 mb/d. Indian runs are expected to slump from September through November on increased maintenance before rebounding at year-end. A third source of weaker-than-expected July crude runs was **Russia**. Initial estimates proved too optimistic, with industry reports assessing July runs at 23.58 Mt, or 5.5-5.6 mb/d, versus last month's 5.74 mb/d estimate. Consequently, we have lowered forecast 2H23 runs by 30 kb/d on average.

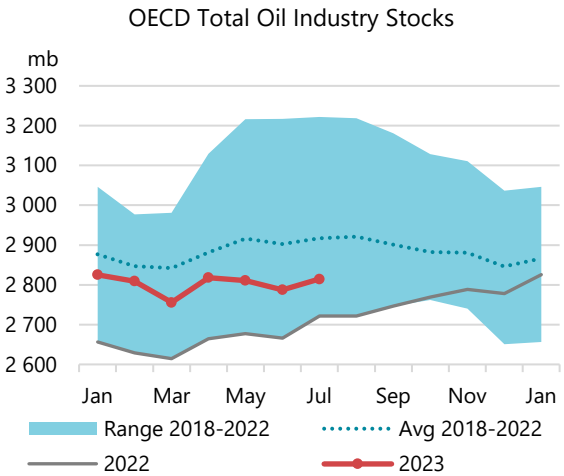




Stocks

Overview

Global observed inventories plummeted by 76.3 mb, or 2.46 mb/d, to a 13-month low in August, according to early estimates. The largest decline came from oil on water, which lost more than 50 mb versus end-July levels. Observed non-OECD oil stocks fell by 20.8 mb, while OECD stocks drew by 3.2 mb. By contrast, global oil stocks rose by 9.1 mb in July, driven higher by a steep crude build in China of 31.5 mb and a 27.7 mb seasonal increase in OECD inventories. Gains were partially offset by a sharp 35.2 mb decline in oil on water and a 14.7 mb draw of non-OECD stocks outside of China.



Sources: IEA, *Kayrros, Kpler, FEDCom/S&P Global Platts, Enterprise Singapore*

OECD commercial stocks in July increased by 26.7 mb to 2 814 mb but remained 102.6 mb below the five-year average. In terms of forward demand, stocks covered 61.1 days, 0.7 days higher m-o-m and 1.8 days above a year ago. OECD Europe led the increase, up by 18.8 mb, to which OECD America inventories added a smaller 10.2 mb, in line with seasonal trends. By comparison, stocks in OECD Asia Oceania recorded a counter-seasonal decline of 2.3 mb. Total OECD crude oil, NGL and feedstock inventories inched up by 1 mb, compared to a more typical draw of 4.3 mb. Crude oil stocks fell by 2.8 mb, while other oil inventories rose by 3.8 mb. Total product stocks increased by 25.8 mb. Other product inventories built by 18.7 mb, largely in line with the seasonal restocking. Middle distillate stocks increased by 12.8 mb, while gasoline and fuel oil inventories drew by 1.1 mb and 4.7 mb, respectively.

Preliminary data from the US, Europe and Japan for August show that commercial stocks fell by 6.2 mb. Crude oil, NGL and feedstock inventories plunged by 28.7 mb, notably in the US (-28.2 mb) and Japan (-5.5 mb) but were partially offset by a build in Europe (+5 mb). By contrast, oil product stocks built by a significant 22.5 mb, led by other products (+14.6 mb) and middle distillates (+10.4 mb). Gasoline and fuel oil inventories fell by 1.6 mb and 0.8 mb, respectively. All product stock movements were largely in line with the five-year average.

Preliminary OECD Industry Stock Change in July 2023 and Second Quarter 2023												
	July 2023 (preliminary)								Second Quarter 2023			
	(million barrels)				(million barrels per day)				(million barrels per day)			
	Am	Europe	As.Ocean	Total	Am	Europe	As.Ocean	Total	Am	Europe	As.Ocean	Total
Crude Oil	**-6.8**	**4.9**	**-0.9**	**-2.8**	**-0.2**	**0.2**	**0.0**	**-0.1**	**-0.2**	**0.1**	**-0.1**	**-0.2**
Gasoline	-1.4	2.0	-1.7	-1.1	0.0	0.1	-0.1	0.0	-0.1	-0.1	0.0	-0.1
Middle Distillates	2.2	11.2	-0.5	12.8	0.1	0.4	0.0	0.4	0.0	0.0	0.1	0.1
Residual Fuel Oil	-2.8	-2.3	0.5	-4.7	-0.1	-0.1	0.0	-0.2	0.0	0.0	0.0	0.0
Other Products	18.6	2.0	-1.9	18.7	0.6	0.1	-0.1	0.6	0.5	0.0	0.0	0.6
Total Products	**16.5**	**12.8**	**-3.6**	**25.8**	**0.5**	**0.4**	**-0.1**	**0.8**	**0.5**	**-0.1**	**0.1**	**0.5**
Other Oils[1]	0.4	1.1	2.2	3.8	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0
Total Oil	**10.2**	**18.8**	**-2.3**	**26.7**	**0.3**	**0.6**	**-0.1**	**0.9**	**0.3**	**0.0**	**0.1**	**0.4**

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

OECD industry inventories for June were adjusted up by a marginal 0.9 mb to 2 788 mb following the submission of more complete data. Crude and other oils were revised higher by 5.1 mb and 5.5 mb, respectively, but were almost wholly offset by lower product inventories (-9.7 mb). Other products (-6.4 mb) led the downward revision, followed by middle distillates (-3.6 mb). May figures were raised by 9.6 mb, mainly for crude oil in Canada.

OECD Industry Stock Revisions versus August 2023 Oil Market Report								
(million barrels)								
	Americas		Europe		Asia Oceania		OECD	
	May-23	Jun-23	May-23	Jun-23	May-23	Jun-23	May-23	Jun-23
Crude Oil	**10.8**	**8.6**	**-0.2**	**-7.6**	**0.0**	**4.1**	**10.6**	**5.1**
Gasoline	0.0	0.0	0.0	-0.2	0.0	1.0	0.0	0.7
Middle Distillates	0.0	-1.6	-0.9	-1.6	0.0	-0.5	-0.9	-3.6
Residual Fuel Oil	0.0	-0.6	0.2	0.1	0.0	0.0	0.2	-0.5
Other Products	-0.4	-5.4	0.1	-1.3	0.0	0.3	-0.3	-6.4
Total Products	**-0.4**	**-7.6**	**-0.6**	**-2.9**	**0.0**	**0.8**	**-1.0**	**-9.7**
Other Oils[1]	0.0	3.5	0.0	2.2	0.0	-0.2	0.0	5.5
Total Oil	**10.4**	**4.5**	**-0.8**	**-8.2**	**0.0**	**4.6**	**9.6**	**0.9**

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

Implied balance

Global oil market balances flipped into deficit in the third quarter, as deepening supply cuts coincided with demand at an all-time high. The implied market shortfall for July and August averaged 1.6 mb/d, its highest since 2021 when record OPEC+ supply cuts were implemented to reduce the surplus that built up during the Covid pandemic. Preliminary stock observations show global oil inventories drew by a massive 76.3 mb, or 2.46 mb/d, in August. Oil on water fell by a substantial 1.69 mb/d, while onshore stocks declined by 100 kb/d in the OECD and by 700 kb/d in non-OECD countries. Of the non-OECD inventory change, the biggest move came in China, where satellite data show crude stocks declined by 10.4 mb. The draw may partly reflect timing issues in satellite observations versus customs clearance data for July's imports into the country (see *Delay in satellite data reporting*).

In July, global observed inventories rose by 290 kb/d. OECD industry crude oil, NGL and feedstock stocks inched up by a marginal 30 kb/d while products built by 830 kb/d. OECD government stocks edged higher by 30 kb/d. Non-OECD crude oil inventories were up by 540 kb/d as they increased in China by 1 mb/d but drew by 470 kb/d in other non-OECD countries. Product stocks in Fujairah and Singapore eased by 10 kb/d. Oil on water plunged by 1.14 mb/d, with crude falling by 870 kb/d and products down by 260 kb/d.

IEA Global oil balance (implied stock change) (mb/d)								
	2019	2020	2021	2022	1Q23	2Q23	Jul-23	Aug-23
Global oil balance	**-0.04**	**2.30**	**-2.06**	**0.53**	**1.47**	**0.08**	**-1.50**	**-1.69**
Observed stock changes								
OECD industry stocks	**0.05**	**0.41**	**-1.06**	**0.34**	-0.25	0.35	0.86	-0.20
OECD government stocks	**-0.04**	**0.02**	**-0.16**	**-0.74**	0.03	-0.12	0.03	0.10
Non-OECD crude stocks*	**0.17**	**0.43**	**-0.46**	**0.26**	0.20	0.52	0.54	-0.51
Selected non-OECD product stocks**	**-0.14**	**0.12**	**-0.02**	**-0.01**	0.35	-0.16	-0.01	-0.16
Oil on w ater	**0.06**	**0.02**	**-0.04**	**0.30**	0.08	-0.59	-1.14	-1.69
Total observed stock changes	**0.09**	**1.00**	**-1.73**	**0.16**	0.42	0.01	0.29	-2.46
Unaccounted for balance	**-0.13**	**1.30**	**-0.33**	**0.36**	1.05	0.08	-1.79	0.77

*Crude stock change data from *Kayrros* and estimated Saldanha Bay data from *Kpler.*

Kayrros data are available for selected countries and include only, and not all, above-ground storage.

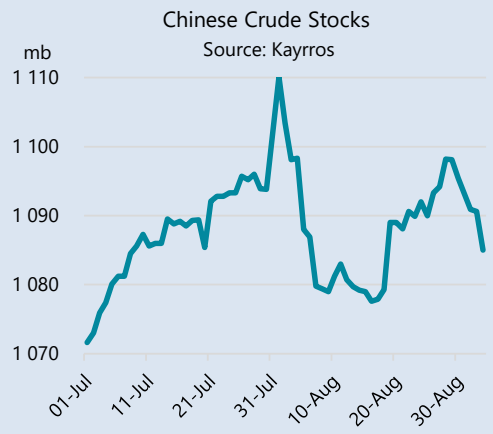
**JODI data adjusted for monthly gaps in reporting, latest data for June 2023, plus Fujairah and Singapore inventories.

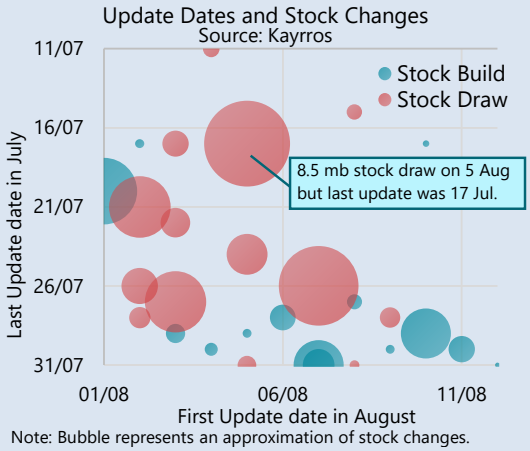
Sources: IEA, EIA, *PAJ* , *Euroilstock* , *Kayrros* , *JODI,* *Kpler* , *FEDCom/S&P Global Platts and* *Enterprise Singapore* .

Delay in satellite data reporting

This *Report* uses *Kayrros* satellite data to assess crude oil inventory changes in non-OECD countries. From satellite images, Kayrros can only analyse the amount of crude oil in floating roof tanks as stocks in fixed-roof or underground tanks are not visible from space. In addition, satellites are unable to acquire daily images of tanks worldwide, but only when their orbits pass above the sites, which is rarely on a daily or intraday frequency. The majority of tanks are updated within every 12 days. As a result, significant discrepancies can occur between actual and observed inventories at month-end.

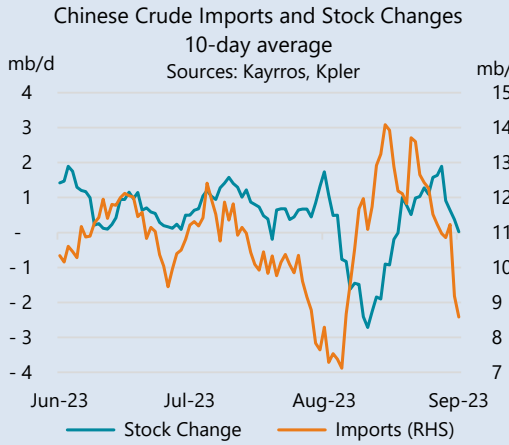
Kayrros data show that Chinese oil stocks peaked on 1 August and plunged by 30 mb in the first seven days of the month. For example, approximately 10 mb of stock depletion was recorded on 5 August, but this included tanks that had not been observed since 17 July, and these inventories accounted for 8.5 mb. Chinese 10-day average seaborne crude oil imports peaked at over 12 mb/d in the first half of July but fell below 8 mb/d at the end of July, according to *Kpler*. So, Chinese stocks likely started to decline already in July, while *Kayrros* records stock changes only when satellite images are obtained.

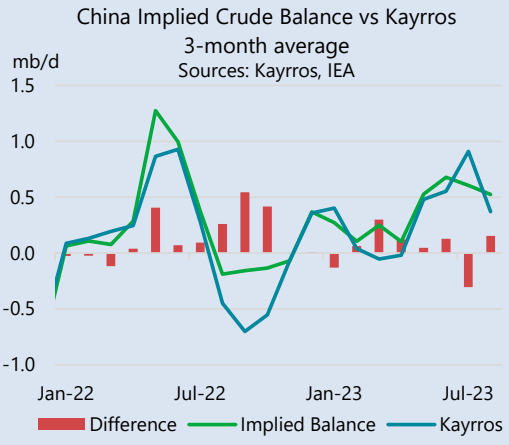




Note: Bubble represents an approximation of stock changes.

Chinese crude oil inventory implied from the country's monthly official statistics and the data from *Kayrros* show the opposite trends over the past several months. However, the discrepancies are mostly due to the timing of observations versus officially reported data and are insignificant when assessed on a three-month average basis.





Recent OECD industry stock changes

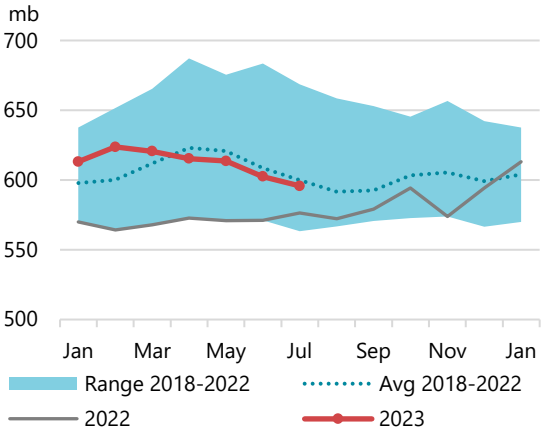
OECD Americas

OECD Americas industry stocks built by 10.2 mb in July, in line with the seasonal trend. They stood at 1 519 mb, 37.8 mb below the five-year average. Crude oil stocks decreased for a fifth consecutive month, by 6.8 mb. The US led the decline at 9.9 mb, but this was partially offset by a 3.1 mb rise in Canada. NGL and feedstock inventories marginally increased by 0.4 mb.

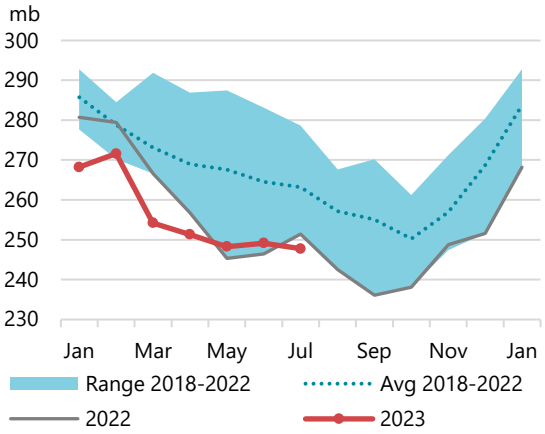
Regional oil product stocks rose by 16.5 mb. Other products accounted for most of the increase (+18.6 mb), slightly more than the seasonal norm. At 299 mb, product stocks were at a seasonal record for July. Fuel oil inventories posted a larger-than-normal decline of 2.8 mb to 34 mb, hitting the lowest for July since at least 1988 when our monthly data started. Gasoline stocks also decreased (-1.4 mb), remaining below their historical range. Middle distillate inventories rose by 2.2 mb, but the build was still below the five-year average (+4.6 mb). Regional refinery intake was 170 kb/d higher y-o-y but record high oil product exports from the US limited the stock build. On the other hand, robust propane and propylene production in the US supported the inventory increase in other products.

US EIA Weekly data show that commercial stocks fell by a steep 15 mb in August, twice the seasonal decline, mainly due to a sharp draw in crude oil (-26.5 mb). Refinery intake and crude exports were up 120 kb/d and 610 kb/d m-o-m, respectively. Other oil inventories also decreased, down 1.7 mb. Oil product stocks increased by 13.2 mb when they usually build by 7.1 mb. Middle distillate stocks rose by 3.3 mb versus a seasonal trend to decline. Gasoline inventories fell less than usual for the time of year, dropping 2.8 mb. Other product inventories rose by 14.7 mb and fuel oil fell by 2 mb, largely in line with the seasonal trend. Government stocks rose by 3 mb, as crude purchases announced in May were completed.

OECD Americas Crude Oil Industry Stocks



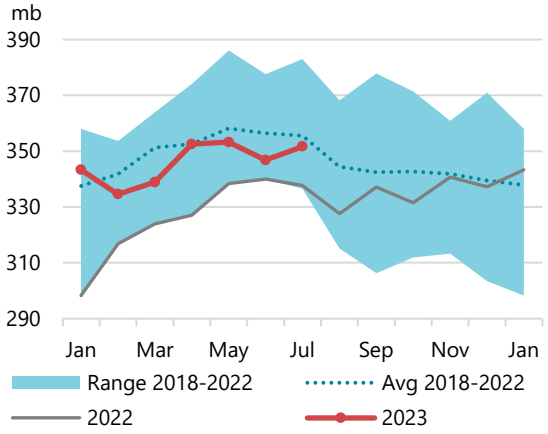
OECD Americas Motor Gasoline Industry Stocks



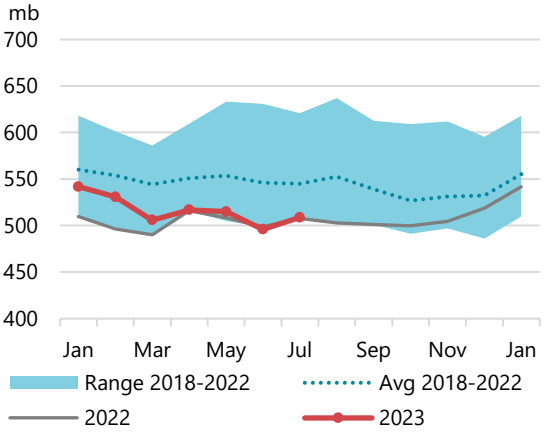
OECD Europe

Industry stocks in OECD Europe surged by 18.8 mb in July, compared with a 1 mb seasonal average draw. They stood at 938.4 mb, remaining 43.7 mb below the five-year average. Crude oil inventories increased counter-seasonally by 4.9 mb while NGLs and feedstocks rose by a smaller 1.1 mb, largely in line with the seasonal trend.

OECD Europe Crude Oil Industry Stocks



OECD Europe Total Products Industry Stocks



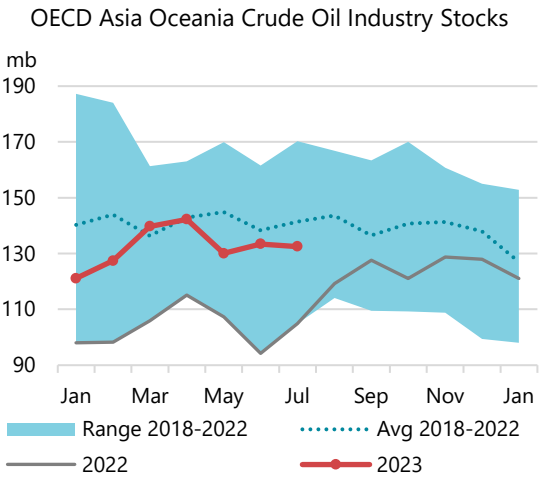
Oil product stocks built by 12.8 mb. Most of the rise came from middle distillates at 11.2 mb, notably in France (+2.3 mb), Germany (+2 mb) and the Netherlands (+1.4 mb). Gasoline stocks rose counter-seasonally by 2 mb – up from their lowest level since at least 1980 reached in June. Other product inventories gained 2 mb. By contrast, fuel oil stocks fell by 2.3 mb to below their seasonal average. Product stocks built as regional crude throughputs increased by 340 kb/d m-o-m while product exports fell to a fresh three-year low, according to *Kpler*.

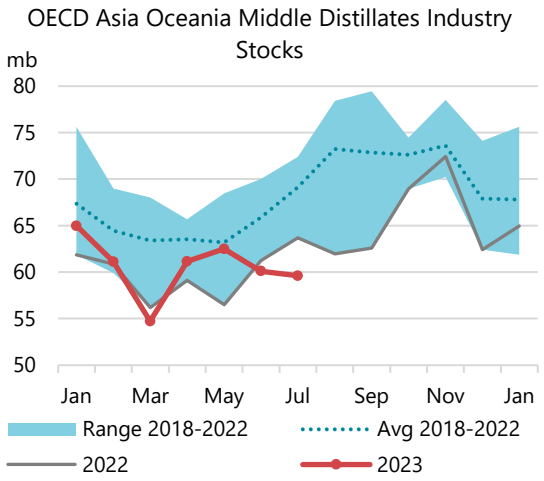
Preliminary data from *Euroilstock* showed industry stocks in August surged by 7 mb in 16 European countries, mainly in the UK (+2.9 mb), Netherlands (+1.7 mb) and Denmark (+1.5 mb). Crude oil led the gains, rising 5 mb. Oil product inventories were also up, by 2 mb. Gasoline and middle distillate stocks increased by 1 mb and 3 mb, respectively, while fuel oil and naphtha inventories drew by 1 mb each.

OECD Asia Oceania

Commercial inventories in OECD Asia Oceania dropped by 2.3 mb in July when they typically increase by 6.6 mb. At 356.6 mb, they remained 21.2 mb below the five-year average. Crude oil stocks edged down by 0.9 mb while NGL and feedstock inventories rose by 2.2 mb.

Oil product stocks declined counter-seasonally by 3.6 mb to below the five-year range. Gasoline inventories fell by 1.7 mb, mainly in Japan (-1.3 mb). Japanese gasoline stocks were at their lowest since 1989. Middle distillate inventories posted a counter-seasonal draw for a second consecutive month, falling by 0.5 mb, with a sharp drawdown in Korea of 1.4 mb partially offset by builds in other countries. Other product stocks also dipped counter-seasonally, down by 1.9 mb. Fuel oil inched up by 0.5 mb, in line with the seasonal norm.

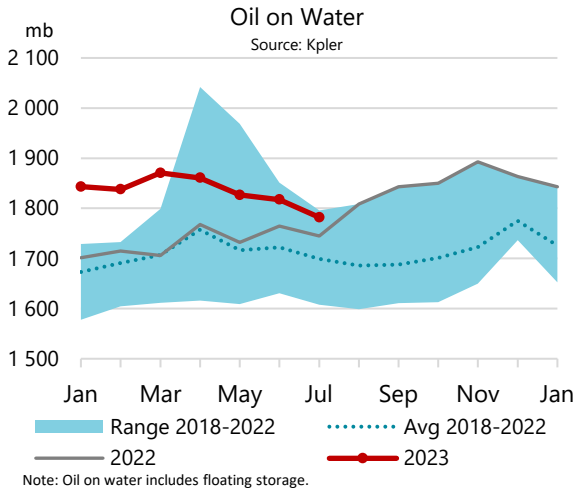


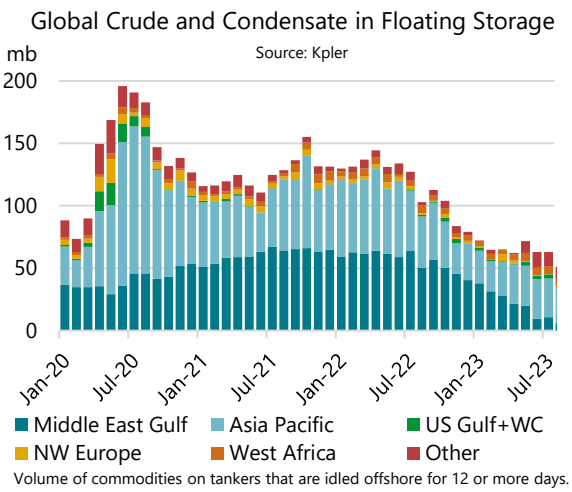


Preliminary data from the *Petroleum Association of Japan* show industry inventories increased by 1.7 mb in August. Crude oil stocks fell by a large 7.2 mb. Other oil inventories built by 1.7 mb. Total oil product stocks rose by 7.3 mb compared with 4.9 mb historically. Middle distillate inventories increased by 4.1 mb, in line with their five-year average. Fuel oil stocks were up by 2.1 mb. Gasoline and naphtha inventories edged up by 0.2 mb and 4.9 mb, respectively. Refinery runs rose 360 kb/d m-o-m partially explaining the stock movements.

Other stock developments

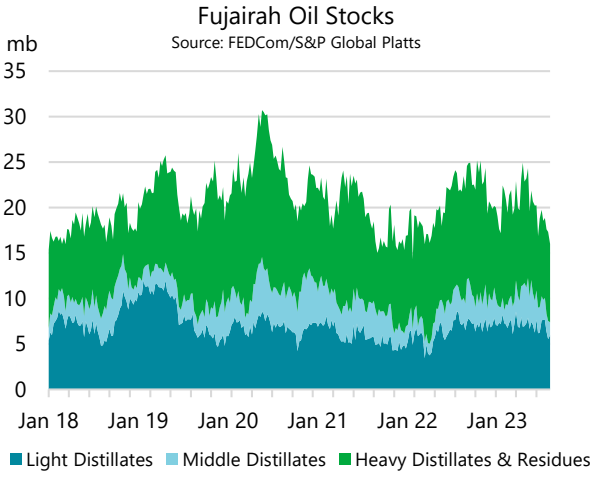
Oil on water, including floating storage, plummeted by 35.2 mb to 1 782 mb in July, the lowest in 12 months, according to tanker tracking data from *Kpler*. Crude oil accounts for a substantial proportion of the decline at 27 mb, while clean products and fuel oils fell by 3.6 mb and 4.6 mb, respectively. Russian oil on water has fallen sharply after peaking in March 2023. Crude oil held in short-term floating storage edged down by 0.1 mb to 63 mb. Declines in Saudi Arabian crude near Ain Sokhna in Egypt and Brazilian oil in South America were partially offset by increased Iranian oil on water. Oil product floating storage was down 2.5 mb, having built in the Middle East and Asia but drawn in West Africa and Eastern Africa. Preliminary data suggest that oil on water decreased faster in August, mainly due to export cuts from Saudi Arabia and Russia.

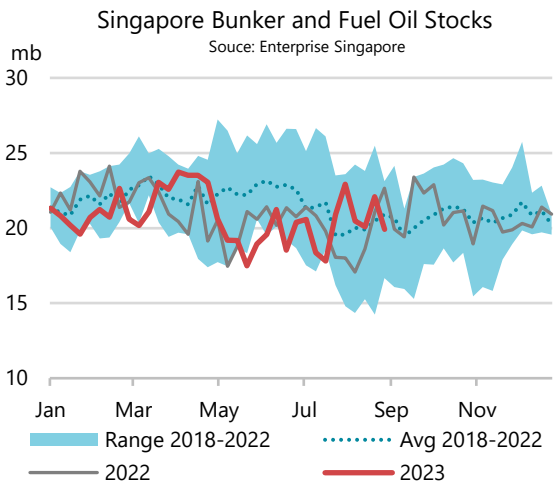




In Fujairah, independent product stocks drew by 0.7 mb in July to 19.7 mb, the lowest level since January, according to *FEDCom* and *S&P Global Platts* data. Middle distillates fell by 0.9 mb to below the five-year average. Heavy distillate and residue inventories were down by 0.8 mb to their lowest level since October 2021. Bunkering sales at Fujairah rose 0.5 mb m-o-m to a seven-month high. By contrast, light distillate inventories increased by 1 mb. In August, total stocks declined for the third consecutive month, falling by 3 mb.

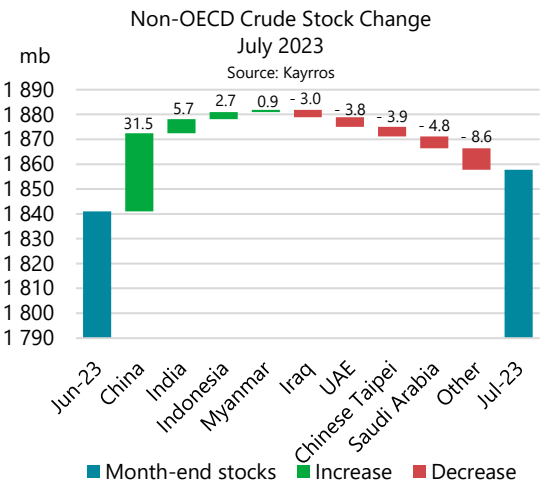
Independent product stocks in Singapore inched up by 0.5 mb to 43.2 mb in July, according to *Enterprise Singapore*. Residual fuel oil stocks jumped by 1.9 mb as imports hit an 11-month high, according to *Kpler,* while bunkering sales slumped to a 12-month low, *Maritime and Port Authority of Singapore* data show. By contrast, light distillate inventories fell for a sixth consecutive month, decreasing by 0.6 mb. Middle distillate stocks declined by 0.8 mb to their lowest since October 2022. Total stocks declined by 2.1 mb in August led by residual fuels (-2.5 mb) and light distillates (-0.6 mb).

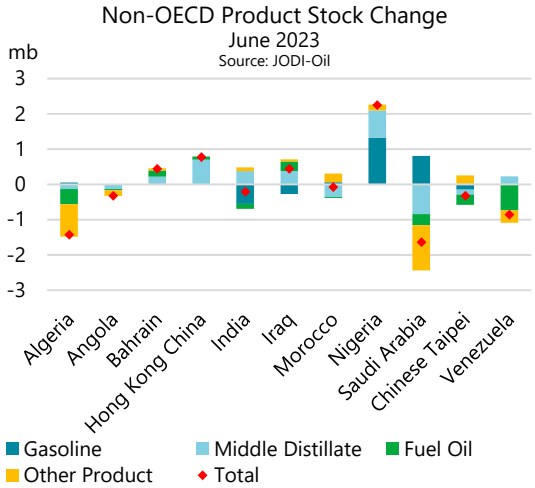




Non-OECD observed crude inventories in floating-roof storage tanks built by 16.8 mb in July, according to satellite data from *Kayrros*. The stock level was the highest since May 2021. The largest increase came from China (+31.5 mb), but the month's stock builds might be distorted due to timing discrepancies between satellite cycles and Chinese official statistics. By contrast, crude inventories fell by 4.8 mb in Saudi Arabia as the Kingdom started additional voluntary production cuts. In Chinese Taipei, crude imports declined by 160 kb/d m-o-m, according to *Kpler*, resulting in a 3.9 mb stock draw. August data show a 15.7 mb drawdown, led by China (-10.4 mb).

In June, oil product stocks in the 13 non-OECD economies reporting to the *JODI-Oil World Database* fell by 0.8 mb. Saudi Arabia, Algeria and Venezuela posted the largest declines, with product stocks down 1.6 mb, 1.4 mb and 0.9 mb, respectively. By contrast, Nigeria built inventories by 2.2 mb, adding 1.3 mb of gasoline and 0.8 mb of middle distillates. Of the total changes, fuel oil stocks declined by 1.5 mb and other products fell by 1.7 mb. Middle distillate and gasoline inventories rose by 1.3 mb and 1.2 mb, respectively.

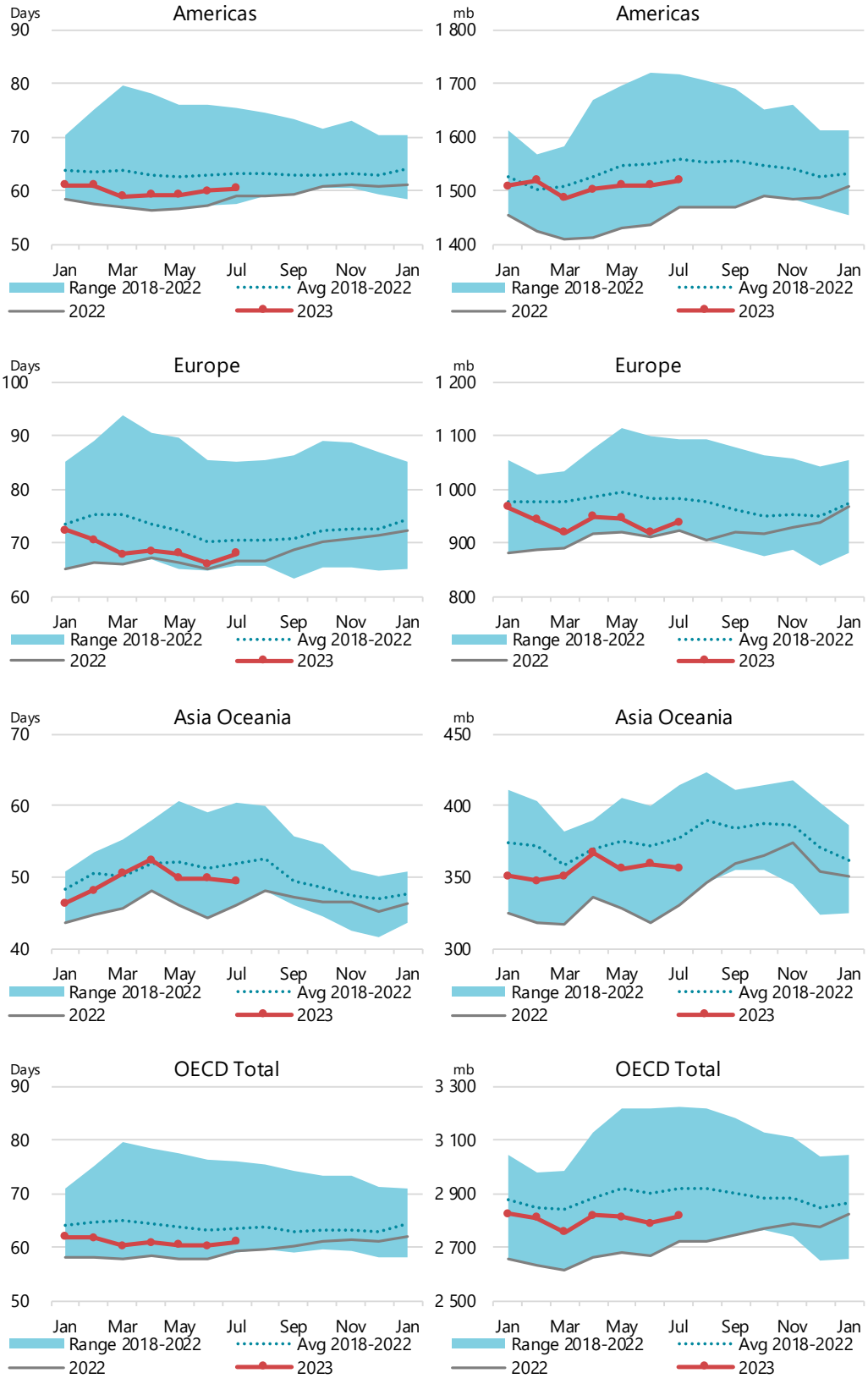




Regional OECD End-of-Month Industry Stocks

(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.

Prices

Overview

Amid directionless trading, benchmark North Sea Dated crude oil hovered within a few dollars of $85/bbl throughout August as price volatility slumped to multi-year lows. Oil initially consolidated July's gains, topping $88/bbl in early August – only marginally below 2023's high. However, the rally subsequently floundered as macro concerns resurfaced due to soaring borrowing rates and growing pessimism around China's economy. This weighed on risk assets in general, as global stock markets had their worst month since February while sovereign bond yields climbed to their highest since 2008. From end-July to end-August, North Sea Dated rose by only a modest $1.61/bbl to $87.34/bbl, despite a sharp draw in oil inventories.

Prices moved higher by late August as fundamentals came to the fore once again and breached $90/bbl for the first time in 10 months following the 5 September announcement by Saudi Arabia and Russia that they would extend their voluntary production cuts until the end of 2023. Dated rose to an average of $91.66/bbl in the first week of September, an increase of around $5/bbl over August levels.

Amid the low-volatility environment, price differentials were mostly stable. WTI recorded a minor increase against Dated, buttressed by lower freight rates and US inventory draws that extended well beyond their seasonal norm. Dubai strengthened in response to tighter medium sour crude supplies, trading at a premium to North Sea Dated for the third month running.

Forward curves and speculative exchange positioning were also steady. A key exception to the muted trading conditions were middle distillates, confirming their status as the tightest segment in the oil complex. Diesel calendar and crack spreads soared while seeing large investor inflows.

Crude Prices and Differentials ($/bbl)

	Month			Week of:	Last:	Changes		Aug-23
	Jun 2023	Jul 2023	Aug 2023	28 Aug	11 Sep	*Monthly Δ	m-o-m Δ	y-o-y Δ
Crude Futures (M1)								
NYMEX WTI	70.27	76.03	81.32	82.41	87.29	*1.83*	*5.29*	*-10.16*
ICE Brent	74.94	80.16	85.10	86.24	90.64	*1.30*	*4.94*	*-12.64*
Crude Marker Grades								
North Sea Dated	74.73	80.09	86.18	87.20	91.93	*1.61*	*6.09*	*-13.45*
WTI (Cushing)	70.24	76.39	81.41	82.41	87.29	*1.83*	*5.01*	*-10.16*
Dubai (London close)	75.02	80.77	86.43	87.12	91.62	*1.80*	*5.66*	*-9.56*
Differential to North Sea Dated								
WTI (Cushing)	-4.49	-3.70	-4.77	-4.78	-4.64	*0.22*	*-1.08*	*3.29*
Dubai (London close)	0.29	0.68	0.25	-0.08	-0.31	*0.19*	*-0.43*	*3.89*
Differential to ICE Brent								
North Sea Dated	-0.21	-0.07	1.08	0.96	1.29	*0.31*	*1.15*	*-0.81*
NYMEX WTI	-4.67	-4.13	-3.78	-3.82	-3.35	*0.53*	*0.34*	*2.47*

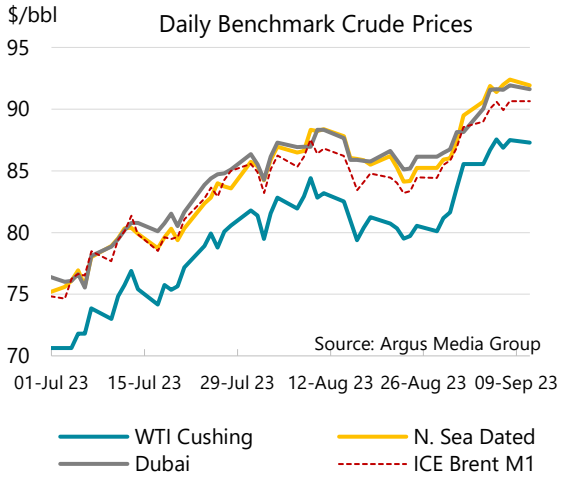
Sources: Argus Media Group, ICE, NYMEX (NYMEX WTI = NYMEX Light Sweet Crude).

*Monthly Δ refers to the difference in price between the current and previous EOM

Macroeconomic worries remain a significant downside risk to oil markets. As the Federal Reserve's tightening cycle reaches its endgame, US recession fears have largely abated. Headline inflation

has fallen to near 3% amid mostly benign data readings, pointing to an economy that is cooling only at a moderate pace. So far, the housing market has been the biggest casualty of the rate hikes by a large margin, as property transactions have slowed to a crawl. Faced with average mortgage rates at a two-decade high of 7%, existing home sales slumped 2.2% m-o-m in July, to a six-month low. Bond yields saw renewed momentum in August as investors grew wary of a possible higher-for-longer rates regime, sending the 10-year treasury yield to its highest since 2008. Besides resilient economic data that are rendering the Fed's mandate to push inflation down to its 2% target more challenging, mounting fiscal concerns added to the yield rally. Structural fiscal shortfalls make for soaring government borrowing requirements, resulting in unprecedented levels of debt issuance for the foreseeable future. The 1 August decision by rating agency *Fitch* to downgrade America's sovereign credit rating below AAA was emblematic in this regard.

In stark contrast to US resilience, the eurozone's economic malaise deepened. The *HCOB Eurozone Composite PMI* fell sharply by 1.9 m-o-m to 46.7 in August, a 33-month low. The services sector (47.9) entered contraction for the first time this year, while manufacturing (43.5) marked its fifteenth straight month of shrinkage. Germany, where the *Ifo Business Climate Index* declined to its lowest level since the height of the energy crisis in October 2022, remains the bloc's main drag on growth. The bleak data put paid to nascent optimism that Europe's economy may be on the mend, instead reviving concerns that other countries besides Germany may enter recession in 2H23. Additionally, the gloomy readings cast doubt on the European Central Bank's commitment to further rate hikes, as traders pared back bets for a September rate increase.

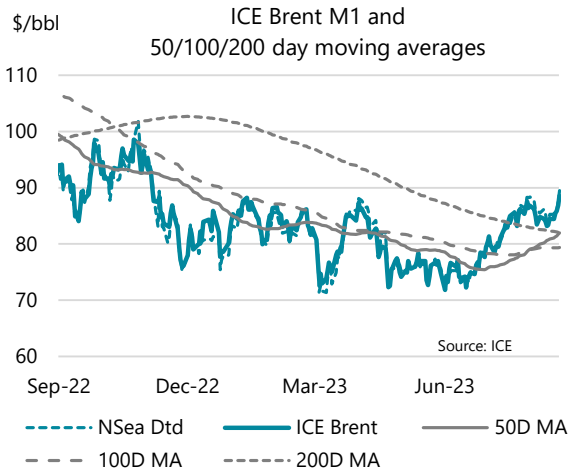


China's economic woes continued to mount, as the country slips into a downward spiral of slower growth, capital flight and deflation. Households and businesses are reluctant to spend and invest amid a general loss of confidence. Particularly, high youth unemployment has undermined morale, while fading global demand for Chinese goods pulled exports down in August, after falling year-on-year (y-o-y) in every month since April. At the heart of the malaise is the implosion of the country's debt-fuelled real estate market, as stalled housing projects and a glut of unfinished apartments weigh on home prices. August saw a flare-up in the property sector's cash crunch – developer Evergrande filed for US bankruptcy protection, while homebuilder Country Garden unexpectedly failed to meet two bond payments. In a testament to China's diminished economic prospects, the offshore yuan and the benchmark mainland CSI 300 Stock index slumped to fresh yearly lows.

Futures markets

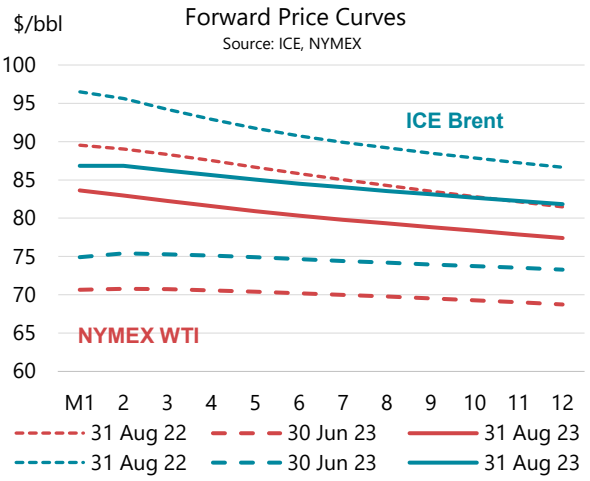
Front-month ICE Brent waxed and waned throughout the month, gaining only $1.30/bbl from end-July to end-August amid quiet trading. Futures moved by a daily average of $0.88/bbl during the month, their lowest in almost two years. Tighter fundamentals were reflected in falling inventories. Weekly US crude inventories as reported by the EIA, both overall and at the Cushing storage hub, fell by more than their seasonal norm in August and are near the lower end of their five-year ranges. However, this was counterbalanced by growing macroeconomic concerns (often China-related) and

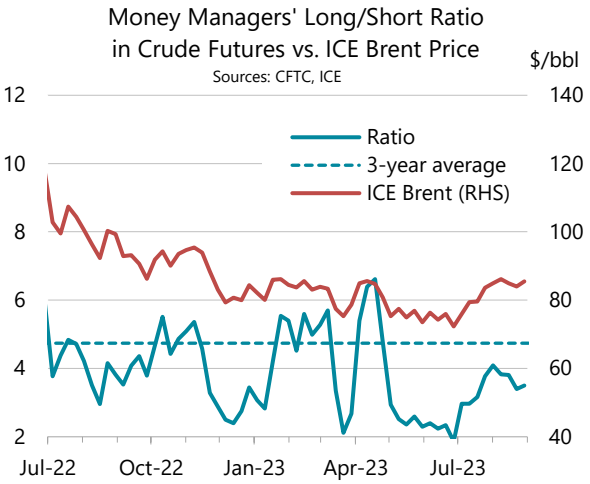
a firming dollar that acted as another headwind for oil prices. The US Dollar index regained 4% from its mid-July yearly lows. Oil held comfortably above key support levels, as moving averages converged amid protracted range trading markets – oil has fluctuated mostly in a $75-85/bbl band in 2023. Brent's 50-, 100-, and 200-day moving averages are all within a few dollars of $80/bbl.



Forward curves were virtually unchanged in August, with 1-12 month backwardations of about $5/bbl in WTI and Brent, and front-month time spreads of around $0.60/bbl. The tightness in middle distillates was reflected in the extreme inversion of the ICE gasoil and NYMEX ULSD curves. The front-month October-November spread traded at its largest backwardation ever on both exchanges. This contrasts with the spread's customary carry, as it prices in the seasonal need to build heating oil inventories in autumn ahead of peak winter demand.

Gasoil cracks continued to display extraordinary strength as US/EU/UK refiners, having to make do without sanctioned Urals, are forced to run lighter crude slates to the detriment of middle distillate yields. ULSD versus WTI front-month cracks climbed by about $13/bbl m-o-m to $50/bbl, trading as high as $58/bbl, a record seasonal high with the exception of 2022. Cracks then weakened somewhat after Chinese product export quotas were raised. Conversely, the RBOB gasoline versus WTI crack fell by $1/bbl m-o-m, as 2023's underwhelming US driving season draws to a close and residual volumes of summer grades are pushed out of storage.





Investor positioning in crude was fairly stable. The ratio of long to short crude future holdings by money managers was 3.5, about half a point lower m-o-m, due to the liquidation of about 20 mb in WTI longs. Investor flows were more pronounced in refined products, as net managed money holdings in NYMEX RBOB gasoline, NYMEX ULSD and ICE gasoil climbed to their highest level since the immediate aftermath of the Ukraine invasion. The latter contract saw the lion's share of speculative inflows - investor holdings in ICE gasoil (where fund positioning was net short as late as June) soared by 25 mb to 75 mb.

Total open interest in the five main ICE and NYMEX futures contracts fell by 230 mb m-o-m to 5 033 mb.

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

				Aug 2023			Week Commencing:				Last:
	Jun 2023	Jul 2023	Aug 2023	*Monthly Δ	m-o-m Δ	y-o-y Δ	07 Aug	14 Aug	21 Aug	28 Aug	11 Sep
NYMEX											
Light Sweet Crude Oil (WTI) 1st contract	70.27	76.03	81.32	*1.83*	*5.29*	*-10.16*	83.05	80.90	79.77	82.41	87.29
Light Sweet Crude Oil (WTI) 12th contract	68.89	74.08	78.60	*-0.92*	*4.52*	*-6.15*	77.58	76.68	76.66	78.16	79.80
RBOB	108.00	114.76	118.80	*-6.83*	*4.04*	*-3.45*	121.36	119.83	117.49	115.53	114.19
ULSD	101.37	112.63	130.82	*6.37*	*18.19*	*-20.07*	130.90	129.28	133.12	132.36	141.21
ULSD ($/mmbtu)	18.26	20.29	23.57	*1.15*	*3.28*	*-3.62*	23.58	23.29	23.98	23.84	25.44
NYMEX Natural Gas ($/mmbtu)	2.47	2.64	2.65	*0.13*	*0.01*	*-6.13*	2.80	2.64	2.55	2.69	2.61
ICE											
Brent 1st contract	74.94	80.16	85.10	*1.30*	*4.94*	*-12.64*	86.45	84.69	83.91	86.24	90.64
Brent 12th; contract	73.09	78.08	82.52	*-0.85*	*4.44*	*-6.97*	81.61	80.66	80.75	82.41	83.81
Gasoil	94.92	104.42	122.11	*2.45*	*17.69*	*-20.18*	122.36	120.44	123.64	123.19	135.92
Prompt Month Differentials											
NYMEX WTI - ICE Brent	-4.67	-4.13	-3.78	*0.53*	*0.34*	*2.47*	-3.40	-3.79	-4.14	-3.82	-3.35
NYMEX WTI 1st vs. 12th	1.38	1.96	2.72	*2.75*	*0.76*	*-4.02*	5.48	4.22	3.11	4.25	7.49
ICE Brent 1st - 12th	1.85	2.08	2.58	*2.15*	*0.50*	*-5.66*	4.84	4.03	3.16	3.83	6.83
NYMEX ULSD - WTI	31.09	36.59	49.50	*4.54*	*12.91*	*-9.91*	47.84	48.38	53.36	49.94	53.92
NYMEX RBOB - WTI	37.73	38.73	37.48	*-8.66*	*-1.24*	*6.71*	38.31	38.93	37.72	33.11	26.90
NYMEX 3-2-1 Crack (RBOB)	35.51	38.01	41.49	*-4.26*	*3.47*	*1.17*	41.48	42.08	42.93	38.72	35.90
NYMEX ULSD - Natural Gas ($/mmbtu)	15.79	17.65	20.92	*1.01*	*3.27*	*2.52*	20.78	20.65	21.43	21.15	22.83
ICE Gasoil - ICE Brent	19.97	24.26	37.01	*1.15*	*12.75*	*-7.54*	35.91	35.75	39.74	36.95	45.28

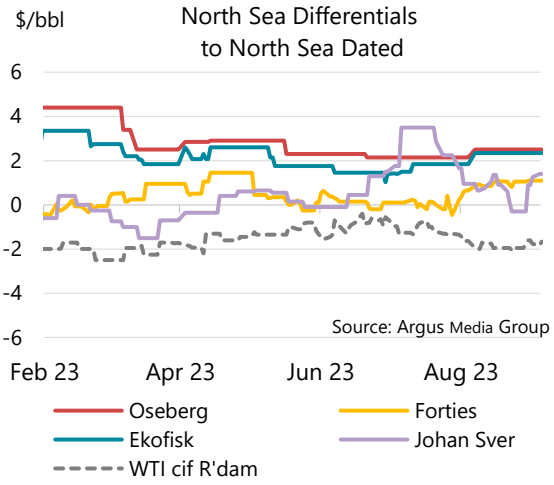
Source: ICE, NYMEX.

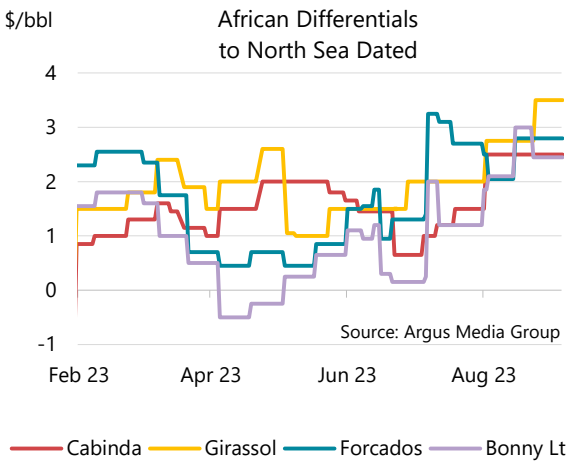
*Monthly Δ refers to the difference in price between the current and previous EOM

Spot crude oil prices

Benchmark crude oil prices moved up roughly $2/bbl over August, as the physical forward price structure firmed, with spot barrels now at premiums versus futures. Exceptional refinery margins and plunging crude stocks (notably in the US) boosted demand for prompt barrels and particularly for sour grades. Average monthly North Sea Dated rose by $6.09/bbl m-o-m to $86.18/bbl but ended the month only $1.61/bbl higher than at end-July. Saudi Arabia and Russia's decision to extend voluntary cuts to year-end sent prices up to an average $92.41/bbl in the first week of September. Similarly, Dubai increased by $6.11/bbl on average, to $86.44/bbl in August and moved as high as $91.39/bbl in the first week of September. Dubai remained at a premium versus ICE Brent reflecting continued tightness in the medium to heavy sour crude market. WTI at Cushing increased by $5.01/bbl m-o-m to $81.41/bbl, gaining $1.83/bbl from start to end of the month.

Prompt month North Sea Dated teetered at a premium to the front month ICE Brent over July and found solid ground in August with the differential increasing by $1.15/bbl m-o-m to a $1.08/bbl average premium against front-month futures. As well, the time spread for North Sea Dated Month 1 versus Month 2 widened by $0.32/bbl to $0.69/bbl, while WTI at Cushing increased by $0.38/bbl to $0.55/bbl. Sour crude market tensions boosted the Dubai time spread by $0.38/bbl to a $1.08/bbl premium over the forward month. The higher backwardation in Dubai and the premium to Dated favoured Asian demand for Brent-linked crudes as the steep time structure penalises longer-haul shipments. The Brent to Dubai Exchange of Futures for Swaps (EFS), a key indicator of the arbitrage, narrowed to $0.58/bbl in August, marking its slimmest margin since November 2020. Coupled with lower freight costs, this has made these Atlantic Basin barrels more competitive and appealing to buyers East of Suez.





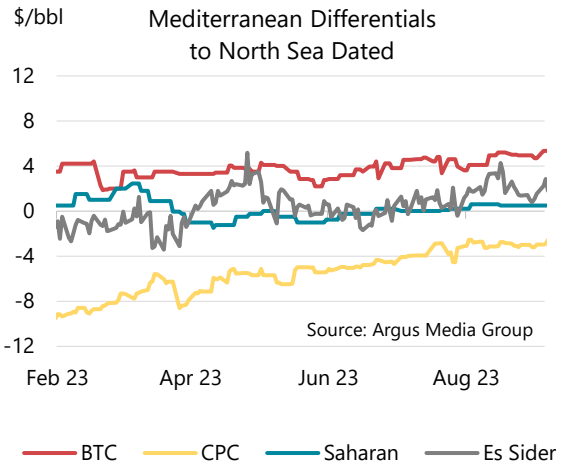
In the Atlantic Basin, sweet crude differentials compared to North Sea Dated increased throughout the month, as refiners raised their demand for available middle distillate-rich crude in response to strong cracks. Tight supply from the Middle East and strong Asian refinery runs also lifted the call on Atlantic Basin supply. This change in demand dynamics led to an increase in the value of Northwest European and West African grades.

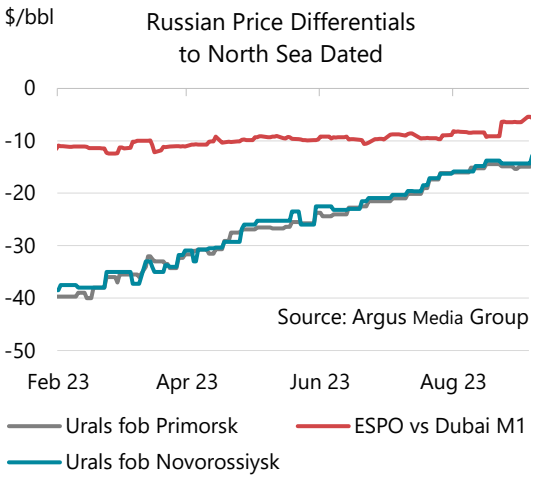
The Forties differential to North Sea Dated increased by $0.86/bbl to $0.90/bbl in August and continued to climb into the first week of September, touching $1.10/bbl. Ekofisk and Oseberg premiums also rose, by $0.52/bbl and $0.29/bbl, to $2.26/bbl and $2.44/bbl, respectively. By contrast, differentials for Johan Sverdrup, a heavier grade, declined by $2.15/bbl to a $0.69/bbl premium following their July spike that was driven by tensions on Middle East supply to Europe. Imminent start-up of autumn refinery maintenance in Europe also weighed on demand for the heavier grade, slowing late-August cargo uptake. However, spreads rebounded in the first week of September to $1.40/bbl. The WTI CIF Rotterdam differential rose by $0.68/bbl m-o-m to $1.83/bbl, reflecting steeper backwardation on WTI than Brent and lower transatlantic freight rates m-o-m.

In August, robust European demand for middle distillate-rich crude supported West African crude differentials as they bid cargoes away from Asian buyers. Proximity to Europe also favoured North African and Nigerian crudes, given the strength of the crude backwardation. Refiners also showed a preference for medium sweet Angolan crudes, which can be blended with light WTI sweet crudes to enhance feedstock mix. In terms of specific grades, the Nigerian Forcados terminal returned from an unplanned outage due to a leak, and as a result saw a slight dip of $0.09/bbl m-o-m to a $2.50/bbl premium over Dated. However, the spread has since rebounded to $4.10/bbl. Qua Iboa rose by $1.41/bbl to $3.36/bbl, while Bonny Light and Brass River both gained approximately $1.30/bbl over Dated, reaching $1.95/bbl and $2.42/bbl, respectively. Premiums for Angolan grades Girassol and Cabinda over Dated also increased from July to August, up by $0.89/bbl to $2.89/bbl and $1.22/bbl to $2.45/bbl, respectively.

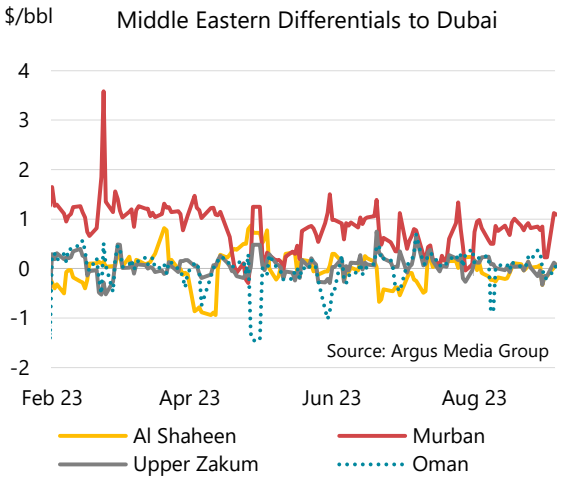
Mediterranean crudes have seen an uptick in their premiums for various reasons. The stronger backwardation favours these grades. Firm light product cracks have lifted their values as BTC blend is rich in gasoil while other grades like Saharan blend, Es Sider and CPC are rich in heavy naphtha. Premiums were also supported by increased competition in the absence of sour Urals in the Atlantic Basin and the recent extension of producer supply cuts. The CPC differential to North Sea Dated edged up by $0.72/bbl, narrowing the discount to -$2.96/bbl, its slimmest since September 2022. Exports of CPC to China were up roughly 130 kb/d from July according to *Kpler*. In addition, BTC Blend's premium increased by $0.23/bbl to $4.66/bbl, reaching a seven-month high. The Es Sider

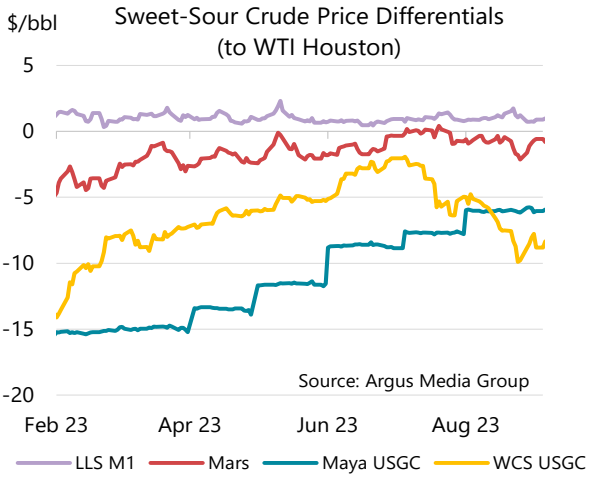
spread also widened by $0.21/bbl to a $1.06/bbl premium, the highest in over a year. Meanwhile, Saharan Blend rose by $0.46/bbl m-o-m to a $0.51/bbl premium versus Dated.





Russian ESPO on a FOB Kozmino basis strengthened against Dubai as firm gasoil margins and tight crude markets supported prices. Exports fell marginally m-o-m but remained higher than the three-month average. Russian Urals prices were up by around $3.80/bbl for both FOB Primorsk and Novorossiysk. Discounts are averaging around $15/bbl, with Urals trading above $70/bbl in August, more than $10/bbl over the price cap.





In the Middle East, differentials to Dubai were mostly lower, despite mounting supply tensions East of Suez. A decline in spot purchases by Asian refiners, who shifted part of their buying toward Atlantic Basin grades (Angola, WTI and Mediterranean), kept a lid on spreads. The combination of weaker prompt backwardation of Brent-linked crudes versus Dubai and declining freight rates made these longer-haul shipments more economical. Differentials for Oman decreased by $0.14/bbl m-o-m to a $0.07/bbl premium over Dubai, while Upper Zakum and Qatar Al-Shaheen each dipped by $0.09/bbl m-o-m, to average $0.03/bbl and -$0.05/bbl, respectively. The UAE's light sour Murban, on the other hand, rose by $0.34/bbl m-o-m to $0.79/bbl, benefitting from its generous yields of middle distillates.

In the US Gulf of Mexico, the WTI Houston and WTI Midland premium to Cushing remained relatively unchanged (+0.04/bbl), sustaining crude flows from the Midcontinent to US Gulf Coast for refiners and exports. The US sour crude market has faced challenges, despite limited availabilities out of the Middle East. An influx of Canadian supply pressured heavy sour crude prices. This surplus has

emerged at a time when refiners are preparing for autumn maintenance. Notably, the discount for Mars crude against WTI Houston fell by $0.74/bbl to -$0.91/bbl, while the discount for Canadian WCS at Houston narrowed by an average $2.89/bbl m-o-m to -$8.59/bbl, trading as low as -$12.06/bbl. By contrast, heavy sour grade Maya against WTI Houston jumped by $1.69/bbl, as its key "K" factor differential to marker grades narrowed with stronger fuel differentials to crude.

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

				Aug 2023			Week Commencing:				Last:
	Jun 2023	Jul 2023	Aug 2023	*Monthly Δ	m-o-m Δ	y-o-y Δ	07 Aug	14 Aug	21 Aug	28 Aug	11 Sep
Crudes											
North Sea Dated	74.73	80.09	86.18	*1.61*	*6.09*	*-13.45*	87.60	86.24	85.00	87.20	91.93
North Sea Mth 1	75.13	80.50	85.87	*1.03*	*5.37*	*-13.32*	87.21	85.90	84.65	86.86	91.23
North Sea Mth 2	75.10	80.13	85.17	*0.66*	*5.05*	*-12.16*	86.41	85.16	84.07	86.05	90.59
WTI (Cushing) Mth 1	70.24	76.39	81.41	*1.83*	*5.01*	*-10.16*	83.05	80.90	80.17	82.41	87.29
WTI (Cushing) Mth 2	70.43	76.23	80.86	*1.64*	*4.63*	*-10.02*	82.48	80.40	79.51	81.84	86.66
WTI (Houston) Mth 1	71.83	77.91	82.97	*2.01*	*5.06*	*-10.64*	84.51	82.59	81.91	83.91	88.87
Urals FOB Primorsk	51.80	60.99	70.96	*2.81*	*9.97*	*-0.95*	72.07	71.47	70.31	72.05	77.93
Dubai (1st month)	74.88	80.33	86.44	*2.04*	*6.11*	*-9.99*	87.85	86.22	85.83	86.85	91.49
Differentials to Futures											
North Sea Dated vs. ICE Brent	-0.21	-0.07	1.08	*0.31*	*1.15*	*-0.81*	1.15	1.54	1.10	0.96	1.29
WTI (Cushing) Mth1 vs. NYMEX	-0.04	0.36	0.09	*0.00*	*-0.27*	*0.00*	0.00	0.00	0.40	0.00	0.00
Differentials to Physical Markers											
WTI (Houston) vs. North Sea Mth 2	-3.27	-2.21	-2.20	*1.35*	*0.01*	*1.52*	-1.90	-2.56	-2.16	-2.14	-1.72
WTI (Houston) vs.WTI (Cushing)	1.60	1.52	1.56	*0.17*	*0.04*	*-0.47*	1.46	1.69	1.75	1.50	1.58
Urals FOB Prim vs. North Sea Dated	-22.93	-19.10	-15.22	*1.20*	*3.88*	*12.50*	-15.53	-14.77	-14.69	-15.15	-14.00
Dubai vs. ICE Brent	-0.06	0.17	1.33	*0.74*	*1.16*	*2.23*	1.40	1.52	1.92	0.61	0.85
Dubai vs. WTI (Cushing) Mth 2	4.45	4.10	5.58	*0.40*	*1.48*	*0.03*	5.37	5.82	6.33	5.01	4.83
Prompt Month Differentials											
Forward North Sea Mth1-Mth2	0.03	0.37	0.69	*0.37*	*0.32*	*-1.17*	0.80	0.74	0.58	0.81	0.64
Forward WTI Cushing Mth1-Mth2	-0.19	0.16	0.55	*0.19*	*0.38*	*-0.14*	0.57	0.50	0.66	0.58	0.63
Forward Dubai Mth1-Mth2	0.52	0.69	1.08	*0.27*	*0.38*	*-1.25*	1.15	1.10	1.07	1.07	1.00

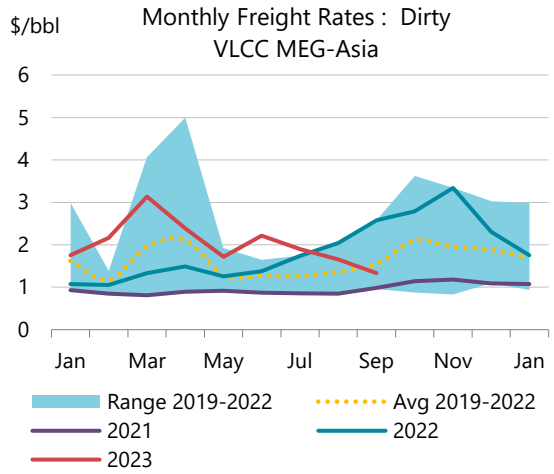
Source: Argus Media group, ICE, NYMEX

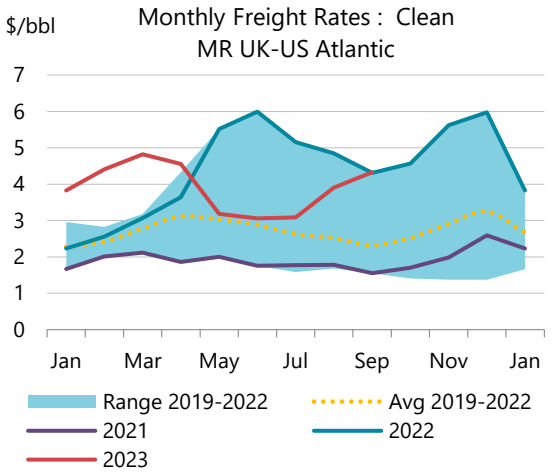
*Monthly Δ refers to the difference in price between the current and previous EOM

Freight

Dirty tanker rates continued to ease from July to August across the main routes, as tonnage lists remained long. From July to end-August, there was a large drop in floating storage, mainly in VLCCs, which has freed up more long-range vessels. Additionally, since July, two new VLCC tankers were placed on the market, according to *Kpler*, adding roughly 4 mb of additional shipping capacity. There has also been decline in exports out of the Middle East, which are typically shipped in VLCCs. Finally, with backwardation steepening, there has been waning interest in longer journeys. Rates for VLCC shipments from the Middle East to Asia fell by $0.24/bbl m-o-m to $1.65/bbl, falling further to $1.33/bbl in the first week of September. VLCC rates were down 19% y-o-y in August.

Freight for a Suezmax from West Africa to the UK dropped $0.45/bbl m-o-m to $1.82/bbl. Rates fell off at the end of July but picked up sharply by mid-August after the Forcados terminal restarted. Transatlantic shipments on Suezmax vessels from the US Gulf to Europe fell $0.48/bbl m-o-m, to average $1.95/bbl. Rates for Aframax shipments in the North Sea region declined by $0.30/bbl to $1.01/bbl. Rates for both classes have fallen by around 35% y-o-y but remain within the 5-year average.





Clean product tanker freight costs rose in August, as limited Chinese export quotas pushed rates higher for shipments to Asia, while strong demand for ships in Europe shortened tonnage lists. Long Range (LR) rates for Middle East to Asia increased by 29%, up $0.99/bbl to $4.37/bbl. Product exports out of the Middle East Gulf increased by just over 400 kb/d, with more than half heading to Asia. Freight rates for Medium Range (MR) charters in the North Sea regions to the US climbed 27%, or $0.83/bbl, m-o-m to average $3.91/bbl, with rates peaking on 29 August at $4.82/bbl. Low inventories, along with hurricane concerns, all led to increased European gasoline exports to meet US requirements. Rates for MR shipments within Asia added $0.11/bbl, to $2.89/bbl. At the same time, rates for MR shipments from the Caribbean to the US coast moved up $0.20/bbl to $3.05/bbl, with Panama Canal delays continuing to support rates and redirect charters to other longer routes.

Freight Costs

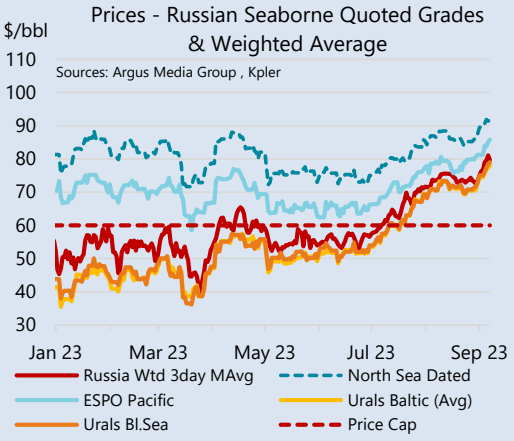
(monthly and weekly averages, $/bbl)

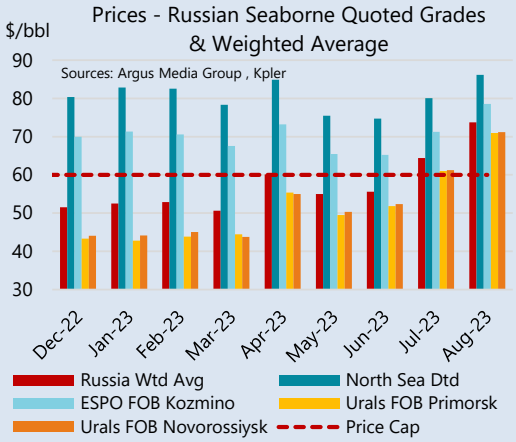
				Aug-23		Week Commencing				
	Jun 23	Jul 23	Aug 23	*m-o-m chg*	*y-o-y chg*	07-Aug	14-Aug	21-Aug	28-Aug	04-Sep
Crude Tankers										
VLCC MEG-Asia	2.22	1.89	1.65	-0.24	-0.39	1.72	1.67	1.60	1.44	1.33
130Kt WAF - UKC	2.94	2.27	1.82	-0.45	-0.96	1.76	1.74	1.96	1.85	1.85
USGC to EUR	2.73	2.43	1.95	-0.48	-1.31	1.73	1.86	2.17	2.09	2.04
North Sea Aframax	1.38	1.32	1.01	-0.30	-0.53	0.97	0.97	1.04	1.07	1.03
Product Tankers										
LR MEG - Japan	3.79	3.37	4.37	0.99	-1.90	4.25	4.11	4.27	4.33	4.37
MR Sing - JPN	2.96	2.78	2.89	0.11	-1.72	2.89	2.90	2.85	2.85	3.25
MR Carib - US Atlantic	2.33	2.85	3.05	0.20	-0.47	2.75	3.23	3.30	3.12	3.07
MR UK-US Atlantic	3.06	3.08	3.91	0.83	-0.94	3.60	3.83	4.25	4.69	4.19

Source: Argus Media Group

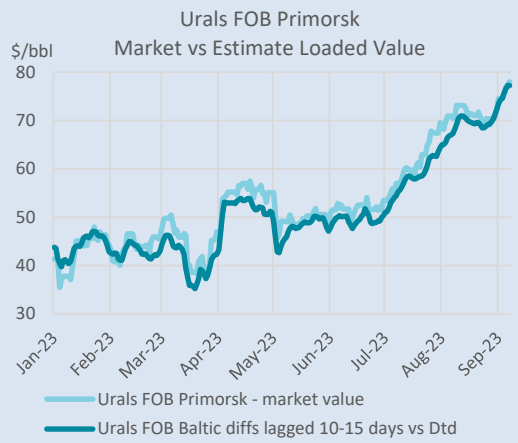
Russian crude and product prices see continued gains as the global market tightens

The weighted average for Russian crude export prices as assessed by *Argus* rose $9.30/bbl m-o-m to $73.71/bbl in August, while its discount versus North Sea Dated narrowed by almost $3/bbl to $12.53/bbl. Russian crude prices were relatively stable during the month at around $70/bbl before blowing past $75/bbl in the first week of September. Cuts to Russian seaborne crude exports since May have principally impacted Urals, the largest export grade, aggravating the impact of already tight global sour crude markets. The discount for ESPO crude versus the North Sea benchmark narrowed by $0.90/bbl to $7.72/bbl.





The increase in the price of Russian Urals delivered to India since June has encouraged Indian refiners to seek alternatives. Higher flows, mainly from the Middle East, have cut Russian crude oil exports to India by 300 kb/d since April-May to 1.8 mb/d in August. Delivered (DAP) prices for Urals on India's West Coast rose $7.74/bbl m-o-m in August to $80.47/bbl (-$5.03/bbl versus Dubai) and to $85.70/bbl in the first 10 days of September (-$4.36/bbl versus Dubai). Urals FOB prices rose faster in the Baltic and Black Sea than DAP as shipping costs for Russian Urals from Baltic ports to the West Coast of India narrowed by a further $1.10/bbl m-o-m to $6.80/bbl in August, based on *Argus* freight data.



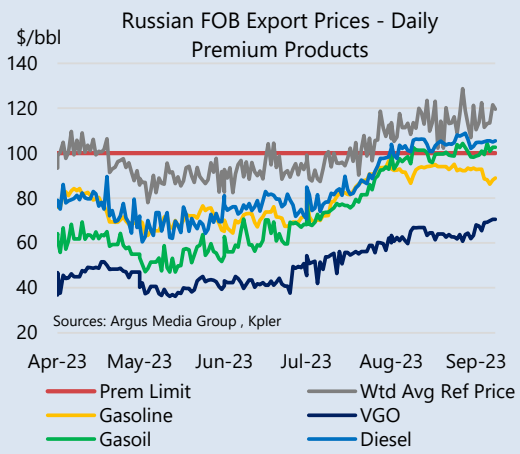
The G7 price cap applies to the crude value at time of loading. Buyers negotiate crude prices as a differential to marker grades to facilitate hedging price risks, with the actual pricing of barrels averaged over three days surrounding the load date. We look at Baltic Urals values as differentials to North Sea Dated and apply them to North Sea Dated with a lag corresponding to a 20-day chartering delay. On this basis, prices at Primorsk in the Baltic remained below the G7 price cap until 24 July. In August they averaged roughly $70/bbl. This may have led some buyers, shippers and insurers to reconsider activity in the Urals market, but with only a marginal impact on shipments so far. Shipping costs from Primorsk to West Coast India continued to decline during the month while crude differentials narrowed further. Surging North Sea Dated prices and tapering discounts pushed loaded values for Baltic Urals above $75/bbl in early September.

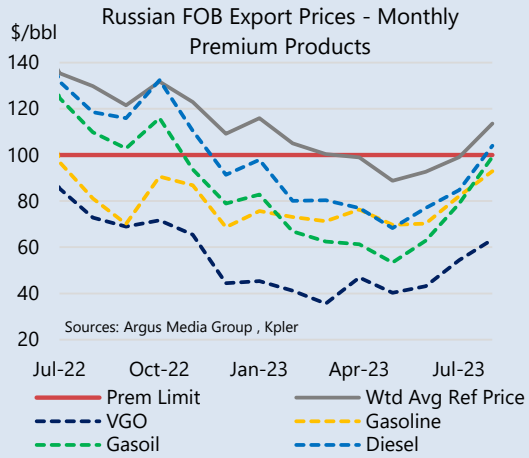
Bulgarian and Czech importers are preparing to cut Russian crude dependence. A new working group has begun to assess a timeline for switching crude supplies at the Burgas refinery while Sofia's parliament cancelled Lukoil's lease on the country's sole Black Sea oil terminal. Mero, the Czech pipeline operator, stated that by 2025 it will add 80 kb/d of import capacity to the Transalpine Pipeline (TAL) to eliminate its reliance on imports via the Druzhba system.

Russian Crude FOB Weighted Average Export Prices ($/bbl)						Discounts to N.Sea Dated		
	Jun-23	Jul-23	Aug-23	Jun - Jul	Jul - Aug	Jun-23	Jul-23	Aug-23
North Sea Dated	**74.80**	**79.86**	**86.24**	**5.06**	**6.38**			
Price Cap	60.00	60.00	60.00					
Russia Wtd Avg	**55.57**	**64.41**	**73.71**	**8.84**	**9.30**	**-19.23**	**-15.44**	**-12.53**
Urals FOB Primorsk	51.80	60.99	70.96	9.19	9.97	-23.00	-18.86	-15.28
Urals FOB Novorossiysk	52.36	61.20	71.16	8.84	9.96	-22.44	-18.66	-15.08
ESPO FOB Kozmino	65.20	71.24	78.52	6.04	7.28	-9.60	-8.61	-7.72

Sources: *Argus Media Group, Kpler* . Russia Weighted Average for Urals from Baltic and Blacks Sea, Siberian Light and Espo.

Russian product cracks versus Urals rose for everything except naphtha. In August, cracks for premium Russian products in the Baltic strengthened, with the biggest strides made on middle distillates. They rose $1/bbl for gasoline, $1.80/bbl for VGO, $11.90/bbl for gasoil and $10.70/bbl for diesel.





Russian gasoline export prices showed the smallest gains despite the seasonal rise in global gasoline demand while a steady decline in naphtha volumes failed to stem the deterioration in cracks versus Urals prices. Middle distillate values above the price cap appeared to have little impact on exports or destinations in August, with Türkiye continuing to take around 40% of the volumes. A 25% fall in VGO exports and a 12% decline in fuel oil exports from July to August, tied to the end of Russian refinery maintenance, supported their cracks.

Russian FOB Export Prices ($/bbl)										
	Jun-23	Jul-23	Aug-23	Jun - Jul	Jul - Aug		Jun-23	Jul-23	Aug-23	Jun - Jul	Jul - Aug
Premium Products						**Discounted Products**					
Ref. Price	92.73	99.10	113.61	6.37	14.51	Ref. Price	65.75	70.84	79.87	5.10	9.03
Price Cap	100.00	100.00	100.00			**Price Cap**	45.00	45.00	45.00		
Avg Price	68.05	76.32	92.50	8.27	16.18	**Avg Price**	35.54	45.42	55.82	9.88	10.40
Gasoline	70.18	82.20	92.92	12.01	10.72	**Naphtha**	32.97	40.13	47.91	7.17	7.77
Diesel	77.04	84.83	103.96	7.79	19.13	**Fuel Oil**	36.62	47.90	59.38	11.27	11.48
Gasoil	62.79	78.92	99.25	16.13	20.33	Sources: *Argus Media Group, Kpler.*					
VGO	43.18	54.37	63.35	11.19	8.97	Note: Weighted avg prices from Baltic and Black Sea ports.					

Note: For methodology, please see August 2023 OMR.

Tables

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

	2020	2021	1Q22	2Q22	3Q22	4Q22	2022	1Q23	2Q23	3Q23	4Q23	2023	1Q24	2Q24	3Q24	4Q24	2024
OECD DEMAND																	
Americas	22.5	24.3	24.7	24.8	25.1	24.7	24.8	24.5	25.2	25.2	24.9	25.0	24.2	24.8	25.1	24.7	24.7
Europe	12.4	13.2	13.2	13.5	14.0	13.3	13.5	13.1	13.6	13.8	13.3	13.4	12.9	13.5	13.7	13.2	13.3
Asia Oceania	7.2	7.3	7.8	6.9	7.2	7.6	7.4	7.8	7.0	7.2	7.7	7.4	7.7	7.0	7.3	7.7	7.4
Total OECD	**42.0**	**44.9**	**45.7**	**45.2**	**46.3**	**45.7**	**45.7**	**45.4**	**45.7**	**46.2**	**45.9**	**45.8**	**44.8**	**45.3**	**46.1**	**45.5**	**45.5**
NON-OECD DEMAND																	
FSU	4.6	4.9	4.8	4.8	5.1	5.1	4.9	4.9	4.9	5.1	5.0	5.0	4.9	4.8	5.0	5.0	4.9
Europe	0.7	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
China	14.3	15.1	15.1	14.0	14.5	15.0	14.7	15.6	16.6	16.5	16.5	16.3	16.5	17.1	17.2	17.0	16.9
Other Asia	13.0	13.5	14.2	14.2	13.6	14.3	14.1	14.4	14.4	14.0	14.7	14.4	14.7	14.7	14.4	15.2	14.8
Americas	5.4	6.0	6.0	6.2	6.4	6.3	6.2	6.2	6.3	6.4	6.4	6.3	6.2	6.4	6.5	6.5	6.4
Middle East	8.0	8.4	8.4	9.0	9.4	8.8	8.9	8.8	8.9	9.4	8.9	9.0	8.9	9.1	9.5	9.0	9.1
Africa	3.8	4.0	4.3	4.2	4.2	4.4	4.3	4.3	4.2	4.2	4.3	4.3	4.4	4.4	4.4	4.6	4.4
Total Non-OECD	**49.8**	**52.7**	**53.6**	**53.1**	**54.0**	**54.6**	**53.8**	**54.9**	**56.0**	**56.4**	**56.6**	**56.0**	**56.3**	**57.2**	**57.9**	**58.0**	**57.3**
Total Demand[1]	**91.8**	**97.6**	**99.3**	**98.4**	**100.2**	**100.4**	**99.6**	**100.4**	**101.7**	**102.6**	**102.5**	**101.8**	**101.1**	**102.6**	**104.0**	**103.5**	**102.8**
OECD SUPPLY																	
Americas	23.9	24.3	25.0	25.4	26.1	26.3	25.7	26.7	26.8	27.1	27.4	27.0	27.3	27.5	27.7	27.8	27.6
Europe	3.6	3.4	3.3	3.0	3.1	3.2	3.2	3.3	3.2	3.2	3.3	3.2	3.3	3.2	3.2	3.3	3.3
Asia Oceania	0.5	0.5	0.5	0.5	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Total OECD[2]	**28.0**	**28.2**	**28.8**	**28.9**	**29.6**	**30.0**	**29.3**	**30.4**	**30.5**	**30.8**	**31.2**	**30.7**	**31.1**	**31.2**	**31.4**	**31.6**	**31.3**
NON-OECD SUPPLY																	
FSU	13.5	13.8	14.4	13.4	13.7	14.1	13.9	14.2	13.8	13.5	13.7	13.8	13.7	13.8	13.7	13.8	13.7
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	4.0	4.1	4.2	4.2	4.1	4.1	4.2	4.3	4.3	4.2	4.2	4.3	4.4	4.4	4.3	4.3	4.3
Other Asia	3.0	2.9	2.8	2.7	2.6	2.7	2.7	2.7	2.7	2.7	2.6	2.7	2.6	2.6	2.6	2.6	2.6
Americas	5.3	5.3	5.4	5.5	5.8	5.9	5.6	6.0	6.0	6.2	6.2	6.1	6.5	6.5	6.6	6.6	6.6
Middle East	3.0	3.1	3.1	3.2	3.2	3.2	3.2	3.1	3.1	3.1	3.1	3.1	3.2	3.1	3.1	3.1	3.1
Africa	1.4	1.3	1.3	1.3	1.3	1.3	1.3	1.2	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
Total Non-OECD[2]	**30.3**	**30.5**	**31.3**	**30.4**	**30.8**	**31.4**	**31.0**	**31.6**	**31.3**	**31.1**	**31.3**	**31.3**	**31.7**	**31.8**	**31.7**	**31.8**	**31.8**
Processing gains[3]	2.1	2.2	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
Global Biofuels	2.6	2.8	2.5	3.1	3.3	2.9	2.9	2.7	3.3	3.5	3.1	3.1	2.8	3.4	3.7	3.3	3.3
Total Non-OPEC Supply	**63.1**	**63.8**	**65.0**	**64.7**	**66.0**	**66.6**	**65.6**	**67.0**	**67.4**	**67.8**	**68.0**	**67.6**	**68.0**	**68.8**	**69.2**	**69.1**	**68.8**
OPEC[4]																	
Crude	25.7	26.5	28.6	28.7	29.6	29.4	29.1	29.4	28.9								
NGLs	5.3	5.3	5.4	5.4	5.5	5.4	5.4	5.5	5.5	5.6	5.6	5.5	5.6	5.6	5.6	5.6	5.6
Total OPEC	**31.0**	**31.7**	**34.0**	**34.2**	**35.1**	**34.8**	**34.5**	**34.8**	**34.4**								
Total Supply	**94.1**	**95.5**	**98.9**	**98.9**	**101.1**	**101.4**	**100.1**	**101.9**	**101.8**								
STOCK CHANGES AND MISCELLANEOUS																	
Reported OECD																	
Industry	0.4	-1.1	-0.4	0.6	0.9	0.3	0.3	-0.2	0.4								
Government	0.0	-0.2	-0.5	-1.1	-1.1	-0.3	-0.7	0.0	-0.1								
Total	**0.4**	**-1.2**	**-0.9**	**-0.5**	**-0.2**	**0.0**	**-0.4**	**-0.2**	**0.2**								
Floating storage/Oil in transit	0.0	0.0	-0.5	0.6	0.8	0.2	0.3	0.1	-0.6								
Miscellaneous to balance[5]	1.8	-0.8	1.0	0.4	0.2	0.8	0.6	1.6	0.4								
Total Stock Ch. & Misc	**2.3**	**-2.1**	**-0.4**	**0.6**	**0.9**	**1.0**	**0.5**	**1.5**	**0.1**								
Memo items:																	
Call on OPEC crude & stock changes[6]	23.4	28.5	28.9	28.2	28.7	28.4	28.6	27.9	28.8	29.3	29.0	28.7	27.5	28.2	29.2	28.8	28.4

1 Measured as deliveries from refineries and primary stocks, comprises inland deliveries, international marine bunkers, refinery fuel, crude for direct burning,oil from non-conventional sources and other sources of supply. Includes biofuels.
2 Comprises crude oil, condensates, NGLs, oil from non-conventional sources and other sources of supply.
3 Net volumetric gains and losses in the refining process and marine transportation losses.
4 OPEC include current members throughout the time series.
5 Includes changes in non-reported stocks in OECD and non-OECD.
6 Total demand minus total non-OPEC supply minus OPEC NGLs.

For the purpose of this and the following tables :
- OECD comprises of Australia, Austria, Belgium, Canada, Chile, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Japan, Korea, Latvia, Lithuania, Luxembourg, Mexico, Netherland, Norway, New Zealand, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland, Republic of Türkiye, UK, US.
- OPEC comprises of Algeria, Angola, Congo, Equatorial Guinea, Gabon, Iran, Iraq, Kuwait, Libya, Neutral zone, Nigeria, Saudi Arabia, UAE, Venezuela.
- OPEC+ comprises of OPEC members throughtout time series plus Sudan, South Sudan, Russia, Oman, Mexico, Malaysia, Kazakhstan, Brunei, Bahrain, Azerbaijan.

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

	2020	2021	1Q22	2Q22	3Q22	4Q22	2022	1Q23	2Q23	3Q23	4Q23	2023	1Q24	2Q24	3Q24	4Q24	2024
OECD DEMAND																	
Americas	0.0	0.0	-0.1	-0.3	-0.4	-0.3	-0.3	-0.2	-0.3	-0.3	-0.3	-0.3	-0.2	-0.2	-0.3	-0.3	-0.2
Europe	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	-0.1	0.0	0.0	0.0	0.3	-0.1	-0.1	0.0
Asia Oceania	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	-0.1	0.0	-0.1	0.0	-0.1	-0.1	-0.1
Total OECD	**0.0**	**0.0**	**-0.1**	**-0.2**	**-0.4**	**-0.3**	**-0.3**	**-0.2**	**-0.2**	**-0.5**	**-0.4**	**-0.3**	**-0.2**	**0.1**	**-0.5**	**-0.5**	**-0.3**
NON-OECD DEMAND																	
FSU	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	0.0	0.0
Europe	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	0.0	0.0
China	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	-0.1	0.0	-0.1	0.1	0.5	-0.2	0.1
Other Asia	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Americas	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	0.0	0.0
Middle East	0.0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0.0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
Africa	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	-0.1	-0.1	0.0	-0.1
Total Non-OECD	**0.0**	**-0.1**	**-0.1**	**-0.1**	**-0.1**	**-0.1**	**-0.1**	**-0.1**	**-0.1**	**0.2**	**-0.2**	**0.0**	**-0.2**	**-0.1**	**0.4**	**-0.3**	**-0.1**
Total Demand	**0.0**	**-0.1**	**-0.2**	**-0.3**	**-0.5**	**-0.4**	**-0.4**	**-0.2**	**-0.2**	**-0.3**	**-0.6**	**-0.4**	**-0.4**	**0.0**	**-0.2**	**-0.8**	**-0.4**
OECD SUPPLY																	
Americas	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.1	0.1	0.0
Europe	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.0	0.0
Asia Oceania	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	0.0	0.0
Total OECD	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.1**	**0.0**	**0.0**	**0.2**	**0.2**	**0.1**	**0.1**	**0.0**	**0.1**	**0.1**	**0.1**	**0.1**
NON-OECD SUPPLY																	
FSU	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0
Europe	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	0.0	0.0
China	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other Asia	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	0.0	0.0
Americas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.0
Middle East	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	0.0	0.0
Africa	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	0.0	0.0
Total Non-OECD	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.1**	**0.2**	**0.0**	**0.1**	**0.0**	**0.1**	**0.0**	**0.0**	**0.0**
Processing gains	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	0.0	0.0
Global Biofuels	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	0.0	0.0
Total Non-OPEC Supply	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.1**	**0.0**	**0.0**	**0.2**	**0.4**	**0.2**	**0.2**	**0.1**	**0.1**	**0.1**	**0.2**	**0.1**
OPEC																	
Crude	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0					
NGLs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.1	0.1	0.1	0.1
Total OPEC	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**			**0.0**					
Total Supply	**0.0**	**0.0**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.3**			**0.2**					
STOCK CHANGES AND MISCELLANEOUS																	
REPORTED OECD																	
Industry	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0					
Government	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0					
Total	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**			**0.0**					
Floating storage/Oil in transit	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	-0.2			0.0					
Miscellaneous to balance	0.1	0.1	0.4	0.4	0.6	0.5	0.5	0.3	0.7			0.6					
Total Stock Ch. & Misc	**0.1**	**0.1**	**0.3**	**0.4**	**0.6**	**0.5**	**0.5**	**0.3**	**0.5**			**0.6**					
Memo items:																	
Call on OPEC crude & stock changes	-0.1	-0.1	-0.3	-0.4	-0.6	-0.5	-0.5	-0.3	-0.5	-0.7	-0.9	-0.6	-0.6	-0.2	-0.4	-1.0	-0.5

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

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

	2020	2021	1Q22	2Q22	3Q22	4Q22	2022	1Q23	2Q23	3Q23	4Q23	2023	1Q24	2Q24	3Q24	4Q24	2024
Total Demand	**91.8**	**97.6**	**99.3**	**98.4**	**100.2**	**100.4**	**99.6**	**100.4**	**101.7**	**102.6**	**102.5**	**101.8**	**101.1**	**102.6**	**104.0**	**103.5**	**102.8**
OECD SUPPLY																	
Americas[2]	21.9	22.4	23.0	23.4	24.1	24.3	23.7	24.6	24.7	25.0	25.2	24.9	25.1	25.3	25.6	25.8	25.5
Europe	3.6	3.4	3.3	3.0	3.1	3.2	3.2	3.3	3.2	3.2	3.3	3.2	3.3	3.2	3.2	3.3	3.3
Asia Oceania	0.5	0.5	0.5	0.5	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Total OECD (non-OPEC+)	**26.0**	**26.3**	**26.8**	**26.9**	**27.6**	**28.0**	**27.3**	**28.3**	**28.4**	**28.6**	**29.0**	**28.6**	**29.0**	**29.1**	**29.2**	**29.5**	**29.2**
NON-OECD SUPPLY																	
FSU[3]	0.4	0.4	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
Europe	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
China	4.0	4.1	4.2	4.2	4.1	4.1	4.2	4.3	4.3	4.2	4.2	4.3	4.4	4.4	4.3	4.3	4.3
Other Asia[4]	2.3	2.2	2.1	2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.9	1.9	1.9	1.9	1.9
Latin America	5.3	5.3	5.4	5.5	5.8	5.9	5.6	6.0	6.0	6.2	6.2	6.1	6.5	6.5	6.6	6.6	6.6
Middle East[5]	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
Africa[6]	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	1.1
Total Non-OECD (non-OPEC+)	**15.1**	**15.0**	**15.2**	**15.2**	**15.3**	**15.4**	**15.3**	**15.7**	**15.7**	**15.8**	**15.8**	**15.7**	**16.2**	**16.2**	**16.3**	**16.2**	**16.2**
Processing Gains	2.1	2.2	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
Global Biofuels	2.6	2.8	2.5	3.1	3.3	2.9	2.9	2.7	3.3	3.5	3.1	3.1	2.8	3.4	3.7	3.3	3.3
Total Non-OPEC+	**45.9**	**46.3**	**46.8**	**47.5**	**48.5**	**48.6**	**47.9**	**49.0**	**49.7**	**50.3**	**50.3**	**49.8**	**50.3**	**51.1**	**51.6**	**51.4**	**51.1**
OPEC+ CRUDE																	
Algeria	0.9	0.9	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.9	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Angola	1.3	1.1	1.2	1.2	1.1	1.1	1.1	1.0	1.1	1.1	1.1	1.1	1.1	1.0	1.0	1.0	1.0
Azerbaijan	0.6	0.6	0.6	0.6	0.6	0.5	0.6	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.6	0.6	0.5
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	2.0	2.4	2.5	2.5	2.5	2.6	2.5	2.7	3.0	3.1	3.1	3.0	3.1	3.1	3.1	3.1	3.1
Iraq	4.0	4.0	4.3	4.4	4.5	4.5	4.4	4.4	4.1	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
Kazakhstan	1.5	1.5	1.6	1.4	1.4	1.6	1.5	1.6	1.6	1.5	1.6	1.6	1.6	1.6	1.6	1.7	1.6
Kuwait	2.4	2.4	2.6	2.7	2.8	2.7	2.7	2.7	2.6	2.5	2.5	2.6	2.5	2.5	2.5	2.5	2.5
Libya	0.4	1.1	1.1	0.8	1.0	1.2	1.0	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
Malaysia	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	0.4
Mexico	1.7	1.7	1.6	1.6	1.6	1.6	1.6	1.6	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
Nigeria	1.5	1.3	1.3	1.2	1.0	1.1	1.1	1.3	1.1	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
Oman	0.8	0.8	0.8	0.8	0.9	0.9	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
Russia	9.4	9.6	10.0	9.4	9.8	9.8	9.8	9.7	9.5	9.5	9.5	9.6	9.5	9.5	9.5	9.5	9.5
Saudi Arabia	9.2	9.2	10.2	10.4	10.9	10.6	10.5	10.4	10.1	9.0	9.0	9.6	10.0	10.0	10.0	10.0	10.0
South Sudan	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	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	0.0	0.0	0.1
UAE	2.9	2.8	3.1	3.3	3.5	3.4	3.3	3.4	3.3	3.2	3.2	3.3	3.2	3.2	3.2	3.2	3.2
Venezuela	0.5	0.6	0.7	0.7	0.7	0.7	0.7	0.7	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
OPEC+ Crude	**40.6**	**41.5**	**44.1**	**43.4**	**44.6**	**44.6**	**44.2**	**44.6**	**43.8**	**42.7**	**42.9**	**43.5**	**43.9**	**43.9**	**43.8**	**43.9**	**43.9**
OPEC+ NGLs & Condensate	7.4	7.6	7.9	7.9	7.8	8.0	7.9	8.2	8.2	8.1	8.1	8.2	8.2	8.2	8.2	8.2	8.2
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+	**48.2**	**49.2**	**52.1**	**51.4**	**52.6**	**52.7**	**52.2**	**52.9**	**52.1**	**50.9**	**51.1**	**51.8**	**52.2**	**52.2**	**52.1**	**52.1**	**52.1**
Total Supply Oil	**94.1**	**95.5**	**98.9**	**98.9**	**101.1**	**101.4**	**100.1**	**101.9**	**101.8**	**101.3**	**101.4**	**101.6**	**102.5**	**103.3**	**103.7**	**103.6**	**103.3**
Memo items:																	
Call on OPEC+ crude & stock changes	38.3	43.6	44.5	42.9	43.8	43.6	43.7	43.1	43.7	44.1	43.9	43.7	42.5	43.2	44.1	43.8	43.4

1 From Sep 2023, OPEC+ supply reflects latest OPEC+ deal and individual country's sustainable capacity. Libya, Iran, Venezuela held at most recent level through 2024.

2 OECD Americas excludes Mexico.

3 FSU excludes Russia, Kazakhstan, Azerbaijan.

4 Other Asia excludes Brunei, Malaysia.

5 Middle East excludes Oman, Bahrain.

6 Africa excludes Sudan, South Sudan.

Table 2
SUMMARY OF GLOBAL OIL DEMAND

	2021	1Q22	2Q22	3Q22	4Q22	2022	1Q23	2Q23	3Q23	4Q23	2023	1Q24	2Q24	3Q24	4Q24	2024
Demand (mb/d)																
Americas	24.32	24.74	24.81	25.06	24.73	24.84	24.52	25.20	25.21	24.91	24.96	24.21	24.84	25.09	24.67	24.70
Europe	13.19	13.20	13.47	14.01	13.35	13.51	13.11	13.55	13.80	13.29	13.44	12.94	13.52	13.73	13.16	13.34
Asia Oceania	7.34	7.78	6.93	7.17	7.63	7.38	7.81	6.96	7.21	7.68	7.41	7.69	6.97	7.32	7.71	7.42
Total OECD	**44.85**	**45.72**	**45.22**	**46.25**	**45.71**	**45.73**	**45.44**	**45.71**	**46.22**	**45.88**	**45.82**	**44.83**	**45.32**	**46.13**	**45.54**	**45.46**
Asia	28.62	29.31	28.21	28.11	29.27	28.72	30.00	30.96	30.50	31.23	30.67	31.17	31.75	31.64	32.17	31.68
Middle East	8.38	8.45	8.99	9.37	8.84	8.91	8.77	8.87	9.45	8.89	8.99	8.86	9.13	9.53	8.98	9.13
Americas	6.00	6.00	6.17	6.36	6.30	6.21	6.18	6.32	6.43	6.36	6.32	6.18	6.38	6.51	6.46	6.39
FSU	4.89	4.79	4.78	5.12	5.07	4.94	4.86	4.89	5.06	5.00	4.95	4.87	4.82	5.01	5.00	4.93
Africa	4.05	4.26	4.24	4.24	4.38	4.28	4.35	4.21	4.19	4.33	4.27	4.40	4.36	4.39	4.56	4.43
Europe	0.77	0.78	0.77	0.79	0.80	0.78	0.78	0.77	0.78	0.80	0.78	0.79	0.79	0.81	0.82	0.80
Total Non-OECD	**52.71**	**53.58**	**53.15**	**53.99**	**54.65**	**53.84**	**54.94**	**56.00**	**56.42**	**56.61**	**56.00**	**56.27**	**57.24**	**57.89**	**57.99**	**57.35**
World	**97.56**	**99.30**	**98.37**	**100.24**	**100.36**	**99.57**	**100.39**	**101.71**	**102.64**	**102.49**	**101.81**	**101.10**	**102.56**	**104.02**	**103.53**	**102.81**
of which:																
United States[1]	19.89	20.09	20.00	20.11	19.85	20.01	19.80	20.38	20.23	20.04	20.11	19.52	20.06	20.15	19.83	19.89
Europe 5[2]	7.38	7.43	7.66	7.83	7.43	7.59	7.38	7.54	7.72	7.37	7.50	7.26	7.53	7.62	7.25	7.42
China	15.09	15.09	14.04	14.51	15.01	14.66	15.58	16.56	16.51	16.50	16.29	16.48	17.05	17.21	16.98	16.93
Japan	3.41	3.70	3.04	3.20	3.57	3.38	3.73	3.10	3.19	3.58	3.40	3.69	3.08	3.29	3.60	3.41
India	4.90	5.38	5.29	5.01	5.42	5.28	5.57	5.52	5.20	5.64	5.48	5.61	5.57	5.32	5.86	5.59
Russia	3.68	3.69	3.64	3.95	3.84	3.78	3.74	3.74	3.89	3.76	3.78	3.71	3.63	3.80	3.71	3.71
Brazil	3.03	2.98	3.02	3.19	3.17	3.09	3.10	3.16	3.26	3.24	3.19	3.09	3.20	3.29	3.28	3.22
Saudi Arabia	3.51	3.35	3.84	3.98	3.74	3.73	3.59	3.69	4.00	3.76	3.76	3.56	3.82	4.04	3.77	3.79
Canada	2.26	2.34	2.30	2.47	2.40	2.38	2.34	2.46	2.53	2.42	2.44	2.35	2.44	2.50	2.39	2.42
Korea	2.56	2.69	2.45	2.51	2.54	2.55	2.57	2.34	2.51	2.54	2.49	2.52	2.38	2.51	2.54	2.49
Mexico	1.67	1.77	2.00	1.97	1.97	1.93	1.89	1.87	1.92	1.93	1.90	1.84	1.84	1.91	1.93	1.88
Iran	1.80	1.89	1.82	1.81	1.80	1.83	1.85	1.80	1.83	1.81	1.82	1.96	1.90	1.88	1.86	1.90
Total	**69.17**	**70.40**	**69.10**	**70.55**	**70.74**	**70.20**	**71.13**	**72.16**	**72.79**	**72.59**	**72.17**	**71.58**	**72.50**	**73.53**	**72.99**	**72.65**
% of World	70.9%	70.9%	70.2%	70.4%	70.5%	70.5%	70.9%	70.9%	70.9%	70.8%	70.9%	70.8%	70.7%	70.7%	70.5%	70.7%
Annual Change (% per annum)																
Americas	8.3	7.8	1.7	1.1	-1.6	2.1	-0.9	1.6	0.6	0.7	0.5	-1.3	-1.5	-0.5	-1.0	-1.0
Europe	6.3	9.9	5.9	0.3	-4.9	2.4	-0.7	0.6	-1.5	-0.4	-0.5	-1.3	-0.3	-0.5	-1.0	-0.8
Asia Oceania	2.5	1.8	-0.2	2.1	-1.3	0.6	0.4	0.4	0.5	0.6	0.5	-1.6	0.2	1.5	0.5	0.1
Total OECD	**6.7**	**7.3**	**2.6**	**1.0**	**-2.5**	**1.9**	**-0.6**	**1.1**	**-0.1**	**0.4**	**0.2**	**-1.3**	**-0.9**	**-0.2**	**-0.7**	**-0.8**
Asia	5.0	2.8	-1.4	0.2	-0.2	0.3	2.4	9.7	8.5	6.7	6.8	3.9	2.6	3.7	3.0	3.3
Middle East	4.0	4.8	7.9	6.7	6.1	6.4	3.9	-1.3	0.8	0.6	0.9	1.0	3.0	0.9	1.0	1.5
Americas	11.0	3.5	5.3	2.7	2.2	3.4	3.0	2.4	1.1	1.0	1.9	0.0	1.0	1.2	1.6	1.0
FSU	6.6	2.6	-0.2	2.0	-0.2	1.0	1.4	2.4	-1.0	-1.5	0.3	0.2	-1.4	-1.0	-0.1	-0.6
Africa	7.7	4.1	6.0	7.3	5.4	5.7	2.2	-0.7	-1.2	-1.0	-0.2	1.1	3.7	4.8	5.2	3.7
Europe	6.6	2.7	1.9	1.5	1.2	1.8	0.3	-0.4	-1.2	0.7	-0.1	0.7	2.4	2.8	1.8	1.9
Total Non-OECD	**5.9**	**3.3**	**1.6**	**2.3**	**1.5**	**2.2**	**2.5**	**5.4**	**4.5**	**3.6**	**4.0**	**2.4**	**2.2**	**2.6**	**2.4**	**2.4**
World	**6.3**	**5.1**	**2.0**	**1.7**	**-0.4**	**2.1**	**1.1**	**3.4**	**2.4**	**2.1**	**2.3**	**0.7**	**0.8**	**1.3**	**1.0**	**1.0**
Annual Change (mb/d)																
Americas	1.87	1.80	0.42	0.27	-0.40	0.52	-0.22	0.39	0.14	0.18	0.13	-0.31	-0.37	-0.12	-0.24	-0.26
Europe	0.78	1.19	0.75	0.05	-0.69	0.32	-0.09	0.08	-0.21	-0.06	-0.07	-0.17	-0.04	-0.07	-0.13	-0.10
Asia Oceania	0.18	0.14	-0.02	0.15	-0.10	0.04	0.03	0.03	0.04	0.05	0.03	-0.12	0.01	0.11	0.04	0.01
Total OECD	**2.82**	**3.12**	**1.15**	**0.46**	**-1.19**	**0.87**	**-0.27**	**0.49**	**-0.03**	**0.17**	**0.09**	**-0.61**	**-0.39**	**-0.09**	**-0.34**	**-0.36**
Asia	1.37	0.79	-0.39	0.05	-0.05	0.10	0.69	2.74	2.39	1.96	1.95	1.17	0.80	1.13	0.94	1.01
Middle East	0.33	0.39	0.66	0.59	0.51	0.54	0.33	-0.12	0.08	0.05	0.08	0.09	0.26	0.09	0.09	0.13
Americas	0.60	0.20	0.31	0.17	0.14	0.20	0.18	0.15	0.07	0.06	0.11	0.00	0.07	0.08	0.10	0.06
FSU	0.30	0.12	-0.01	0.10	-0.01	0.05	0.07	0.11	-0.05	-0.08	0.01	0.01	-0.07	-0.05	0.00	-0.03
Africa	0.29	0.17	0.24	0.29	0.23	0.23	0.09	-0.03	-0.05	-0.04	-0.01	0.05	0.16	0.20	0.23	0.16
Europe	0.05	0.02	0.01	0.01	0.01	0.01	0.00	0.00	-0.01	0.01	0.00	0.01	0.02	0.02	0.01	0.02
Total Non-OECD	**2.93**	**1.69**	**0.82**	**1.21**	**0.83**	**1.14**	**1.36**	**2.85**	**2.43**	**1.96**	**2.15**	**1.32**	**1.24**	**1.47**	**1.38**	**1.35**
World	**5.75**	**4.81**	**1.97**	**1.68**	**-0.36**	**2.01**	**1.09**	**3.34**	**2.40**	**2.12**	**2.24**	**0.71**	**0.85**	**1.38**	**1.04**	**0.99**
Revisions to Oil Demand from Last Month's Report (mb/d)																
Americas	0.00	-0.13	-0.27	-0.37	-0.32	-0.27	-0.19	-0.26	-0.33	-0.30	-0.27	-0.16	-0.18	-0.35	-0.30	-0.25
Europe	0.00	-0.01	0.03	-0.04	-0.01	-0.01	0.02	0.08	-0.09	-0.03	-0.01	0.03	0.31	-0.11	-0.10	0.03
Asia Oceania	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	-0.09	-0.06	-0.03	-0.08	-0.03	-0.05	-0.09	-0.06
Total OECD	**-**	**-0.14**	**-0.24**	**-0.40**	**-0.33**	**-0.28**	**-0.17**	**-0.16**	**-0.51**	**-0.39**	**-0.31**	**-0.20**	**0.09**	**-0.51**	**-0.48**	**-0.28**
Asia	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.06	0.33	-0.13	0.07	-0.10	0.09	0.53	-0.17	0.09
Middle East	-0.06	-0.06	-0.06	-0.06	-0.06	-0.06	-0.05	-0.11	-0.08	-0.07	-0.08	-0.08	-0.14	-0.13	-0.10	-0.11
Americas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.03	0.01	0.00	-0.01	0.00	-0.01	0.00	0.00
FSU	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Africa	-0.03	-0.04	-0.04	-0.04	-0.04	-0.04	-0.05	-0.04	-0.04	-0.04	-0.04	-0.06	-0.07	-0.05	-0.04	-0.06
Europe	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Non-OECD	**-0.09**	**-0.10**	**-0.10**	**-0.09**	**-0.10**	**-0.10**	**-0.07**	**-0.09**	**0.21**	**-0.22**	**-0.04**	**-0.24**	**-0.11**	**0.35**	**-0.30**	**-0.08**
World	**-0.09**	**-0.23**	**-0.33**	**-0.49**	**-0.43**	**-0.37**	**-0.25**	**-0.25**	**-0.30**	**-0.61**	**-0.35**	**-0.45**	**-0.02**	**-0.16**	**-0.78**	**-0.35**
Revisions to Oil Demand Growth from Last Month's Report (mb/d)																
World	-0.06	-0.14	-0.24	-0.40	-0.33	-0.28	-0.01	0.09	0.19	-0.19	0.02	-0.20	0.23	0.14	-0.17	0.00

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

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

	2021	2022	3Q22	4Q22	1Q23	2Q23	Apr 23	May 23	Jun 23 [2]	Latest month vs. May 23	Latest month vs. Jun 22
Americas											
LPG and ethane	3.70	3.85	3.72	3.84	4.01	3.84	3.79	3.79	3.95	0.17	0.24
Naphtha	0.26	0.23	0.22	0.22	0.22	0.24	0.24	0.25	0.23	-0.02	0.01
Motor gasoline	10.34	10.46	10.62	10.41	10.23	10.79	10.57	10.79	11.02	0.24	0.20
Jet and kerosene	1.57	1.84	1.90	1.87	1.85	1.98	1.91	1.96	2.06	0.10	0.07
Gasoil/diesel oil	5.04	5.24	5.13	5.25	5.22	5.06	4.97	5.12	5.10	-0.01	-0.21
Residual fuel oil	0.56	0.55	0.60	0.53	0.51	0.43	0.39	0.43	0.48	0.05	-0.08
Other products	2.86	2.66	2.87	2.62	2.49	2.85	2.73	2.92	2.91	-0.01	0.08
Total	**24.32**	**24.84**	**25.06**	**24.73**	**24.52**	**25.20**	**24.60**	**25.25**	**25.76**	**0.51**	**0.32**
Europe											
LPG and ethane	1.09	1.04	1.10	0.99	1.10	1.11	1.10	1.15	1.07	-0.09	0.08
Naphtha	1.16	0.96	0.86	0.84	0.97	0.83	0.95	0.79	0.76	-0.03	-0.23
Motor gasoline	1.93	2.04	2.15	2.02	1.99	2.19	2.09	2.21	2.27	0.06	0.06
Jet and kerosene	0.86	1.29	1.50	1.32	1.26	1.46	1.38	1.44	1.56	0.13	0.17
Gasoil/diesel oil	6.29	6.25	6.37	6.31	5.98	6.07	5.77	6.17	6.28	0.11	0.07
Residual fuel oil	0.72	0.78	0.80	0.77	0.76	0.73	0.73	0.76	0.71	-0.05	-0.09
Other products	1.16	1.16	1.24	1.11	1.05	1.16	1.07	1.14	1.26	0.12	0.04
Total	**13.19**	**13.51**	**14.01**	**13.35**	**13.11**	**13.55**	**13.08**	**13.67**	**13.91**	**0.23**	**0.10**
Asia Oceania											
LPG and ethane	0.76	0.79	0.71	0.80	0.90	0.70	0.72	0.69	0.69	0.00	0.00
Naphtha	1.97	1.85	1.89	1.84	1.94	1.69	1.77	1.72	1.59	-0.13	-0.15
Motor gasoline	1.39	1.44	1.52	1.50	1.41	1.44	1.40	1.45	1.46	0.00	0.05
Jet and kerosene	0.60	0.68	0.53	0.83	0.94	0.67	0.70	0.64	0.68	0.04	0.19
Gasoil/diesel oil	1.86	1.87	1.85	1.94	1.89	1.84	1.77	1.86	1.89	0.03	0.07
Residual fuel oil	0.45	0.50	0.48	0.51	0.54	0.42	0.45	0.39	0.42	0.03	-0.05
Other products	0.30	0.24	0.20	0.22	0.19	0.19	0.20	0.16	0.21	0.05	-0.11
Total	**7.34**	**7.38**	**7.17**	**7.63**	**7.81**	**6.96**	**7.00**	**6.93**	**6.94**	**0.02**	**0.01**
OECD											
LPG and ethane	5.55	5.68	5.52	5.62	6.01	5.65	5.61	5.63	5.71	0.08	0.31
Naphtha	3.39	3.04	2.97	2.89	3.13	2.76	2.95	2.75	2.57	-0.18	-0.37
Motor gasoline	13.66	13.94	14.29	13.93	13.62	14.42	14.06	14.45	14.75	0.30	0.31
Jet and kerosene	3.02	3.81	3.92	4.02	4.04	4.11	3.99	4.04	4.31	0.26	0.43
Gasoil/diesel oil	13.18	13.37	13.36	13.50	13.10	12.98	12.51	13.15	13.28	0.13	-0.07
Residual fuel oil	1.73	1.82	1.88	1.81	1.81	1.59	1.56	1.59	1.61	0.02	-0.22
Other products	4.32	4.06	4.31	3.95	3.73	4.20	4.00	4.23	4.38	0.15	0.02
Total	**44.85**	**45.73**	**46.25**	**45.71**	**45.44**	**45.71**	**44.68**	**45.84**	**46.60**	**0.76**	**0.42**

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. Americas comprises US 50 states, US territories, Mexico, Canada and Chile.
2 Latest official OECD submissions (MOS).

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

	2021	2022	3Q22	4Q22	1Q23	2Q23	Apr 23	May 23	Jun 23 [2]	Latest month vs. May 23	Latest month vs. Jun 22
United States[3]											
LPG and ethane	2.88	3.08	2.91	3.08	3.24	3.08	3.05	3.05	3.14	0.08	0.17
Naphtha	0.19	0.14	0.13	0.13	0.13	0.15	0.16	0.16	0.12	-0.03	0.00
Motor gasoline	8.82	8.81	8.93	8.74	8.67	9.13	9.00	9.10	9.28	0.17	0.20
Jet and kerosene	1.38	1.56	1.60	1.58	1.57	1.68	1.62	1.69	1.74	0.05	0.05
Gasoil/diesel oil	3.97	4.03	3.91	4.00	4.01	3.93	3.90	3.93	3.96	0.03	-0.09
Residual fuel oil	0.31	0.33	0.38	0.30	0.29	0.22	0.18	0.22	0.26	0.04	-0.06
Other products	2.35	2.06	2.25	2.01	1.90	2.20	2.14	2.24	2.22	-0.03	0.01
Total	**19.89**	**20.01**	**20.11**	**19.85**	**19.80**	**20.38**	**20.04**	**20.40**	**20.72**	**0.32**	**0.28**
Japan											
LPG and ethane	0.40	0.39	0.32	0.41	0.51	0.35	0.36	0.34	0.36	0.02	0.02
Naphtha	0.69	0.61	0.62	0.64	0.64	0.56	0.63	0.56	0.49	-0.07	-0.11
Motor gasoline	0.77	0.80	0.85	0.82	0.77	0.79	0.79	0.78	0.80	0.02	0.00
Jet and kerosene	0.37	0.38	0.23	0.47	0.57	0.33	0.36	0.30	0.33	0.03	0.12
Diesel	0.42	0.42	0.43	0.43	0.41	0.41	0.40	0.39	0.43	0.04	0.00
Other gasoil	0.31	0.31	0.28	0.32	0.34	0.28	0.28	0.27	0.29	0.02	0.00
Residual fuel oil	0.25	0.26	0.25	0.27	0.30	0.21	0.22	0.19	0.22	0.03	-0.03
Other products	0.21	0.20	0.21	0.20	0.18	0.17	0.16	0.17	0.18	0.01	-0.05
Total	**3.41**	**3.38**	**3.20**	**3.57**	**3.73**	**3.10**	**3.20**	**3.01**	**3.10**	**0.09**	**-0.04**
Germany											
LPG and ethane	0.11	0.11	0.10	0.09	0.09	0.10	0.10	0.11	0.10	-0.01	-0.01
Naphtha	0.37	0.31	0.27	0.27	0.30	0.28	0.30	0.26	0.26	0.00	-0.07
Motor gasoline	0.46	0.45	0.47	0.44	0.45	0.46	0.44	0.47	0.47	0.00	-0.07
Jet and kerosene	0.13	0.20	0.22	0.21	0.18	0.21	0.21	0.20	0.22	0.02	0.01
Diesel	0.73	0.71	0.74	0.71	0.67	0.69	0.64	0.72	0.71	-0.01	-0.06
Other gasoil	0.30	0.28	0.30	0.31	0.29	0.27	0.27	0.29	0.26	-0.03	0.04
Residual fuel oil	0.05	0.06	0.06	0.05	0.04	0.06	0.05	0.06	0.06	0.00	0.00
Other products	0.08	0.06	0.08	0.05	0.04	0.04	0.03	0.03	0.06	0.02	0.02
Total	**2.23**	**2.18**	**2.24**	**2.13**	**2.07**	**2.10**	**2.05**	**2.14**	**2.12**	**-0.02**	**-0.16**
Italy											
LPG and ethane	0.10	0.11	0.10	0.11	0.12	0.09	0.10	0.09	0.09	0.00	0.00
Naphtha	0.08	0.06	0.04	0.05	0.06	0.05	0.06	0.06	0.04	-0.01	0.01
Motor gasoline	0.17	0.18	0.20	0.18	0.16	0.19	0.18	0.19	0.21	0.02	0.02
Jet and kerosene	0.05	0.09	0.11	0.08	0.07	0.10	0.10	0.09	0.11	0.02	0.01
Diesel	0.48	0.49	0.51	0.50	0.47	0.49	0.45	0.50	0.51	0.01	0.00
Other gasoil	0.07	0.05	0.06	0.05	0.03	0.04	0.03	0.04	0.06	0.01	0.00
Residual fuel oil	0.06	0.06	0.07	0.06	0.05	0.05	0.05	0.05	0.05	0.00	-0.02
Other products	0.15	0.16	0.17	0.16	0.15	0.16	0.16	0.16	0.16	0.00	-0.03
Total	**1.16**	**1.19**	**1.25**	**1.18**	**1.13**	**1.18**	**1.13**	**1.18**	**1.23**	**0.05**	**-0.01**
France											
LPG and ethane	0.11	0.10	0.10	0.07	0.11	0.11	0.11	0.11	0.11	0.00	0.01
Naphtha	0.14	0.10	0.10	0.08	0.11	0.11	0.10	0.12	0.10	-0.02	-0.02
Motor gasoline	0.21	0.23	0.26	0.23	0.22	0.25	0.23	0.25	0.27	0.02	0.02
Jet and kerosene	0.09	0.14	0.17	0.14	0.15	0.17	0.15	0.17	0.18	0.01	0.04
Diesel	0.72	0.73	0.75	0.72	0.69	0.71	0.65	0.69	0.78	0.08	0.00
Other gasoil	0.14	0.11	0.10	0.11	0.14	0.08	0.09	0.08	0.08	0.00	0.02
Residual fuel oil	0.04	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.00	-0.01
Other products	0.09	0.09	0.11	0.08	0.07	0.10	0.07	0.10	0.12	0.02	-0.01
Total	**1.54**	**1.54**	**1.63**	**1.47**	**1.53**	**1.55**	**1.44**	**1.55**	**1.67**	**0.12**	**0.07**
United Kingdom											
LPG and ethane	0.11	0.10	0.09	0.08	0.10	0.09	0.08	0.09	0.08	-0.01	-0.01
Naphtha	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00
Motor gasoline	0.25	0.28	0.28	0.27	0.28	0.30	0.30	0.30	0.29	-0.01	-0.01
Jet and kerosene	0.17	0.27	0.28	0.28	0.29	0.29	0.28	0.30	0.31	0.01	0.04
Diesel	0.47	0.47	0.47	0.47	0.47	0.54	0.50	0.55	0.57	0.01	0.07
Other gasoil	0.13	0.13	0.15	0.12	0.12	0.09	0.09	0.08	0.09	0.00	-0.05
Residual fuel oil	0.02	0.02	0.02	0.02	0.01	0.02	0.02	0.02	0.02	0.00	-0.01
Other products	0.10	0.11	0.11	0.11	0.12	0.12	0.11	0.12	0.12	0.00	0.02
Total	**1.25**	**1.38**	**1.41**	**1.36**	**1.40**	**1.44**	**1.38**	**1.47**	**1.47**	**0.00**	**0.06**
Canada											
LPG and ethane	0.46	0.40	0.43	0.37	0.39	0.40	0.39	0.37	0.45	0.07	0.05
Naphtha	0.05	0.06	0.07	0.06	0.06	0.07	0.06	0.06	0.07	0.01	0.01
Motor gasoline	0.76	0.78	0.81	0.80	0.73	0.83	0.78	0.84	0.88	0.03	0.05
Jet and kerosene	0.09	0.14	0.17	0.15	0.14	0.16	0.14	0.15	0.19	0.04	0.02
Diesel	0.29	0.29	0.28	0.31	0.30	0.28	0.22	0.35	0.27	-0.08	-0.01
Other gasoil	0.27	0.27	0.26	0.27	0.28	0.26	0.26	0.26	0.26	0.00	-0.01
Residual fuel oil	0.03	0.03	0.03	0.04	0.04	0.02	0.04	0.00	0.02	0.02	-0.02
Other products	0.31	0.40	0.42	0.40	0.39	0.45	0.40	0.46	0.48	0.02	0.05
Total	**2.26**	**2.38**	**2.47**	**2.40**	**2.34**	**2.46**	**2.29**	**2.49**	**2.61**	**0.12**	**0.15**

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

Table 3
WORLD OIL PRODUCTION
(million barrels per day)

	2022	2023	2024	1Q23	2Q23	3Q23	4Q23	1Q24	Jun 23	Jul 23	Aug 23
OPEC											
Crude Oil											
Saudi Arabia	10.53			10.42	10.14				9.98	9.08	8.98
Iran	2.55			2.70	3.00				3.04	3.04	3.14
Iraq	4.45			4.39	4.14				4.19	4.27	4.32
UAE	3.34			3.44	3.27				3.27	3.22	3.22
Kuwait	2.70			2.68	2.60				2.55	2.55	2.55
Angola	1.14			1.05	1.10				1.12	1.15	1.13
Nigeria	1.15			1.27	1.15				1.24	1.10	1.18
Libya	0.99			1.15	1.16				1.16	1.13	1.16
Algeria	1.01			1.01	0.97				0.95	0.96	0.93
Congo	0.26			0.28	0.28				0.28	0.28	0.27
Gabon	0.19			0.20	0.20				0.20	0.22	0.22
Equatorial Guinea	0.08			0.05	0.06				0.07	0.06	0.07
Venezuela	0.70			0.71	0.79				0.79	0.81	0.79
Total Crude Oil	**29.08**			**29.36**	**28.86**				**28.84**	**27.87**	**27.96**
of which Neutral Zone [1]	*0.28*			*0.29*	*0.31*				*0.31*	*0.26*	*0.22*
Total NGLs[2]	**5.43**	**5.53**	**5.61**	**5.49**	**5.51**	**5.55**	**5.58**	**5.60**	**5.53**	**5.53**	**5.56**
Total OPEC[3]	**34.51**			**34.85**	**34.37**				**34.37**	**33.40**	**33.52**
NON-OPEC[4]											
OECD											
Americas	25.70	27.00	27.57	26.68	26.81	27.12	27.39	27.26	27.09	27.05	27.27
United States	17.93	19.09	19.53	18.72	19.21	19.21	19.23	19.24	19.45	19.26	19.26
Mexico	2.01	2.13	2.12	2.10	2.14	2.12	2.15	2.14	2.14	2.09	2.14
Canada	5.76	5.77	5.91	5.84	5.44	5.77	6.01	5.87	5.49	5.68	5.86
Chile	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Europe	3.16	3.24	3.26	3.29	3.24	3.16	3.28	3.33	3.24	3.22	3.10
UK	0.83	0.76	0.75	0.83	0.77	0.68	0.77	0.77	0.73	0.70	0.65
Norway	1.90	2.03	2.04	2.02	2.02	2.02	2.04	2.10	2.02	2.06	1.99
Others	0.43	0.45	0.46	0.44	0.45	0.46	0.47	0.46	0.49	0.46	0.46
Asia Oceania	0.48	0.48	0.48	0.46	0.46	0.48	0.50	0.50	0.48	0.47	0.51
Australia	0.41	0.40	0.40	0.39	0.38	0.41	0.43	0.42	0.40	0.40	0.43
Others	0.07	0.07	0.06	0.07	0.07	0.07	0.06	0.06	0.07	0.07	0.06
Total OECD	**29.34**	**30.72**	**31.31**	**30.43**	**30.51**	**30.76**	**31.18**	**31.09**	**30.81**	**30.74**	**30.87**
NON-OECD											
Former USSR	13.90	13.80	13.74	14.15	13.79	13.55	13.70	13.73	13.71	13.58	13.48
Russia	11.09	10.93	10.80	11.20	10.91	10.77	10.84	10.82	10.84	10.79	10.75
Azerbaijan	0.67	0.63	0.67	0.64	0.62	0.63	0.65	0.66	0.61	0.62	0.62
Kazakhstan	1.82	1.92	1.97	1.99	1.95	1.84	1.90	1.95	1.94	1.85	1.80
Others	0.32	0.31	0.31	0.32	0.31	0.31	0.31	0.31	0.31	0.31	0.31
Asia	6.88	6.93	6.91	7.03	6.99	6.88	6.84	6.96	7.00	6.84	6.93
China	4.18	4.28	4.34	4.34	4.34	4.23	4.21	4.37	4.36	4.18	4.28
Malaysia	0.56	0.56	0.55	0.58	0.55	0.56	0.56	0.56	0.54	0.57	0.56
India	0.70	0.69	0.68	0.68	0.69	0.69	0.68	0.67	0.69	0.69	0.69
Indonesia	0.63	0.63	0.61	0.64	0.64	0.63	0.62	0.62	0.63	0.63	0.63
Others	0.81	0.78	0.74	0.79	0.78	0.77	0.77	0.75	0.76	0.77	0.77
Europe	0.11	0.10	0.09	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Americas	5.65	6.09	6.56	5.96	6.00	6.20	6.19	6.46	6.13	6.23	6.19
Brazil	3.12	3.41	3.71	3.30	3.32	3.54	3.49	3.69	3.45	3.59	3.51
Argentina	0.71	0.76	0.78	0.75	0.76	0.75	0.76	0.77	0.75	0.75	0.75
Colombia	0.76	0.78	0.76	0.78	0.79	0.78	0.78	0.77	0.79	0.79	0.78
Ecuador	0.47	0.45	0.45	0.44	0.45	0.46	0.46	0.46	0.45	0.46	0.46
Others	0.59	0.69	0.86	0.68	0.68	0.67	0.70	0.78	0.70	0.65	0.68
Middle East	3.16	3.13	3.14	3.13	3.15	3.11	3.14	3.16	3.14	3.06	3.13
Oman	1.07	1.05	1.04	1.07	1.06	1.04	1.04	1.04	1.05	1.05	1.04
Qatar	1.80	1.81	1.81	1.81	1.81	1.81	1.81	1.82	1.81	1.81	1.81
Others	0.29	0.27	0.29	0.25	0.28	0.25	0.29	0.29	0.29	0.20	0.27
Africa	1.29	1.28	1.30	1.23	1.27	1.31	1.30	1.30	1.29	1.31	1.31
Egypt	0.60	0.60	0.60	0.59	0.60	0.60	0.60	0.60	0.60	0.60	0.60
Others	0.70	0.68	0.70	0.64	0.67	0.71	0.70	0.70	0.69	0.71	0.71
Total Non-OECD	**30.99**	**31.33**	**31.75**	**31.61**	**31.31**	**31.15**	**31.27**	**31.70**	**31.38**	**31.13**	**31.14**
Processing gains[5]	2.31	2.35	2.44	2.31	2.35	2.38	2.37	2.44	2.37	2.40	2.39
Global biofuels	2.95	3.15	3.28	2.65	3.26	3.53	3.14	2.77	3.44	3.53	3.57
TOTAL NON-OPEC	**65.59**	**67.55**	**68.77**	**67.01**	**67.43**	**67.82**	**67.95**	**67.99**	**67.99**	**67.80**	**67.97**
TOTAL SUPPLY	**100.10**			**101.85**	**101.80**				**102.36**	**101.20**	**101.48**

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

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

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

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

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

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

	2022	2023	2024	1Q23	2Q23	3Q23	4Q23	1Q24	Jun 23	Jul 23	Aug 23
United States											
Alaska	437	425	422	443	429	390	440	443	423	387	381
California	349	315	306	312	319	316	314	311	321	317	317
Texas	5060	5471	5641	5361	5462	5542	5517	5550	5518	5533	5545
New Mexico	1589	1776	1888	1816	1808	1737	1745	1803	1764	1755	1725
Federal Gulf of Mexico[2]	1730	1840	1883	1870	1764	1838	1888	1957	1853	1853	1912
Other US Lower 48	2746	2918	2962	2824	2927	2958	2959	2946	2964	2951	2952
NGLs[3]	5933	6270	6352	6010	6424	6354	6289	6155	6527	6379	6349
Other Hydrocarbons	84	78	72	82	77	79	74	80	84	89	77
Total	**17928**	**19094**	**19527**	**18717**	**19211**	**19214**	**19226**	**19244**	**19454**	**19264**	**19259**
Canada											
Alberta Light/Medium/Heavy	491	511	530	523	498	513	509	535	486	516	511
Alberta Bitumen	1995	2026	2057	1975	1844	2136	2145	1955	1924	2051	2190
Saskatchewan	455	451	440	457	454	449	445	446	453	451	449
Other Crude	433	392	451	403	398	372	394	409	378	326	418
NGLs	1035	1044	1085	1051	995	1062	1069	1075	1025	1052	1071
Other Upgraders	181	183	184	193	173	169	197	197	175	177	164
Synthetic Crudes	1167	1165	1168	1244	1086	1076	1255	1256	1058	1113	1056
Total	**5757**	**5769**	**5913**	**5845**	**5443**	**5775**	**6012**	**5872**	**5488**	**5681**	**5860**
Mexico											
Crude	1843	1955	1957	1933	1965	1948	1974	1969	1962	1919	1963
NGLs	158	170	161	166	174	171	168	165	171	172	171
Total	**2006**	**2128**	**2121**	**2103**	**2142**	**2122**	**2145**	**2137**	**2136**	**2094**	**2137**
UK											
Brent Fields	23	20	17	23	23	16	18	21	23	23	12
Forties Fields	210	186	149	205	186	165	187	181	169	170	168
Ninian Fields	20	26	22	27	27	26	25	24	26	26	26
Flotta Fields	40	31	27	36	28	31	30	29	31	30	31
Other Fields	474	446	487	487	447	388	462	464	425	407	361
NGLs	66	54	50	57	58	51	51	50	54	48	53
Total	**833**	**762**	**752**	**834**	**768**	**675**	**773**	**769**	**728**	**704**	**652**
Norway[4]											
Ekofisk-Ula Area	122	117	112	130	114	107	118	115	102	97	105
Oseberg-Troll Area	200	195	198	205	187	185	204	202	173	184	200
Statfjord-Gullfaks Area	250	203	176	236	198	193	188	183	203	195	191
Haltenbanken Area	237	233	241	226	230	232	244	247	218	233	230
Sleipner-Frigg Area	784	993	1039	924	979	1027	1040	1043	1024	1025	1027
Other Fields	116	77	71	94	106	70	40	101	106	112	29
NGLs	190	206	205	205	208	205	207	207	190	212	210
Total	**1899**	**2026**	**2043**	**2020**	**2023**	**2019**	**2040**	**2099**	**2016**	**2058**	**1991**
Other OECD Europe											
Denmark	65	63	72	61	60	63	68	73	60	62	63
Italy	83	87	78	80	91	90	89	78	89	90	89
Türkiye	69	78	88	72	76	80	82	85	77	79	80
Other	78	77	79	71	69	85	84	82	73	86	85
NGLs	7	6	6	7	6	6	6	6	7	6	6
Non-Conventional Oils	129	143	139	146	151	137	139	139	188	132	132
Total	**431**	**455**	**462**	**437**	**453**	**461**	**468**	**463**	**494**	**456**	**456**
Australia											
Gippsland Basin	8	9	9	9	9	9	9	9	9	9	9
Cooper-Eromanga Basin	18	18	17	18	18	18	17	17	18	18	18
Carnarvon Basin	108	85	92	74	67	100	98	96	67	99	100
Other Crude	177	186	178	190	182	173	197	192	194	169	189
NGLs	102	106	104	99	108	109	107	106	110	107	111
Total	**413**	**403**	**400**	**391**	**385**	**408**	**428**	**420**	**398**	**402**	**426**
Other OECD Asia Oceania											
New Zealand	16	16	14	17	18	16	15	14	18	19	15
Japan	3	3	3	3	3	3	3	3	3	3	3
NGLs	11	10	8	11	10	9	8	8	10	10	8
Non-Conventional Oils	38	38	37	38	38	37	37	37	38	37	37
Total	**68**	**67**	**62**	**69**	**69**	**65**	**63**	**63**	**69**	**68**	**64**
OECD											
Crude Oil	20230	21239	21726	21112	20998	21282	21560	21600	21171	21196	21412
NGLs	7509	7875	7979	7614	7993	7975	7914	7782	8102	7994	7989
Non-Conventional Oils[5]	1605	1607	1601	1706	1524	1499	1703	1710	1536	1547	1470
Total	**29344**	**30722**	**31306**	**30433**	**30514**	**30756**	**31177**	**31092**	**30809**	**30738**	**30871**

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 aggregated with crude oil.
4 North Sea production is grouped into crude streams that include all fields being processed through the named field complex, i.e. the name corresponds to the crude stream not just the field of that name.
5 Does not include biofuels.

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

	2021	2022	2023	1Q22	2Q22	3Q22	4Q22	1Q23	2Q23	Jun 23	Jul 23	Aug 23
OPEC+												
Crude Oil												
Algeria	0.91	1.01	0.97	0.99	1.01	1.02	1.02	1.01	0.97	0.95	0.96	0.93
Angola	1.12	1.14	1.09	1.16	1.17	1.15	1.08	1.05	1.10	1.12	1.15	1.13
Azerbaijan	0.59	0.56	0.52	0.58	0.56	0.55	0.55	0.53	0.50	0.50	0.50	0.50
Bahrain	0.17	0.19	0.18	0.18	0.19	0.20	0.19	0.17	0.20	0.20	0.12	0.19
Brunei	0.08	0.07	0.07	0.08	0.07	0.07	0.07	0.07	0.07	0.06	0.08	0.08
Congo	0.27	0.26	0.28	0.27	0.26	0.26	0.26	0.28	0.28	0.28	0.28	0.27
Equatorial Guinea	0.10	0.08	0.06	0.09	0.09	0.09	0.06	0.05	0.06	0.07	0.06	0.07
Gabon	0.18	0.19	0.19	0.19	0.18	0.20	0.18	0.20	0.20	0.20	0.22	0.22
Iran	2.42	2.55	2.97	2.55	2.46	2.55	2.63	2.70	3.00	3.04	3.04	3.14
Iraq	4.03	4.45	4.26	4.29	4.45	4.54	4.50	4.39	4.14	4.19	4.27	4.32
Kazakhstan	1.52	1.50	1.58	1.63	1.43	1.35	1.60	1.64	1.62	1.60	1.52	1.46
Kuwait	2.42	2.70	2.59	2.61	2.67	2.80	2.71	2.68	2.60	2.55	2.55	2.55
Libya	1.15	0.99	1.16	1.08	0.77	0.96	1.17	1.15	1.16	1.16	1.13	1.16
Malaysia	0.42	0.40	0.38	0.41	0.39	0.38	0.40	0.39	0.36	0.37	0.38	0.37
Mexico	1.66	1.62	1.67	1.64	1.62	1.62	1.62	1.65	1.67	1.67	1.64	1.67
Nigeria	1.31	1.15	1.21	1.30	1.15	1.00	1.13	1.27	1.15	1.24	1.10	1.18
Oman	0.75	0.85	0.81	0.82	0.84	0.88	0.85	0.84	0.82	0.80	0.80	0.80
Russia	9.62	9.75	9.57	10.04	9.40	9.78	9.78	9.74	9.51	9.48	9.48	9.48
Saudi Arabia	9.15	10.53	9.63	10.17	10.44	10.92	10.57	10.42	10.14	9.98	9.08	8.98
South Sudan	0.15	0.14	0.15	0.14	0.14	0.15	0.14	0.12	0.15	0.17	0.19	0.18
Sudan	0.06	0.06	0.05	0.06	0.06	0.06	0.06	0.06	0.06	0.05	0.05	0.05
UAE	2.78	3.34	3.29	3.15	3.35	3.47	3.39	3.44	3.27	3.27	3.22	3.22
Venezuela	0.61	0.70	0.78	0.72	0.74	0.66	0.68	0.71	0.79	0.79	0.81	0.79
Total Crude Oil	**41.49**	**44.22**	**43.49**	**44.14**	**43.45**	**44.65**	**44.64**	**44.57**	**43.82**	**43.75**	**42.62**	**42.75**
of which Neutral Zone	*0.25*	*0.28*		*0.27*	*0.28*	*0.31*	*0.27*	*0.29*	*0.31*	*0.31*	*0.26*	*0.22*
Total NGLs	**7.67**	**8.00**	**8.26**	**7.99**	**7.97**	**7.94**	**8.10**	**8.31**	**8.28**	**8.25**	**8.23**	**8.21**
TOTAL OPEC+	**49.17**	**52.2**	**51.8**	**52.1**	**51.4**	**52.6**	**52.7**	**52.9**	**52.1**	**52.0**	**50.8**	**51.0**
NON-OPEC+												
OECD												
Americas[2]	22.37	23.69	24.87	23.00	23.39	24.07	24.30	24.57	24.66	24.95	24.96	25.13
United States	16.77	17.93	19.09	17.27	17.81	18.26	18.35	18.72	19.21	19.45	19.26	19.26
Canada	5.59	5.76	5.77	5.71	5.57	5.79	5.95	5.84	5.44	5.49	5.68	5.86
Chile	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Europe	3.39	3.16	3.24	3.33	3.03	3.09	3.21	3.29	3.24	3.24	3.22	3.10
UK	0.88	0.83	0.76	0.91	0.85	0.75	0.81	0.83	0.77	0.73	0.70	0.65
Norway	2.05	1.90	2.03	1.98	1.74	1.91	1.97	2.02	2.02	2.02	2.06	1.99
Others	0.46	0.43	0.45	0.43	0.44	0.43	0.43	0.44	0.45	0.49	0.46	0.46
Asia Oceania	0.51	0.48	0.48	0.49	0.51	0.43	0.48	0.46	0.46	0.48	0.47	0.51
Australia	0.44	0.41	0.40	0.42	0.45	0.37	0.42	0.39	0.38	0.40	0.40	0.43
Others	0.07	0.07	0.07	0.07	0.07	0.07	0.06	0.07	0.08	0.08	0.07	0.08
Total OECD (non-OPEC+)	**26.28**	**27.34**	**28.59**	**26.82**	**26.94**	**27.59**	**27.99**	**28.33**	**28.37**	**28.67**	**28.64**	**28.73**
Non-OECD												
FSU	0.35	0.32	0.31	0.34	0.30	0.31	0.31	0.32	0.31	0.31	0.31	0.31
Asia	6.24	6.23	6.28	6.32	6.29	6.14	6.16	6.36	6.36	6.38	6.18	6.27
China	4.06	4.18	4.28	4.23	4.23	4.12	4.13	4.34	4.34	4.36	4.18	4.28
India	0.73	0.70	0.69	0.72	0.71	0.70	0.69	0.68	0.69	0.69	0.69	0.69
Indonesia	0.68	0.63	0.63	0.65	0.63	0.62	0.63	0.64	0.64	0.63	0.63	0.63
Others	0.77	0.71	0.68	0.73	0.71	0.70	0.71	0.70	0.69	0.69	0.68	0.68
Europe	0.11	0.11	0.10	0.11	0.11	0.11	0.11	0.10	0.10	0.10	0.10	0.10
Americas	5.30	5.65	6.09	5.44	5.49	5.75	5.89	5.96	6.00	6.13	6.23	6.19
Brazil	3.00	3.12	3.41	3.08	3.00	3.16	3.23	3.30	3.32	3.45	3.59	3.51
Argentina	0.64	0.71	0.76	0.69	0.70	0.72	0.74	0.75	0.76	0.75	0.75	0.75
Colombia	0.74	0.76	0.78	0.75	0.76	0.76	0.78	0.78	0.79	0.79	0.79	0.78
Ecuador	0.48	0.47	0.45	0.47	0.45	0.47	0.46	0.44	0.45	0.45	0.46	0.46
Others	0.44	0.59	0.69	0.44	0.58	0.65	0.68	0.68	0.68	0.70	0.65	0.68
Middle East	1.90	1.89	1.89	1.87	1.91	1.90	1.88	1.89	1.89	1.88	1.88	1.88
Qatar	1.80	1.80	1.81	1.78	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81
Others	0.10	0.09	0.08	0.10	0.10	0.10	0.08	0.07	0.07	0.07	0.07	0.07
Africa	1.12	1.09	1.07	1.10	1.10	1.09	1.09	1.06	1.07	1.07	1.07	1.08
Egypt	0.59	0.60	0.60	0.59	0.61	0.60	0.60	0.59	0.60	0.60	0.60	0.60
Others	0.52	0.49	0.48	0.51	0.48	0.49	0.49	0.47	0.46	0.47	0.47	0.48
Total non-OECD (non-OPEC+)	**15.02**	**15.28**	**15.74**	**15.18**	**15.19**	**15.31**	**15.44**	**15.68**	**15.73**	**15.88**	**15.78**	**15.84**
Processing gains	2.24	2.31	2.35	2.29	2.30	2.33	2.32	2.31	2.35	2.37	2.40	2.39
Global biofuels	2.79	2.95	3.15	2.51	3.08	3.30	2.89	2.65	3.26	3.44	3.53	3.57
TOTAL NON-OPEC+	**46.33**	**47.87**	**49.84**	**46.79**	**47.51**	**48.52**	**48.65**	**48.97**	**49.70**	**50.36**	**50.35**	**50.53**
TOTAL SUPPLY	**95.50**	**100.10**	**101.59**	**98.92**	**98.92**	**101.11**	**101.39**	**101.85**	**101.80**	**102.36**	**101.20**	**101.48**

1 From Sep 2023, OPEC+ supply reflects latest OPEC+ deal and individual country's sustainable capacity. Libya, Iran, Venezuela held at most recent level through 2024.
2 Excludes Mexico.

Table 4
OECD STOCKS AND QUARTERLY STOCK CHANGES

	RECENT MONTHLY STOCKS[2] in Million Barrels					PRIOR YEARS' STOCKS[2] in Million Barrels			STOCK CHANGES in mb/d			
	Mar2023	Apr2023	May2023	Jun2023	Jul2023[3]	Jul2020	Jul2021	Jul2022	3Q2022	4Q2022	1Q2023	2Q2023
OECD INDUSTRY-CONTROLLED STOCKS[1]												
OECD Americas												
Crude	620.5	615.3	613.6	602.4	595.6	668.4	606.7	576.3	0.09	0.17	0.29	-0.20
Motor Gasoline	254.2	251.3	248.3	249.1	247.7	278.7	258.3	251.4	-0.11	0.17	0.03	-0.06
Middle Distillate	181.0	185.0	184.5	184.8	187.0	250.6	216.9	181.1	-0.05	0.11	-0.04	0.04
Residual Fuel Oil	35.9	39.5	39.4	36.8	34.0	42.5	36.0	35.1	-0.01	0.03	-0.02	0.01
Total Products[4]	706.6	727.1	740.1	751.1	767.7	866.9	781.1	729.7	0.32	0.01	-0.30	0.49
Total[5]	**1485.4**	**1503.1**	**1509.4**	**1509.2**	**1519.4**	**1715.8**	**1556.3**	**1470.1**	**0.35**	**0.20**	**-0.03**	**0.26**
OECD Europe												
Crude	338.8	352.5	353.2	346.8	351.6	383.0	336.6	337.6	-0.03	0.00	0.02	0.09
Motor Gasoline	89.3	86.2	82.7	80.5	82.5	94.1	83.4	87.5	0.01	0.00	0.02	-0.10
Middle Distillate	246.9	256.8	257.5	245.9	257.0	334.1	294.6	245.5	-0.03	0.17	-0.05	-0.01
Residual Fuel Oil	67.5	68.9	70.2	65.5	63.2	74.2	62.4	64.0	0.02	0.04	-0.03	-0.02
Total Products[4]	505.8	516.8	514.8	495.9	508.7	620.7	539.7	507.5	0.03	0.19	-0.14	-0.11
Total[5]	**919.4**	**948.1**	**945.9**	**919.6**	**938.4**	**1091.9**	**951.3**	**921.2**	**0.07**	**0.20**	**-0.19**	**0.00**
OECD Asia Oceania												
Crude	139.7	142.2	130.0	133.4	132.5	170.3	114.5	104.9	0.36	0.00	0.13	-0.07
Motor Gasoline	24.5	26.7	24.8	25.1	23.4	25.7	26.1	23.9	-0.02	0.01	0.00	0.01
Middle Distillate	54.7	61.2	62.5	60.1	59.6	71.2	66.2	63.7	0.01	0.00	-0.09	0.06
Residual Fuel Oil	16.3	17.3	17.7	17.2	17.7	18.3	17.7	15.7	0.01	0.00	0.00	0.01
Total Products[4]	157.2	166.6	166.9	167.5	163.9	181.1	169.1	167.8	0.04	-0.05	-0.08	0.11
Total[5]	**350.9**	**366.9**	**355.6**	**358.9**	**356.6**	**413.7**	**345.1**	**330.1**	**0.45**	**-0.06**	**-0.03**	**0.09**
Total OECD												
Crude	1099.0	1110.0	1096.8	1082.6	1079.8	1221.7	1057.7	1018.9	0.42	0.17	0.44	-0.18
Motor Gasoline	368.0	364.3	355.8	354.7	353.6	398.5	367.8	362.9	-0.12	0.18	0.05	-0.15
Middle Distillate	482.6	502.9	504.5	490.8	503.6	655.9	577.6	490.3	-0.06	0.27	-0.17	0.09
Residual Fuel Oil	119.7	125.7	127.3	119.6	114.9	135.1	116.2	114.7	0.01	0.07	-0.05	0.00
Total Products[4]	1369.6	1410.5	1421.8	1414.5	1440.2	1668.7	1489.9	1405.0	0.38	0.15	-0.52	0.49
Total[5]	**2755.7**	**2818.0**	**2810.9**	**2787.6**	**2814.3**	**3221.4**	**2852.7**	**2721.4**	**0.87**	**0.34**	**-0.25**	**0.35**
OECD GOVERNMENT-CONTROLLED STOCKS[6]												
OECD Americas												
Crude	371.2	363.7	354.4	347.2	347.4	656.1	621.3	468.0	-0.84	-0.48	-0.01	-0.26
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	187.7	185.0	186.8	189.3	190.5	207.8	204.4	194.6	-0.01	-0.01	-0.06	0.02
Products	270.7	273.7	276.2	278.8	278.0	281.6	277.7	255.3	-0.04	0.15	0.05	0.09
OECD Asia Oceania												
Crude	347.8	348.5	352.1	351.4	351.3	377.2	373.9	357.2	-0.17	0.01	0.06	0.04
Products	35.4	35.5	35.7	35.7	35.5	39.4	38.8	37.3	0.00	-0.02	0.00	0.00
Total OECD												
Crude	906.7	897.2	893.2	887.8	889.2	1241.2	1199.6	1019.7	-1.02	-0.49	-0.01	-0.21
Products	308.1	311.2	313.9	316.5	315.4	322.9	318.6	294.7	-0.04	0.13	0.04	0.09
Total[5]	**1216.7**	**1210.0**	**1208.7**	**1205.8**	**1206.8**	**1566.1**	**1519.8**	**1315.5**	**-1.06**	**-0.35**	**0.03**	**-0.12**

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.

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

(million barrels)

	February			March			April			May			June		
	2022	2023	%	2022	2023	%	2022	2023	%	2022	2023	%	2022	2023	%
United States[2]															
Crude	408.5	472.4	15.6	414.2	465.4	12.4	417.4	459.9	10.2	415.1	460.8	11.0	417.8	454.7	8.8
Motor Gasoline	250.3	242.3	-3.2	238.5	225.3	-5.5	230.0	223.6	-2.8	220.7	222.1	0.6	221.0	224.2	1.4
Middle Distillate	161.9	163.6	1.1	151.6	151.3	-0.2	145.2	154.3	6.3	152.1	156.8	3.1	151.6	157.6	4.0
Residual Fuel Oil	28.0	31.3	11.8	28.1	29.6	5.3	29.5	32.1	8.8	29.5	32.8	11.2	29.3	30.4	3.8
Other Products	178.6	212.5	19.0	180.0	212.9	18.3	191.5	228.2	19.2	211.6	245.1	15.8	219.4	258.9	18.0
Total Products	618.8	649.7	5.0	598.2	619.1	3.5	596.2	638.2	7.0	613.9	656.8	7.0	621.3	671.1	8.0
Other[3]	138.2	144.7	4.7	141.9	145.7	2.7	140.2	146.9	4.8	143.2	141.7	-1.0	141.3	140.5	-0.6
Total	**1165.5**	**1266.8**	**8.7**	**1154.3**	**1230.2**	**6.6**	**1153.8**	**1245.0**	**7.9**	**1172.2**	**1259.3**	**7.4**	**1180.4**	**1266.3**	**7.3**
Japan															
Crude	70.7	76.1	7.6	76.0	76.7	0.9	80.3	83.2	3.6	74.9	77.1	2.9	67.0	84.2	25.7
Motor Gasoline	10.9	10.4	-4.6	9.8	9.9	1.0	10.3	10.4	1.0	10.3	10.6	2.9	9.9	10.1	2.0
Middle Distillate	26.7	25.7	-3.7	23.3	23.7	1.7	24.7	26.3	6.5	26.6	27.4	3.0	26.6	27.4	3.0
Residual Fuel Oil	6.5	6.8	4.6	5.7	6.7	17.5	6.2	6.9	11.3	6.8	7.4	8.8	6.7	8.0	19.4
Other Products	32.2	31.9	-0.9	32.0	34.5	7.8	33.1	37.1	12.1	34.8	34.9	0.3	34.8	36.0	3.4
Total Products	76.3	74.8	-2.0	70.8	74.8	5.6	74.3	80.7	8.6	78.5	80.3	2.3	78.0	81.5	4.5
Other[3]	43.7	45.3	3.7	42.0	42.9	2.1	47.3	46.3	-2.1	49.9	47.1	-5.6	47.8	47.5	-0.6
Total	**190.7**	**196.2**	**2.9**	**188.8**	**194.4**	**3.0**	**201.9**	**210.2**	**4.1**	**203.3**	**204.5**	**0.6**	**192.8**	**213.2**	**10.6**
Germany															
Crude	47.3	49.7	5.1	48.2	49.5	2.7	48.8	51.7	5.9	50.7	53.7	5.9	49.6	50.3	1.4
Motor Gasoline	10.7	10.8	0.9	10.8	9.1	-15.7	11.7	8.9	-23.9	11.9	8.8	-26.1	10.2	9.0	-11.8
Middle Distillate	21.7	29.3	35.0	24.4	23.6	-3.3	27.3	24.0	-12.1	26.2	25.4	-3.1	25.2	23.7	-6.0
Residual Fuel Oil	8.8	8.6	-2.3	8.0	8.8	10.0	8.1	9.0	11.1	8.3	8.8	6.0	8.7	8.6	-1.1
Other Products	9.8	9.5	-3.1	9.7	9.3	-4.1	10.4	10.0	-3.8	9.7	9.8	1.0	9.4	9.6	2.1
Total Products	51.0	58.2	14.1	52.9	50.8	-4.0	57.5	51.9	-9.7	56.1	52.8	-5.9	53.5	50.9	-4.9
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	**98.3**	**107.9**	**9.8**	**101.1**	**100.3**	**-0.8**	**106.3**	**103.6**	**-2.5**	**106.8**	**106.5**	**-0.3**	**103.1**	**101.2**	**-1.8**
Italy															
Crude	30.4	36.2	19.1	32.7	39.8	21.7	34.1	39.3	15.2	36.4	39.0	7.1	38.2	36.7	-3.9
Motor Gasoline	11.3	10.6	-6.2	11.3	10.5	-7.1	10.5	10.3	-1.9	11.6	10.0	-13.8	10.2	9.0	-11.8
Middle Distillate	23.8	24.4	2.5	23.1	23.8	3.0	22.6	23.1	2.2	22.5	25.0	11.1	21.2	23.6	11.3
Residual Fuel Oil	8.1	7.5	-7.4	7.9	7.1	-10.1	8.7	7.2	-17.2	8.3	7.2	-13.3	7.8	6.3	-19.2
Other Products	11.3	11.4	0.9	11.0	11.4	3.6	11.4	11.3	-0.9	11.8	11.7	-0.8	11.5	10.8	-6.1
Total Products	54.5	53.9	-1.1	53.3	52.8	-0.9	53.2	51.9	-2.4	54.2	53.9	-0.6	50.7	49.7	-2.0
Other[3]	13.1	14.1	7.6	14.7	14.9	1.4	14.6	15.6	6.8	13.8	15.1	9.4	14.9	15.8	6.0
Total	**98.0**	**104.2**	**6.3**	**100.7**	**107.5**	**6.8**	**101.9**	**106.8**	**4.8**	**104.4**	**108.0**	**3.4**	**103.8**	**102.2**	**-1.5**
France															
Crude	12.4	11.3	-8.9	12.1	7.5	-38.0	10.2	15.5	52.0	11.9	13.6	14.3	13.5	10.6	-21.5
Motor Gasoline	4.5	5.6	24.4	4.2	4.9	16.7	4.9	5.2	6.1	4.5	5.4	20.0	4.4	4.7	6.8
Middle Distillate	16.5	21.8	32.1	18.6	16.2	-12.9	19.3	20.9	8.3	19.7	20.2	2.5	17.2	17.9	4.1
Residual Fuel Oil	1.3	1.4	7.7	0.7	1.9	171.4	1.1	1.4	27.3	1.5	1.3	-13.3	2.1	0.8	-61.9
Other Products	3.5	3.9	11.4	3.6	3.6	0.0	3.8	3.2	-15.8	3.5	3.5	0.0	3.6	3.6	0.0
Total Products	25.8	32.7	26.7	27.1	26.6	-1.8	29.1	30.7	5.5	29.2	30.4	4.1	27.3	27.0	-1.1
Other[3]	7.1	7.6	7.0	7.1	6.1	-14.1	7.6	7.7	1.3	8.2	7.1	-13.4	7.7	6.8	-11.7
Total	**45.3**	**51.6**	**13.9**	**46.3**	**40.2**	**-13.2**	**46.9**	**53.9**	**14.9**	**49.3**	**51.1**	**3.7**	**48.5**	**44.4**	**-8.5**
United Kingdom															
Crude	26.4	25.8	-2.3	26.5	25.3	-4.5	25.2	27.3	8.3	24.1	28.2	17.0	23.6	25.6	8.5
Motor Gasoline	9.5	9.7	2.1	9.2	8.9	-3.3	9.9	8.3	-16.2	9.7	8.2	-15.5	9.4	8.7	-7.4
Middle Distillate	18.3	21.0	14.8	16.8	20.4	21.4	18.4	23.3	26.6	18.1	20.9	15.5	17.9	18.2	1.7
Residual Fuel Oil	1.5	1.0	-33.3	1.4	1.2	-14.3	1.7	1.3	-23.5	1.7	1.0	-41.2	1.4	1.3	-7.1
Other Products	6.1	6.2	1.6	5.6	5.8	3.6	6.8	6.7	-1.5	6.8	6.2	-8.8	6.8	5.9	-13.2
Total Products	35.4	37.9	7.1	33.0	36.3	10.0	36.8	39.6	7.6	36.3	36.3	0.0	35.5	34.1	-3.9
Other[3]	7.8	7.9	1.3	7.7	8.0	3.9	7.5	8.0	6.7	6.8	7.6	11.8	7.2	7.2	0.0
Total	**69.6**	**71.6**	**2.9**	**67.2**	**69.6**	**3.6**	**69.5**	**74.9**	**7.8**	**67.2**	**72.1**	**7.3**	**66.3**	**66.9**	**0.9**
Canada[4]															
Crude	122.4	117.6	-3.9	119.4	118.6	-0.7	122.6	119.9	-2.2	121.3	116.8	-3.7	120.0	111.2	-7.3
Motor Gasoline	16.3	17.4	6.7	16.6	17.3	4.2	15.3	16.4	7.2	13.4	14.8	10.4	13.7	15.0	9.5
Middle Distillate	18.0	19.8	10.0	17.9	20.2	12.8	18.2	20.8	14.3	17.3	18.2	5.2	17.1	18.2	6.4
Residual Fuel Oil	2.2	2.4	9.1	2.3	2.6	13.0	1.9	2.2	15.8	2.7	2.6	-3.7	2.1	2.5	19.0
Other Products	13.2	13.2	0.0	13.6	13.6	0.0	13.9	13.6	-2.2	13.8	13.4	-2.9	13.7	12.3	-10.2
Total Products	49.7	52.8	6.2	50.4	53.7	6.5	49.3	53.0	7.5	47.2	49.0	3.8	46.6	48.0	3.0
Other[3]	16.4	12.6	-23.2	15.9	12.5	-21.4	17.1	13.7	-19.9	19.6	13.9	-29.1	21.2	14.9	-29.7
Total	**188.5**	**183.0**	**-2.9**	**185.7**	**184.8**	**-0.5**	**189.0**	**186.6**	**-1.3**	**188.1**	**179.7**	**-4.5**	**187.8**	**174.1**	**-7.3**

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.

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

	End June 2022		End September 2022		End December 2022		End March 2023		End June 2023 [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	187.9	76	184.3	77	196.3	84	184.8	75	174.0	-
Chile	9.9	27	10.6	29	10.6	28	10.8	29	10.9	-
Mexico	36.6	19	36.7	20	36.6	20	37.3	20	35.8	-
United States[4]	1675.7	83	1634.0	82	1596.6	81	1603.5	79	1615.6	-
Total[4]	**1932.3**	**77**	**1887.7**	**77**	**1862.2**	**76**	**1858.6**	**74**	**1858.3**	**74**
OECD Asia Oceania										
Australia	38.6	36	35.8	32	38.7	35	39.8	35	38.9	-
Israel	-	-	-	-	-	-	-	-	-	-
Japan	502.8	157	522.4	146	513.9	138	492.5	159	510.7	-
Korea	165.9	66	174.5	69	173.8	68	196.0	84	190.8	-
New Zealand	6.0	42	6.1	35	5.5	36	5.8	38	5.4	-
Total	**713.3**	**99**	**738.8**	**97**	**731.9**	**94**	**734.1**	**105**	**745.9**	**103**
OECD Europe[5]										
Austria	20.0	81	17.4	72	21.3	91	22.6	91	22.0	-
Belgium	44.8	74	45.4	77	45.7	73	45.5	77	46.9	-
Czech Republic	22.3	102	22.6	105	23.1	116	23.6	113	22.0	-
Denmark	21.7	141	21.1	142	23.6	167	22.8	149	21.8	-
Estonia	2.3	74	2.3	80	3.4	120	3.2	110	3.0	-
Finland	41.0	205	40.4	219	38.0	222	35.9	198	36.4	-
France	144.6	89	142.3	97	151.3	99	138.7	89	151.8	-
Germany	267.7	120	265.6	125	271.7	131	264.4	126	264.9	-
Greece	29.8	87	30.4	97	31.9	118	32.1	107	31.6	-
Hungary	29.2	159	28.6	172	28.7	177	30.5	172	30.7	-
Ireland	10.3	68	10.3	65	11.0	70	10.3	67	10.3	-
Italy	119.3	96	123.3	104	120.0	106	122.9	104	117.7	-
Latvia	2.8	70	2.8	82	2.9	89	1.9	55	3.0	-
Lithuania	8.4	116	8.2	115	8.3	133	8.7	122	8.5	-
Luxembourg	0.7	14	0.6	14	0.5	11	0.5	10	0.5	-
Netherlands	127.1	148	125.2	141	139.8	155	130.1	142	126.3	-
Norway	25.5	95	26.0	128	27.2	123	27.8	115	26.1	-
Poland	82.4	114	82.1	116	83.8	128	88.5	125	87.5	-
Portugal	22.5	88	21.1	103	20.0	91	18.9	86	19.1	-
Slovak Republic	13.2	146	13.5	141	13.1	141	13.5	148	12.5	-
Slovenia	4.8	89	4.5	85	4.9	100	4.5	92	4.7	-
Spain	107.9	82	111.5	87	109.5	87	110.2	88	112.9	-
Sweden	31.4	103	34.5	118	36.0	121	36.9	121	39.1	-
Switzerland	29.9	150	28.2	140	27.4	145	28.4	144	29.0	-
Republic of Türkiye	87.8	80	86.6	83	88.6	92	87.9	82	93.9	-
United Kingdom	66.3	47	71.1	52	65.9	47	69.6	48	66.9	-
Total	**1363.8**	**97**	**1365.8**	**102**	**1397.5**	**107**	**1379.7**	**102**	**1389.2**	**101**
Total OECD	**4009.4**	**87**	**3992.3**	**88**	**3991.5**	**88**	**3972.4**	**87**	**3993.4**	**86**
DAYS OF IEA Net Imports[6]	-	**244**	-	**242**	-	**241**	-	**242**	-	**143**

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 June 2023 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]		
2Q2020	4778	1561	3217	113	37	76
3Q2020	4732	1551	3181	110	36	74
4Q2020	4578	1541	3037	108	36	71
1Q2021	4470	1546	2924	102	35	66
2Q2021	4405	1524	2882	96	33	63
3Q2021	4281	1513	2768	91	32	59
4Q2021	4135	1484	2651	90	32	58
1Q2022	4057	1442	2615	90	32	58
2Q2022	4009	1343	2666	87	29	58
3Q2022	3992	1246	2747	88	27	60
4Q2022	3992	1214	2778	88	27	61
1Q2023	3972	1217	2756	87	27	60
2Q2023	3993	1206	2788	86	26	60

1 Includes government-owned stocks and stock holding organisation stocks held for emergency purposes.
2 Days of forward demand calculated using actual demand except in 2Q2023 (where latest forecasts are used).

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

	2020	2021	2022	3Q22	4Q22	1Q23	2Q23	Apr 23	May 23	Jun 23	Year Earlier Jun 22	Year Earlier change
Saudi Light & Extra Light												
Americas	0.26	0.34	0.46	0.52	0.41	0.39	0.39	0.38	0.40	0.41	0.50	-0.09
Europe	0.59	0.48	0.62	0.60	0.67	0.66	0.69	0.78	0.62	0.66	0.65	0.01
Asia Oceania	1.39	1.30	1.51	1.53	1.58	1.58	1.17	1.47	1.39	0.64	1.17	-0.53
Saudi Medium												
Americas	0.14	0.01	-	-	-	-	-	-	-	-	-	-
Europe	0.02	0.01	0.02	0.03	0.01	0.01	-	-	-	-	0.12	-
Asia Oceania	0.25	0.21	0.23	0.26	0.23	0.25	0.16	0.23	0.17	0.07	0.26	-0.19
Canada Heavy												
Americas	2.39	2.59	2.61	2.58	2.63	2.70	2.58	2.62	2.49	2.62	2.48	0.14
Europe	0.03	0.03	0.08	0.08	0.11	0.07	0.14	0.14	0.15	0.11	0.08	0.03
Asia Oceania	0.00	0.02	0.01	0.01	-	-	-	-	-	-	-	-
Iraqi Basrah Light[2]												
Americas	0.11	0.08	0.21	0.25	0.13	0.33	0.18	0.11	0.23	0.21	0.31	-0.10
Europe	0.58	0.62	0.69	0.82	0.69	0.71	0.77	0.76	0.66	0.89	0.60	0.29
Asia Oceania	0.22	0.17	0.23	0.26	0.26	0.27	0.26	0.23	0.26	0.30	0.23	0.07
Kuwait Blend												
Americas	-	-	-	-	-	-	-	-	-	-	-	-
Europe	0.04	-	-	-	-	-	-	-	-	-	-	-
Asia Oceania	0.55	0.48	0.48	0.47	0.46	0.51	0.38	0.47	0.45	0.23	0.38	-0.15
Iranian Light												
Americas	-	-	-	-	-	-	-	-	-	-	-	-
Europe	-	-	-	-	-	-	-	-	-	-	-	-
Asia Oceania	-	-	-	-	-	-	-	-	-	-	-	-
Iranian Heavy[3]												
Americas	-	-	-	-	-	-	-	-	-	-	-	-
Europe	-	-	-	-	-	-	-	-	-	-	-	-
Asia Oceania	-	-	-	-	-	-	-	-	-	-	-	-
BFOE												
Americas	-	0.00	-	-	-	-	-	-	-	-	-	-
Europe	0.42	0.36	0.41	0.44	0.38	0.49	0.48	0.49	0.63	0.31	0.36	-0.05
Asia Oceania	0.03	0.05	0.03	0.02	-	-	-	-	-	-	0.04	-
Kazakhstan												
Americas	-	0.01	-	-	-	-	-	-	-	-	-	-
Europe	0.74	0.69	0.73	0.67	0.70	0.98	0.97	0.96	0.92	1.02	0.69	0.32
Asia Oceania	0.07	0.09	0.13	0.09	0.14	0.15	0.14	0.16	0.20	0.07	0.21	-0.14
Venezuelan 22 API and heavier												
Americas	-	-	-	-	-	-	0.03	0.09	-	-	-	-
Europe	0.04	-	0.01	0.04	0.02	0.01	0.02	0.03	-	0.03	-	-
Asia Oceania	-	-	-	-	-	-	-	-	-	-	-	-
Mexican Maya												
Americas	0.48	0.40	0.40	0.40	0.36	0.43	0.38	0.28	0.39	0.46	0.45	0.01
Europe	0.16	0.14	0.10	0.09	0.12	0.09	0.10	0.12	0.08	0.10	0.07	0.03
Asia Oceania	0.12	0.14	0.06	0.04	0.08	0.05	0.05	0.05	0.05	0.05	0.07	-0.02
Russian Urals												
Americas	-	-	-	-	-	-	-	-	-	-	-	-
Europe	1.12	1.05	0.74	0.71	0.40	0.13	0.09	0.09	0.10	0.10	0.79	-0.69
Asia Oceania	-	0.01	-	-	-	-	-	-	-	-	-	-
Cabinda and Other Angola												
North America	0.01	-	0.00	0.00	-	-	-	-	-	-	-	-
Europe	0.12	0.03	0.23	0.29	0.31	0.35	0.22	0.28	0.20	0.20	0.41	-0.22
Pacific	-	-	0.00	0.01	0.01	-	-	-	-	-	-	-
Nigerian Light[4]												
Americas	-	0.02	0.00	0.01	-	-	-	-	-	-	-	-
Europe	0.49	0.41	0.41	0.29	0.46	0.53	0.42	0.59	0.23	0.44	0.45	-0.01
Asia Oceania	0.02	0.01	0.01	0.02	0.02	0.00	0.00	0.01	-	-	-	-
Libya Light and Medium												
Americas	-	0.02	-	-	-	-	-	-	-	-	-	-
Europe	0.19	0.80	0.63	0.52	0.76	0.65	0.76	0.72	0.81	0.74	0.39	0.35
Asia Oceania	0.01	0.02	0.01	0.01	0.01	0.02	0.00	-	0.01	-	-	-

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

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

	2020	2021	2022	3Q22	4Q22	1Q23	2Q23	Apr 23	May 23	Jun 23	Year Earlier Jun 22	Year Earlier % change
Crude Oil												
Americas	1896	2077	2115	2161	2128	2105	2182	2216	2193	2138	2205	-3%
Europe	8349	8520	9090	9302	8986	8368	8328	8620	7831	8549	9362	-9%
Asia Oceania	5579	5514	5871	6228	5724	5926	5400	5765	5162	5280	4913	7%
Total OECD	**15823**	**16110**	**17077**	**17691**	**16838**	**16399**	**15910**	**16601**	**15186**	**15967**	**16479**	**-3%**
LPG												
Americas	28	21	25	24	18	31	23	35	18	18	24	-28%
Europe	422	404	525	514	578	543	539	619	524	475	509	-7%
Asia Oceania	559	562	579	532	538	677	486	481	486	492	534	-8%
Total OECD	**1009**	**987**	**1130**	**1070**	**1134**	**1251**	**1049**	**1135**	**1027**	**985**	**1068**	**-8%**
Naphtha												
Americas	7	8	7	7	8	5	14	15	19	8	6	41%
Europe	409	513	306	225	195	176	134	137	140	125	243	-48%
Asia Oceania	1003	1146	1046	1063	1074	1118	933	1018	842	942	1010	-7%
Total OECD	**1419**	**1667**	**1359**	**1294**	**1277**	**1298**	**1082**	**1171**	**1001**	**1075**	**1259**	**-15%**
Gasoline[3]												
Americas	576	805	675	733	590	548	988	946	979	1040	1003	4%
Europe	109	106	101	108	69	63	53	74	38	47	99	-52%
Asia Oceania	116	153	176	179	179	196	197	197	230	164	237	-31%
Total OECD	**801**	**1064**	**952**	**1020**	**838**	**807**	**1238**	**1216**	**1247**	**1252**	**1339**	**-7%**
Jet & Kerosene												
Americas	159	165	134	115	177	178	160	142	173	164	141	17%
Europe	337	329	453	535	536	383	478	497	539	394	431	-9%
Asia Oceania	60	69	87	67	139	160	113	78	129	132	97	36%
Total OECD	**556**	**563**	**674**	**716**	**852**	**721**	**751**	**717**	**841**	**691**	**669**	**3%**
Gasoil/Diesel												
Americas	134	197	99	41	120	158	59	64	78	34	75	-54%
Europe	1192	1188	1225	1136	1486	1164	1255	1229	1255	1280	1130	13%
Asia Oceania	328	349	319	311	325	344	389	287	459	419	371	13%
Total OECD	**1654**	**1735**	**1644**	**1489**	**1931**	**1666**	**1703**	**1579**	**1792**	**1733**	**1575**	**10%**
Heavy Fuel Oil												
Americas	143	102	122	82	132	105	51	54	31	68	165	-59%
Europe	295	374	260	244	241	146	158	185	154	136	230	-41%
Asia Oceania	88	119	89	68	75	109	86	70	97	92	126	-27%
Total OECD	**526**	**594**	**470**	**393**	**448**	**361**	**295**	**310**	**281**	**296**	**521**	**-43%**
Other Products												
Americas	591	580	497	502	457	472	475	546	358	523	479	9%
Europe	574	605	629	643	605	561	614	595	595	653	546	20%
Asia Oceania	207	229	213	225	209	197	255	223	269	272	213	28%
Total OECD	**1372**	**1414**	**1338**	**1370**	**1270**	**1229**	**1344**	**1365**	**1222**	**1449**	**1237**	**17%**
Total Products												
Americas	1639	1878	1558	1502	1502	1497	1770	1803	1655	1856	1891	-2%
Europe	3339	3518	3500	3405	3711	3035	3231	3336	3245	3111	3188	-2%
Asia Oceania	2360	2628	2510	2445	2538	2800	2460	2353	2512	2513	2588	-3%
Total OECD	**7338**	**8024**	**7568**	**7352**	**7751**	**7333**	**7461**	**7493**	**7411**	**7480**	**7668**	**-2%**
Total Oil												
Americas	3534	3955	3674	3663	3630	3603	3953	4019	3848	3994	4096	-3%
Europe	11688	12037	12590	12707	12697	11403	11559	11956	11076	11660	12550	-7%
Asia Oceania	7939	8141	8381	8673	8262	8726	7860	8118	7673	7793	7501	4%
Total OECD	**23161**	**24134**	**24644**	**25043**	**24589**	**23732**	**23371**	**24094**	**22598**	**23447**	**24147**	**-3%**

1 Based on Monthly Oil Questionnaire data submitted by OECD countries in tonnes and converted to barrels conversion factors available at https://www.iea.org/articles/oil-market-report-glossary#a.
2 Excludes intra-regional trade.
3 Includes additives.

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

	2020	2021	2022	3Q22	4Q22	1Q23	2Q23	Apr 23	May 23	Jun 23	Year Earlier Jun 22	Year Earlier % change
Crude Oil												
Americas	1835	1982	2049	2093	2056	2053	2111	2111	2155	2066	2132	-3%
Europe	7115	7265	7523	7612	7251	6564	6433	6590	5969	6754	7916	-15%
Asia Oceania	5051	4904	5293	5690	5083	5372	4912	5208	4709	4827	4379	10%
Total OECD	**14002**	**14151**	**14865**	**15395**	**14391**	**13989**	**13456**	**13909**	**12833**	**13648**	**14427**	**-5%**
LPG												
Americas	22	20	25	24	18	31	23	35	18	18	24	-28%
Europe	252	243	256	236	283	263	275	321	259	245	230	7%
Asia Oceania	58	46	62	54	52	50	34	35	51	15	46	-67%
Total OECD	**331**	**309**	**343**	**314**	**353**	**345**	**332**	**391**	**328**	**278**	**301**	**-8%**
Naphtha												
Americas	1	4	3	2	6	3	6	5	8	4	3	27%
Europe	390	426	272	224	194	162	103	111	116	82	229	-64%
Asia Oceania	832	974	945	952	958	1047	889	983	780	908	978	-7%
Total OECD	**1223**	**1404**	**1220**	**1179**	**1158**	**1212**	**998**	**1099**	**905**	**994**	**1211**	**-18%**
Gasoline[3]												
Americas	195	248	174	214	137	155	329	319	338	328	257	28%
Europe	104	100	84	90	58	49	38	54	23	37	83	-55%
Asia Oceania	98	149	176	179	179	196	197	197	230	164	237	-31%
Total OECD	**397**	**497**	**434**	**484**	**374**	**399**	**564**	**570**	**590**	**529**	**576**	**-8%**
Jet & Kerosene												
Americas	55	63	47	25	89	91	60	42	80	59	37	59%
Europe	297	294	393	461	423	370	423	414	493	361	350	3%
Asia Oceania	60	69	87	67	139	160	113	78	129	132	97	36%
Total OECD	**413**	**426**	**527**	**552**	**650**	**622**	**597**	**534**	**702**	**552**	**484**	**14%**
Gasoil/Diesel												
Americas	103	134	43	12	48	98	39	56	38	22	36	-37%
Europe	1062	1107	1120	1034	1315	1008	1016	1042	1046	959	1083	-11%
Asia Oceania	323	349	319	311	325	344	389	287	459	419	371	13%
Total OECD	**1488**	**1591**	**1482**	**1358**	**1688**	**1450**	**1444**	**1384**	**1544**	**1401**	**1490**	**-6%**
Heavy Fuel Oil												
Americas	110	86	90	56	96	86	38	42	27	47	120	-61%
Europe	279	347	239	215	220	126	133	159	145	94	207	-55%
Asia Oceania	88	119	89	68	75	109	86	70	97	92	126	-27%
Total OECD	**477**	**552**	**418**	**339**	**390**	**320**	**257**	**271**	**268**	**232**	**452**	**-49%**
Other Products												
Americas	514	530	420	397	359	385	420	497	318	448	380	18%
Europe	352	427	443	453	415	314	364	332	393	365	392	-7%
Asia Oceania	130	151	140	148	138	131	167	143	184	174	121	44%
Total OECD	**996**	**1107**	**1003**	**998**	**911**	**830**	**951**	**972**	**895**	**988**	**893**	**11%**
Total Products												
Americas	1000	1085	803	730	753	848	915	996	827	926	857	8%
Europe	2735	2944	2806	2715	2907	2291	2351	2433	2474	2143	2574	-17%
Asia Oceania	1590	1857	1818	1779	1864	2038	1876	1792	1930	1905	1976	-4%
Total OECD	**5325**	**5885**	**5428**	**5224**	**5525**	**5177**	**5143**	**5222**	**5232**	**4974**	**5408**	**-8%**
Total Oil												
Americas	2835	3067	2852	2824	2810	2901	3027	3108	2982	2992	2989	0%
Europe	9850	10209	10330	10327	10158	8855	8784	9023	8443	8897	10490	-15%
Asia Oceania	6641	6760	7111	7469	6948	7409	6789	7000	6639	6732	6356	6%
Total OECD	**19327**	**20037**	**20292**	**20619**	**19916**	**19166**	**18600**	**19131**	**18064**	**18622**	**19835**	**-6%**

1 Based on Monthly Oil Questionnaire data submitted by OECD countries in tonnes and converted to barrels
converson factors available at https://www.iea.org/articles/oil-market-report-glossary#a.
2 Excludes intra-regional trade.
3 Includes additives.

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

	2020	2021	2022	3Q22	4Q22	1Q23	2Q23	Apr 23	May 23	Jun 23	Year Earlier Jun 22	Year Earlier % change
Crude Oil												
Americas	60	95	66	68	72	52	71	105	38	71	73	-3%
Europe	1234	1255	1567	1690	1735	1804	1895	2029	1862	1795	1446	24%
Asia Oceania	527	610	578	538	641	554	487	557	453	453	533	-15%
Total OECD	**1821**	**1959**	**2212**	**2296**	**2448**	**2410**	**2454**	**2691**	**2354**	**2319**	**2052**	**13%**
LPG												
Americas	6	1	1	0	0	0	0	0	0	0	0	na
Europe	171	161	269	278	296	280	264	298	265	230	279	-18%
Asia Oceania	501	516	517	478	486	626	452	446	435	477	488	-2%
Total OECD	**678**	**678**	**787**	**756**	**782**	**906**	**717**	**744**	**699**	**707**	**767**	**-8%**
Naphtha												
Americas	6	4	3	4	2	2	8	10	11	4	2	62%
Europe	20	87	35	1	1	14	31	27	24	44	13	224%
Asia Oceania	170	172	101	110	115	70	44	36	62	33	32	4%
Total OECD	**196**	**263**	**139**	**115**	**119**	**86**	**83**	**72**	**97**	**81**	**48**	**69%**
Gasoline[3]												
Americas	382	557	501	518	452	393	660	627	641	712	746	-5%
Europe	5	6	17	18	11	15	15	19	15	10	17	-37%
Asia Oceania	18	5	0	0	0	0	0	0	0	0	0	4%
Total OECD	**404**	**567**	**518**	**537**	**464**	**408**	**675**	**646**	**656**	**722**	**763**	**-5%**
Jet & Kerosene												
Americas	103	102	87	90	88	87	99	100	93	106	104	2%
Europe	40	35	60	74	114	12	54	83	47	33	81	-59%
Asia Oceania	0	0	0	0	0	0	0	0	0	0	0	na
Total OECD	**144**	**137**	**147**	**164**	**202**	**100**	**154**	**183**	**140**	**139**	**185**	**-25%**
Gasoil/Diesel												
Americas	31	63	56	29	72	61	20	8	39	12	39	-69%
Europe	131	81	106	101	171	156	239	187	210	321	47	586%
Asia Oceania	4	0	0	0	0	0	0	0	0	0	0	-100%
Total OECD	**166**	**144**	**162**	**131**	**243**	**217**	**259**	**194**	**249**	**333**	**86**	**289%**
Heavy Fuel Oil												
Americas	33	16	31	25	35	20	12	13	3	22	45	-52%
Europe	16	27	21	28	22	21	26	26	9	42	24	79%
Asia Oceania	0	0	0	0	0	0	0	0	0	0	0	-100%
Total OECD	**49**	**42**	**52**	**53**	**57**	**40**	**38**	**39**	**12**	**64**	**69**	**-7%**
Other Products												
Americas	78	50	77	105	98	87	55	49	40	76	99	-23%
Europe	222	178	186	190	190	247	250	264	202	288	154	87%
Asia Oceania	77	78	73	77	71	66	87	80	85	98	91	7%
Total OECD	**377**	**307**	**335**	**372**	**359**	**400**	**393**	**392**	**327**	**461**	**344**	**34%**
Total Products												
Americas	639	793	755	772	748	649	855	807	828	930	1034	-10%
Europe	604	574	694	690	805	744	879	903	771	968	614	58%
Asia Oceania	770	771	692	666	673	763	584	561	582	608	612	-1%
Total OECD	**2013**	**2138**	**2140**	**2128**	**2226**	**2156**	**2318**	**2271**	**2180**	**2507**	**2260**	**11%**
Total Oil												
Americas	699	888	822	840	820	701	926	912	866	1002	1107	-10%
Europe	1838	1829	2261	2380	2539	2548	2775	2933	2633	2763	2060	34%
Asia Oceania	1297	1381	1270	1204	1314	1317	1071	1118	1035	1061	1145	-7%
Total OECD	**3834**	**4097**	**4352**	**4424**	**4674**	**4567**	**4771**	**4963**	**4534**	**4825**	**4312**	**12%**

1 Based on Monthly Oil Questionnaire data submitted by OECD countries in tonnes and converted to barrels converson factors available at https://www.iea.org/articles/oil-market-report-glossary#a.
2 Excludes intra-regional trade.
3 Includes additives.

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

	2020	2021	2022	3Q22	4Q22	1Q23	2Q23	Apr 23	May 23	Jun 23	Year Earlier Jun 22	Year Earlier change
OECD Americas												
Venezuela	-	-	-	-	-	69	151	140	185	126	-	-
Other Central & South America	745	719	845	917	878	837	808	737	802	885	804	81
North Sea	59	92	64	60	72	52	63	105	26	60	73	-13
Other OECD Europe	1	3	-	-	-	-	4	-	12	-	-	-
Non-OECD Europe	-	-	-	-	-	-	-	-	-	-	-	-
Former Soviet Union	91	229	43	25	19	23	32	49	24	25	8	17
Saudi Arabia	588	427	535	487	516	487	434	450	432	421	686	-264
Kuwait	21	21	27	14	42	14	19	12	24	20	26	-6
Iran	-	3	1	-	-	-	-	-	-	-	-	-
Iraq	177	152	244	277	245	257	190	193	194	182	236	-54
Oman	-	-	-	-	-	-	-	-	-	-	-	-
United Arab Emirates	5	17	12	19	-	16	-	-	-	-	-	-
Other Middle East	-	-	-	-	-	-	-	-	-	-	-	-
West Africa[2]	145	228	186	201	160	265	288	363	266	236	224	12
Other Africa	45	161	153	139	196	80	186	167	229	162	148	14
Asia	17	25	5	21	-	-	7	-	-	21	-	-
Other	3	-	-	-	-	6	-	-	-	-	-	-
Total	**1896**	**2077**	**2115**	**2161**	**2128**	**2105**	**2182**	**2216**	**2193**	**2138**	**2205**	**-67**
of which Non-OECD	**1835**	**1982**	**2049**	**2093**	**2056**	**2053**	**2111**	**2111**	**2155**	**2066**	**2132**	**-65**
OECD Europe												
Canada	95	83	129	124	172	131	207	279	194	148	167	-19
Mexico + USA	1139	1172	1438	1566	1562	1673	1689	1751	1669	1647	1279	368
Venezuela	44	-	15	35	23	8	25	39	-	38	-	-
Other Central & South America	208	219	409	561	443	610	580	696	375	676	717	-41
Non-OECD Europe	25	23	15	12	15	19	17	11	23	15	13	2
Former Soviet Union	3504	3538	3179	2951	2528	1813	1845	1804	1754	1980	2935	-954
Saudi Arabia	756	518	763	867	882	873	845	912	756	870	754	116
Kuwait	48	0	-	-	-	-	-	-	-	-	-	-
Iran	6	1	-	-	-	-	-	-	-	-	-	-
Iraq	814	912	989	1121	940	932	876	908	748	978	1127	-149
Oman	-	-	-	-	-	11	11	-	-	33	-	-
United Arab Emirates	-	-	48	86	76	75	49	98	13	37	93	-56
Other Middle East	8	9	7	11	10	22	-	-	-	-	-	-
West Africa[2]	1074	822	1001	970	1055	1090	980	987	1015	936	1318	-383
Other Africa	596	1198	1071	979	1269	1064	1187	1123	1245	1190	924	266
Asia	0	0	1	-	-	-	-	-	-	-	-	-
Other	11	1	3	-	-	0	-	-	-	-	-	-
Total	**8329**	**8496**	**9067**	**9282**	**8976**	**8321**	**8310**	**8606**	**7791**	**8549**	**9327**	**-778**
of which Non-OECD	**7115**	**7265**	**7523**	**7612**	**7251**	**6564**	**6433**	**6590**	**5969**	**6754**	**7916**	**-1162**
OECD Asia Oceania												
Canada	1	16	6	10	-	-	-	-	-	-	-	-
Mexico + USA	477	496	538	486	633	554	479	533	453	453	498	-45
Venezuela	-	-	-	-	-	-	-	-	-	-	-	-
Other Central & South America	91	110	120	140	109	95	94	62	145	74	111	-37
North Sea	49	98	34	42	8	-	8	24	-	-	35	-
Other OECD Europe	-	-	-	-	-	-	-	-	-	-	-	-
Non-OECD Europe	-	-	-	-	-	-	-	-	-	-	-	-
Former Soviet Union	300	335	239	116	161	154	145	161	202	69	236	-166
Saudi Arabia	1867	1766	1991	2040	2033	2128	1845	2001	1759	1778	1652	126
Kuwait	584	506	534	516	524	586	485	520	449	487	441	46
Iran	-	-	-	-	-	-	-	-	-	-	-	-
Iraq	224	167	220	262	241	247	241	191	235	296	231	65
Oman	22	32	40	68	26	28	49	50	32	65	-	-
United Arab Emirates	1096	1083	1287	1509	1288	1220	1325	1436	1408	1128	1133	-5
Other Middle East	387	362	370	424	289	371	394	420	415	347	260	87
West Africa[2]	65	71	64	88	55	35	5	-	-	15	29	-15
Other Africa	42	56	40	33	43	44	27	20	19	43	50	-8
Non-OECD Asia	161	175	119	97	135	131	118	117	113	125	87	38
Other	210	235	265	397	173	332	184	230	-68	399	149	250
Total	**5577**	**5509**	**5868**	**6228**	**5720**	**5926**	**5400**	**5765**	**5162**	**5280**	**4913**	**367**
of which Non-OECD	**5051**	**4904**	**5293**	**5690**	**5083**	**5372**	**4912**	**5208**	**4709**	**4827**	**4379**	**448**
Total OECD Trade	**15801**	**16083**	**17050**	**17670**	**16824**	**16353**	**15892**	**16587**	**15146**	**15967**	**16445**	**-478**
of which Non-OECD	**14002**	**14151**	**14865**	**15395**	**14391**	**13989**	**13456**	**13909**	**12833**	**13648**	**14427**	**-779**

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.

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

	2020	2021	2022	3Q22	4Q22	1Q23	2Q23	Apr 23	May 23	Jun 23	Year Earlier Jun 22	Year Earlier change
OECD Americas												
Venezuela	-	-	-	-	-	-	-	-	-	-	-	-
Other Central & South America	40	41	45	61	62	49	65	44	75	75	50	24
ARA (Belgium Germany Netherlands)	149	194	170	199	100	97	216	199	215	233	367	-134
Other Europe	213	327	293	266	320	259	389	354	369	445	372	73
FSU	56	83	8	0	-	-	-	-	-	-	-	-
Saudi Arabia	6	24	27	19	20	8	33	19	37	44	74	-30
Algeria	4	1	1	2	1	-	21	64	-	1	-	-
Other Middle East & Africa	13	13	14	22	13	15	20	14	39	6	18	-12
Singapore	1	4	2	4	2	10	29	17	28	42	-	-
OECD Asia Oceania	21	37	38	54	32	38	63	83	63	43	12	31
Non-OECD Asia (excl. Singapore)	72	81	76	107	38	71	153	152	153	152	110	42
Other	-	0	0	-	0	-	-	-	-	-	-	-
Total[2]	**576**	**805**	**675**	**733**	**590**	**548**	**988**	**946**	**979**	**1040**	**1003**	**37**
of which Non-OECD	**195**	**248**	**174**	**214**	**137**	**155**	**329**	**319**	**338**	**328**	**257**	**72**
OECD Europe												
OECD Americas	3	5	16	17	11	11	14	19	15	8	16	-8
Venezuela	0	2	2	3	2	3	2	2	2	2	2	-1
Other Central & South America	4	7	10	14	6	7	6	9	6	1	6	-5
Non-OECD Europe	16	10	8	14	6	8	9	20	0	8	15	-7
FSU	31	8	9	3	2	7	1	1	1	1	2	-1
Saudi Arabia	8	3	1	2	-	0	-	-	-	-	1	-
Algeria	1	-	6	7	4	7	2	5	-	-	14	-
Other Middle East & Africa	3	5	8	6	5	5	5	4	6	6	11	-5
Singapore	2	0	2	1	3	2	3	2	2	4	1	2
OECD Asia Oceania	1	1	1	1	1	4	1	-	0	3	1	2
Non-OECD Asia (excl. Singapore)	0	3	3	4	3	3	4	2	2	8	3	6
Other	37	63	36	37	26	8	6	8	3	6	27	-21
Total[2]	**107**	**106**	**101**	**108**	**69**	**63**	**53**	**74**	**38**	**47**	**99**	**-52**
of which Non-OECD	**104**	**100**	**84**	**90**	**58**	**49**	**38**	**54**	**23**	**37**	**83**	**-46**
OECD Asia Oceania												
OECD Americas	4	1	0	0	0	0	0	0	0	0	0	0
Venezuela	-	-	-	-	-	-	-	-	-	-	-	-
Other Central & South America	-	-	-	-	-	-	0	-	0	-	-	-
ARA (Belgium Germany Netherlands)	4	4	0	0	0	0	0	0	0	0	0	0
Other Europe	10	0	0	0	0	0	0	0	0	0	0	0
FSU	0	-	-	-	-	-	-	-	-	-	-	-
Saudi Arabia	-	-	-	-	-	-	4	11	-	-	-	-
Algeria	-	-	-	-	-	-	-	-	-	-	-	-
Other Middle East & Africa	1	-	-	-	-	-	-	-	-	-	-	-
Singapore	51	100	126	121	125	140	123	123	154	91	169	-78
Non-OECD Asia (excl. Singapore)	37	29	30	35	27	39	54	46	60	56	51	5
Other	9	20	21	23	27	17	17	17	16	17	17	0
Total[2]	**116**	**153**	**176**	**179**	**179**	**196**	**197**	**197**	**230**	**164**	**237**	**-73**
of which Non-OECD	**98**	**149**	**176**	**179**	**179**	**196**	**197**	**197**	**230**	**164**	**237**	**-73**
Total OECD Trade[2]	**799**	**1064**	**952**	**1020**	**838**	**807**	**1238**	**1216**	**1247**	**1252**	**1339**	**-87**
of which Non-OECD	**397**	**497**	**434**	**484**	**374**	**399**	**564**	**570**	**590**	**529**	**576**	**-47**

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

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

	2020	2021	2022	3Q22	4Q22	1Q23	2Q23	Apr 23	May 23	Jun 23	Year Earlier Jun 22	Year Earlier change
OECD Americas												
Venezuela	-	-	-	-	-	-	-	-	-	-	-	-
Other Central and South America	34	28	6	12	3	15	17	18	23	11	6	5
ARA (Belgium Germany Netherlands)	11	34	15	3	11	3	1	-	-	3	7	-4
Other Europe	4	5	2	0	3	0	0	-	1	-	0	-
FSU	12	25	6	-	-	-	1	-	2	-	-	-
Saudi Arabia	8	15	9	-	5	9	-	-	-	-	25	-
Algeria	-	-	-	-	-	-	-	-	-	-	-	-
Other Middle East and Africa	9	25	4	-	8	7	8	16	-	9	-	-
Singapore	-	2	1	-	2	3	-	-	-	-	-	-
OECD Asia Oceania	16	25	39	26	58	57	19	8	38	9	32	-23
Non-OECD Asia (excl. Singapore)	34	27	5	-	17	52	12	21	13	2	5	-3
Other	6	12	11	-	13	12	-	-	-	-	-	-
Total[2]	**134**	**197**	**99**	**41**	**120**	**158**	**59**	**64**	**78**	**34**	**75**	**-40**
of which Non-OECD	**103**	**134**	**43**	**12**	**48**	**98**	**39**	**56**	**38**	**22**	**36**	**-13**
OECD Europe												
OECD Americas	99	38	76	84	126	126	212	158	173	307	27	280
Venezuela	-	-	-	-	-	-	-	-	-	-	-	-
Other Central and South America	3	1	1	3	0	-	-	-	-	-	1	-
Non-OECD Europe	30	35	44	43	45	24	32	40	29	26	60	-34
FSU	627	612	530	506	538	299	287	260	296	305	493	-187
Saudi Arabia	193	141	169	184	221	231	210	134	290	203	256	-53
Algeria	2	-	-	-	-	-	-	-	-	-	-	-
Other Middle East and Africa	71	156	161	143	200	208	265	273	236	286	151	134
Singapore	17	19	37	28	33	33	32	41	27	29	15	13
OECD Asia Oceania	32	42	30	18	45	30	26	28	36	14	19	-6
Non-OECD Asia (excl. Singapore)	101	123	152	105	269	204	182	291	155	101	78	23
Other	15	21	23	23	9	9	7	0	12	10	29	-19
Total[2]	**1190**	**1188**	**1223**	**1136**	**1486**	**1164**	**1254**	**1226**	**1255**	**1280**	**1130**	**150**
of which Non-OECD	**1062**	**1107**	**1120**	**1034**	**1315**	**1008**	**1016**	**1042**	**1046**	**959**	**1083**	**-124**
OECD Asia Oceania												
OECD Americas	4	0	0	0	0	0	-	-	-	-	-	-
Venezuela	-	-	-	-	-	-	-	-	-	-	-	-
Other Central and South America	0	-	-	-	-	-	-	-	-	-	-	-
ARA (Belgium Germany Netherlands)	0	0	0	0	0	0	0	0	-	-	0	-
Other Europe	-	0	0	0	-	0	-	-	-	-	-	-
FSU	2	1	-	-	-	-	-	-	-	-	-	-
Saudi Arabia	-	-	-	-	-	-	-	-	-	-	-	-
Algeria	-	-	-	-	-	-	-	-	-	-	-	-
Other Middle East and Africa	13	4	6	14	-	-	3	-	-	11	11	0
Singapore	91	109	112	112	97	124	82	66	99	81	121	-40
Non-OECD Asia (excl. Singapore)	208	229	191	176	209	218	297	215	358	315	237	78
Other	9	6	10	9	20	3	7	6	2	12	2	10
Total[2]	**328**	**349**	**319**	**311**	**325**	**344**	**389**	**287**	**459**	**419**	**371**	**48**
of which Non-OECD	**323**	**349**	**319**	**311**	**325**	**344**	**389**	**287**	**459**	**419**	**371**	**48**
Total OECD Trade[2]	**1652**	**1734**	**1641**	**1489**	**1931**	**1666**	**1702**	**1576**	**1792**	**1733**	**1575**	**158**
of which Non-OECD	**1488**	**1591**	**1482**	**1358**	**1688**	**1450**	**1444**	**1384**	**1544**	**1401**	**1490**	**-89**

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

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

	2020	2021	2022	3Q22	4Q22	1Q23	2Q23	Apr 23	May 23	Jun 23	Year Earlier Jun 22	Year Earlier change
OECD Americas												
Venezuela	-	-	-	-	-	-	-	-	-	-	-	-
Other Central and South America	5	1	0	-	1	1	3	3	-	6	-	-
ARA (Belgium Germany Netherlands)	-	5	0	-	0	-	1	-	1	3	-	-
Other Europe	4	7	1	-	4	11	1	4	-	0	0	0
FSU	0	4	1	-	-	-	-	-	-	-	-	-
Saudi Arabia	6	6	1	-	1	3	5	14	-	-	-	-
Algeria	1	4	0	-	1	-	-	-	-	-	-	-
Other Middle East and Africa	11	18	16	6	38	33	32	14	50	32	17	16
Singapore	4	2	1	1	2	-	5	4	6	5	3	2
OECD Asia Oceania	100	91	85	90	85	80	97	96	92	103	104	-1
Non-OECD Asia (excl. Singapore)	23	27	24	17	44	48	12	8	24	5	18	-13
Other	4	1	3	1	1	4	3	-	-	10	-	-
Total[2]	**159**	**165**	**134**	**115**	**177**	**178**	**160**	**142**	**173**	**164**	**141**	**24**
of which Non-OECD	**55**	**63**	**47**	**25**	**89**	**91**	**60**	**42**	**80**	**59**	**37**	**22**
OECD Europe												
OECD Americas	13	3	6	6	11	6	6	6	2	9	4	5
Venezuela	-	-	-	-	-	-	-	-	-	-	-	-
Other Central and South America	0	0	0	1	-	3	-	-	-	-	-	-
Non-OECD Europe	0	0	3	4	5	1	3	-	9	-	0	-
FSU	21	27	16	16	14	15	19	13	20	25	14	11
Saudi Arabia	40	27	57	62	61	45	51	42	59	53	68	-15
Algeria	9	5	4	5	-	-	-	-	-	-	25	-
Other Middle East and Africa	155	153	172	208	145	186	199	159	242	193	199	-6
Singapore	10	11	13	25	10	11	-	-	-	-	4	-
OECD Asia Oceania	27	32	54	68	102	6	49	77	45	24	77	-53
Non-OECD Asia (excl. Singapore)	50	61	121	125	187	107	149	199	159	88	37	51
Other	10	9	5	14	0	1	0	-	0	0	2	-2
Total[2]	**336**	**328**	**452**	**535**	**536**	**380**	**475**	**496**	**536**	**392**	**431**	**-39**
of which Non-OECD	**297**	**294**	**393**	**461**	**423**	**370**	**423**	**414**	**493**	**361**	**350**	**11**
OECD Asia Oceania												
OECD Americas	-	0	0	0	0	0	0	0	0	0	0	0
Venezuela	-	-	-	-	-	-	-	-	-	-	-	-
Other Central and South America	-	-	-	-	-	-	-	-	-	-	-	-
ARA (Belgium Germany Netherlands)	-	0	0	-	0	-	-	-	-	-	-	-
Other Europe	-	0	0	0	-	-	-	-	-	-	-	-
FSU	-	-	-	-	-	-	-	-	-	-	-	-
Saudi Arabia	-	-	-	-	-	-	-	-	-	-	-	-
Algeria	-	-	-	-	-	-	-	-	-	-	-	-
Other Middle East and Africa	-	1	0	-	0	0	0	0	0	0	-	-
Singapore	14	16	34	41	39	44	41	39	45	39	47	-8
Non-OECD Asia (excl. Singapore)	28	34	38	20	72	83	41	18	68	35	47	-12
Other	18	19	15	5	27	33	32	21	16	58	3	55
Total[2]	**60**	**69**	**87**	**67**	**139**	**160**	**113**	**78**	**129**	**132**	**97**	**35**
of which Non-OECD	**60**	**69**	**87**	**67**	**139**	**160**	**113**	**78**	**129**	**132**	**97**	**35**
Total OECD Trade[2]	**555**	**562**	**673**	**716**	**852**	**719**	**748**	**716**	**837**	**689**	**669**	**20**
of which Non-OECD	**413**	**426**	**527**	**552**	**650**	**622**	**597**	**534**	**702**	**552**	**484**	**67**

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

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

	2020	2021	2022	3Q22	4Q22	1Q23	2Q23	Apr 23	May 23	Jun 23	Year Earlier Jun 22	Year Earlier change
OECD Americas												
Venezuela	-	-	-	-	-	-	-	-	-	-	-	-
Other Central and South America	52	34	53	36	69	44	16	19	20	8	77	-69
ARA (Belgium Germany Netherlands)	12	6	12	14	18	9	4	2	3	7	18	-12
Other Europe	21	10	19	11	18	11	1	1	0	-	26	-
FSU	43	34	21	4	9	1	4	5	1	7	15	-8
Saudi Arabia	2	0	7	8	6	3	0	-	0	-	20	-
Algeria	2	7	4	4	1	18	4	2	-	11	9	2
Other Middle East and Africa	10	8	4	3	5	15	10	12	6	12	-	-
Singapore	1	0	-	-	-	-	-	-	-	-	-	-
OECD Asia Oceania	-	0	-	-	-	-	8	10	-	15	-	-
Non-OECD Asia (excl. Singapore)	-	2	2	2	6	4	4	4	-	9	-	-
Other	-	-	-	-	-	-	-	-	-	-	-	-
Total[2]	**143**	**102**	**122**	**82**	**132**	**105**	**51**	**54**	**31**	**68**	**165**	**-96**
of which Non-OECD	**110**	**86**	**90**	**56**	**96**	**86**	**38**	**42**	**27**	**47**	**120**	**-73**
OECD Europe												
OECD Americas	12	24	13	21	11	5	16	11	2	35	7	28
Venezuela	-	-	-	-	-	-	-	-	-	-	-	-
Other Central and South America	6	4	5	6	10	4	11	7	21	4	0	4
Non-OECD Europe	13	12	31	47	25	21	25	19	33	23	26	-3
FSU	141	247	121	89	63	45	59	65	65	45	103	-58
Saudi Arabia	2	-	-	-	-	10	0	0	0	-	-	-
Algeria	2	2	5	4	2	5	9	6	7	14	-	-
Other Middle East and Africa	13	14	21	9	31	27	26	59	16	4	37	-33
Singapore	3	3	2	2	0	1	-	-	-	-	-	-
OECD Asia Oceania	4	3	8	7	11	16	10	15	6	7	17	-9
Non-OECD Asia (excl. Singapore)	-	0	2	3	6	8	-	-	-	-	-	-
Other	93	59	45	51	67	2	1	1	1	1	37	-36
Total[2]	**288**	**368**	**254**	**238**	**227**	**144**	**157**	**184**	**152**	**134**	**228**	**-93**
of which Non-OECD	**279**	**347**	**239**	**215**	**220**	**126**	**133**	**159**	**145**	**94**	**207**	**-113**
OECD Asia Oceania												
OECD Americas	-	-	0	0	-	-	-	-	-	-	-	-
Venezuela	-	-	-	-	-	-	-	-	-	-	-	-
Other Central and South America	0	-	-	-	-	-	-	-	-	-	-	-
ARA (Belgium Germany Netherlands)	-	0	0	0	0	-	-	-	-	-	0	-
Other Europe	-	-	0	0	0	-	-	-	-	-	-	-
FSU	5	0	-	-	-	-	-	-	-	-	-	-
Saudi Arabia	1	13	16	15	7	7	11	10	22	-	67	-
Algeria	-	-	-	-	-	-	-	-	-	-	-	-
Other Middle East and Africa	38	30	7	2	13	9	7	-	3	20	19	0
Singapore	18	29	22	18	14	39	19	17	25	14	15	0
Non-OECD Asia (excl. Singapore)	26	47	44	32	41	54	49	43	47	58	24	33
Other	-	-	-	-	-	-	-	-	-	-	-	-
Total[2]	**88**	**119**	**89**	**68**	**75**	**109**	**86**	**70**	**97**	**92**	**126**	**-34**
of which Non-OECD	**88**	**119**	**89**	**68**	**75**	**109**	**86**	**70**	**97**	**92**	**126**	**-34**
Total OECD Trade[2]	**519**	**588**	**464**	**387**	**434**	**358**	**294**	**308**	**279**	**294**	**518**	**-224**
of which Non-OECD	**477**	**552**	**418**	**339**	**390**	**320**	**257**	**271**	**268**	**232**	**452**	**-220**

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

2 Total figure excludes intra-regional trade.

Table 13
AVERAGE IEA CIF CRUDE COST AND SPOT CRUDE AND PRODUCT PRICES

($/bbl)

	2020	2021	2022	3Q22	4Q22	1Q23	2Q23	Mar 23	Apr 23	May 23	Jun 23	Jul 23	Aug 23
CRUDE PRICES													
IEA CIF Average Import[1]													
IEA Europe	42.91	70.67	100.22	102.36	89.42	82.21	79.71	81.05	84.16	78.41	76.48		
IEA Americas	37.31	64.78	90.77	92.16	77.18	67.91	70.68	66.85	72.32	70.03	69.82		
IEA Asia Oceania	46.28	70.41	102.56	111.62	96.43	86.14	83.56	84.82	83.91	85.27	79.24		
IEA Total	**42.19**	**68.87**	**98.20**	**101.90**	**87.96**	**79.25**	**77.92**	**78.12**	**80.98**	**77.70**	**74.70**		
SPOT PRICES[2]													
North Sea Dated	41.76	70.82	101.10	100.66	88.36	81.11	78.02	78.29	84.84	75.49	74.73	80.09	86.18
North Sea Dated M1	42.90	71.51	101.17	100.16	89.54	82.37	78.02	79.51	84.29	75.57	75.13	80.50	85.87
WTI (Cushing) M1	39.25	68.10	94.58	91.63	82.82	75.96	73.54	73.37	79.44	71.59	70.24	76.39	81.41
WTI (Houston) M1	40.71	69.01	96.19	93.77	84.33	77.74	74.69	74.86	80.31	72.57	71.83	77.91	82.97
Urals	41.21	69.00	76.58	75.41	62.46	46.77	54.63	47.60	58.00	52.00	54.26	63.31	72.91
Dubai M1	42.36	69.35	96.27	96.57	84.68	80.20	77.56	78.42	83.40	74.94	74.88	80.33	86.44
PRODUCT PRICES[2]													
Northwest Europe													
Gasoline	44.64	80.07	117.01	113.82	99.41	96.17	99.44	94.89	103.69	97.06	98.12	105.34	116.85
Diesel	49.34	78.41	142.36	145.01	139.55	113.71	96.12	106.98	100.97	91.52	96.34	105.24	122.52
Jet/Kero	45.80	77.31	139.91	141.82	130.90	114.74	95.43	104.39	100.50	91.73	94.64	106.12	124.27
Naphtha	40.18	71.58	86.51	76.81	72.63	77.95	67.47	75.90	76.17	65.87	61.81	64.42	72.14
HSFO	33.99	61.18	76.58	70.47	59.55	60.51	67.96	60.60	70.30	63.97	69.68	73.63	85.20
0.5% Fuel Oil	48.50	76.78	107.05	106.21	87.19	83.99	79.21	81.33	83.18	76.06	78.84	81.92	89.91
Mediterranean Europe													
Gasoline	45.57	80.50	119.73	116.78	103.89	100.36	98.77	100.85	104.65	94.33	98.01	105.88	115.19
Diesel	48.82	77.93	136.11	135.88	130.46	112.08	94.97	104.41	99.34	90.68	95.30	104.35	120.94
Jet/Kero	45.57	77.19	140.02	142.03	131.28	114.89	95.43	104.39	100.50	91.73	94.64	106.08	124.27
Naphtha	39.04	70.65	84.62	75.15	70.36	75.83	65.93	73.22	73.96	64.60	60.56	62.93	70.50
HSFO	34.17	60.05	73.40	65.38	56.73	56.97	65.19	59.10	68.44	63.34	64.21	74.44	82.14
US Gulf Coast													
Gasoline	47.30	86.49	123.00	118.71	103.04	105.58	103.93	106.68	109.52	101.24	101.70	112.06	120.82
Diesel	50.26	84.73	145.74	146.73	141.65	120.39	100.11	112.42	105.72	96.61	98.68	109.56	128.02
Jet/Kero	46.30	77.95	140.05	140.46	134.73	125.00	94.79	111.18	99.44	91.39	94.14	105.09	125.34
Naphtha	40.12	72.24	91.24	84.50	76.09	80.92	74.87	78.04	77.93	74.69	72.30	69.63	71.31
HSFO	34.71	59.90	76.96	75.98	55.48	57.10	64.07	58.34	66.85	60.29	65.53	72.69	79.81
0.5% Fuel Oil	49.88	79.69	112.92	111.76	92.69	90.54	82.18	87.17	88.34	78.88	80.06	84.63	94.78
Singapore													
Gasoline	45.28	78.49	110.86	105.71	89.89	95.15	89.57	94.25	96.26	85.69	87.43	93.13	101.68
Diesel	49.60	77.80	135.47	137.89	126.25	108.44	93.09	102.80	98.44	89.05	92.31	101.79	119.07
Jet/Kero	45.06	75.29	126.90	129.27	118.30	106.38	91.57	98.86	96.68	88.49	90.06	98.85	116.28
Naphtha	40.94	71.02	83.79	74.51	70.92	74.21	63.26	73.19	71.48	62.12	57.01	62.43	70.65
HSFO	38.33	63.20	77.65	69.60	58.60	62.36	68.53	65.41	72.77	66.96	66.28	74.54	83.93
0.5% Fuel Oil	52.85	80.81	116.78	115.77	97.77	90.95	86.97	86.64	89.84	84.10	87.25	86.94	95.78

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

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

IEA Americas includes United States and Canada.

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

Table 14
MONTHLY AVERAGE END-USER PRICES FOR PETROLEUM PRODUCTS

August 2023

	NATIONAL CURRENCY [1]						US DOLLARS					
	Total Price	% change from Jul-23	% change from Aug-22	Ex-Tax Price	% change from Jul-23	% change from Aug-22	Total Price	% change from Jul-23	% change from Aug-22	Ex-Tax Price	% change from Jul-23	% change from Aug-22
GASOLINE [2] (per litre)												
France	1.922	4.3	6.7	0.911	7.9	-5.2	2.097	3.0	14.8	0.994	6.5	2.1
Germany	1.916	2.6	6.9	0.887	4.7	-22.7	2.090	1.2	15.1	0.968	3.3	-16.8
Italy	1.940	4.2	8.0	0.862	8.0	-13.4	2.116	2.8	16.2	0.940	6.6	-6.7
Spain	1.701	5.6	- 6.9	0.933	8.7	-19.7	1.856	4.2	0.2	1.018	7.3	-13.5
United Kingdom	1.486	3.7	- 15.2	0.708	6.6	-23.9	1.887	2.3	-10.1	0.899	5.1	-19.3
Japan	182.9	4.9	7.9	109.7	7.7	12.5	1.264	2.3	0.9	0.758	5.0	5.2
Canada	1.745	4.5	1.3	1.230	5.9	-0.6	1.295	2.4	-2.9	0.912	3.8	-4.8
United States	1.014	6.7	- 3.4	0.880	7.8	-4.2	1.014	6.7	-3.4	0.880	7.8	-4.2
AUTOMOTIVE DIESEL FOR NON COMMERCIAL USE (per litre)												
France	1.825	7.6	- 1.8	0.912	13.4	-16.3	1.991	6.2	5.7	0.995	11.9	-9.9
Germany	1.770	7.2	- 9.9	0.942	11.9	-28.7	1.931	5.8	-3.0	1.028	10.4	-23.2
Italy	1.829	7.2	1.9	0.882	12.9	-20.1	1.995	5.8	9.7	0.962	11.4	-14.0
Spain	1.589	8.9	- 14.1	0.934	12.9	-26.7	1.733	7.5	-7.5	1.019	11.4	-21.1
United Kingdom	1.511	4.1	- 19.0	0.729	7.2	-28.9	1.919	2.6	-14.2	0.926	5.7	-24.6
Japan	162.4	5.5	8.6	115.7	7.2	11.4	1.123	2.9	1.6	0.800	4.5	4.1
Canada	1.845	15.0	- 1.9	1.357	19.1	-4.8	1.369	12.8	-6.0	1.007	16.8	-8.8
United States	1.155	12.7	- 12.8	1.000	14.9	-14.8	1.155	12.7	-12.8	1.000	14.9	-14.8
DOMESTIC HEATING OIL (per litre)												
France	1.305	11.9	- 14.4	0.931	14.2	-16.4	1.424	10.4	-7.9	1.016	12.7	-10.0
Germany	1.134	14.0	- 22.7	0.811	16.9	-30.7	1.237	12.5	-16.7	0.885	15.4	-25.4
Italy	1.603	8.5	- 11.7	0.910	12.7	-16.1	1.748	7.0	-5.0	0.993	11.2	-9.7
Spain	1.099	15.3	- 17.9	0.812	17.4	-19.6	1.199	13.8	-11.6	0.886	15.9	-13.5
United Kingdom	0.811	14.1	- 19.8	0.671	16.6	-22.1	1.030	12.5	-15.0	0.852	15.0	-17.5
Japan [3]	121.6	6.0	8.5	107.7	6.1	8.8	0.840	3.3	1.5	0.744	3.5	1.7
Canada	1.783	13.4	- 1.3	1.478	14.9	-8.1	1.323	11.2	-5.4	1.096	12.7	-12.0
United States	-	-	-	-	-	-	-	-	-	-	-	-
LOW SULPHUR FUEL OIL FOR INDUSTRY [4] (per kg)												
France	0.732	8.4	- 11.3	0.592	10.6	-13.6	0.798	7.0	-4.5	0.646	9.1	-7.0
Germany	-	-	-	-	-	-	-	-	-	-	-	-
Italy	0.691	9.3	- 11.4	0.660	9.8	-11.9	0.754	7.9	-4.6	0.720	8.3	-5.2
Spain	0.613	2.4	- 13.9	0.596	2.5	-14.2	0.669	1.1	-7.3	0.650	1.2	-7.7
United Kingdom	-	-	-	-	-	-	-	-	-	-	-	-
Japan	-	-	-	-	-	-	-	-	-	-	-	-
Canada	-	-	-	-	-	-	-	-	-	-	-	-
United States	-	-	-	-	-	-	-	-	-	-	-	-

1 Prices for France, Germany, Italy and Spain are in Euros; UK in British Pounds, Japan in Yen, Canada in Canadian Dollars
2 Unleaded premium (95 RON) for France, Germany, Italy, Spain, UK; regular unleaded for Canada, Japan and the United States.
3 Kerosene for Japan.
4 VAT excluded from prices for low sulphur fuel oil when refunded to industry.

Table 15
IEA Global Indicator Refining Margins

$/bbl	2020	2021	2022	3Q22	4Q22	1Q23	2Q23	Mar 23	Apr 23	May 23	Jun 23	Jul 23	Aug 23
NW Europe													
Light sweet hydroskimming	1.11	2.54	10.05	9.07	10.81	8.41	4.42	6.84	2.15	4.06	6.61	8.24	14.96
Light sweet cracking	2.07	3.51	16.22	15.31	18.77	14.08	7.07	12.16	5.47	6.44	8.95	10.82	18.58
Light sweet cracking + Petchem	3.23	6.55	18.44	17.07	19.59	14.69	7.03	13.40	6.45	6.56	7.93	9.99	17.99
Medium sour cracking*	4.30	6.11	39.13	37.55	38.86	19.33	11.87	17.54	10.93	10.64	13.75	16.00	25.35
Mediumsour cracking + Petchem*	5.44	9.07	41.28	39.25	39.67	19.94	11.82	18.77	11.89	10.76	12.73	15.18	24.76
Mediterranean													
Light sweet hydroskimming	2.36	2.90	9.08	7.73	10.84	8.45	5.24	6.77	3.22	4.48	7.59	9.37	15.20
Light sweet cracking	3.34	4.97	16.82	15.98	19.14	15.80	9.42	13.56	8.19	8.10	11.63	14.56	21.71
Medium sour cracking	5.70	5.68	21.65	20.58	24.36	21.78	12.02	18.83	11.03	10.46	14.25	16.04	22.86
US Gulf Coast													
Light sweet cracking	4.28	11.04	26.64	26.71	25.10	25.53	18.83	25.41	18.65	18.13	19.72	23.51	30.40
Medium sour cracking	6.61	15.79	35.69	35.28	35.01	33.40	23.21	30.92	23.75	22.27	23.71	26.58	35.19
Heavy sour coking	9.73	19.98	45.92	46.45	49.73	44.90	28.64	40.14	30.31	28.05	27.74	32.59	43.60
US Midwest													
Light sweet cracking	3.74	12.33	29.90	34.28	30.81	25.23	22.00	26.10	20.25	23.01	22.53	17.66	26.04
Heavy sour coking	13.26	26.02	50.61	54.05	55.59	46.84	36.17	43.57	36.77	37.14	34.61	31.77	42.12
Singapore													
Light sweet cracking	0.20	3.10	11.46	10.91	8.75	9.94	3.19	7.75	2.82	2.54	4.16	5.99	11.93
Light sweet cracking + Petchem	2.03	4.82	12.94	12.81	10.05	10.83	4.45	8.93	4.00	3.94	5.37	6.73	12.34
Medium sour cracking	1.80	3.92	12.81	7.88	10.83	11.35	5.04	9.52	4.77	4.99	5.33	7.91	14.77
Medium sour cracking + Petchem	3.61	5.61	14.27	9.76	12.11	12.23	6.29	10.69	5.93	6.37	6.53	8.63	15.17

Source: IEA, Argus Media Ltd prices.

Methodology notes are avaialble at https://www.iea.org/topics/oil-market-report#methodology

*From 1 December, the basis has changed from Urals NWE to Argus Brent Sour

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

	Apr-23	May-23	Jun-23	Jun-22	Jun 23 vs Previous Month	Jun 23 vs Previous Year	Jun 23 vs 5 Year Average	5 Year Average
OECD Americas								
Naphtha	1.1	1.1	1.0	0.9	-0.1	0.1	-0.2	1.2
Motor gasoline	44.0	43.8	42.9	44.2	-0.9	-1.3	-1.5	44.4
Jet/kerosene	9.5	9.3	9.2	9.0	-0.1	0.2	1.1	8.1
Gasoil/diesel oil	27.5	27.6	26.7	28.7	-1.0	-2.0	-2.0	28.7
Residual fuel oil	3.7	3.2	2.8	2.5	-0.4	0.3	-0.1	2.9
Petroleum coke	4.2	4.1	4.1	4.4	0.0	-0.3	-0.3	4.4
Other products	13.4	13.8	13.9	13.9	0.0	0.0	0.1	13.8
OECD Europe								
Naphtha	8.9	9.2	8.5	7.7	-0.7	0.8	0.5	8.0
Motor gasoline	21.0	21.4	22.1	20.6	0.7	1.5	1.7	20.5
Jet/kerosene	8.4	9.0	9.0	9.0	0.0	0.1	1.7	7.4
Gasoil/diesel oil	39.0	39.0	38.1	38.7	-0.9	-0.7	-2.3	40.4
Residual fuel oil	8.1	7.8	7.5	8.5	-0.3	-0.9	-0.9	8.4
Petroleum coke	1.6	1.5	1.6	1.5	0.1	0.1	0.1	1.4
Other products	15.5	15.2	15.8	15.5	0.6	0.3	-0.4	16.2
OECD Asia Oceania								
Naphtha	17.2	18.7	16.9	16.8	-1.8	0.1	1.0	15.9
Motor gasoline	20.8	21.0	21.7	21.7	0.6	0.0	0.0	21.7
Jet/kerosene	14.3	13.7	13.2	11.6	-0.5	1.5	0.1	13.1
Gasoil/diesel oil	29.4	29.7	30.6	31.2	0.9	-0.6	-0.5	31.2
Residual fuel oil	8.1	7.2	8.3	7.9	1.2	0.4	1.3	7.1
Petroleum coke	0.4	0.4	0.4	0.5	0.0	-0.1	-0.1	0.5
Other products	11.5	11.9	11.6	12.3	-0.3	-0.7	-1.3	12.9
OECD Total								
Naphtha	6.3	6.5	5.6	5.7	-0.9	0.0	-0.1	5.8
Motor gasoline	32.8	33.1	33.3	32.8	0.3	0.5	0.3	33.1
Jet/kerosene	9.9	9.9	9.7	9.4	-0.2	0.3	1.0	8.7
Gasoil/diesel oil	31.5	31.5	30.8	32.4	-0.7	-1.6	-2.0	32.8
Residual fuel oil	5.8	5.3	5.1	5.3	-0.2	-0.2	-0.2	5.3
Petroleum coke	2.7	2.7	2.8	2.8	0.1	0.0	0.0	2.8
Other products	13.7	13.9	14.1	14.2	0.2	0.0	-0.3	14.4

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

Table 17
WORLD BIOFUELS PRODUCTION
(thousand barrels per day)

	2022	2023	2024	4Q22	1Q23	2Q23	Jun 23	Jul 23	Aug 23
ETHANOL									
OECD Americas	**1031**	**1031**	**1017**	**1041**	**1035**	**1039**	**1072**	**1026**	**1026**
United States	1002	997	982	1012	1000	1005	1038	992	992
Other [1]	29	34	35	29	34	34			
OECD Europe	**107**	**108**	**110**	**97**	**102**	**107**	**110**	**110**	**110**
France	20	20	22	11	21	22	18	18	18
Germany	13	13	13	13	20	17	8	8	8
Spain	10	10	10	10	6	9	13	13	13
United Kingdom	9	9	9	9	4	7	13	13	13
Other [1]	54	55	55	54	50	53			
OECD Asia Oceania	**4**	**4**	**4**	**4**	**4**	**4**	**5**	**5**	**5**
Australia	4	4	4	4	4	4	4	4	4
Other [1]	0	1	1	0	0	0			
Total OECD Ethanol	**1142**	**1143**	**1131**	**1142**	**1140**	**1150**	**1188**	**1141**	**1141**
Total Non-OECD Ethanol	**763**	**850**	**872**	**707**	**399**	**935**	**1119**	**1285**	**1255**
Brazil	528	593	603	472	141	677	862	1027	997
China [1]	81	136	146	86	136	136			
Argentina [1]	21	22	23	21	22	22			
Other	133	100	100	127	100	100	258	258	258
TOTAL ETHANOL	**1904**	**1994**	**2004**	**1849**	**1539**	**2085**	**2307**	**2426**	**2396**
BIODIESEL									
OECD Americas	**209**	**261**	**308**	**222**	**249**	**277**	**260**	**260**	**260**
United States	202	247	291	216	243	266	239	239	239
Other [1]	6	15	18	6	6	11			
OECD Europe	**307**	**314**	**323**	**296**	**285**	**298**	**336**	**336**	**336**
France	48	48	48	45	50	50	46	46	46
Germany	64	63	62	63	56	58	69	69	69
Italy [1]	25	25	25	23	23	27			
Spain	31	32	35	31	27	30	35	35	35
Other	139	146	153	135	129	133	160	160	160
OECD Asia Oceania	**14**	**13**	**13**	**12**	**10**	**16**	**14**	**14**	**14**
Australia	0	0	0	0	0	0	0	0	0
Other [1]	14	13	13	12	10	16			
Total OECD Biodiesel	**530**	**589**	**644**	**530**	**544**	**591**	**609**	**609**	**609**
Total Non-OECD Biodiesel	**513**	**580**	**630**	**513**	**580**	**580**	**580**	**580**	**580**
Brazil	108	125	156	108	102	130	138	146	131
Argentina [1]	42	40	40	42	40	40			
Other [1]	363	415	434	363	438	410			
TOTAL BIODIESEL	**1043**	**1168**	**1275**	**1043**	**1124**	**1171**	**1189**	**1189**	**1189**
GLOBAL BIOFUELS	**2947**	**3162**	**3278**	**2892**	**2663**	**3256**	**3496**	**3615**	**3585**

1 monthly data not available.

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International Energy Agency

Oil Market Team

Editor	Toril Bosoni +33 (0)1 40 57 67 18 Toril.Bosoni@iea.org	Special Advisor	Joel R. Couse +33 (0) 1 40 57 67 22 Joel.Couse@iea.org
Demand / Prices	Alexander Bressers +33 (0)1 40 57 65 16 Alexander.Bressers@iea.org	Data Officer	Julien Canu +33 (0)1 40 57 65 42 Julien.Canu@iea.org
Demand	Ciarán Healy +33 (0)1 40 57 67 58 Ciaran.Healy@iea.org	Data Officer	Ramiz Farishta +33 (0)1 40 57 65 56 Ramiz.Farishta@iea.org
OPEC+ Supply	Peg Mackey +33 (0)1 40 57 65 81 Peg.Mackey@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	David Martin +33 (0)1 40 57 66 05 David.Martin@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	Jenny Thomson +33 (0)1 40 57 67 11 Jenny.Thomson@iea.org	Media Enquiries/IEA Press Office	+33 (0)1 40 57 66 94 ieapressoffice@iea.org

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