

Oil Market Report

12 October 2023

- Evidence of demand destruction is appearing with preliminary September data showing that US gasoline consumption fell to two-decade lows. Buoyant demand growth in China, India and Brazil, nevertheless underpins an increase of 2.3 mb/d to 101.9 mb/d in 2023, of which China accounts for 77%. Growth slows to 900 kb/d in 2024, as efficiency gains and a deteriorating economic climate weigh on oil use.
- World oil output rose 270 kb/d in September to 101.6 mb/d, led by higher production from Nigeria and Kazakhstan. The Israel-Hamas conflict has not had any direct impact on oil flows. Driven by non-OPEC+ growth, global output will increase by 1.5 mb/d and 1.7 mb/d in 2023 and 2024, respectively, to new record highs. Overall OPEC+ output is set to decline in 2023, although Iran may rank as the world's second largest source of growth after the United States.
- Refinery margins fell sharply from near-record levels over the course of September and into October, as gasoline and fuel oil cracks collapsed, but overall remained above the seasonal average. Global refinery throughput rates reached a summer peak of 83.6 mb/d in August, underpinned by record Chinese runs. Refinery crude runs are expected to rise by 1.7 mb/d in 2023 and by 1 mb/d next year.
- Global observed oil inventories tumbled by 63.9 mb in August, led by a massive 102.3 mb draw in crude oil stocks. Preliminary data suggest that on land inventories continued to draw in September, while oil on water rebounded as exports recovered. OECD industry stocks fell counter-seasonally by 6.5 mb in August to 2 816 mb, a substantial 105.3 mb below the five-year average.
- Russian oil export revenues surged by \$1.8 bn to \$18.8 bn in September, their highest since July 2022. Total oil exports rose by 460 kb/d to 7.6 mb/d, with crude oil accounting for 250 kb/d of the increase. The weighted average crude export price rose by \$8/bbl to \$81.80/bbl, narrowing its discount to North Sea Dated to \$12.20/bbl, its lowest since March 2022.
- ICE Brent crude oil futures rose by \$4/bbl after Hamas attacked Israel on 7 October as traders reassessed geopolitical risks. Tightening balances following Saudi Arabia's extension of voluntary supply cuts had sent prices up by \$8/bbl in September. However, gains subsequently dissipated in early October as renewed macro concerns took hold. At the time of writing, Brent traded at \$87/bbl.



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Escalating risks

A sharp escalation in geopolitical risk in the Middle East, a region accounting for more than one-third of the world's seaborne oil trade, has markets on edge. The surprise attack by Hamas on Israel on 7 October spurred traders to price in a \$3-4/bbl risk premium when markets opened. Prices have since stabilised, with benchmark Brent futures trading at around \$87/bbl at the time of writing. While there has been no direct impact on physical supply, markets will remain on tenterhooks as the crisis unfolds.

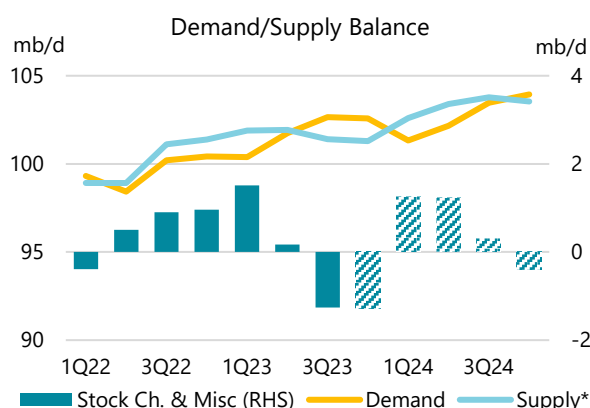
Oil prices had already surged to almost \$98/bbl in mid-September after Saudi Arabia and Russia extended their voluntary production cuts through year-end and as crude oil and distillate inventories drew to exceptionally low levels. Rising prices focused the market's attention on the prospect that 'higher for longer' interest rates could slow economic and demand growth. By early October, Brent futures tumbled by more

than \$12/bbl to \$84/bbl as supply fears gave way to deteriorating macroeconomic indicators and signs of demand destruction in the United States, where gasoline deliveries plunged to two-decade lows. Demand destruction has hit emerging markets even harder, as currency effects and the removal of subsidies have amplified the rise in fuel prices. However, growth continues apace in China, India and Brazil, underpinning forecast global oil demand gains for this year at around 2.3 mb/d, of which China accounts for 77%. Global oil demand growth is set to slow to 900 kb/d in 2024 as the post-Covid rebound runs out of steam while the economic expansion slows and energy efficiency improvements weigh on oil use.

Global supply growth this year and next, of 1.5 mb/d and 1.7 mb/d, respectively, is dominated by non-OPEC+ producers. As for the OPEC+ bloc, the supply story this year is one of contraction, although Iran is on course to rank as the world's second biggest source of growth after the United States. Voluntary cuts are expected to keep the oil market in deficit as OPEC+ could pump 1.3 mb/d below the call on its crude in 4Q23. If extra cuts are unwound in January, the balance could shift to surplus, which would go some way to help replenish depleted inventories. Observed global oil stocks tumbled by 63.9 mb in August, with crude oil down by a massive 102.3 mb.

Middle distillate markets are tight heading into the Northern Hemisphere winter. Ten months after the EU embargo on Russian crude came into effect, European refiners still struggle to lift processing rates and diesel output. Sustained high gasoil imports will be required, but stringent winter quality specifications constrain the available supply pool. It may take another mild winter to avoid shortages.

The Middle East conflict is fraught with uncertainty and events are fast developing. Against a backdrop of tightly balanced oil markets anticipated by the IEA for some time, the international community will remain laser focused on risks to the region's oil flows. The IEA will continue to monitor the oil market closely and, as ever, stands ready to act if necessary to ensure markets remain adequately supplied.

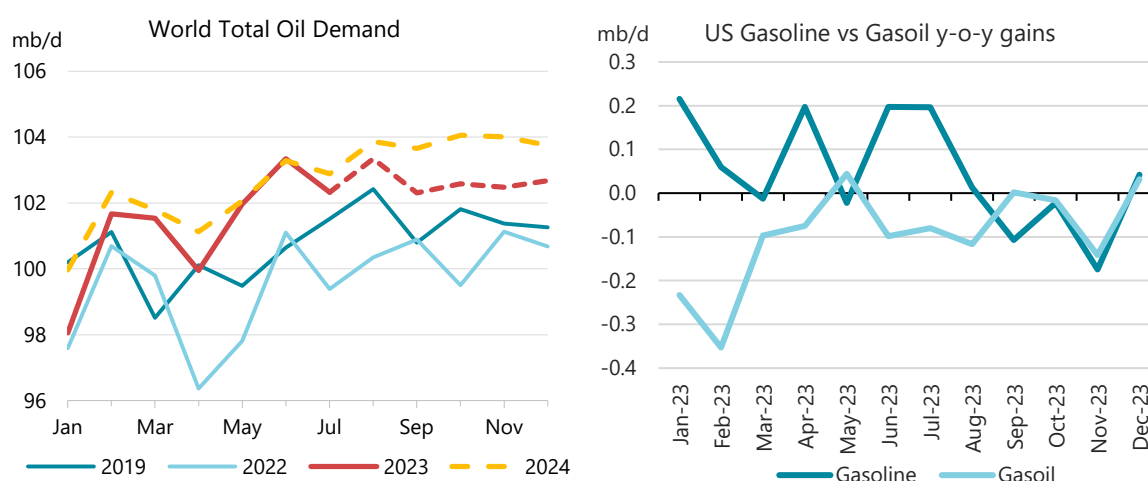


* Assumes OPEC+ targets and voluntary cuts in place through 2024. Saudi, Russia extra voluntary cuts in place through 2023.

Demand

Overview

Global oil demand is forecast to continue its strong growth trajectory in 4Q23, underpinning an annual increase of 2.3 mb/d to 101.9 mb/d for 2023 as a whole. China and non-OECD economies account for 77% and 97% of the increase, respectively. In a testament to oil's resilience amid challenging economic conditions, Chinese demand set a record high at 16.9 mb/d in August, while estimated global consumption remained within touching distance of June's all-time peak at 103.3 mb/d. Jet/kerosene and petrochemical feedstocks continue to provide the bulk of gains. However, growth will decelerate to 880 kb/d in 2024, as a harsher economic climate and continued progress in energy efficiency weigh on oil consumption.



Contrasting sharply with non-OECD strength, OECD demand growth is barely positive at +70 kb/d in 2023, before the region's consumption enters what is likely to be a permanent decline from 2024 (-380 kb/d y-o-y). Weak manufacturing and trade have depressed OECD gasoil demand so far this year (-280 kb/d), while gasoline has remained relatively firm (+130 kb/d). However, as higher pump prices, a cooling labour market, vehicle efficiencies and electric vehicle (EV) sales weigh on driving demand, gasoline use has started to weaken. In 2024 gasoline (-250 kb/d) is set to overtake gasoil (-180 kb/d) to register the largest demand decline among fuels in the OECD.

There has been some evidence of large-scale demand destruction, especially in lower-income countries, like Nigeria, Pakistan and Egypt, and signs of accelerating declines within some OECD markets including the United States. These have been particularly centred on gasoline, with Nigeria seeing the latest and most abrupt response to sharply higher prices. However, these woes are not yet widespread with several major demand centres, especially China, India and Brazil, continuing to post solid gains.

Even so, concerns over the outlook for demand reverberated through global commodity markets in September and early October. First, the run-up in crude oil futures, to over \$95/bbl, after Saudi Arabia and Russia extended their supply cuts through the end of the year threatened a resurgence in higher-for-longer interest rates, which would slow economic and demand growth. The 10-year Treasury yield gained about half a point to almost 4.7% in September - the highest level since 2007 - as financial markets digested the prospect of a protracted period of high interest rates. Although,

after an aggregate 525 basis points of rate hikes since March 2022, the Federal Reserve stood pat in September, signalling it is in no hurry to cut rates, with one more rate hike projected this year. In addition to higher oil prices and the Fed's hawkish stance, concerns about the escalating federal debt burden prompted investors to price in a higher-for-longer interest rate path.

In early October, turmoil in financial markets amid the rout in government bonds, in combination with US preliminary data showing gasoline demand falling sharply, saw a reversal in oil's fortunes. Benchmark crude tumbled back to just \$84/bbl on 5 October, underscoring concerns about the direction of the global economy.

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	14 123	14 725	14 961	602	236	4.3	1.6
Naphtha	7 013	6 794	7 134	7 550	339	417	5.0	5.8
Motor Gasoline	25 761	26 303	26 895	26 833	592	- 62	2.3	-0.2
Jet Fuel & Kerosene	5 175	6 134	7 189	7 199	1 055	10	17.2	0.1
Gas/Diesel Oil	27 417	28 237	28 336	28 471	98	135	0.3	0.5
Residual Fuel Oil	6 248	6 504	6 455	6 545	- 50	91	-0.8	1.4
Other Products	12 220	11 502	11 118	11 171	- 384	53	-3.3	0.5
Total Products	97 560	99 597	101 851	102 731	2 254	880	2.3	0.9

Recent apparent weakness in preliminary US gasoline demand data reflect a combination of acute short-term factors and the ongoing structural decline in consumption of the fuel in the United States. The country's demand has been somewhat underwhelming since the initial post-Covid bounce ran out of steam in late-2021 but was particularly poor in 3Q23. Given the structural developments underway, US gasoline demand has to run to stand still and any deterioration in the macroeconomic environment risks a slowdown in demand.

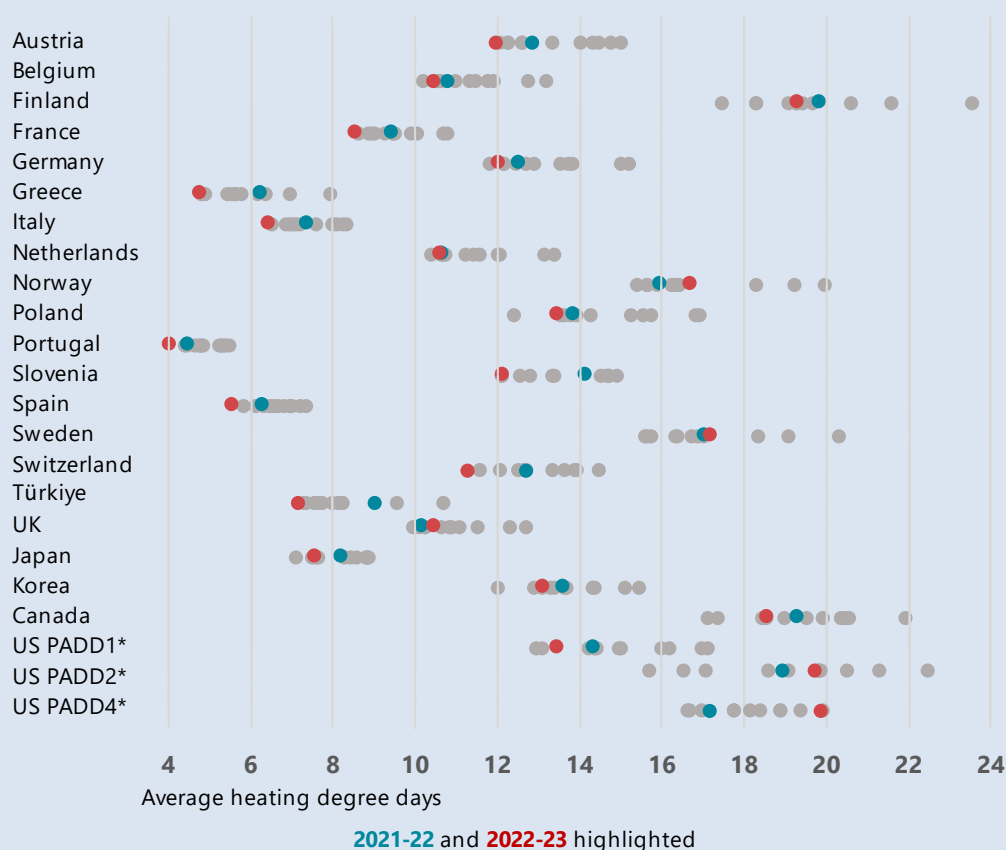
Global Demand by Region								
(thousand barrels per day)								
	Demand				Annual Chg (kb/d)		Annual Chg (%)	
	2021	2022	2023	2024	2023	2024	2023	2024
Africa	4 045	4 277	4 230	4 398	- 47	168	-1.1	4.0
Americas	30 324	31 071	31 314	31 107	243	- 207	0.8	-0.7
Asia/Pacific	35 960	36 100	38 166	39 115	2 066	949	5.7	2.5
Europe	13 964	14 295	14 244	14 109	- 52	- 135	-0.4	-0.9
FSU	4 891	4 942	4 950	4 919	8	- 30	0.2	-0.6
Middle East	8 375	8 912	8 948	9 083	35	136	0.4	1.5
World	97 560	99 597	101 851	102 731	2 254	880	2.3	0.9
OECD	44 851	45 755	45 820	45 441	66	- 379	0.1	-0.8
Non-OECD	52 709	53 842	56 031	57 290	2 189	1 259	4.1	2.2

Milder weather reduces heating fuel use but potential for volatility remains

Oil products' share of domestic heating fuels has steadily declined in recent years with a switch to natural gas and electricity, yet this segment of demand still plays a major role in the seasonality of LPG, heating oil (gasoil) and kerosene deliveries. While some countries overwhelmingly make use of other fuels, there are several OECD countries across Europe, North America and Northeast Asia that still rely on these products for home heating.

During the Northern Hemisphere winter of 2022-23 (which in this analysis we define as the fourth quarter of one year and the first of the next), many of these countries experienced unusually mild weather. This trend was particularly marked in Europe, where the most important oil product in winter fuels is heating oil. Regional demand for other gasoil (which includes heating oil) declined by 140 kb/d y-o-y, helping to alleviate very tight local gasoil markets in the aftermath of Russia's invasion of Ukraine.

Winter Heating Requirements 2010-2011 to 2022-23, Selected OECD Countries



*Average for states with substantial oil use in domestic heating.

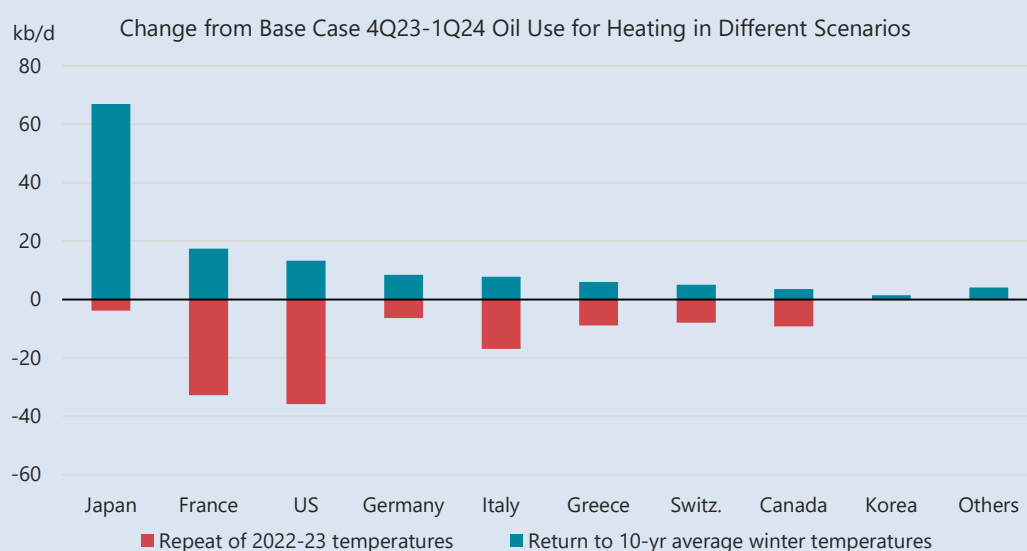
Sources: Bloomberg, IEA.

Last winter, the number of heating degree days (HDDs), which are used to track the extent to which temperatures fall below a level where the heating systems are likely switched on, were especially low in southern Europe while some northern countries experienced a rather typical winter. The temperature elasticity of heating demand in countries like France, Italy and Greece is higher than in Germany (which is the largest European heating oil consumer). This reflects a variety of factors, including typical domestic fuel storage capacities, timing of purchases, desired home temperature and, crucially, home insulation standards. German consumers are cushioned from the direct impact of weather by extensive insulation and relative new housing stock. However, on average Italian homes lose warmth 50% faster and French at 2.5 times the German rate – according to a 2020 study by *Tado*, a European supplier of home heating systems.

This means that if HDDs return to the level of the five-year average, which forms our base case, underlying European heating demand across all oil products will be about 70 kb/d higher than last year.

This would primarily be concentrated in France (+35 kb/d), Italy (+15 kb/d), Greece and Switzerland (both +10 kb/d). Conversely, a repeat of last year's weather would imply an opposite revision to our projections.

Winters have generally become warmer since 2010 in almost all the countries considered. This means there is a meaningful difference between the five- and ten-year average HDD levels. While this is closely aligned with the overall rise in global temperatures, the ten-year average level serves as a useful high case for heating requirements. If this winter were as frigid, we estimate that demand would increase in Europe by 50 kb/d compared with our forecast based on five-year average temperatures. However, the impact of a return to ten-year average temperatures would be larger in Japan (+70 kb/d), where winters have been relatively mild in recent years, but were much colder on average between 2010 and 2018. For geographical and historical reasons, oil products (largely split between kerosene, LPG and heating oil) play an unusually large role in Japanese domestic use. In combination with its large population, this means that the island nation represents the most important upside risk to this outlook (almost exactly half of the estimated 130 kb/d increment).

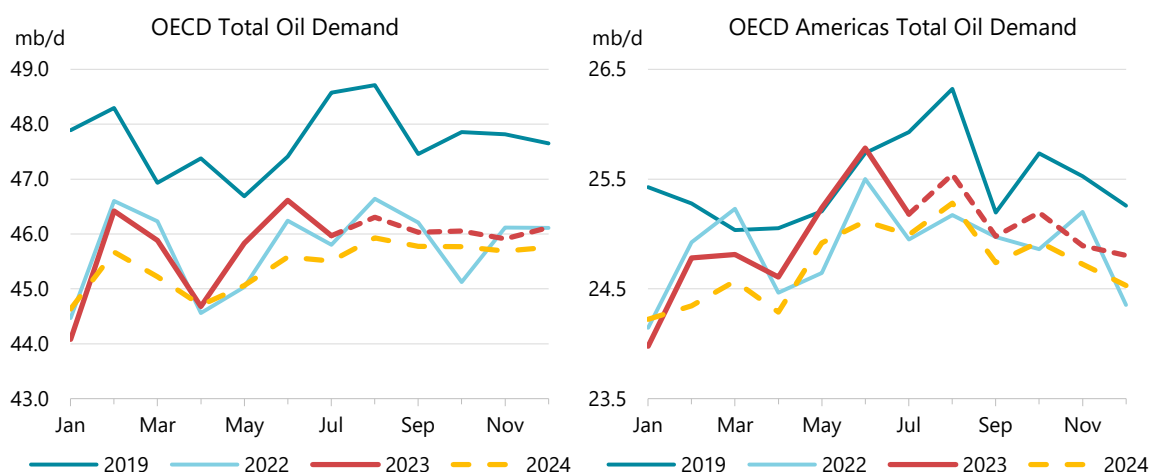


In keeping with its vast size and wide climatic diversity, different regions of the United States often simultaneously experience quite dissimilar conditions. This was the case last winter, when the three areas of the country with significant oil use in heating saw substantial variation in HDDs. In New England (northern PADD 1), where heating oil plays a larger role than other regions, the winter was relatively mild on average, albeit rather cold in an international context and with heavy snowstorms during February and March 2023. By contrast, in the areas of the Midwest and Rocky Mountains where propane plays an important role (western PADD 2 and eastern PADD 4) the weather was comparatively cold. Indeed, in Montana and Wyoming, last winter had slightly more HDDs than any other US region during the period considered and more than any country in the sample group last year. This means that the expected increase (+35 kb/d) in US heating requirements with a return to the five-year average would be comprised of an increase in New England heating oil use and lower use of propane elsewhere. Similarly, the potential upside case for the US (+15 kb/d) is much more limited than Europe (+50 kb/d) or Japan (+70 kb/d).

OECD

OECD oil demand fell by 120 kb/d in 3Q23. This was 90 kb/d below last month's forecast, largely due to the deepening petrochemical slump that depressed naphtha deliveries in Europe and Asia. Geographically, Europe is the only OECD region seeing a demand contraction in 2023, of 50 kb/d y-o-y, due to its chronically underperforming economies in the grips of stagnant manufacturing and trade. This compares with resilience in the Americas (+120 kb/d) and Asia, where use will be flat.

Deliveries in the **OECD Americas** rose by 200 kb/d y-o-y in 3Q23. Demand was 60 kb/d above last month's forecast, mainly due to higher-than-expected usage of LPG/ethane. Petrochemical feedstocks remain the region's main growth driver by far, at 280 kb/d y-o-y in 3Q23, of which 160 kb/d was in the US and 120 kb/d in Canada. Total consumption growth in North America contrasts with Mexico's ongoing demand downturn (-60 kb/d in 3Q23, largely because of weakness in road fuels). This disparity also applies to 2023's expected increase of 120 kb/d y-o-y for the Americas, with growth evenly split between the US and Canada (+70 kb/d each) but with Mexico declining by 30 kb/d.



US oil consumption rose by 70 kb/d y-o-y in 3Q23, propelled by strong jet/kerosene and LPG/ethane deliveries. This stands in contrast to lacklustre use of gasoline and gasoil (although the latter fuel's demand slump may be abating).

Jet/kerosene deliveries increased by 110 kb/d y-o-y in 3Q23 to 1.7 mb/d, which is about 95% of their pre-pandemic levels. Flight traffic finally attained 2019 volumes in late August/early September. In the same period, international flights stabilised about 10% above pre-Covid-19 levels, having returned to pre-pandemic levels early in 2023.

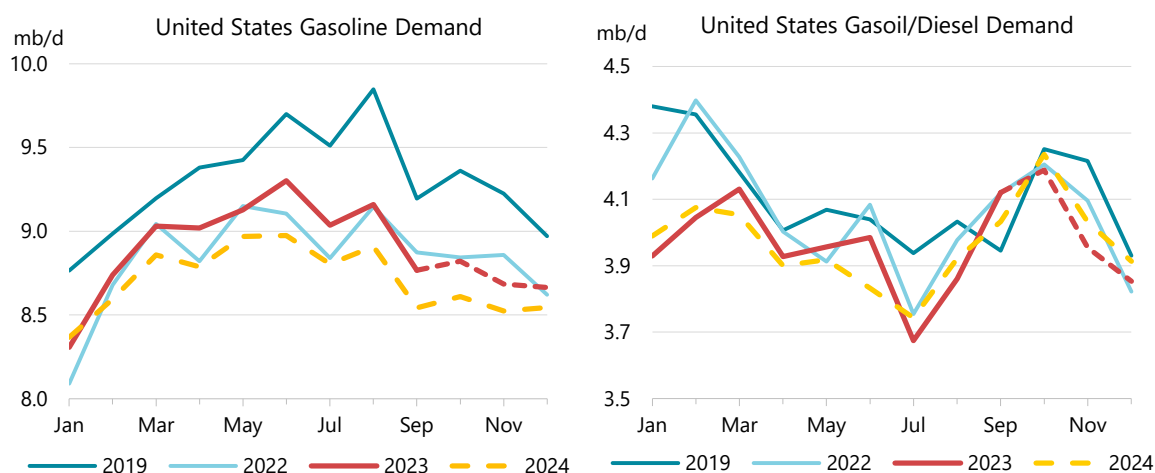
LPG/ethane consumption continued to display solid growth, of 160 kb/d, in 3Q23. Having greatly expanded its processing capacity over the past decade, US ethane crackers are seemingly resistant to the global petrochemical malaise.

Gasoline demand, which had been remarkably firm so far this year, about 100 kb/d higher y-o-y in 1H23, eased to 40 kb/d in 3Q23. This caps a lacklustre summer driving season that failed to live up to its early momentum. Gasoline demand of 9.2 mb/d over the June to August period was only 1.5% above last year's disappointing levels. US gasoline demand was particularly sluggish in September, with monthly deliveries estimated at 8.8 mb/d (-110 kb/d y-o-y). EIA weekly data indicate that deliveries were at multi-decade lows (excluding 2020). This comes against a structurally weakening

backdrop (1H23 gasoline use was 320 kb/d below 2019) but during 3Q23 demand lost further ground (July 470 kb/d, August 690 kb/d and September 430 kb/d lower than 2019 respectively). with pump prices at 10-year seasonal highs National average gasoline prices exceeded \$4/gallon from late July, according to *GlobalPetrolPrices*. Gasoline prices also accounted for more than half of the resurgence in consumer inflation, which accelerated in August (3.7% y-o-y versus 3.2% in July). A historically tight but cooling job market acts as a further drag on commuter driving, with hiring subsiding back to pre-pandemic levels and the US unemployment rate rising by 0.4%pt to 3.8% since April.

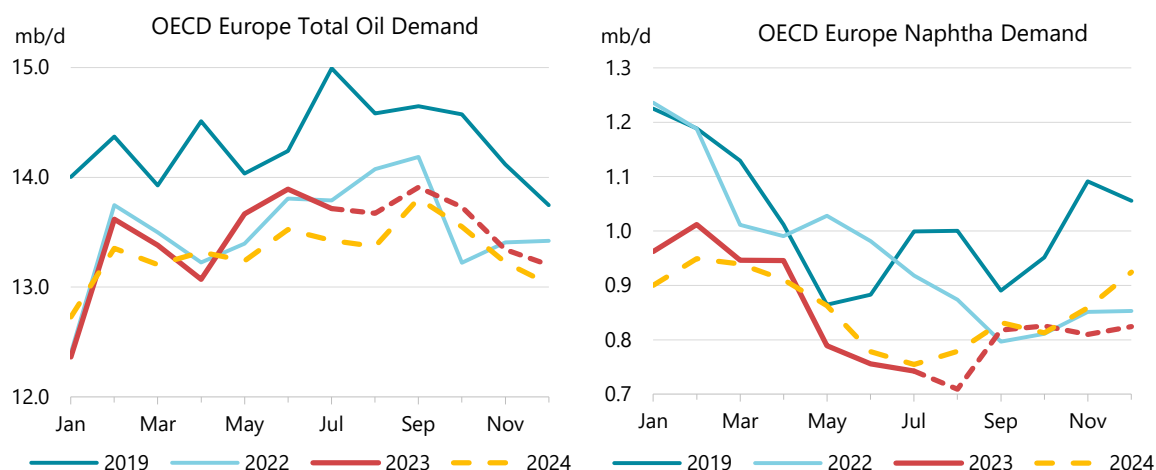
Gasoline's softness contrasts with relatively robust gasoil deliveries. While 3Q23 consumption fell by 70 kb/d y-o-y, preliminary volumes for August and September were notably firm. In an indication that gasoil's summer demand slump may be bottoming out, y-o-y growth shifted marginally into positive territory in September, aided by economic activity that remains broadly resilient in the face of higher rates. The *S&P Global US Manufacturing PMI* rose by a point in September to 48.9, while orders for durable goods rose by 0.2% in August, beating expectations of a 0.5% decline. By contrast, the *American Trucking Association's For-Hire Truck Tonnage Index* was up a marginal seasonally adjusted 0.2% m-o-m in August, after rising 1.1% in July.

We see total US demand growing by 70 kb/d y-o-y in 2023, with jet/kerosene and LPG/ethane as the main drivers, increasing by about 90 kb/d each. This will likely be the last year of US demand growth before a decline of 220 kb/d sets in next year, when US gasoline consumption is forecast to decrease by 180 kb/d amid structural efficiency gains and a harsher economic climate. In this regard, the Federal Reserve forecasts GDP growth to decelerate from 2.1% in 2023 to 1.5% in 2024.



July deliveries in **OECD Europe** came in roughly 100 kb/d below forecast, as did preliminary data for August, frustrating May/June's nascent demand recovery. Contrasting sharply with US resilience, Europe finds itself once again on the brink of recession. In a testament to the region's underperforming manufacturing sector, the decline was largely due to the industrial products LPG/ethane, naphtha and gasoil.

Gasoil use fell by 260 kb/d y-o-y in 3Q23. Worse still, naphtha deliveries reached multi-decade lows in both July and August (740 kb/d and 710 kb/d, respectively), amid rising feedstock prices and negative cracker margins.



On a country level, **Germany** saw the largest 3Q23 y-o-y fall in demand for both naphtha (-30 kb/d) and gasoil (-90 kb/d). Its economy, the bloc's largest, is seen contracting by 0.4% this year according to analysts' consensus. Business activity surveys confirmed the depth of the slump, with the *HCOB Eurozone Manufacturing PMI* dipping 0.1 to 43.4 in September – its 15th straight month below the 50 breakeven mark.

Stagflation worries moved to the fore at a divided European Central Bank (ECB) confronted by elevated core inflation (4.5% y-o-y in September). Although the bank raised interest rates for a 10th consecutive time to an all-time high of 4%, it signalled that this may be the last increase. This “dovish” hike weighed on the euro, sending it to an 11-month low to the US dollar. Investors are expecting the ECB to start cutting rates by mid-2024.

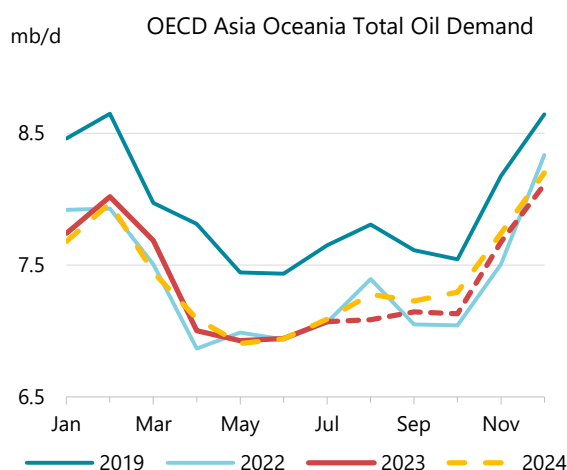
Europe's dismal economic outlook is set to depress oil demand well into next year. The European Commission downgraded its eurozone GDP growth forecast for 2023 and 2024 by 0.4%pt each, to 0.8% and 1.3%, respectively. Tighter credit availability does not help in this regard, as August saw a drop in bank lending to businesses of 0.4% m-o-m, according to ECB data. European oil demand in 2023 will decline by 50 kb/d, with Germany alone dropping by 90 kb/d. In 2024, a decline of 150 kb/d will be more evenly spread, with Germany, France and Italy each declining by about 20 kb/d. On a product basis, gasoil will be the main pressure on demand, falling by about 150 kb/d in each year.

Oil demand in **OECD Asia Oceania** fell by 70 kb/d y-o-y in 3Q23, largely on account of ongoing soft naphtha deliveries (at a multi-decade seasonal low and tumbling by 160 kb/d) that offset strength in jet/kerosene (+120 kb/d). Declines in Japan (-80 kb/d) and Korea (-30 kb/d) were partly offset by gains in Australia (+40 kb/d). We see flat demand in 2023 and slight growth in 2024 (+30 kb/d).

Naphtha accounted for 90 kb/d of **Korea's** 3Q23 y-o-y decline. Petrochemical market conditions remain highly challenging, constituting almost all of 2023's 60 kb/d aggregate drop. Demand growth should exit negative territory in 2024, after two years, as economic activity picks up. Korea's consensus GDP estimate is for 1.2% in 2023 and 2.2% in 2024, indicating that Korean exports are slowly improving. While they fell for a 12th straight month in September by 4.4% y-o-y, this was the mildest decline in a year.

Japan is similarly affected by lacklustre exports and a worsening petrochemical slump, resulting in a total demand decline of 80 kb/d in 3Q23. While the 2023 summer was Japan's hottest since records began, the impact on oil demand was limited, as increased nuclear use reduced the need for oil in power generation.

Analyst consensus sees Japan's already muted 2023 GDP growth of 1.8% decelerating to 1% next year, with its economic outlook is highly policy dependent. The Bank of Japan's (BOJ) September meeting brought no major policy changes. Core inflation (3.1% in August) which excludes fresh food but includes fuel, has exceeded the BOJ's 2% target for 17 straight months. The measure is likely to see more upward pressure from the ultra-weak yen and rising oil prices. BOJ Governor Ueda prefers to see inflation take hold in the broader economy through wage hikes and consumption rather than through import costs, causing the bank to stick to its negative interest rate policy that was first adopted in 2016. We project slightly lower deliveries in 2023 (-10 kb/d) and lukewarm growth of 40 kb/d in 2024.



OECD Demand based on Adjusted Preliminary Submissions - August 2023

	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	10.86	0.2	2.02	3.3	3.35	-1.9	1.75	-2.5	3.89	13.8	0.57	-2.0	3.10	-2.1	25.54	1.5
US*	9.16	0.1	1.71	2.0	2.43	-3.0	1.43	-2.9	3.02	11.2	0.37	-11.1	2.34	-6.1	20.46	0.2
Canada	0.87	2.6	0.19	6.9	0.37	9.7	0.25	-0.7	0.49	51.4	0.03	7.0	0.56	19.2	2.75	13.3
Mexico	0.75	-1.3	0.10	4.9	0.37	-5.7	0.07	0.1	0.33	1.1	0.16	24.6	0.18	2.1	1.95	0.5
OECD Europe	2.21	0.0	1.63	6.5	4.84	-4.8	1.18	-6.3	1.11	0.6	0.79	-0.1	1.90	-8.8	13.67	-2.9
Germany	0.50	-2.8	0.21	-4.7	0.74	-7.1	0.23	-21.0	0.11	10.9	0.06	9.5	0.27	-22.4	2.11	-8.8
United Kingdom	0.28	-0.2	0.32	10.0	0.45	-5.7	0.16	17.6	0.08	-17.7	0.02	18.8	0.12	0.9	1.42	0.9
France	0.27	5.5	0.21	6.4	0.66	-3.4	0.08	-15.1	0.11	11.8	0.03	-13.3	0.19	-3.8	1.56	-0.7
Italy	0.20	0.4	0.13	24.8	0.46	-3.9	0.05	-8.6	0.09	-2.5	0.05	-24.6	0.19	-3.7	1.17	-2.0
Spain	0.15	-1.8	0.17	13.2	0.45	-0.6	0.17	2.3	0.06	32.0	0.14	-8.4	0.14	-23.4	1.28	-1.7
OECD Asia & Oceania	1.55	-0.6	0.63	17.6	1.38	-8.5	0.38	-8.8	0.77	8.2	0.44	-12.0	1.93	-10.6	7.09	-4.2
Japan	0.90	1.7	0.28	18.7	0.41	-5.4	0.25	-10.5	0.33	-3.0	0.24	-9.2	0.75	-15.6	3.16	-5.1
Korea	0.25	-7.7	0.16	7.8	0.37	-22.3	0.07	-1.3	0.36	20.8	0.16	-21.2	1.03	-8.6	2.41	-7.4
Australia	0.28	2.0	0.15	37.1	0.55	1.0	-	-	0.05	-0.9	0.01	12.8	0.10	9.9	1.14	5.6
OECD Total	14.63	0.1	4.29	6.4	9.57	-4.4	3.32	-4.6	5.77	10.3	1.79	-3.9	6.93	-6.4	46.30	-0.7

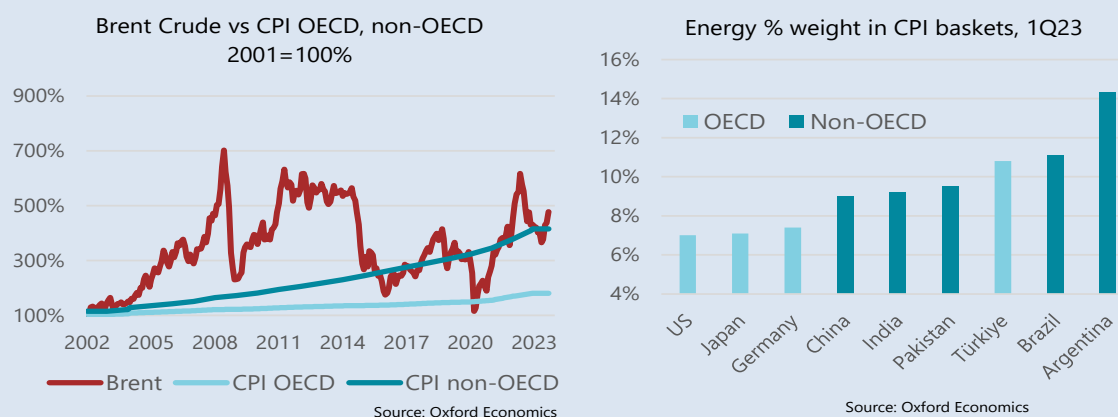
* Including US territories.

Late-summer oil price rally rekindles inflationary fears

Crude oil prices soared in the wake of Saudi and Russian production cuts, with North Sea Dated climbing more than \$20/bbl from June to over \$95/bbl in mid-September, before subsequently easing. At the same time, US gasoline pump prices rose above \$4/gallon. This has raised concerns about a revival in global inflation that, compounded by a surging US dollar, is set to have a disproportionate impact on consumers in poorer countries.

The new-found oil price momentum comes at an inopportune time for a global economy still reeling from the aftermath of the 2021-22 commodity rally that, combined with massive fiscal and monetary stimulus, sent consumer price inflation to four-decade highs. Following unprecedented rate hiking campaigns by the world's major central banks, headline inflation has recently slowed to around 4% y-o-y in the US and Europe - about 6 points below 2022's peak but well above official targets. Inflation remains undefeated, as the core measure that strips out the volatile energy and food segments has been slow to decline. Still, diminishing price pressures have buoyed market risk sentiment, encouraging investors

to anticipate an imminent end to central bank tightening and a soft landing, where inflation continues to abate as the economy cools but a recession is avoided. However, the recent jump in prices dented this optimism, prompting fears that a stall or reversal of inflation's slide could mean a "higher-for-longer" interest rates regime, possibly pushing the fragile global economy into stagflation.



For developed nations, such a scenario is still some way off, as the pass-through of crude oil prices into consumer price indices (CPIs), and eventually monetary policy, is far from comprehensive or instantaneous. Oil outstrips the volatility in retail prices with its impact on CPIs typically limited, accounting for a modest 5-8% weighting in household consumption baskets. In this context, forecaster *Oxford Economics* estimates that if crude oil prices were to average \$95/bbl through to the end of 2024 (roughly \$10/bbl above its baseline forecast) it would add about 0.4 percentage points to 2024 global headline inflation.

Second-round inflation effects, where higher oil prices are passed on to worker wage demands and non-oil retail products, take longer to materialise and are more difficult to quantify. For now, medium-term inflation expectations remain anchored. Federal Reserve and European Central Bank surveys show consumers envisage annual price increases of around 2.5-3% at a three-year horizon, more or less in line with break-even inflation rates derived from bond markets. Additionally, unlike in 2021/22, the latest rally did not occur amid a general commodity market surge - grains and industrial metals prices are currently languishing near yearly lows. Moreover, crude prices remain below the all-time peak levels of 2008, even more so in real terms as these would correspond to about \$200/bbl in today's dollars.

In contrast to developed countries, emerging economies will suffer oil's inflationary impact more acutely. Amid less advanced decarbonisation, their economic models tend to be more fossil-fuel intensive, gravitating towards heavy industry and agriculture. Energy will also rank higher in their CPI baskets, as poorer households spend a larger share of their income on basic goods. The indirect effects of oil's prominence are likely to be more pronounced as well, especially for oil importers

due to the impact on their balance of payments and state finances. The 2021/22 oil price rally contributed to full-blown financial meltdowns in Pakistan, Egypt and Sri Lanka amid a vicious circle of

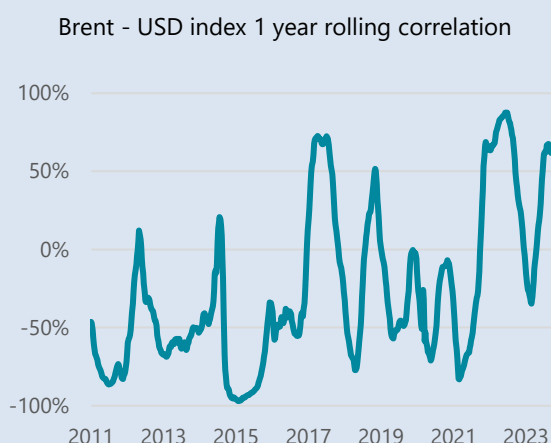
% Change Jan 2015 - Aug 2023		
Country	Retail Gasoline Price	FX vs USD
Argentina	2405%	-97%
Egypt	84%	-77%
Pakistan	260%	-66%
Sri Lanka	149%	-59%
Ghana	335%	-71%
Türkiye	260%	-66%

Source: GlobalPetrolPrices.com

runaway inflation, plunging currencies and heightening debt burdens. This combination has become a common threat to emerging market stability. Larger non-OECD economies have been less susceptible, with Indian consumers sheltered by price subsidies and China by a healthy trade balance and deflationary trends.

Compounding importers' woes is a shift in the relationship between oil and the US dollar. Historically, this interdependence was mostly inverse – modestly protecting importers as dollar weakness would lower costs in local currencies and temper the impact of rising oil prices. However, in recent years increasing oil prices have often coincided with a firming dollar. This change occurred as the shale oil revolution shifted the US to an energy-exporting powerhouse - now taking in dollars from exports rather than spending them to pay for imports - raising the greenback's correlation with oil.

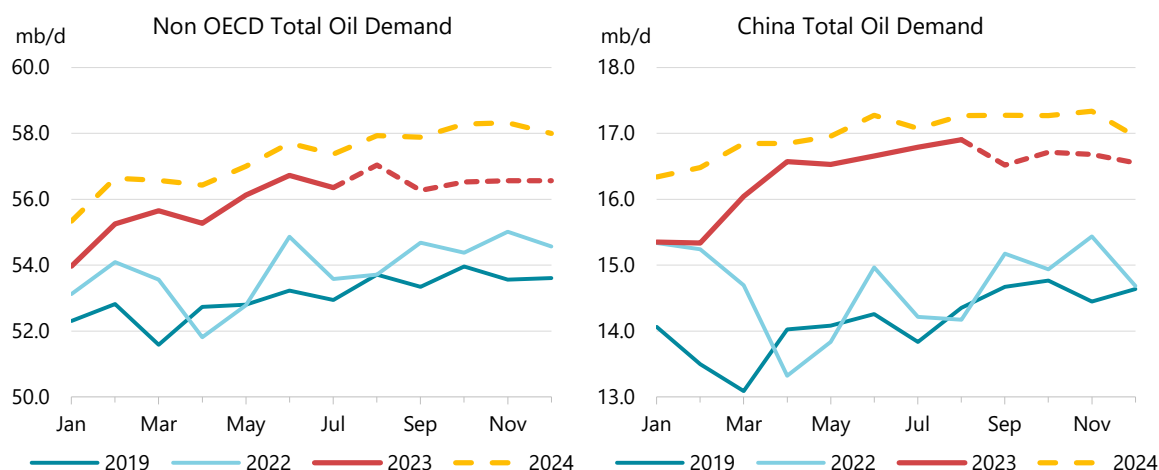
As with the 2021/22 oil price bull run, the recent rebound has ensued amid considerable dollar strength. This does not portend well for importing nations. While immediate financial collapse may have been averted (Egypt, Pakistan, Argentina, Sri Lanka and Ghana have all received IMF bailouts), the 3Q23 oil rally looks set to exacerbate already rampant consumer price inflation.



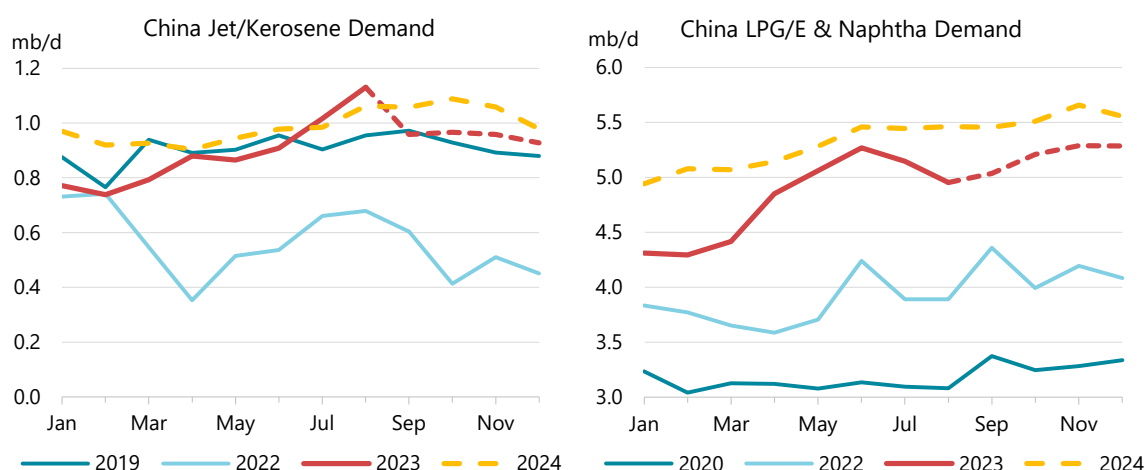
Non-OECD

Overall oil demand in non-OECD economies was buoyant through mid-2023, rising by 2.9 mb/d in 2Q23 and 2.6 mb/d in 3Q23. This is overwhelmingly the result of the strength of China – following its post-lockdown rebound and the realisation of structural gains. In contrast, softness in demand is becoming increasingly apparent in small- and medium-sized non-OECD nations. Higher oil prices and the strength of the dollar are hamstringing consumption (see *Late-summer oil price rally rekindles inflationary fears*) and growth will be extremely concentrated in a small group of larger countries. China will account for 1.7 mb/d of the 2.2 mb/d overall non-OECD 2023 increase, India another 200 kb/d and Brazil 110 kb/d (together 93% of the total). China will contribute almost half of total gains of 1.3 mb/d in 2024.

Chinese apparent demand set yet another all-time record in August, hitting 16.9 mb/d. Growth of 2.7 mb/d y-o-y reflects the extent of lockdown disruptions in 2022 and the colossal impact of investments in the nation's petrochemical sector, pushing demand 1.7 mb/d above August 2021. Average 2023 consumption is estimated at 16.4 mb/d, a rise of 1.7 mb/d. China will continue to dominate gains in 2024, with demand rising by 600 kb/d, despite the impact of burgeoning EV sales.



Nevertheless, flagging economic conditions and a looming construction slowdown continue to cloud the outlook, with the *Caixin China General Manufacturing* and *Services PMIs* showing razor-thin growth in September (falling to 50.6 and 50.2, respectively). In the face of these challenges, demand appears extremely robust. In part, this is because of the way lockdown restrictions obscured the impact of economic growth over recent years and in part because of structural changes to petrochemical feedstock use.



Combined 3Q23 Chinese naphtha, LPG and ethane demand is set to increase by almost 1.9 mb/d compared with 3Q19. Demand for all other products in the rest of the world will contract by 860 kb/d over the same period. Alongside growing polymer use from Chinese manufacturers, notably in sectors like EV production, and climbing demand for packaging, much of this growth has been at the expense of imported petrochemicals and has served to depress feedstock consumption in other countries. Chinese demand for petrochemical feedstocks remained strong in August, just below 5 mb/d, but has fallen slightly from its June peak of 5.3 mb/d. This suggests that the impact of the slowdown in construction activity may be beginning to be felt and that there was perhaps some opportunistic filling of chemical plant inventories in a period of particularly favourable LPG prices.

Year-to-date refinery output of naphtha has been revised higher by China's National Bureau of Statistics (NBS). This follows a similar update earlier this year and we have therefore assumed that the latest changes only relate to May, June and July, which have been upgraded by about 130 kb/d. Because of the way that we calculate apparent demand in China, this rise comes at the expense of other products, with overall refinery runs largely unchanged.

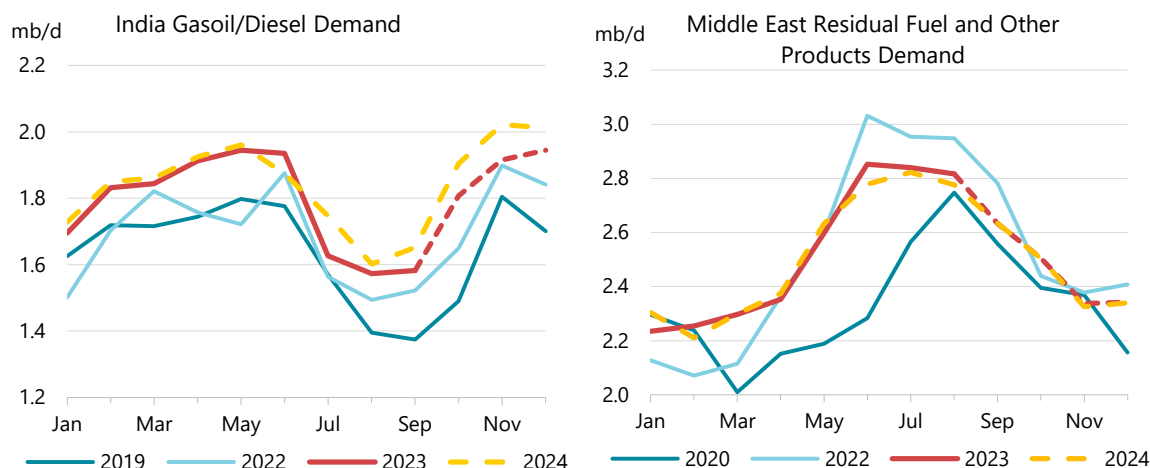
China: Demand by Product								
(thousand barrels per day)								
	Demand				Annual Chg (kb/d)		Annual Chg (%)	
	2021	2022	2023	2024	2023	2024	2023	2024
LPG & Ethane	1 943	2 116	2 534	2 655	418	121	19.8	4.8
Naphtha	1 577	1 817	2 395	2 683	578	288	31.8	12.0
Motor Gasoline	3 513	3 373	3 702	3 724	330	22	9.8	0.6
Jet Fuel & Kerosene	787	561	911	990	350	79	62.3	8.7
Gas/Diesel Oil	3 242	3 337	3 652	3 743	315	91	9.4	2.5
Residual Fuel Oil	545	592	601	597	9	- 4	1.6	-0.6
Other Products	3 480	2 867	2 598	2 602	- 269	4	-9.4	0.2
Total Products	15 088	14 662	16 393	16 994	1 731	601	11.8	3.7

Chinese demand for major fuels was also very firm in August, with gasoline (3.9 mb/d) and jet/kerosene (1.1 mb/d) both surpassing all-time record levels and gasoil (3.8 mb/d) remaining close to May's peak. The strength of jet fuel demand mirrors the country's air traffic, which hit new heights in August, with almost 17 000 flights/day according to *Radarbox*. This subsequently softened in September but looks set to regain some momentum in October. *Baidu's* measure of interprovincial mobility suggests that Mid-Autumn Festival/National Day holiday travel during late-September and early-October may have been exceptionally strong, with the initial peak more than 20% above the equivalent 2021 level. Despite competition from China's extensive high-speed rail network, this has undoubtedly bolstered fuel demand. Nonetheless, structural factors (especially world-leading EV sales) mean that we expect a slowdown in 2024 gasoline demand growth, to just 20 kb/d compared to 330 kb/d in 2023. While there is considerable uncertainty, our outlook suggests that this period of pent-up demand release may represent the highwater mark for China gasoline consumption. Gasoline demand of 3.8 mb/d in 3Q23 is above projected level for all four quarters of 2024 and structural decline is likely to set-in from 2025.

In September, **Indian** deliveries extended their recent buoyant momentum, rising by 330 kb/d y-o-y to exceed 5.3 mb/d. Consumption of both gasoline (+70 kb/d) and gasoil (+60 kb/d) reflected the country's stellar economic growth and the fact that Indian consumers are almost completely insulated at the pump from rising global markets by price regulation. Latest indicators continue to show India's output on an exceptionally strong upswing. *S&P Global PMI* readings of 57.5 for manufacturing (down from 58.6 in August) and 61 for services (up from 60.1) emphasise how much more robust conditions are than in other countries.

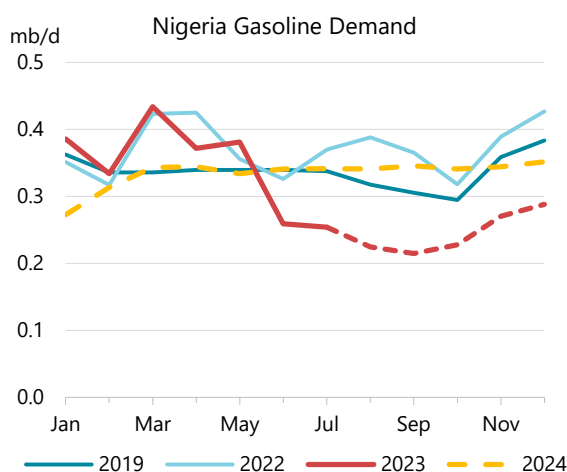
Notably, LPG demand increased by 40 kb/d, to exceed 1 mb/d for only the third time and the first time outside of the traditional February peak. This reflects the success of government efforts to promote the fuel for domestic use, replacing more polluting alternatives.

Average 2023 growth for Indian oil demand will slow to 200 kb/d from 380 kb/d in 2022. This largely reflects the healthy increase recorded last year, as India's economic boom gathered pace while exceptional agricultural and weather conditions, as well as changing mobility patterns boosted consumption. The rate of gains will likely ease further, to 100 kb/d, in 2024. Gasoil, essential to manufacturers and farmers, will account for half of growth over the two years.



In the **Middle East**, 2Q23 demand flipped into a y-o-y decline (-120 kb/d) following solid 1Q23 growth (+330 kb/d). This is largely due to substantially lower direct crude use and fuel oil deliveries, heavily used in power generation, in **Saudi Arabia** (-80 kb/d) and **Kuwait** (-50 kb/d). In both cases this fall comes despite very hot weather, resulting in a similar number of cooling degree days (CDDs) in 2Q22 and 2Q23 and reflects improving natural gas availability. July data for both countries show that these declines continued. **Iraqi** demand for these products has followed a different trajectory, rising by 50 kb/d from an already firm 2Q22 baseline. Iraq's power grid has been under strain recently with elevated demand, especially for cooling, coinciding with an interruption to gas supplies from its neighbour Iran. An oil-for-gas barter agreement reached in mid-July may help to moderate oil burn if implemented consistently. Average 2023 Middle Eastern demand is set to increase by 40 kb/d to 8.9 mb/d, but the rise will be entirely due to a strong 1Q23 for oil burn and rebounding jet fuel demand (+60 kb/d). Oil use in 2024 will be 140 kb/d higher, led by rebounding petrochemical operating rates (LPG/ethane +80 kb/d).

Gasoline use is in freefall in **Nigeria**, after President Tinubu scrapped government fuel subsidies following his inauguration at end-May. In July, demand in what had been the 13th largest national gasoline market, plummeted by 120 kb/d y-o-y. This 31% annual drop (following a 21% fall in June) sees reported demand for the month a steep 180 kb/d below the March peak, itself an all-time record. This may reflect stock building after the presidential election, as Tinubu had committed to removing the subsidy due to concerns about the cost to the state and reported smuggling to neighbouring countries. According to information from *Kpler*, demand destruction has mirrored a sharp decline in import volumes, which deepened in August and September. Therefore, we do not expect any precipitous return to the previous level of demand. However, our forecasts assume a gradual and incomplete recovery during 4Q23 and 1Q24 to leave 2024 gasoline demand roughly 10% below 2022 levels, while 2023 demand is set to be 18% lower y-o-y. The situation appears highly uncertain, with government policy, product supply and international pricing major variables. While gasoline specifications differ substantially between Nigeria and most other major



countries, the extent of the recovery will nonetheless have important implications for international markets.

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	8 893	9 165	437	271	5.2%	3.1%
Naphtha	3 623	3 757	4 286	4 669	529	383	14.1%	8.9%
Motor Gasoline	12 106	12 366	12 831	13 016	465	184	3.8%	1.4%
Jet Fuel & Kerosene	2 150	2 319	2 999	3 031	680	32	29.3%	1.1%
Gas/Diesel Oil	14 233	14 840	15 218	15 529	378	312	2.5%	2.0%
Residual Fuel Oil	4 522	4 683	4 712	4 768	29	57	0.6%	1.2%
Other Products	7 896	7 422	7 091	7 112	- 330	21	-4.4%	0.3%
Total Products	52 709	53 842	56 031	57 290	2 189	1 259	4.1%	2.2%

In **Brazil** demand exceeded expectations in August, to post robust y-o-y growth of 140 kb/d, largely from gasoil (+80 kb/d) and gasoline (+40 kb/d). The two products dominate the country's market, together accounting for 2.4 mb/d out of the 3.4 mb/d delivered during August. Similarly, Brazil's economy continues to outperform projections, with several institutions upgrading their outlooks. The GDP assumptions used in our balances have been revised up by an average of 1.8% for 2H23. However, conditions appear to be worsening, with the *S&P Global Brazil Composite PMI* sliding into contraction in September at 49 (compared to an expansion of 50.6 in August), a 29-month low. The *Manufacturing PMI* has been more subdued all year, and also returned to contraction in September (to 49, down from 50.2). In a further sign of a softening outlook the Brazilian real gave back most of its earlier 2023 gains against the dollar. We expect growth to narrow to 80 kb/d in 4Q23, for an average of 110 kb/d in 2023 and 20 kb/d in 2024.

Argentinian demand declined by a modest 20 kb/d in August. Although the country is enduring substantial economic hardship, with local fuel prices spiralling (see *Late-summer oil price rally rekindles inflationary fears*), gasoline and gasoil demand both stood close to year-ago levels. Instead, the drop is primarily the result of an almost 20 kb/d fall in LPG deliveries. This appears to be more attributable to meteorology than macroeconomics, with Argentina echoing the Northern Hemisphere with an unusually warm winter in 2023. In August, HDDs dropped by 12% y-o-y, this followed a 5% fall in July and an average drop of almost 40% in 2Q23. LPG will account for about two-thirds of the projected 10 kb/d annual decline in 2023.

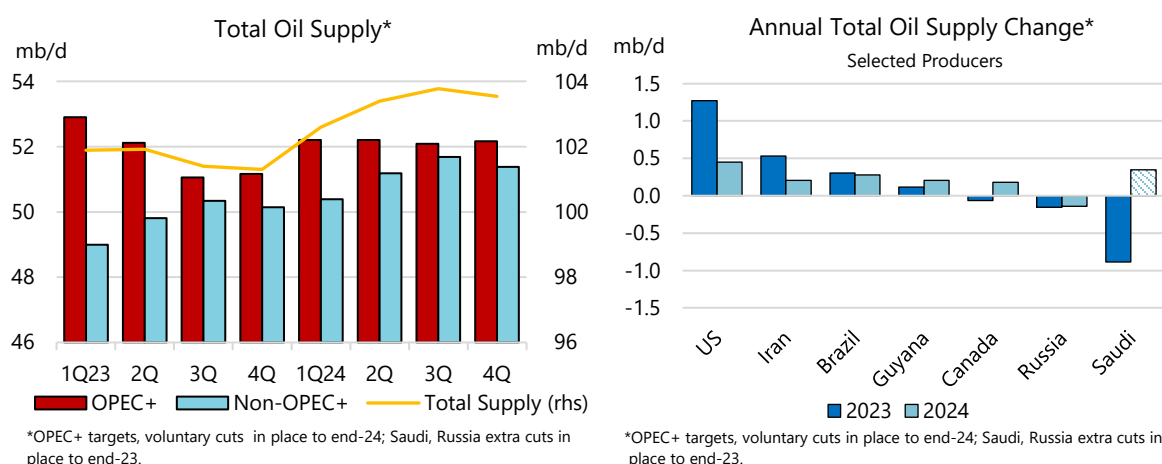
Non-OECD: Demand by Region								
(thousand barrels per day)								
	Demand				Annual Chg (kb/d)		Annual Chg (%)	
	2021	2022	2023	2024	2023	2024	2023	2024
Africa	4 045	4 277	4 230	4 398	- 47	168	-1.1	4.0
Asia	28 624	28 722	30 791	31 710	2 068	919	7.2	3.0
FSU	4 891	4 942	4 950	4 919	8	- 30	0.2	-0.6
Latin America	6 003	6 205	6 331	6 383	126	53	2.0	0.8
Middle East	8 375	8 912	8 948	9 083	35	136	0.4	1.5
Non-OECD Europe	770	784	782	796	- 2	14	-0.3	1.7
Total Products	52 709	53 842	56 031	57 290	2 189	1 259	4.1	2.2

Supply

Overview

World oil output posted a modest rise of 270 kb/d in September, with higher production from Nigeria and Kazakhstan contributing to an overall increase to 101.6 mb/d. While military clashes between Israel and Hamas that began on 7 October have heightened risks to Middle East supply, there has not been any impact on flows. Global output, barring any unforeseen disruptions, is expected to average around 101.3 mb/d in the fourth quarter. Non-OPEC+ is dominating projected annual gains of 1.5 mb/d in 2023 that will propel world supply to a record 101.6 mb/d. The US alone adds 1.3 mb/d or 65% of the 2 mb/d non-OPEC+ growth this year.

Supply is expected to ramp up sharply next year – driven primarily by the United States along with other non-OPEC+ producers Brazil, Guyana and Canada. The additional volumes from these four countries will account for 65% of anticipated 1.7 mb/d of growth in 2024 that will lift global oil output to a new annual high of 103.3 mb/d. The pace of the US expansion slows markedly in 2024 – a further 450 kb/d is forecast – but that looks enough to retain its position as the world's top source of supply growth.



Production from the 23-nation OPEC+ alliance contracts by 420 kb/d this year due to its lower output targets and sharp voluntary curbs from Saudi Arabia along with smaller cuts from Russia. The anticipated loss will be tempered by Iran, exempt from supply cuts, which looks set to deliver gains of 530 kb/d and rank as the world's second largest source of growth after the United States. Saudi Arabia will post the biggest decline, with its extra 1 mb/d cut that started in July and in place through 2023 knocking production down by close to 900 kb/d versus 2022.

Growth is forecast to return for the bloc next year – with gains of 360 kb/d assuming Riyadh phases out its voluntary cut at the start of 2024. As of now, it's unclear just when and how the Kingdom will choose to unwind its cuts. Its decision to slash output has considerably tightened world oil markets in the second half of this year and its market management policy will determine the pace of the 2024 supply ramp up and the shape of world oil market balances. Iran looks set to boost supply by 210 kb/d y-o-y in 2024 assuming its output remains at current levels.

Apart from shifting the global oil market into deficit, Saudi Arabia's additional curbs sparked a rally that pushed oil towards \$100/bbl in September, creating an additional burden for

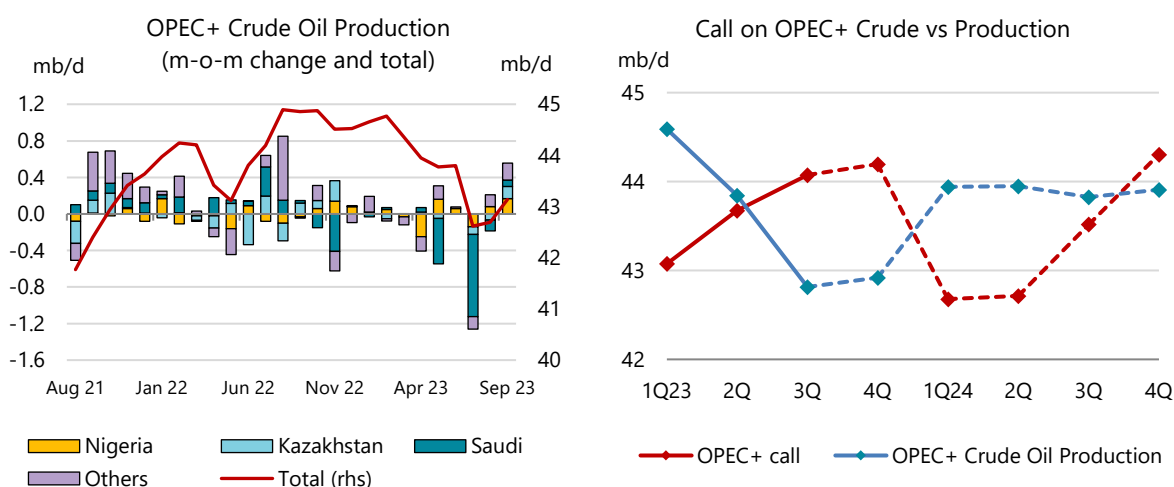
consumers - especially in emerging markets. But producer countries and international oil companies alike have reaped the profits from stronger oil prices (see *Oil producers post surging profits after Saudi supply cutbacks*).

World Oil Production by Region (OPEC+ based on current agreement)											
	2022	1Q23	2Q23	3Q23	4Q23	2023	1Q24	2Q24	3Q24	4Q24	2024
Africa	7.1	7.2	7.1	7.3	7.2	7.2	7.2	7.2	7.2	7.1	7.2
Latin America	6.4	6.8	6.9	7.1	7.1	7.0	7.4	7.5	7.5	7.5	7.5
North America	25.7	26.7	26.8	27.2	27.4	27.0	27.3	27.6	27.8	27.9	27.7
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	3.1	3.0	3.1
Europe	3.3	3.4	3.4	3.2	3.2	3.3	3.4	3.3	3.2	3.3	3.3
FSU	13.9	14.2	13.8	13.6	13.7	13.8	13.7	13.7	13.6	13.8	13.7
Middle East	31.1	31.2	30.8	29.9	29.8	30.4	30.9	30.9	30.9	30.9	30.9
Total Oil Production	94.8	96.9	96.3	95.4	95.8	96.1	97.4	97.6	97.7	97.8	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	3.6	3.2	3.2	2.8	3.4	3.7	3.3	3.3
Total Supply	100.1	101.9	101.9	101.4	101.3	101.6	102.6	103.4	103.8	103.5	103.3
<i>OPEC Crude</i>	<i>29.1</i>	<i>29.4</i>	<i>28.9</i>	<i>28.0</i>	<i>27.9</i>	<i>28.6</i>	<i>29.0</i>	<i>28.9</i>	<i>28.9</i>	<i>28.9</i>	<i>28.9</i>
<i>OPEC NGLs*</i>	<i>5.4</i>	<i>5.5</i>	<i>5.5</i>	<i>5.6</i>	<i>5.6</i>	<i>5.5</i>	<i>5.6</i>	<i>5.6</i>	<i>5.6</i>	<i>5.6</i>	<i>5.6</i>
<i>Non-OPEC OPEC+</i>	<i>17.7</i>	<i>18.0</i>	<i>17.7</i>	<i>17.5</i>	<i>17.6</i>	<i>17.7</i>	<i>17.6</i>	<i>17.7</i>	<i>17.6</i>	<i>17.7</i>	<i>17.6</i>
Total OPEC+	52.2	52.9	52.1	51.1	51.2	51.8	52.2	52.2	52.1	52.2	52.2

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

OPEC+ crude supply

Led higher by Nigeria and Kazakhstan, OPEC+ crude oil output from all 23 member countries rose to 43.14 mb/d in September, up 440 kb/d m-o-m – the largest monthly increase since August 2022. Production from the 13 OPEC countries increased by 240 kb/d to 28.21 mb/d, while flows from non-OPEC nations in the OPEC+ group rose 200 kb/d to 14.93 mb/d. Overall output from the 19 producers subject to quotas was 450 kb/d higher at 36.38 mb/d. That left the bloc's effective spare capacity, excluding Russia and volumes of crude oil shut in by sanctions on Iran, at 5.1 mb/d, with Saudi Arabia holding about 60% of the surplus.



The alliance's Joint Ministerial Monitoring Committee met on 4 October without making a recommendation to change the bloc's existing production policy. Just ahead of the meeting, Saudi

Arabia reconfirmed that it would restrict its crude oil production at roughly 9 mb/d until the end of 2023 by retaining its previously announced voluntary cut of 1 mb/d on top of coordinated OPEC+ cuts. At the same time, Moscow reiterated that it would maintain its 300 kb/d export reduction through the end of December. The 23-member producer alliance is due to gather for a full ministerial meeting on 26 November. It remains to be seen just when and how Riyadh and Moscow will phase out their voluntary reductions that are on top of a 2 mb/d cut to the OPEC+ production ceiling in place since November 2022 and extra curbs of 1.7 mb/d from some members that started in May.

What is clear is that Saudi Arabia's decision to unwind its extra cut will have a major impact on world oil market balances. For the remainder of this year, the Kingdom's self-imposed supply limitations look set to keep the oil market in a substantial deficit that could see OPEC+ production 1.3 mb/d below the requirement for its crude. If Saudi Arabia were to unwind its extra cut at the start of 2024, the bloc could pump more than 1 mb/d above the call on its crude in 1H24 which would go some way to help replenish comparatively low levels of global inventories.

OPEC+ Crude Oil Production (excluding condensates)						
(million barrels per day)						
	Aug 2023 Supply	Sep 2023 Supply	Sep Prod vs Target	Sep 2023 Implied Target ¹	Sustainable Capacity ²	Cap vs Sep ³
Algeria	0.93	0.95	-0.01	0.96	1.0	0.1
Angola	1.13	1.11	-0.35	1.46	1.1	0.0
Congo	0.27	0.25	-0.06	0.31	0.3	0.0
Equatorial Guinea	0.06	0.05	-0.07	0.12	0.1	0.0
Gabon	0.22	0.22	0.05	0.17	0.2	0.0
Iraq	4.32	4.34	0.12	4.22	4.7	0.4
Kuwait	2.58	2.59	0.04	2.55	2.8	0.2
Nigeria	1.18	1.35	-0.39	1.74	1.3	0.0
Saudi Arabia	8.96	9.03	0.05	8.98	12.2	3.1
UAE	3.22	3.25	0.38	2.88	4.2	1.0
Total OPEC-10	22.87	23.14	-0.24	23.38	27.9	4.8
Iran ⁴	3.14	3.14			3.8	
Libya ⁴	1.16	1.15			1.2	0.1
Venezuela ⁴	0.80	0.78			0.8	0.0
Total OPEC	27.97	28.21			33.8	4.9
Azerbaijan	0.50	0.49	-0.19	0.68	0.5	0.0
Kazakhstan	1.45	1.58	0.03	1.55	1.7	0.1
Mexico ⁵	1.67	1.69			1.7	0.0
Oman	0.80	0.80	0.00	0.80	0.9	0.0
Russia	9.47	9.48	0.03	9.45	10.0	
Others ⁶	0.84	0.88	-0.18	1.06	0.9	0.0
Total Non-OPEC	14.72	14.93	-0.30	13.54	15.6	0.2
OPEC+ 19 in Nov 2022 deal⁴	35.93	36.38	-0.54	36.92	41.9	5.0
Total OPEC+	42.69	43.14			49.4	5.1

1 Includes extra voluntary curbs where announced.

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.

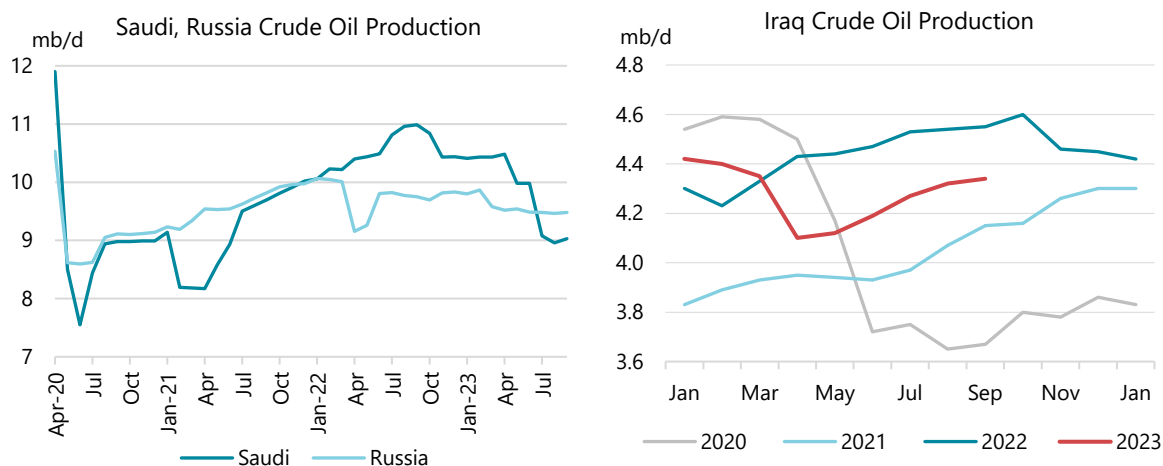
5 Mexico excluded from OPEC+ compliance.

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

Crude oil supply from **Saudi Arabia** rose 70 kb/d to 9.03 mb/d in September along with higher exports. Production from its Gulf neighbours edged higher. **Kuwaiti** output crept up to 2.59 mb/d and flows from the **UAE** increased 30 kb/d to 3.25 mb/d, 380 kb/d above its implied quota. Supply from **Oman** was steady at 800 kb/d.

Iraqi production inched up in September to 4.34 mb/d, 120 kb/d above its implied target, despite a six-month suspension of the Iraq-Türkiye export pipeline. Flows from the Kurdistan Regional Government remain largely shut in due to the halt of shipments via the northern pipeline route that had been delivering some 450 kb/d to world markets.

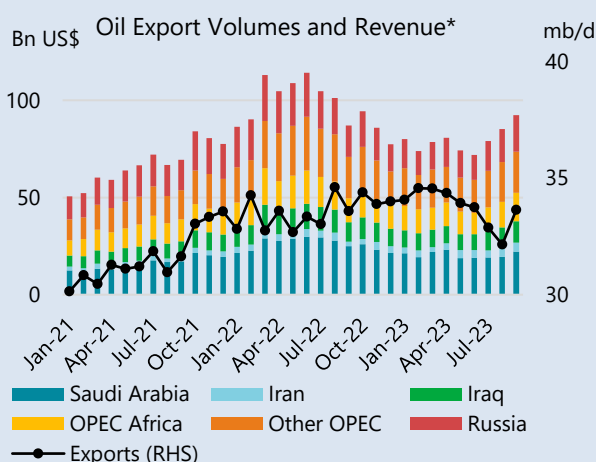
Ankara said in early October that the Iraq-Türkiye pipeline was ready to operate and resume shipments. But the Iraqi government has yet to give the go-ahead. Türkiye halted flows on Iraq's northern oil export route after an arbitration ruling by the International Chamber of Commerce (ICC) ordered Ankara to pay Baghdad damages for unauthorised exports between 2014 and 2018.



In **Iran**, crude oil supply held broadly steady in September at 3.14 mb/d, a five-year high. At the time of writing, *Kpler* tanker tracking data showed the country's oil exports averaged around 1.4 mb/d, close to levels that – apart from July – have been sustained since May. Satellite data suggest that Tehran was also pushing barrels into onshore storage. Most of its oil exports are heading to China. Before the former US administration withdrew from the Joint Comprehensive Plan of Action (JCPOA) nuclear deal in 2018, shipments 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 on ice for a year. Iran has meanwhile found 2.6 billion barrels of oil equivalent at four onshore oil and gas fields – the southern Tongo and Genaveh oil fields, the northern Hirkan oil field and the Cheshmeh Shour gas field in the northeast.

Oil producers post surging profits after Saudi supply cutbacks

Total oil export revenues from OPEC countries and Russia were assessed nearly \$20 bn higher from June to September thanks to Saudi Arabia's voluntary output cut. Core producers from the OPEC+ alliance had already reduced supply by a combined 1.7 mb/d from May – but the price response was negligible (North Sea Dated hovered around \$75/bbl) and export earnings fell \$2.2 bn to \$72 bn the following month. It was only from July, when Saudi Arabia slashed output by an additional 1 mb/d, that oil prices began to rally – resulting in soaring revenues for net exporters within and outside the OPEC+ bloc. Crude export revenues for OPEC and Russia in September are estimated at \$92.2 bn, the highest level since October 2022.



*IEA estimates based on data from *Kpler*, *Argus Media Group*

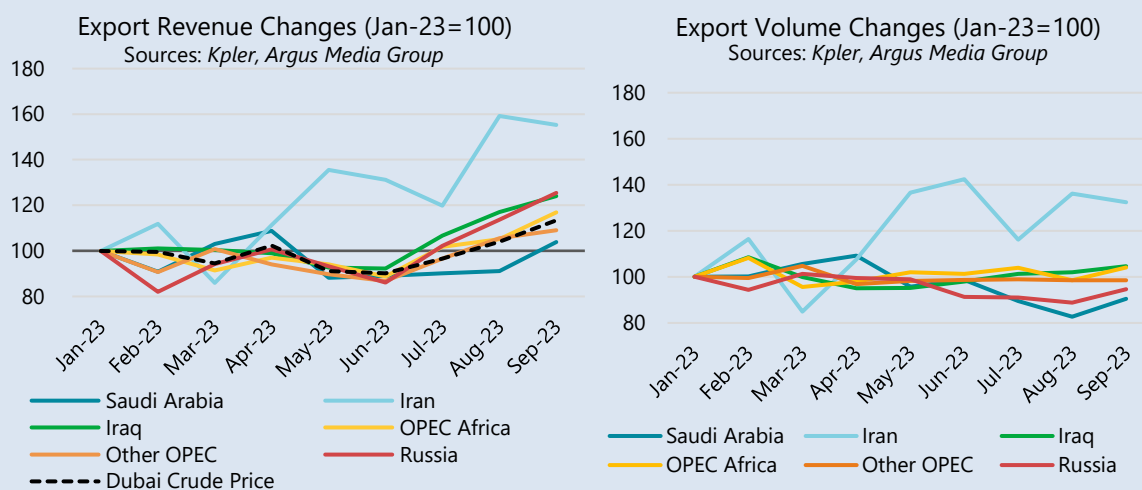
As noted in previous editions of this *Report*, Russian oil export revenues have increased significantly since June as narrowing discounts for its crude and oil products amplified the impact of rising international prices. However, other oil producing countries, local, national and international oil companies are also raking in higher profits. Iran, exempt from OPEC+ supply cuts, has seen its oil shipments ramp up by 30% since January, resulting in a 60% jump in oil export revenues. Even Saudi Arabia, which has made by far the most substantial OPEC+ curbs, reaped higher export revenue in September after crude oil prices surged above \$90/bbl and product margins neared all-time highs.

Revenues for OPEC countries are estimated based on seaborne crude export volumes provided by *Kpler* and multiplied by monthly average FOB prices from *Argus*. Volumes are considered as sold in the month of loading, so those barrels going into floating storage are not included. Official prices are used for Iranian and Venezuelan oil although the barrels are believed to be sold at discounted prices. For further details on Russian exports and revenues see *Russian oil export revenues jump in September on price and volume gains*.

Estimated Crude Oil and Product Export Revenue (Bn US\$)

	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23
Saudi Arabia	21.3	19.4	22.0	23.2	18.8	19.0	19.2	19.4	22.0
Iran	3.1	3.4	2.6	3.4	4.1	4.0	3.7	4.9	4.7
Iraq	8.8	8.9	8.8	8.7	8.2	8.1	9.4	10.3	10.9
OPEC Africa	12.5	12.3	11.4	12.1	11.7	11.1	12.7	13.1	14.6
Other OPEC	19.4	17.6	19.6	18.3	17.4	16.9	18.8	20.5	21.2
Russia	15.0	12.3	14.1	15.1	14.0	12.9	15.3	17.0	18.8
Total	80.1	73.9	78.5	80.8	74.2	72.0	79.1	85.3	92.2

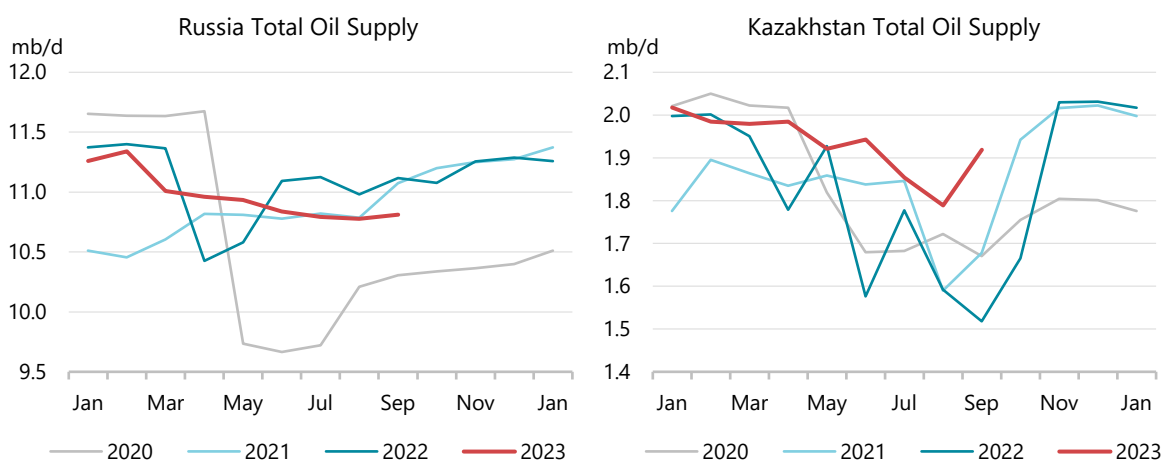
Sources: Kpler, Argus Media Group



Russian crude output crept up to 9.48 mb/d. Moscow promised to curb exports by 300 kb/d from September through the end of 2023, but preliminary estimates show crude oil exports of 4.9 mb/d were down around 100 kb/d from the May-June average. Total output of crude, condensates and NGLs in September was 10.81 mb/d, up 40 kb/d m-o-m on higher condensate output. For 2023, oil production is forecast to average 10.9 mb/d, down 150 kb/d y-o-y.

In other upstream developments, Igor Sechin, the head of top Russian producer Rosneft, has reportedly suggested that the Vostok Oil mega project – a crucial source of Arctic growth – could

require more than \$120 billion to tap. The hope was that the project would ramp up towards 600 kb/d in 2024 and eventually pump more than 2 mb/d.



Kazakh crude oil production climbed 130 kb/d to 1.58 mb/d in September following the completion of maintenance at the Tengiz field, the country's largest producer. Work at Tengiz, with capacity of nearly 700 kb/d, stretched from the start of August through mid-September. An estimated \$47 billion expansion project to boost capacity at the field by 260 kb/d could be delayed by six months to the end of 2024. **Azeri** crude oil supply dipped to 490 kb/d.

Russian oil export revenues jump in September on price and volume gains

Russian oil export revenues surged by \$1.8 bn in September to their highest level since July 2022 on a combination of rising overall volumes (+460 kb/d m-o-m) and higher weighted average prices of Russian crude (+\$8/bbl m-o-m) and products. Export revenue increases were again dominated by crude (+\$1.5 bn m-o-m) and stood \$2.6 bn above September 2022's unusually low level.

The overall rise in exports reflected increases of 220 kb/d m-o-m in product shipments and an estimated 250 kb/d in crude. Approximately 190 kb/d of crude exports remain allocated to "unknown" destinations at the time of writing, but much of this could offset the 300 kb/d m-o-m drop currently shown for India. Crude exports destined for China rose by 270 kb/d and those to Türkiye by 80 kb/d. Overall, crude exports were unchanged versus September 2022. For products, 260 kb/d of exports remain allocated to "unknown" destinations. Some of this could offset the 130 kb/d m-o-m drop currently shown for Türkiye. Product exports to India increased 160 kb/d m-o-m while shipments to most other destinations were roughly unchanged. Total product exports are up 100 kb/d y-o-y, with the fall in sales to the European Union (-870 kb/d) largely offset by higher flows to Africa (+190 kb/d), Türkiye (+160 kb/d), India (+190 kb/d), Latin America (+140 kb/d) and the Middle East (+80 kb/d).

Product exports rose month-on-month for fuel oil (+360 kb/d), gasoline (+90 kb/d) and naphtha (+50 kb/d), but declined for gasoil (-200 kb/d) and VGO (-90 kb/d). Pressure to increase supplies to Russia's agricultural sector during the harvest season likely impacted gasoil exports while refinery maintenance may have contributed to higher fuel oil and naphtha exports. Gasoline exports probably rose in response to very strong international prices in the first two decades of the month.

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	0.1	0.0	0.6	0.0	7.7	5.1	2.6	18.7
Sep 2022	2.6	0.0	0.6	1.9	1.1	0.0	0.2	0.2	0.1	0.8	0.0	7.5	4.9	2.6	16.2
Oct 2022	2.5	0.0	0.6	2.0	1.2	0.1	0.2	0.2	0.1	0.9	0.0	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	4.6	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	8.0	5.1	2.9	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	1.0	0.1	8.1	4.9	3.2	14.1
Apr 2023	0.5	0.0	0.6	2.6	2.2	0.1	0.5	0.3	0.2	0.8	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	14.0
Jun 2023	0.5	0.0	0.7	2.3	1.8	0.0	0.5	0.3	0.2	0.9	0.0	7.3	4.8	2.5	12.9
Jul 2023	0.5	0.0	0.6	2.2	1.8	0.0	0.5	0.4	0.2	0.9	0.1	7.3	4.6	2.6	15.3
Aug 2023	0.6	0.0	0.7	2.1	1.8	0.0	0.3	0.4	0.2	0.9	0.1	7.1	4.7	2.4	17.0
Sep 2023	0.6	0.0	0.6	2.4	1.7	0.0	0.3	0.4	0.2	0.9	0.5	7.6	4.9	2.6	18.8
M-o-M chg	0.0	0.0	0.0	0.2	-0.1	0.0	0.0	0.0	0.0	0.0	0.4	0.5	0.3	0.2	1.8
Y-o-Y chg	-1.9	0.0	0.0	0.4	0.6	0.0	0.1	0.2	-0.1	0.1	0.5	0.1	0.0	0.1	2.6

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.

Russian crude prices once again increased faster than the North Sea Dated benchmark in September, narrowing discounts for Urals to their lowest monthly average level since March 2022. However, the steeper backwardation on Dated versus Dubai M1 meant ESPO crude discounts to the Middle East benchmark narrowed by \$1.50/bbl to -\$6.90/bbl in September and to around -\$4/bbl in the first five days of October. At this level, the discounts for Russian crude versus other grades from East of Suez may fail to incentivise some buyers. All Russian crudes traded at more than \$80/bbl, well above the G7 price cap.

Russian Crude FOB Weighted Average Export Prices (\$/bbl)						Discounts to N.Sea Dated		
	Jul-23	Aug-23	Sep-23	Jul-Aug	Aug-Sep	Jul-23	Aug-23	Sep-23
North Sea Dated	80.09	86.18	93.96	6.09	7.78			
Price Cap	60.00	60.00	60.00					
Russia Wtd Avg	64.41	73.76	81.78	9.34	8.02	-15.68	-12.42	-12.18
Urals FOB Primorsk	60.99	70.96	80.25	9.97	9.29	-19.10	-15.22	-13.71
Urals FOB Novorossiysk	61.20	71.16	80.96	9.96	9.80	-18.89	-15.02	-13.00
ESPO FOB Kozmino	71.24	78.52	86.75	7.28	8.23	-8.85	-7.66	-7.21

Sources: Argus Media Group, Kpler. Russia Weighted Average for Urals from Baltic and Black Sea, Siberian Light and Espos.

Premium product prices rose over the month, with the largest increases occurring for VGO and gasoil. The latter is now substantially above the G7 price cap. The boost came from rising Russian crude prices (Urals) as product cracks remained roughly stable. Gasoline prices posted the smallest gains as cracks collapsed, leaving gasoline prices just below the \$100/bbl price cap through the latter weeks of the month and into October.

Discounted product prices also progressed over the month and remained well above the relevant price cap. Cracks versus Urals narrowed for both naphtha and fuel oil, in line with international product prices.

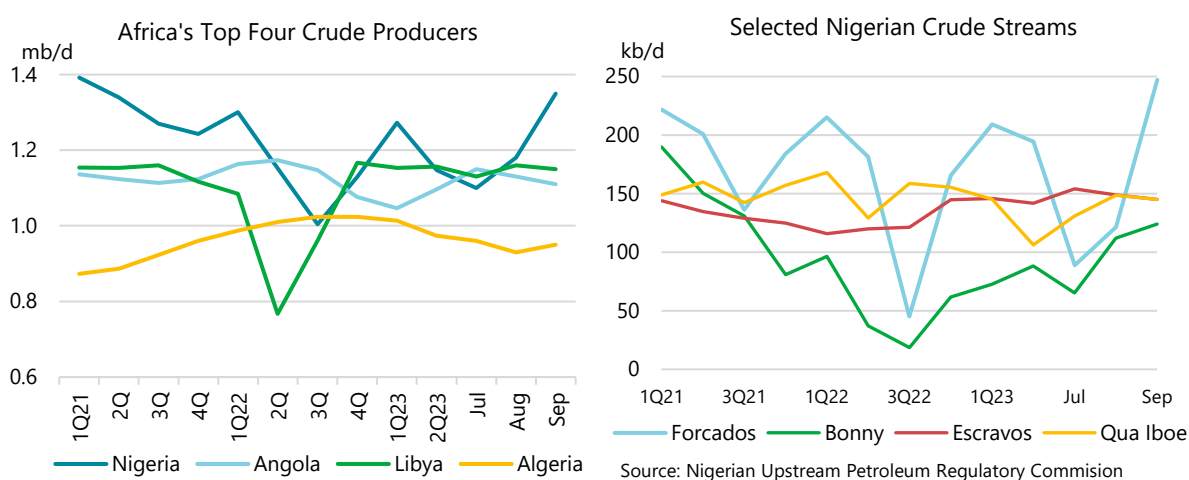
Russian government revenues from oil in US dollars rose 24% m-o-m in September, to \$10.6 bn, but were 7% below their level of a year-ago. The gains reflect both higher prices and export volumes, as well as a continued deterioration in the exchange rate, which slumped by 1% m-o-m and 37% y-o-y. While export duty payments (representing less than 4% of total fiscal receipts) rose 9% compared to August they were down 61% y-o-y. Mineral Extraction Taxes (MET) rose 24% m-o-m to over \$10 bn.

The IEA's estimate of further export revenue increases in September signals a higher fiscal intake in October.

On 21 September, Russia announced an embargo on seaborne light product exports (subsequently limited to low sulphur diesel and gasoline) to ensure full supply to farmers during the harvest and to offset recent domestic market price tensions. On 5 October, the government partly lifted the ban, freeing up 10 ppm sulphur diesel exports delivered to ports by pipeline (Primorsk, Vysotsk, and Novorossiysk, or roughly 70% of diesel exports) on condition that the refiners delivered 50% of their output to the domestic market. Gasoline exports remain forbidden. Moreover, the government announced that it would fully restore to refiners the subsidy that offsets the difference between international and domestic market prices to ensure adequate supply at home (it had been reduced by 50% as of 1 September to ease the burden on state revenues). The government also raised the additional duty on non-refiner exporters by 250% to RUB 50 000/tonne (\$500/tonne).

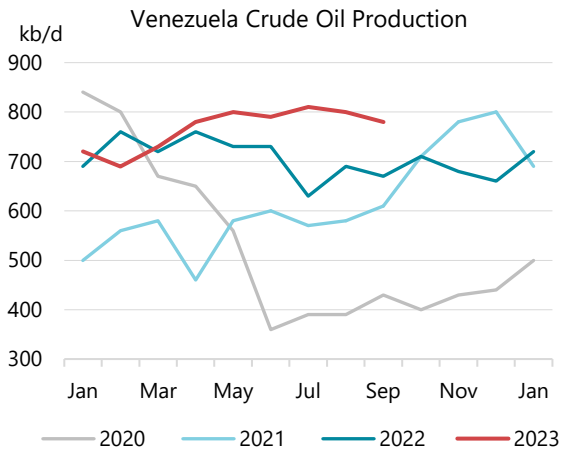
Russian FOB Export Prices (\$/bbl)											
	Jul-23	Aug-23	Sep-23	Jul -Aug	Aug -Sep		Jul-23	Aug-23	Sep-23	Jul -Aug	Aug -Sep
Premium Products						Discounted Products					
Ref. Price	99.27	113.71	119.64	14.43	5.93	Ref. Price	70.87	79.92	84.72	9.05	4.80
Price Cap	100.00	100.00	100.00			Price Cap	45.00	45.00	45.00		
Avg Price	76.55	92.62	98.94	16.07	6.32	Avg Price	45.43	55.92	60.20	10.49	4.28
Gasoline	82.24	92.92	95.20	10.68	2.28	Naphtha	40.13	47.85	53.09	7.71	5.24
Diesel	84.83	103.96	112.74	19.14	8.78	Fuel Oil	47.89	59.34	63.22	11.45	3.88
Gasoil	78.91	99.21	107.53	20.29	8.32	Sources: <i>Argus Media Group, Kpler.</i>					
VGO	54.39	63.40	72.89	9.01	9.49	Note: Weighted avg prices from Baltic and Black Sea ports.					

Combined output from African members of OPEC+ rose 140 kb/d in September on the back of strong gains in Nigeria. Robust output from major export streams pushed up flows in **Nigeria** by 170 kb/d m-o-m to 1.35 mb/d – the highest since January 2022. Production of the key Forcados grade rose 130 kb/d in September to 250 kb/d. Output of Bonny Light, another major export stream, edged up 10 kb/d to 120 kb/d.



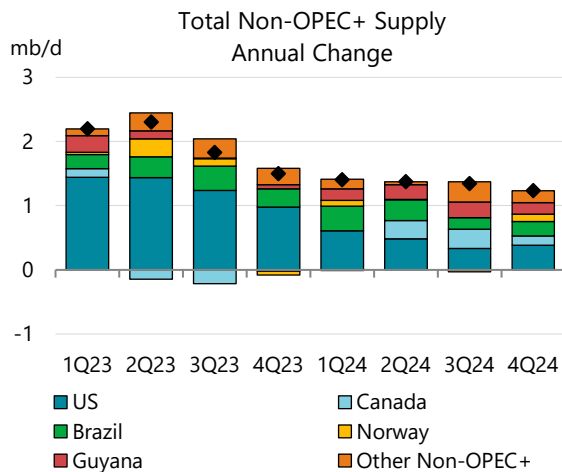
Crude supply in **Angola** eased to 1.11 mb/d, while output in **Algeria** edged up to 950 kb/d. **Libyan** crude oil production dipped to 1.15 mb/d but flows were largely unaffected by a powerful storm that swept through the North African country and briefly shut down ports.

Supply in **Venezuela** declined by 20 kb/d to 780 kb/d. So far this year, crude oil production has been running at around 770 kb/d – up 70 kb/d compared to 2022. The boost is mainly due to Chevron's return since Washington loosened sanctions on Caracas allowing the US company to restart operations at four joint ventures (JVs) where it is a minority partner. The PetroPiar, Petroindependencia, PetroBoscan and PetroIndependiente JVs are now producing roughly 140 kb/d, not far off the rate before the US imposed sanctions in 2019.

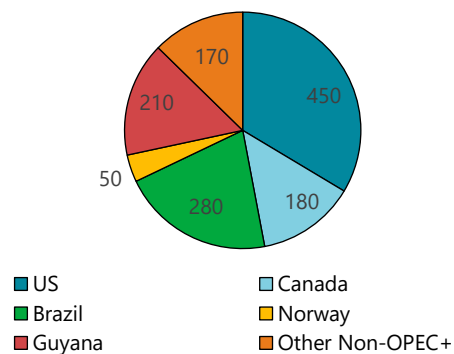


Non-OPEC+

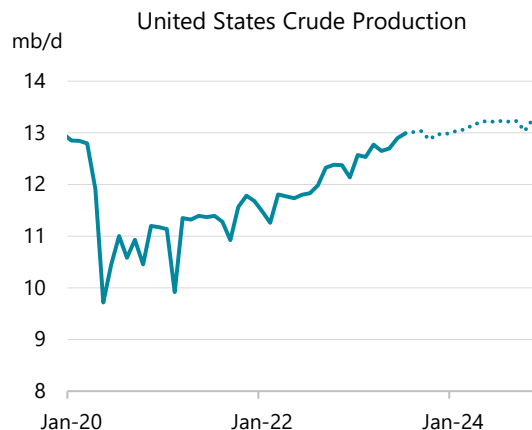
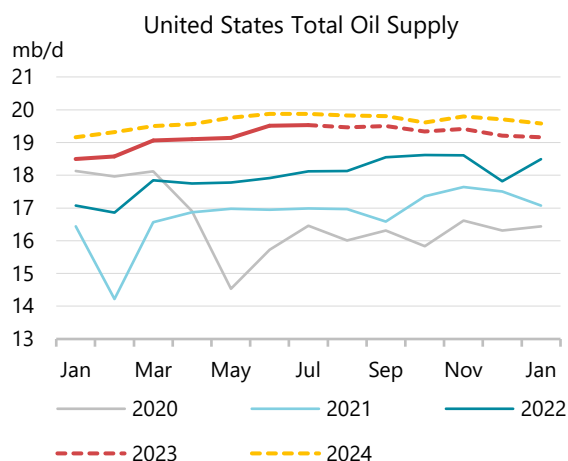
Non-OPEC+ supply fell by 210 kb/d m-o-m to 50.2 mb/d in September as a number of countries saw small declines and biofuels output fell seasonally. The previous three months saw non-OPEC+ production average 50.4 mb/d as the US and Brazil both reached all-time highs, according to official government data. For the year as a whole, the US and Brazil are set to account for close to 80% of non-OPEC supply growth of an average 2 mb/d to 49.8 mb/d. Guyana and Norway each account for around 5% of the increase. In 2024, non-OPEC+ is forecast to increase by a smaller 1.3 mb/d as Brazil, Guyana and Canada continue to add barrels while growth in shale production slows down.



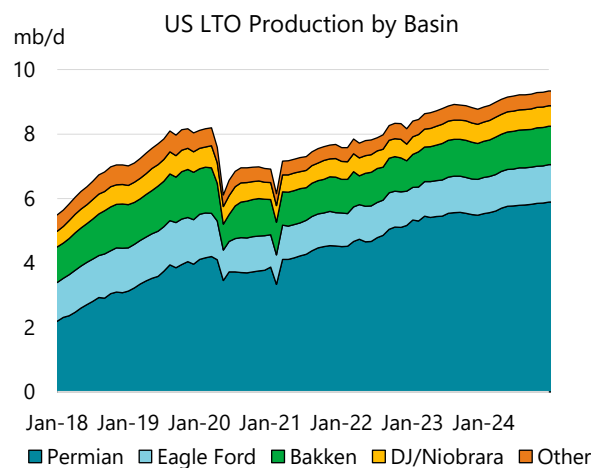
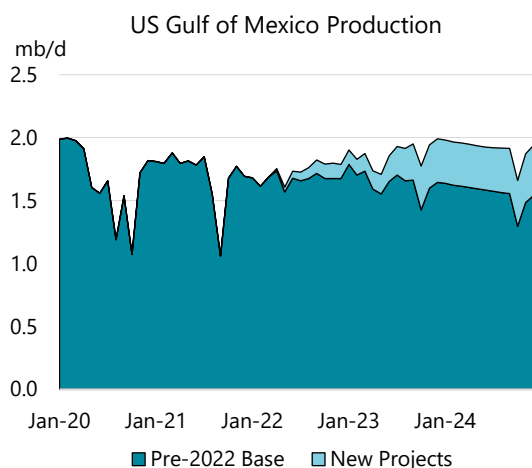
2024 Non-OPEC+ Supply Annual Change (kb/d)



In July, the last month for which official data from the Energy Information Administration (EIA) is available, total **US** oil supply rose by 20 kb/d to an all-time high of 19.5 mb/d, with crude oil tying the 13 mb/d record of November 2019. Crude oil production increased by 90 kb/d in addition to upwardly revised EIA data for May and June. Increases in the Gulf of Mexico (GoM), Permian (Texas and New Mexico) and Bakken (North Dakota) more than offset declines in Alaska and other lower-48 fields. NGL production fell by 80 kb/d m-o-m from the 6.5 mb/d high in June. For 2023 as a whole, total output is expected to increase 1.3 mb/d to 19.2 mb/d on average. Growth is set to slow to 450 kb/d in 2024.

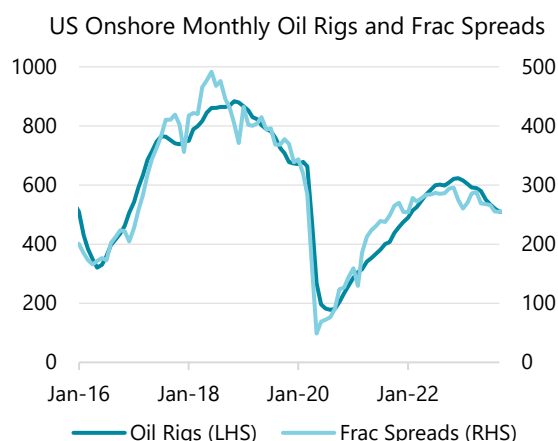


Following losses of 70 kb/d in August, US supply is estimated to have inched up 40 kb/d m-o-m to 19.5 mb/d in September as small gains in GoM crude and onshore NGLs contributed equally. Production was 1 mb/d higher year-to-date. Light tight oil (LTO) was 630 kb/d higher than a year ago and is expected to rise by 790 kb/d on average in 2023 and 410 kb/d in 2024, with the Permian basin accounting for over 75% of the growth since 2022. GoM crude has increased for four straight months and, barring any adverse storm effects in October, could touch levels last seen in August 2019. As of now, we maintain a 250 kb/d wedge this month and 50 kb/d in November for potential hurricane impacts.

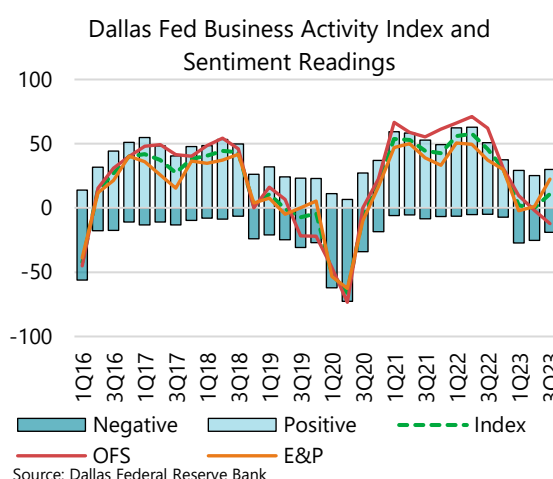


Forecast LTO supply for 2023 and 2024 have been adjusted higher by 60 kb/d and 30 kb/d, respectively, from last month's *Report* on revised EIA data and strong July results. New production typically comes online 9-12 months after the spud date (the day drilling begins) and the latest peak in drilling rig activity was seen in late November 2022, according to data from *Baker Hughes*. Heading into the fourth quarter and next year, lower rig counts and frack spreads will limit shale growth as capital restraint at higher price levels and producer consolidation throttle activity levels.

Of note, ExxonMobil – the world's largest supermajor and fourth largest company in the Permian – announced its intent to acquire Pioneer Natural Resources, the largest producer in the Permian in an all-stock transaction valued at \$59.5 bn. Subject to regulatory approval, the combined entity would more than double ExxonMobil's Permian footprint with a large queue of high-quality Midland Basin inventory. Together, the estimated Permian Basin resource base will be greater than 15 billion boe with production of 1.3 mb/d in 2024 and the expectation of 2 mb/d by 2027.

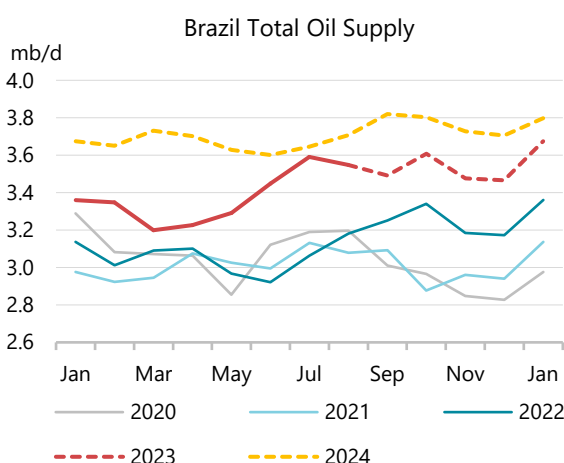
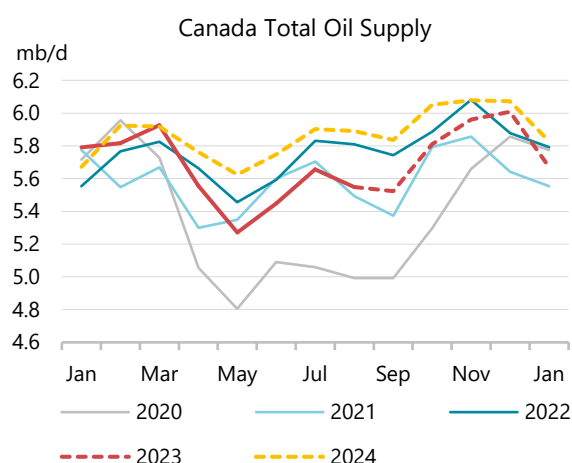


Sources: Primary Vision, Baker Hughes.



The recent Dallas Fed Energy Survey reveals a widening divergence in sentiment between oilfield service companies (OFS) and operators (E&P) in the shale patch. While expectations of sticky activity levels, flat rig rates and increasing input costs weigh heavily on the minds of OFS executives, operators increasingly see an environment where capital discipline combined with higher realisations could be accretive to balance sheets.

Canadian oil supply is estimated to have inched down by 20 kb/d to 5.5 mb/d in September as losses from Suncor's maintenance programme steepened along with its U2 upgrader and in-situ assets undergoing work. In August, production fell by 110 kb/d as maintenance curbed bitumen output, based on data from the Alberta Energy Regulator. For 2023, supply is forecast to fall by 60 kb/d y-o-y. Next year will see growth of 180 kb/d to 5.9 mb/d as oil sands facilities continue to debottleneck and optimise operations, and as Terra Nova in the Atlantic Offshore restarts after having been offline since late 2019. Additional take away capacity from Alberta is expected to come online in 2Q24 when the Trans Mountain Expansion Project begins commercial operations from a new 590 kb/d line to Canada's west coast.



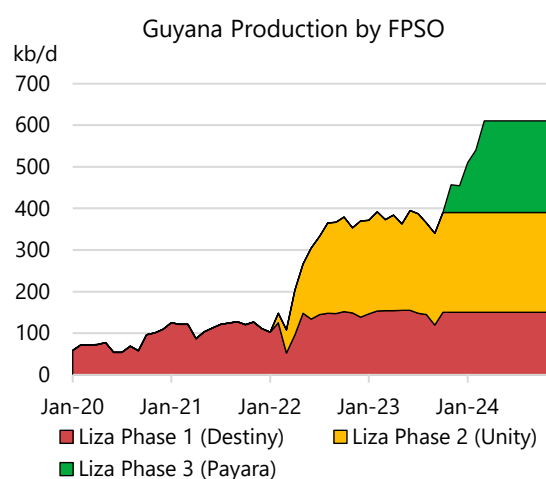
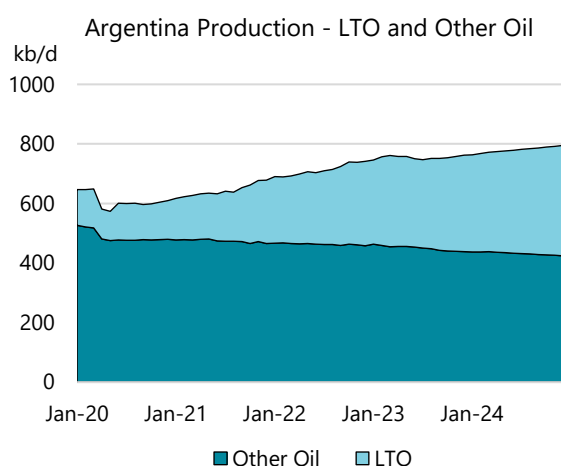
Brazilian output fell by 60 kb/d m-o-m to 3.5 mb/d in September, based on provisional daily data from the Agencia Nacional do Petroleo (ANP) and export data from *Kpler*. This follows official August ANP data that showed supply eased 50 kb/d from July's record highs. September saw the Anita Garibaldi – the sixth floating production, storage and offloading (FPSO) vessel brought online since the start of 2022 – produce first oil. The 80 kb/d facility is part of the Marlim revitalisation project

along with the Anita Nery, commissioned in May. Annual supply, buoyed by this spate of new installations, is expected to increase 300 kb/d this year to 3.4 mb/d and 280 kb/d to 3.7 mb/d in 2024.

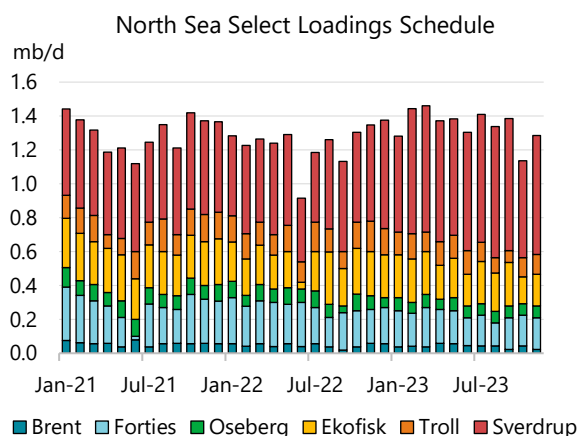
Additionally, the Brazilian Institute for the Environment and Natural Resources (IBAMA), the national environmental regulator, approved Petrobras's two exploration wells in the Equatorial Margin, a large geological area that spreads over five basins running along the country's northern coast. It is similar in geology to the prolific Guyanese Stabroek Block currently being exploited by an ExxonMobil-led consortium. The regulatory approval is for wells in the eastern section of the margin in the Potiguar Basin, where the Ministry of Mines and Energy estimates up to 2 billion barrels of oil in place. IBAMA rejected Petrobras' bid to drill an exploration well in the western section of the Equatorial Margin, in the Foz do Amazonas Basin, in May, as that location is close to the ecologically sensitive Great Amazon Reef System.

Argentinean supply held steady at 750 kb/d in September for the fourth month after having plateaued earlier in the year at 760 kb/d. Fracking activity was up 14% m-o-m and slightly above July levels at 1 398 frack stages, according to *NCS Multistage*. Argentinean producers have been targeting both liquid and gas-rich wells this year, but that strategy looks to change as gas takeaway capacity becomes severely limited in the Neuquén basin. These developments and stated plans by large international companies will help push output above 760 kb/d by December of this year and to an average of 780 kb/d in 2024.

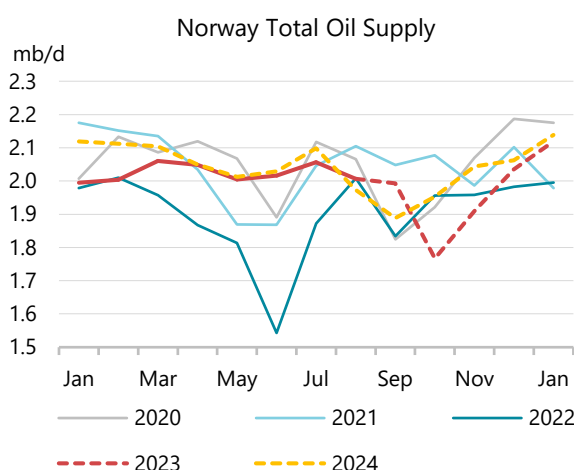
Guyana's Payara Gold crude will officially begin loading next month with two cargoes scheduled in November. The 220 kb/d project is the third in the country by the ExxonMobil-led consortium. The first two FPSOs, Liza and Unity Gold, produced 340 kb/d in September. At 28 API, Payara will be the heaviest crude thus far to be produced from the Stabroek Block. Unity is the lightest at 34.5 API while Liza was assayed at 32 API. Supply is forecast to grow by 110 kb/d this year and another 210 kb/d next year as the Payara FPSO ramps up.



North Sea loadings (as measured by BFOE plus Troll and Johan Sverdrup) are scheduled at 1.3 mb/d in November, regaining 150 kb/d m-o-m as Johan Sverdrup and Ekofisk volumes partially recover after maintenance cut liftings by a combined 300 kb/d in October. November will be down 60 kb/d from a year ago with all BFOE grades falling by close to 200 kb/d and Johan Sverdrup production rising by 140 kb/d.



Sources: Reuters, Energy Intelligence



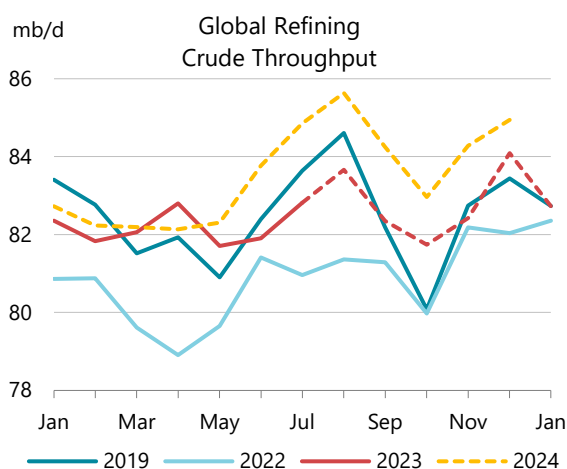
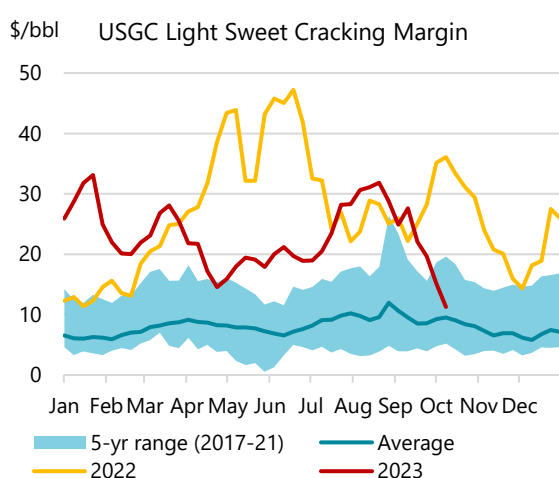
Data from the **Norwegian** Petroleum Directorate show that production fell by 50 kb/d to 2 mb/d on the month in August as volumes were taken offline from the Ekofisk and Troll-Oseberg systems. September supply was flat as returning Ekofisk barrels offset further losses in Troll. The NPD also announced that the Equinor led Breidablikk field's start-up was moved forward to October. The heavier crude (22 API) will feed into the Grane blend (currently 30 API) and is expected to add 55 kb/d next year. For 2023, Norwegian annual output is forecast to rise 90 kb/d to 2 mb/d and in 2024 by 50 kb/d.

UK production was relatively flat in September at 640 kb/d. Through the end of the year, volumes recover by 110 kb/d to exit 2023 at 750 kb/d. Oil supply is forecast to fall 80 kb/d this year and 20 kb/d in 2024. September saw UK authorities approve two oil developments. The BP-led Murlach redevelopment is expected to add 15 kb/d of crude to the Forties stream in 2025-26. Equinor's Rosebank project targets over 200 million barrels of low-sulphur light grade crude (35 API) in the West of Shetland area in its first phase. Output expected between 50-70 kb/d after the project comes online in 2027. Equinor plans for the FPSO to be electrified from day one, receiving power from onshore sources, with an estimated 3 kg-CO₂e/bbl Scope 1 and 2 emissions.

Refining

Overview

Global refinery margins collapsed over the course of September and early October from near-record August levels, as gasoline and fuel oil cracks collapsed. Nevertheless, refining profitability remains above seasonal average levels, due to still strong jet and diesel cracks (see *European diesel markets risk sustained tightness through winter season*). Record August crude runs in China underpinned peak summer global refinery throughputs at 83.6 mb/d. Throughputs have now moved lower as maintenance activity picked up. Runs are currently close to their autumn trough but expected to rebound in the coming weeks and build towards the end of the year.



Overall, crude runs are forecast to increase by 1.7 mb/d in 2023 and by 1 mb/d next year. Estimates for 2023 are 20 kb/d lower than last month's *Report*, with a 120 kb/d downward revision to 4Q23 is partly offset by higher 3Q23 estimates.

Global Refinery Crude Throughput ¹														
	(million barrels per day)													
	2019	2020	2021	2022	3Q23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	4Q23	1Q24	2023	2024
Americas	19.1	16.6	17.7	18.7	19.3	19.5	19.0	18.2	18.9	19.0	18.7	17.9	18.8	18.4
Europe	12.2	10.7	11.0	11.5	11.5	11.5	11.5	11.5	11.3	11.5	11.4	10.8	11.3	11.2
Asia Oceania	6.8	5.9	5.8	6.1	5.6	5.8	5.6	5.9	6.2	6.4	6.1	6.1	5.9	5.8
Total OECD	38.1	33.1	34.5	36.3	36.5	36.8	36.1	35.6	36.4	36.8	36.3	34.8	36.0	35.4
FSU	6.9	6.5	6.8	6.5	6.6	6.7	6.4	6.5	6.6	6.7	6.6	6.6	6.6	6.7
Non-OECD Europe	0.5	0.4	0.4	0.5	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4
China	13.4	13.7	14.4	13.6	15.3	15.5	15.4	15.2	15.0	15.1	15.1	15.3	15.1	15.3
Other Asia	10.4	9.4	9.7	10.1	10.0	10.1	9.9	10.1	10.0	10.7	10.3	10.9	10.5	10.7
Latin America	3.2	3.0	3.3	3.5	3.7	3.7	3.7	3.5	3.6	3.6	3.5	3.6	3.6	3.6
Middle East	7.9	7.1	7.8	8.3	8.7	8.6	8.7	8.7	8.6	9.0	8.8	9.0	8.6	9.2
Africa	2.0	1.9	1.8	1.8	1.7	1.7	1.7	1.6	1.7	1.7	1.6	1.7	1.7	2.0
Total Non-OECD	44.3	42.0	44.1	44.4	46.4	46.8	46.2	46.1	46.0	47.2	46.4	47.5	46.4	48.0
Total	82.4	75.1	78.6	80.7	82.9	83.6	82.3	81.6	82.3	84.0	82.7	82.3	82.4	83.4
Year-on-year change	-0.1	-7.2	3.5	2.1	1.7	2.3	1.1	1.8	0.2	2.0	1.4	0.3	1.7	1.0

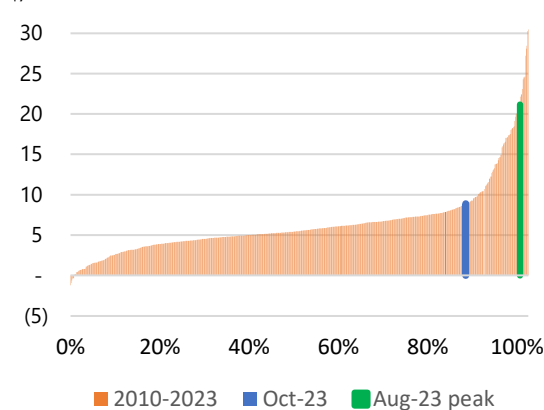
¹ Preliminary and estimated runs based on capacity, known outages, economic runcuts and global demand forecast.

Projected 4Q23 runs are lowered due to expectations of a slower ramp-up to full capacity at Oman's Duqm refinery, heavier refinery maintenance projections in the Middle East and a more cautious view on processing rates at Kuwait's Al Zour refinery.

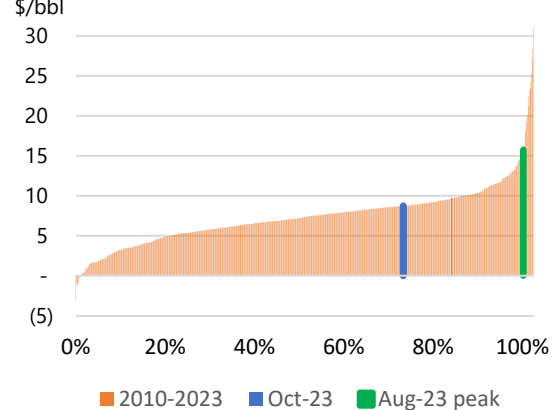
Product cracks and refinery margins

Refinery margins fell sharply during September and early October from the near-record levels achieved in August. Much as the US Gulf Coast (USGC) led the margin rally during August, so too, it led the declines in September. By early October, margins globally had dropped by 35-75% from their August peaks, with hydroskimming margins hardest hit. Nevertheless, refining profitability remains strong relative to the historic range. Across Northwest Europe, the USGC and Singapore, cracking margins on average are holding at the 83rd percentile for the period since 2010.

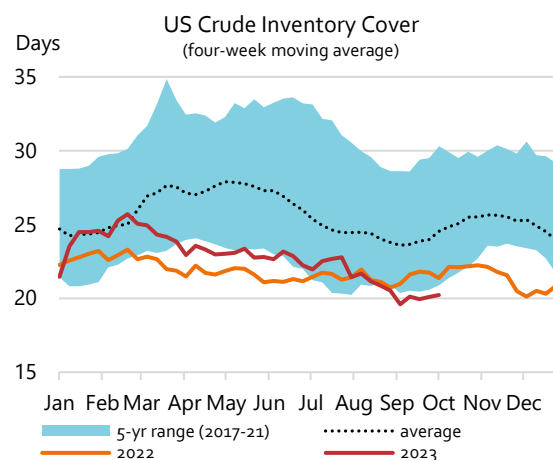
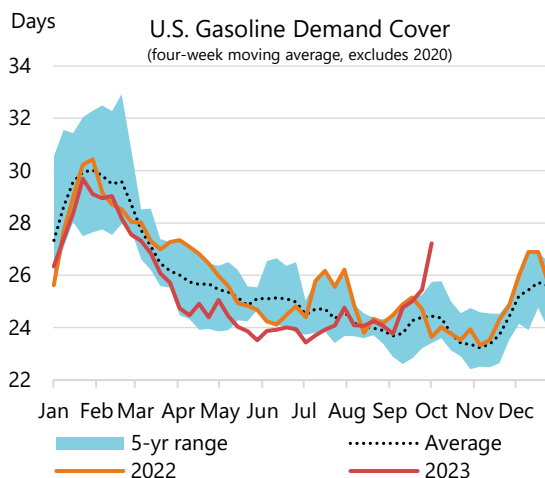
\$/bbl NWE Weekly Light Sweet Cracking Margin



\$/bbl Singapore Weekly Sour Cracking Margin



Refining margins can be viewed through the lens of the relative tightness of crude markets compared with those for product. Tight product markets versus an oversupplied crude environment should support margins. Conversely, negative demand shocks against the backdrop of tight crude supplies will result in lower, and at times negative, margins. The recent deterioration in profitability indicates that a shift in the strength of product markets versus crude markets is underway.



As a case in point, US gasoline inventory cover has shifted from the lower end or below the five-year seasonal range for much of the past six months to above the range. Some distortion from the recent

flooding in the US Northeast may also have contributed, but so too, the lack of any hurricane related disruptions and the healthy processing rates during September have also eased the inventory position. Conversely, crude has continued to tighten and now sits below year-ago levels and the five-year range, when assessed on an inventory cover basis.

The monthly average decline of \$6.87/bbl for WTI cracking margins on the USGC understates the degree to which margins have compressed in recent weeks. At the time of writing, USGC WTI cracking margins stood at \$15/bbl, roughly half their August peak. Declines elsewhere have been equally rapid, albeit less significant and from lower absolute levels.

IEA Global Indicator Refining Margins										
\$/bbl	Monthly Average				Change	Average for week starting:				
	Jun 23	Jul 23	Aug 23	Sep 23	Aug - Sep	04 Sep	11 Sep	18 Sep	25 Sep	02 Oct
NW Europe										
Light sweet hydroskimming	6.61	8.24	14.96	12.36	-2.61	12.62	15.43	12.22	8.94	4.46
Light sweet cracking	8.95	10.82	18.58	16.57	-2.01	16.38	20.13	16.55	13.18	8.88
Light sweet cracking + Petchem	7.93	9.99	17.99	16.02	-1.96	15.69	19.66	16.13	12.65	8.94
Medium sour cracking*	13.75	16.00	25.35	23.38	-1.97	22.93	27.41	23.42	19.85	14.88
US Gulf Coast										
Light sweet cracking	19.72	23.51	30.40	23.53	-6.87	24.88	27.59	22.03	19.67	15.12
Medium sour cracking	23.71	26.58	35.19	30.55	-4.64	31.00	33.99	29.96	27.52	23.09
Heavy sour coking	27.74	32.59	43.60	38.46	-5.13	40.38	43.05	35.76	34.73	30.03
Singapore										
Light sweet cracking	4.16	5.99	11.93	8.89	-3.03	9.81	11.30	8.08	6.38	4.72
Light sweet cracking + Petchem	5.37	6.73	12.34	9.24	-3.10	10.25	11.52	8.40	6.82	5.39
Medium sour cracking	5.33	7.91	14.77	12.31	-2.46	13.05	14.42	11.75	10.02	8.50
Medium sour cracking + Petchem	6.53	8.63	15.17	12.65	-2.52	13.48	14.63	12.06	10.44	9.16

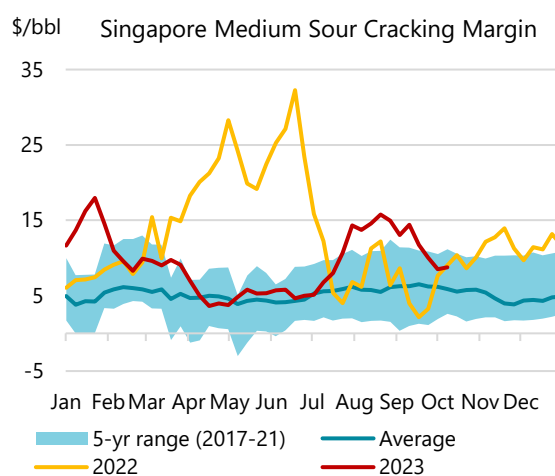
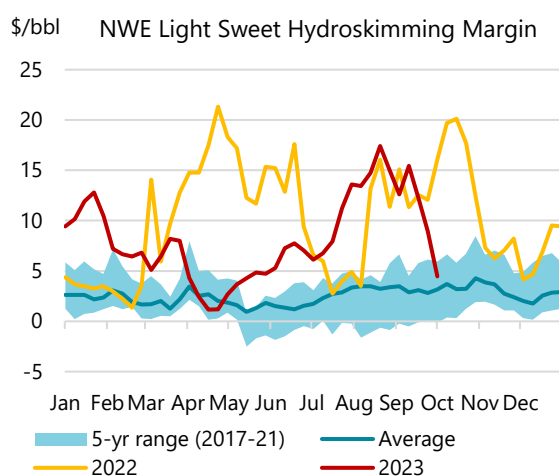
Note: Mediterranean and US Midcontinent margins are available in Table 15 of this Report.

Source: IEA/Argus Media Group prices.

Methodology notes are available 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

Northwest European margins dropped by \$2-2.50/bbl m-o-m on average in September. Margin weakness extended into early October, with light sweet hydroskimming profitability last assessed at \$4.46/bbl, some 75% below August's peak. In addition to the impact of weaker gasoline pricing, fuel oil cracks have also fallen heavily in recent weeks. Similar moves are seen in Singapore, with a \$2.50-3.10/bbl drop in month average margins belying the more significant pullback in recent weeks, particularly on sweet crude grades.

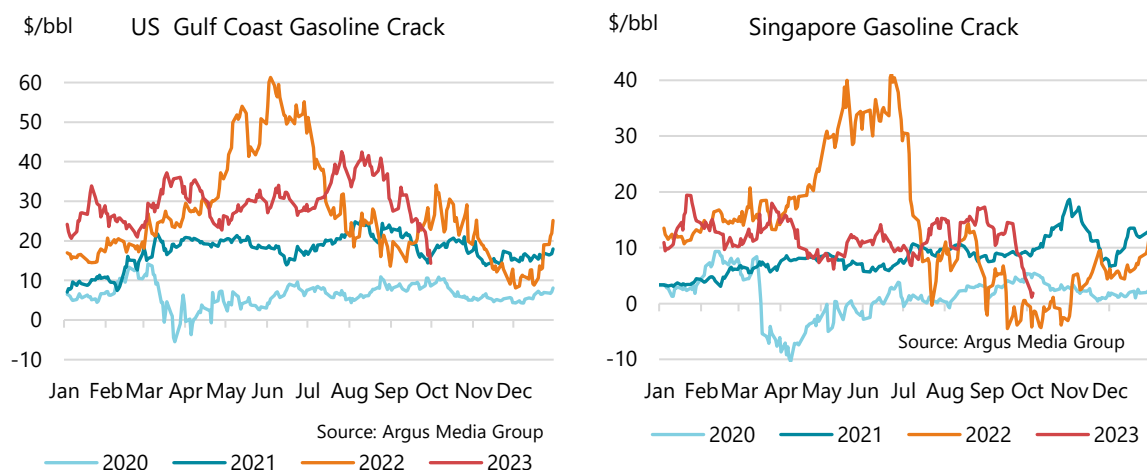


The rally and subsequent collapse in US Gulf Coast and, to a lesser extent, in European margins in recent weeks indicate that product market tightness, relative to regional crude markets was most acute in the United States, and that the unwinding of these tensions is led by those regions.

Product Prices and Differentials (\$/bbl)												
	Prices			Differentials				Week Starting				
	Jul	Aug	Sep	Jul	Aug	Sep	Aug-Sep chg	04-Sep	11-Sep	18-Sep	25-Sep	02-Oct
Northwest Europe												
				to North Sea Dated								
Gasoline	105.34	116.85	114.93	25.25	30.67	20.96	-9.70	22.51	25.02	22.46	12.53	6.05
Diesel	105.24	122.52	131.73	25.15	36.33	37.77	1.43	36.27	42.73	37.16	35.65	31.12
Jet/Kero	106.12	124.27	131.44	26.03	38.09	37.47	-0.62	36.24	41.27	37.60	35.12	30.97
Naphtha	64.42	72.14	78.59	-15.67	-14.04	-15.38	-1.34	-15.43	-14.03	-15.24	-16.95	-18.40
HSFO	73.63	85.20	88.93	-6.46	-0.98	-5.03	-4.05	-3.76	-2.23	-6.00	-8.11	-14.40
0.5% Fuel Oil	81.92	89.91	92.59	1.83	3.73	-1.38	-5.10	-1.39	0.18	-1.86	-2.89	-1.85
US Gulf Coast												
				to WTI Houston								
Gasoline	112.06	120.82	117.59	34.15	37.85	26.58	-11.27	28.75	30.99	24.92	21.38	14.37
Diesel	109.56	128.02	135.95	31.65	45.05	44.95	-0.11	44.78	49.09	43.83	42.75	39.72
Jet/Kero	105.09	125.34	129.27	27.18	42.37	38.26	-4.11	38.35	42.34	36.93	35.65	32.34
Naphtha	69.63	71.31	77.91	-8.29	-11.66	-13.10	-1.44	-12.27	-12.13	-14.48	-13.44	-12.00
HSFO	72.69	79.81	82.98	-5.22	-3.16	-8.03	-4.87	-4.70	-8.04	-9.48	-9.88	-11.99
0.5% Fuel Oil	84.63	94.78	99.55	6.71	11.81	8.54	-3.27	11.65	9.67	6.63	5.93	6.70
Singapore												
				to Dubai								
Gasoline	93.13	101.68	104.47	11.51	14.10	10.26	-3.84	12.10	13.11	11.09	4.73	1.32
Diesel	101.79	119.07	125.32	20.17	31.49	31.11	-0.38	30.49	33.13	30.40	30.42	29.58
Jet/Kero	98.85	116.28	122.77	17.22	28.70	28.56	-0.15	28.86	30.98	27.81	26.58	24.91
Naphtha	62.43	70.65	74.73	-19.20	-16.93	-19.48	-2.56	-18.75	-18.60	-19.81	-20.77	-18.43
HSFO	74.54	83.93	82.46	-7.08	-3.65	-11.75	-8.11	-8.96	-9.80	-14.81	-13.43	-17.16
0.5% Fuel Oil	86.94	95.78	99.72	5.31	8.21	5.51	-2.70	5.42	5.83	5.00	5.79	8.89

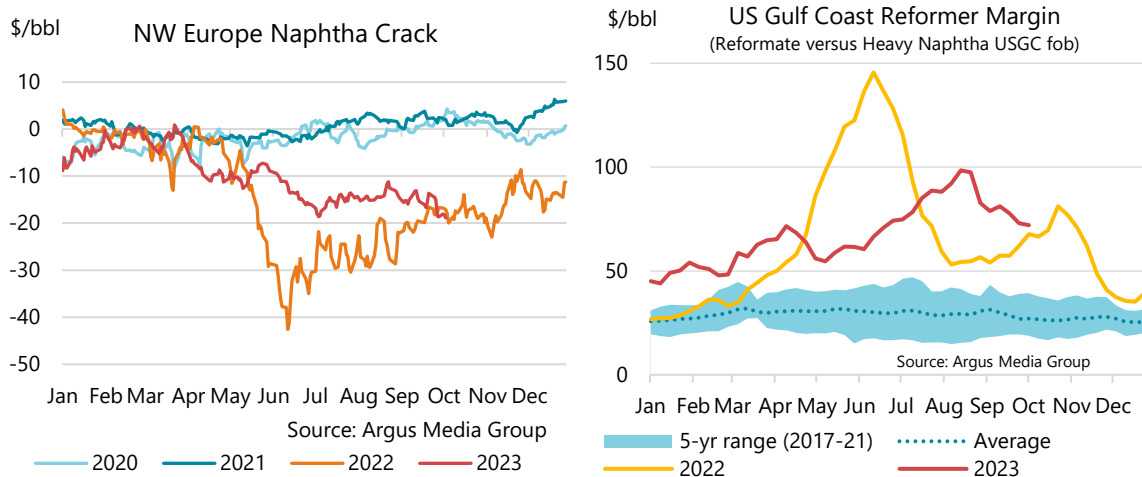
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The main driver of the materially weaker margin environment has been gasoline pricing. Gasoline prices fell marginally on average during September in the Atlantic Basin but registered a m-o-m increase in Singapore. Once again, the average price movement obscures the rapid decline that occurred in the second half of the month. In contrast to the rally in crude prices over the course of September gasoline cracks collapsed. The switch to winter specification gasoline and instances of demand destruction have undermined gasoline market tightness.



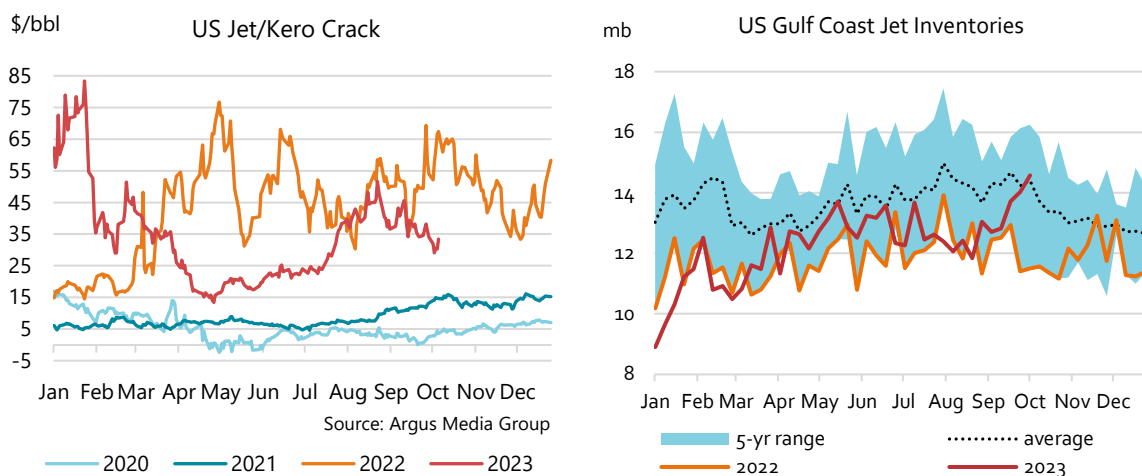
Average September USGC gasoline cracks fell \$10/bbl m-o-m, but the cumulative decline from their summer peak to early October is more than \$30/bbl. A similar shift is evident in Northwest European gasoline cracks. Elsewhere, US West Coast gasoline markets have detached from historic pricing relationships, with CARBOB premium unleaded gasoline cracks reaching a late-September peak of \$103/bbl. Conversely, Singapore markets tracked Atlantic Basin developments, with gasoline cracks falling to \$4.60/bbl at the time of writing, having briefly turned negative in early October.

The shift to winter specification gasoline for Northern Hemisphere markets allows for cheaper blending components to be included. Typically lighter, more volatile components such as butane, are used to improve gasoline characteristics in colder weather. The incentive to include butane is significant, given it currently trades at around \$40/bbl on the USGC. Blending volumes are limited, however, with US *refiner and blender* use typically increasing by 170 kb/d in winter months versus summer, effectively less than 2% of gasoline output.

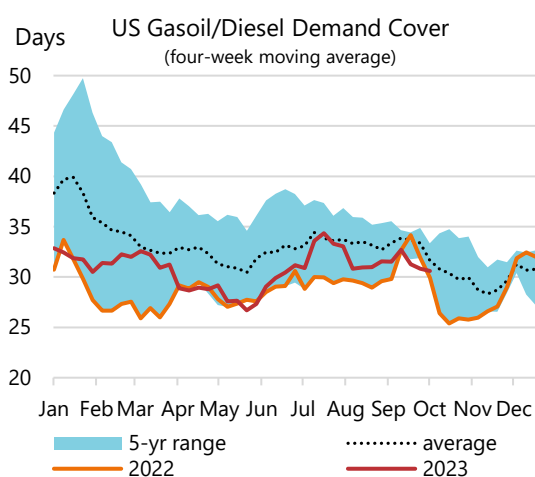
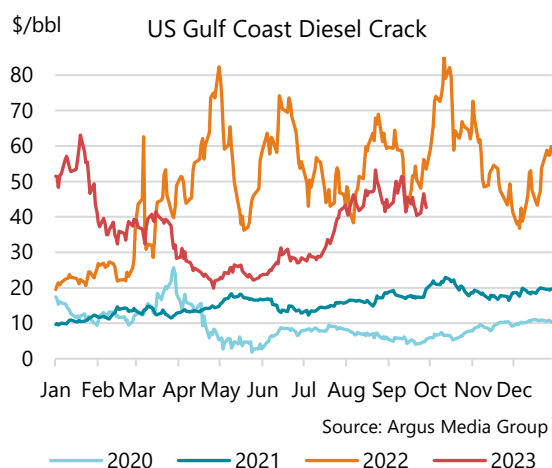


Naphtha prices rallied on average in September but failed to keep pace with gains in crude pricing. Consequently, naphtha cracks weakened by nearly \$1.50/bbl m-o-m to fresh annual lows in Europe and the USGC, and to three-month lows in Singapore. Naphtha cracks remain deeply depressed, at -\$13/bbl to -\$20/bbl due to weak petrochemical industry margins and fierce competition from propane, which is an alternative petrochemical feedstock that has tethered naphtha prices to around its breakeven price. Heavy naphtha for reforming into reformate has also fallen on the USGC and converting aromatic naphtha into reformate is still highly profitable, despite the current gasoline weakness.

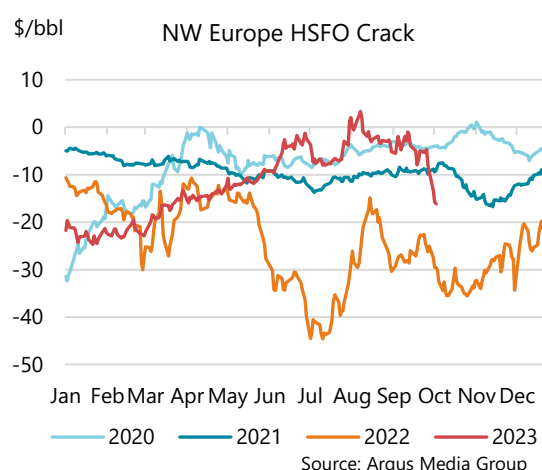
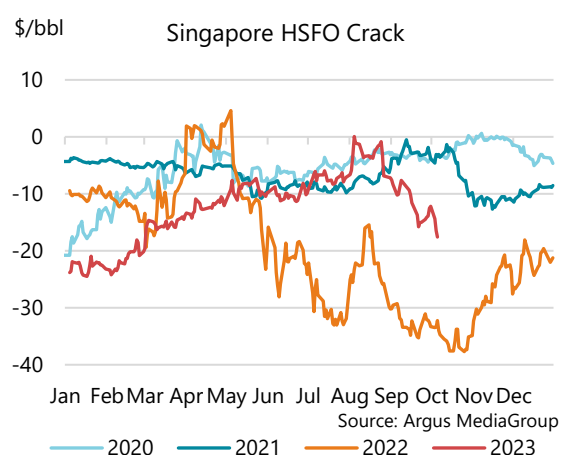
Jet fuel prices increased by \$4-7/bbl m-o-m in September, largely keeping pace with crude prices. The regional laggard proved to be the USGC, where cracks fell \$4/bbl, on average partly driven by inventories surging counter-seasonally to two-year highs by end-month. Cracks had already rallied strongly in August on refinery outages but surrendered gains as refinery runs were above average.



Despite USGC jet fuel cracks underperforming Europe and Singapore in the past month, in absolute terms, jet cracks remain extremely elevated, with Europe and the USGC at \$28/bbl and Singapore close to \$22/bbl at the time of writing. Jet fuel cracks will gain support from planned refinery maintenance in the US and Europe in the coming weeks. Similarly, the shift to winter specification diesel in the Northern Hemisphere will increase the need to blend kerosene into the diesel pool; to improve the cold-weather properties of the fuel.



Diesel prices reasserted their lead against other products, gaining between \$6-9/bbl m-o-m in September and broadly keeping pace with crude prices. Diesel cracks improved in Europe, but lost ground in the US Gulf Coast and Singapore. Nevertheless, at around \$38/bbl in the US and \$28/bbl in Europe and Asia, there is every incentive to maximise diesel output at the current juncture. The loss of Russian diesel exports following the snap imposition of a government export ban on 21 September threatened to remove 800-900 kb/d of supply from the market. Beyond the knee-jerk reaction on the day, diesel prices appeared to discount the risks of a long-term outage. The decision by the Russia government in early October to remove most of the restrictions appears to vindicate the consensus market view.

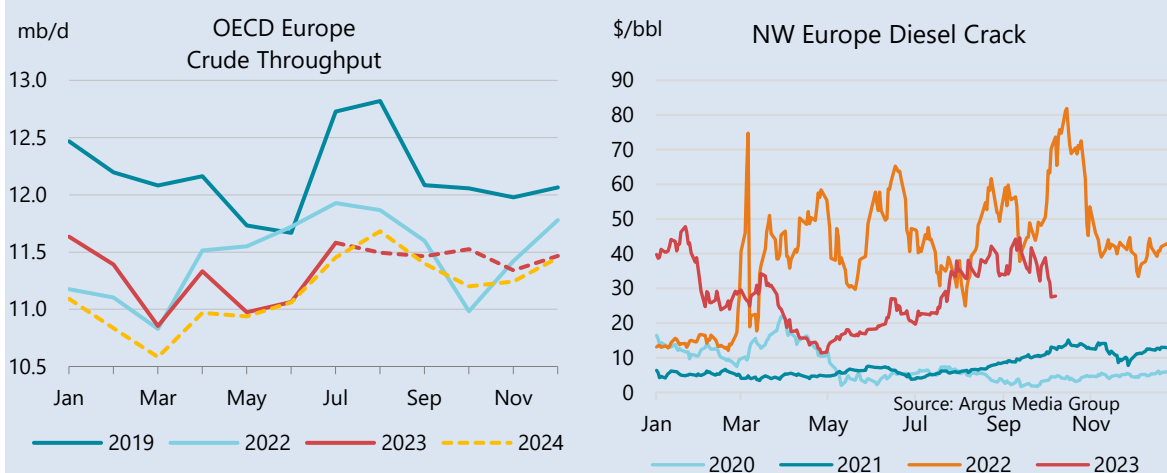


Fuel oil cracks were the second major casualty during September. Across all three regions, high sulphur fuel oil (HSFO) prices failed to keep pace with rallying crude values and cracks lost ground accordingly. Losses were most pronounced in Asia, with fuel oil cracks slumping to seven-month lows by early October. A similar pattern was evident in Europe, with HSFO cracks collapsing from above parity in August to a six-month minimum by early October.

In Europe, HSFO cracks have moved from close to parity in August to -\$13/bbl currently, near its lowest value in more than six months. Similar moves were seen in Singapore, with a \$8/bbl m-o-m drop in cracks belying the more significant pullback in recent weeks.

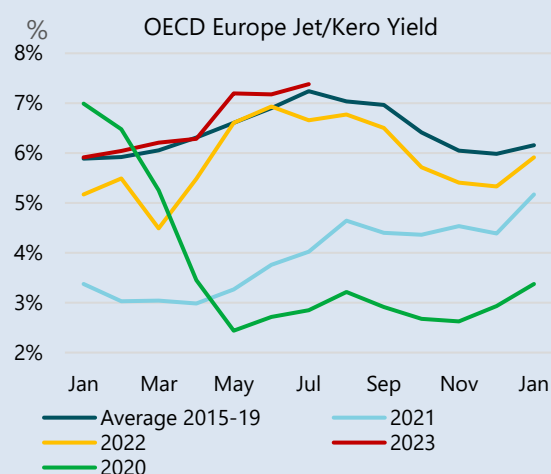
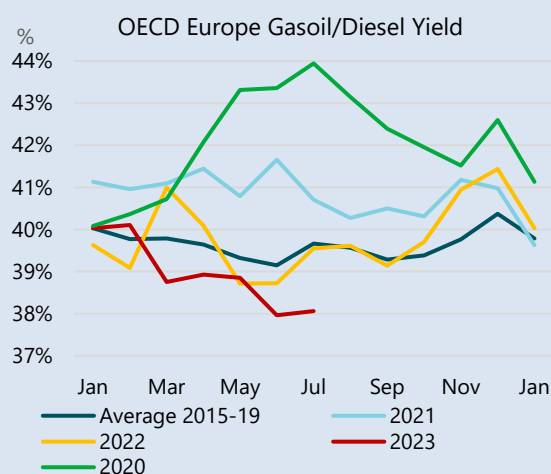
European diesel markets risk sustained tightness through winter season

More than 18 months after Russia's invasion of Ukraine, European diesel markets are still adjusting to the loss of supplies from their main import source. Refining constraints, and the risk of reduced imports from Middle Eastern refiners that may struggle to meet stringent winter quality specifications, could, combined, tighten supplies further in 4Q23 and at the start of 2024. Ahead of the Northern Hemisphere winter, OECD European gasoil/diesel stocks remain mired well below pre-invasion levels and only marginally ahead of 2022. Stocks covered 33 days of forward demand at the end of July, 10% below the five-year seasonal average and at the bottom of the pre-conflict historical range.

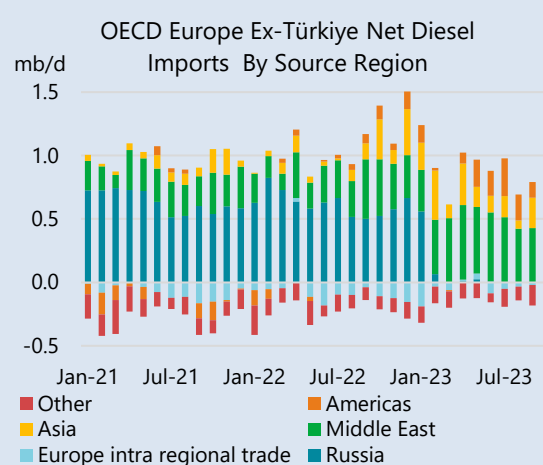
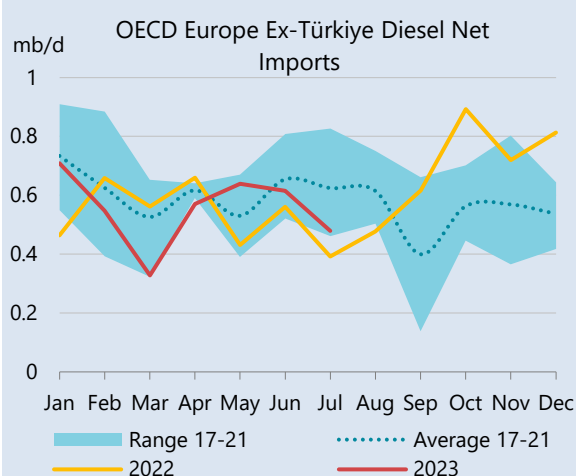


Despite near-record refinery profitability and middle distillate product cracks in recent months, European crude throughputs remain well below historical averages. In August, crude runs averaged 11.5 mb/d, 1.3 mb/d lower than pre-Covid levels. The loss of 600 kb/d of regional capacity since 2019 only partly explains the reduction in activity levels. Compared with a year ago, European runs were 370 kb/d lower, while refinery capacity is largely unchanged. It is increasingly clear that crude and feedstock constraints are contributing to the sustained decline in activity levels.

While lower than last year's all-time highs, middle distillate cracks remain robust. Northwest European diesel and jet fuel cracks both average just over \$28/bbl so far in 2023. Notwithstanding the strong incentive to maximise middle distillate production, OECD Europe aggregate middle distillate yields are just below the trailing five-year average and in line with the 2015-19 average. But with aviation demand recovering sharply from Covid-lows, the increase in jet/kerosene yields have come at the expense of gasoil/diesel. Jet fuel/kerosene yields have rebounded from post-Covid lows of sub 3% to 7% by July, just ahead of the 2015-2019 average. By contrast, regional gasoil/diesel yields have fallen to their lowest level since September 2009 when recessionary demand conditions pressured cracks and yields. The trade-off evident between grades suggests that the European refining system is at, or close to, maximum middle distillates output.



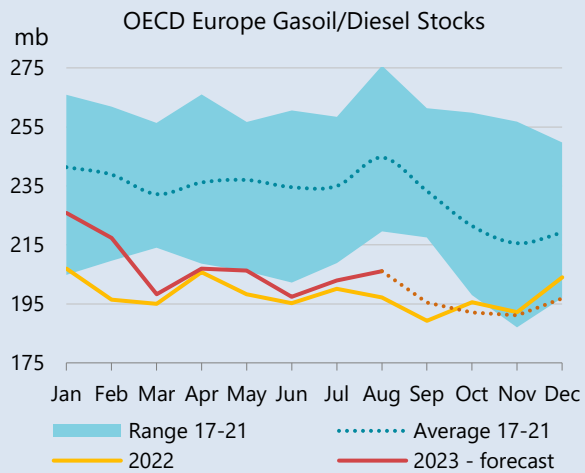
Higher imports could alleviate some of the tightness. However, imports into OECD Europe, (excluding Türkiye - which is not subject to EU restrictions on Russian imports) have not accelerated in recent months and are trailing the five-year average. Furthermore, following the loss of Russian diesel supplies to Europe, the Middle East is now the largest source of supply to the region with smaller contributions from Asia and the Americas. If reports that some Middle East refineries face challenges in meeting the winter quality specification prove accurate, then maintaining even this level of imports through the winter season may prove difficult.



The shift to increased Middle Eastern and Asian supplies has also significantly lengthened the supply chain for the marginal barrel. Tanker tacking data indicate that the average diesel import journey into Europe (ex-Türkiye) has more than doubled since the start of last year. From 1Q22 to 3Q23, Middle Eastern imports increased by 40% to 482 kb/d, while Asian imports more than doubled to 160 kb/d on average. Imports from the United States and other Western Hemisphere suppliers increased eight-fold to 225 kb/d.

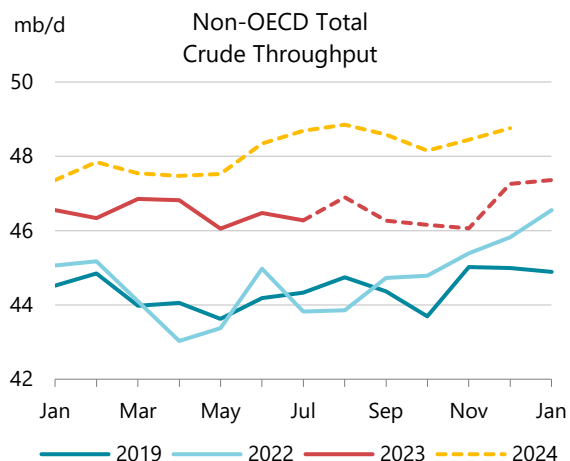
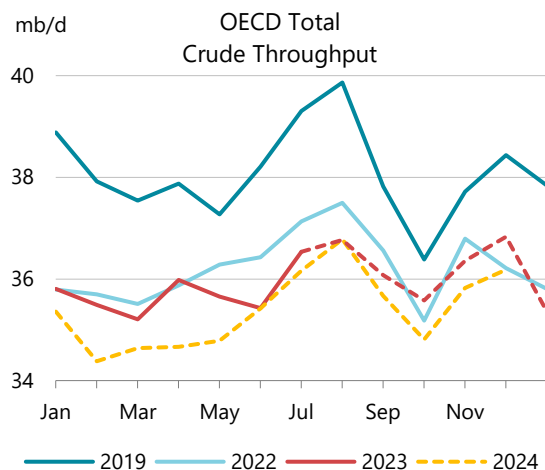
Consequently, 4Q23 European diesel balances look tight. Considering a scenario where net imports track seasonal average levels, OECD crude runs remain close to recent rates in 4Q23 as currently forecast and, assuming that gasoil/diesel yields rebound strongly, as they did in 2022, then inventories could finish at the bottom of the five-year range, around 200 mb. However, if yields remain at July's depressed levels, or track the average m-o-m development for 2H23, then stocks could end 2023 at 180 mb – a level seen only once in the past 20 years (March 2004) and not at the start of the winter heating season.

On balance, there appear to be limited options for European diesel/gasoil supplies to improve the stock cover levels in the coming months. A rebound in either refinery yields, regional runs, imports, or ideally all three, are required. Markets may have to rely on another mild winter to avoid even tighter diesel market conditions through 1Q24.



Regional refining developments

Forecast global crude runs are maintained at 82.4 mb/d for this year but trimmed to 83.4 mb/d for 2024. Consequently, annual growth is largely unchanged at 1.7 mb/d in 2023 but reduced by 130 kb/d, to 1 mb/d for next year. August data was in line with last month's estimate, as a 200 kb/d shortfall in Europe was offset by higher-than-expected Chinese crude runs.



August clearly marked the seasonal peak in refining activity, with runs of 83.6 mb/d a fresh highpoint since Covid-19 roiled oil markets more than three years ago. Nonetheless, crude processing is still some 900 kb/d below the August 2019 all-time peak of 84.5 mb/d. Despite reaching a fresh post-pandemic high, the geographic composition of crude runs has changed substantially. Chinese refinery activity stands out in August's data, reaching a new record level of 15.5 mb/d, as growth

rebounded to 2.6 mb/d y-o-y, another highpoint for 2023. Conversely, OECD crude runs stagnated at 36.8 mb/d, down 730 kb/d y-o-y, hampered by weak European activity and in total the OECD was 3.1 mb/d below its August 2019 level.

Crude runs in 2024 should benefit from the ramp up of two key new refinery projects, including Oman's 230 kb/d Duqm refinery which is undergoing commissioning currently and Nigeria's 650 kb/d Dangote refinery. Tanker tracking data indicate a total of four VLCCs, each with approximately 2 million barrels of Kuwait export blend crude, have been delivered so far this year to Oman's Ras Markaz terminal. An initial cargo was delivered in January - presumably for filling and commissioning pipeline and storage tanks, along with a second cargo in May. The most recent two cargoes arrived during September. Inaugural export cargoes of diesel and jet fuel are also reported to have been shipped.

When at full capacity, we expect to see three to four VLCCs discharging at Ras Markaz to supply the Duqm refinery each month and a similar acceleration in product export volumes. Nevertheless, we have scaled back our assumptions for a rapid 4Q23 ramp up in crude runs and slowed the pace at which Duqm will reach full capacity. As demonstrated by the reported outages at Kuwait's 615 kb/d Al Zour refinery and continued feedstock exports at Saudi Aramco's 400 kb/d Jizan refinery, achieving a stable processing environment can take several months.

Elsewhere, despite much talk of the imminent commissioning of the 650 kb/d Dangote refinery in Nigeria and the 340 kb/d Dos Bocas refinery in Mexico, we see no similar shift in trade flows of crude or products. Tanker tracking data does not show a slowdown in Nigerian or Mexican crude exports and no reports of imports. The Dos Bocas port is expected to handle roughly 400 kb/d of crude exports in October, in line with the past three months' average. Consequently, we retain, for now, the assumption that the world scale operations at Dangote and Dos Bocas have yet to reach mechanical completion and will most likely start in 2024 and 2025, respectively.

Refinery Crude Throughput and Utilisation in OECD Countries										
(million barrels per day)										
	Mar 23	Apr 23	May 23	Jun 23	Jul 23	Aug 23	Change from		Utilisation rate	
							Jul 23	Aug 22	Aug 23	Aug 22
US ¹	15.51	15.84	16.21	16.39	16.60	16.68	0.08	0.25	93%	93%
Canada	1.75	1.61	1.68	1.81	1.85	1.85	0.00	0.05	101%	99%
Chile	0.19	0.21	0.19	0.14	0.19	0.19	0.00	0.04	83%	67%
Mexico	0.95	0.97	0.85	0.97	0.78	0.80	0.02	-0.01	49%	50%
OECD Americas¹	18.40	18.64	18.93	19.32	19.42	19.51	0.09	0.32	90%	90%
France	0.52	0.66	0.96	0.99	1.04	1.08	0.03	0.04	88%	84%
Germany	1.58	1.55	1.54	1.68	1.71	1.62	-0.09	-0.14	79%	86%
Italy	1.31	1.42	1.17	1.18	1.22	1.21	-0.01	-0.20	70%	81%
Netherlands	0.95	1.12	1.05	0.98	0.98	1.04	0.06	0.02	83%	82%
Spain	1.16	1.27	1.18	1.17	1.29	1.27	-0.02	-0.03	86%	88%
United Kingdom	1.03	1.04	1.05	0.94	1.00	0.99	-0.01	-0.06	82%	87%
Other OECD Europe ²	4.30	4.26	4.04	4.11	4.33	4.29	-0.04	-0.01	89%	89%
OECD Europe	10.85	11.33	10.98	11.06	11.58	11.49	-0.09	-0.37	84%	86%
Japan	2.65	2.62	2.33	2.18	2.39	2.75	0.36	-0.16	86%	84%
Korea	2.80	2.88	2.97	2.43	2.69	2.57	-0.11	-0.47	72%	85%
Other Asia Oceania ³	0.50	0.51	0.44	0.44	0.46	0.44	-0.02	-0.05	81%	90%
OECD Asia Oceania	5.95	6.01	5.75	5.05	5.53	5.76	0.23	-0.68	79%	85%
OECD Total	35.21	35.98	35.66	35.43	36.54	36.77	0.23	-0.73	86%	88%

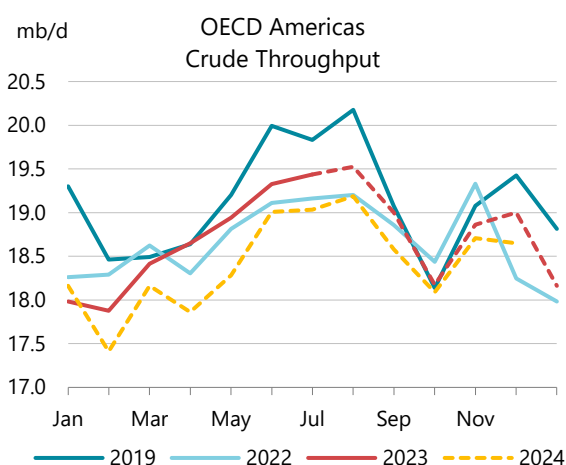
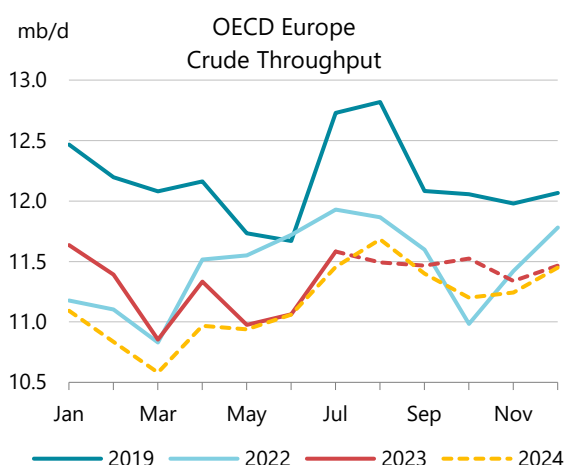
¹ US includes US50, OECD Americas include Chile and US territories

² Includes Lithuania

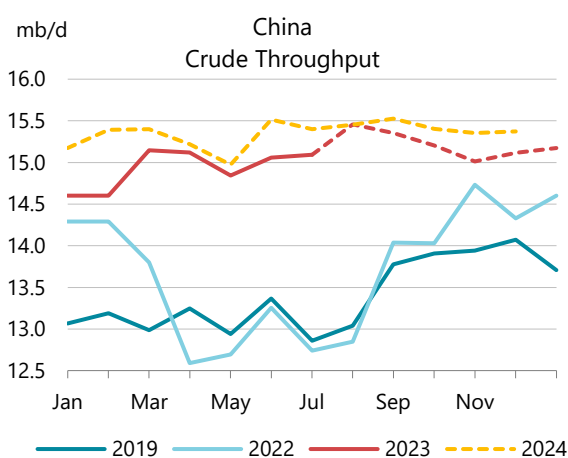
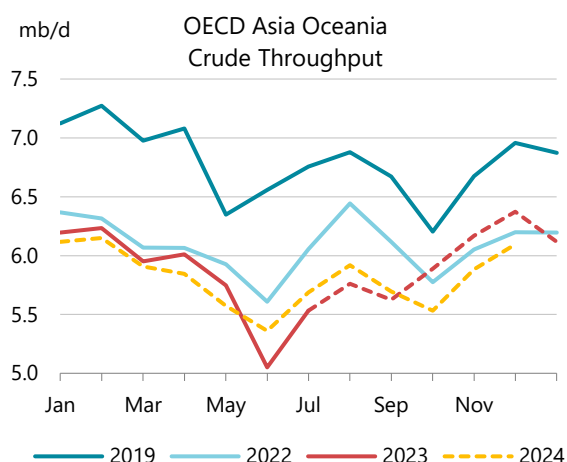
³ Includes Israel

August preliminary data for **OECD** crude runs reveal a now familiar weak performance from European countries, offset by strong North American activity levels. OECD runs averaged 36.8 mb/d during August, 200 kb/d below last month's estimate and 730 kb/d lower than a year ago. Runs were only 230 kb/d higher than in July, significantly less than the normal seasonal increase.

OECD European runs dipped m-o-m by 90 kb/d to 11.5 mb/d, 370 kb/d below August 2022. July data was revised higher by 180 kb/d for Europe, with Italy, the Netherlands and Türkiye the main beneficiaries. This reduced July's decline in runs to 350 kb/d y-o-y for the region, comparable to August's annual drop. At the height of summer activity, European utilisation rates remain at a lacklustre 84%, with Germany and Italy both running below 80%.



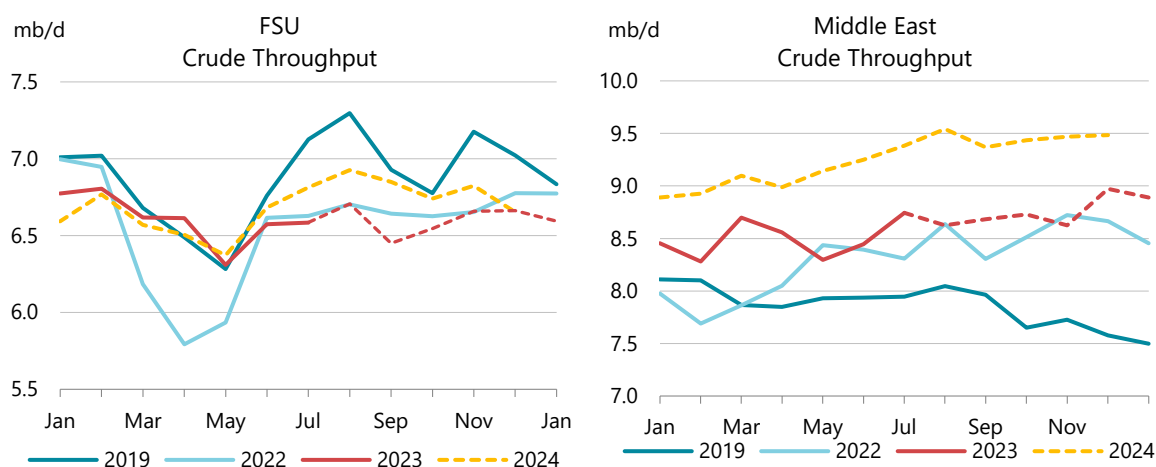
Conversely, OECD **Americas** runs edged higher versus July, with crude throughput rates estimated at 19.5 mb/d - up by 90 kb/d m-o-m and by 320 kb/d y-o-y. Mexican refinery activity was steady versus July at 800 kb/d, but utilisation rates remain stuck at around 50%. Conversely, the initial data for Canada points to another strong month with crude processing at 1.8 mb/d, slightly ahead of nameplate capacity. Weekly data for the United States indicate throughput rates remained elevated, with no weather-related curtailments and only limited reports of unplanned outages. Nevertheless, crude processing fell in September m-o-m and is expected to fall further in October, with increases in planned maintenance activity.



OECD Asia Oceania refining runs rebounded in August to 5.8 mb/d, as Japanese throughputs recovered from a more extensive than normal maintenance season. September processing rates are estimated to have dipped again on renewed maintenance but should rebound into year-end as refineries ramp up to meet peak winter heating demand.

Chinese throughput rates hit a record 15.5 mb/d in August, 290 kb/d ahead of last month's forecast. Y-o-y growth surged to 2.6 mb/d, in part reflecting a weak baseline. Runs likely held up during September, before seasonal maintenance lowers activity levels during 4Q23. Domestic demand remains robust and offers an upside risk to the forecast. Conversely, the issuance of a fourth, and reportedly final, set of product export quotas in early September could hamper runs towards the end of the year.

Elsewhere in Asia, **India's** August crude runs of 5.2 mb/d were broadly unchanged versus July, albeit 30 kb/d lower than expectations. The smaller discount available on Russian crudes have tempered Indian demand for these barrels in favour of Iraqi imports. Nevertheless, India continues to occupy the second spot in driving crude processing levels higher, with y-o-y growth of 560 kb/d in August.



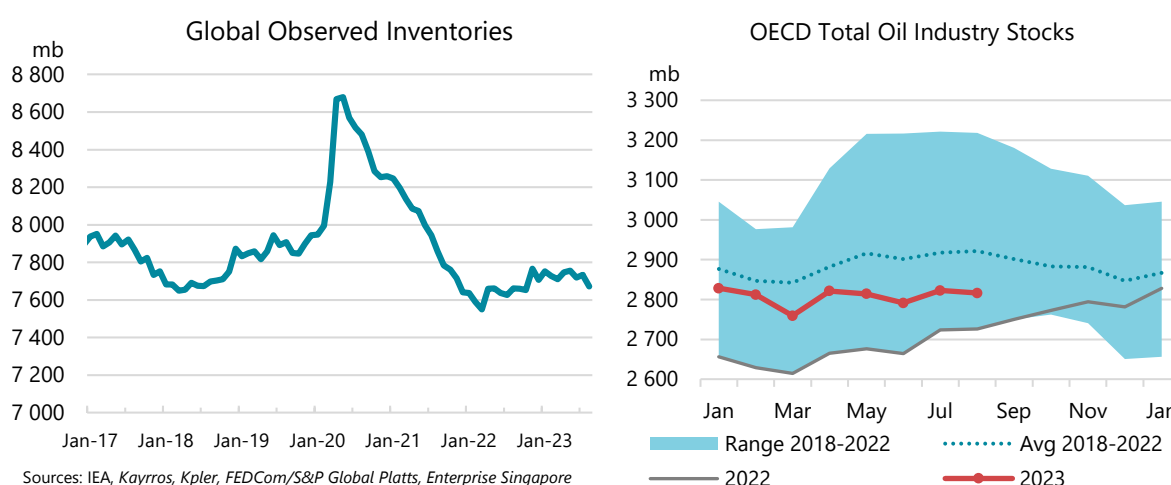
Russian runs averaged 5.6 mb/d in August, down slightly on July levels as refineries conducted planned maintenance. Against the backdrop of tight domestic product markets and reports of fuel shortages, the decline in runs appears counter-intuitive, particularly ahead of the peak agricultural demand season for gasoil/diesel. We estimate that runs fell further in September but will recover into year-end.

The Middle East crude throughput forecast has been trimmed this month, on the back of a more cautious assessment of Oman's Duqm refinery ramp up and ongoing problems reported at Kuwait's Al Zour refinery. Reports of heavier than assumed maintenance at several Saudi refineries are also incorporated into the 4Q23 forecast. In total, 4Q23 expectations have been reduced by 270 kb/d and estimates for 2024 runs are 40 kb/d below last month's *Report*. Nevertheless, the Middle East is expected to increase throughputs by 295 kb/d in 2023 and 650 kb/d in 2024, which is more than half of next year's forecast increase in global refinery runs.

Stocks

Overview

Global observed oil inventories tumbled by 63.9 mb in August to the lowest level in 10 months. Oil on water declined by 40.6 mb, while OECD and non-OECD stocks fell by 3.5 mb and 19.7 mb, respectively. World seaborne crude exports fell by 1.6 mb/d m-o-m, according to *Kpler*, as Saudi Arabia fully implemented its additional 1 mb/d supply cut. As a result, global crude stocks plunged by a massive 102.3 mb to their lowest level since at least 2017. By contrast, oil product inventories built by 38.5 mb. Preliminary data suggest that on land inventories continued to draw in September, mainly in non-OECD countries, while oil on water rebounded as exports recovered.



OECD industry stocks fell counter-seasonally by 6.5 mb in August. By end-month, they stood at 2 816 mb, 105.3 mb below the five-year average. In terms of forward demand, stocks covered 61.2 days, unchanged m-o-m and 1.7 days above a year ago. Crude oil, NGL and feedstock inventories plunged by 33.8 mb, double the five-year average decline. Crude oil stocks drew by a sharp 41.3 mb, to their lowest level in 12 months, led by OECD Americas (-27.7 mb), followed by OECD Asia Oceania (-12.8 mb). Oil product inventories increased by 27.3 mb, largely in line with the historical trend. Gasoline stocks inched down by 1 mb, but slightly exceeded year-earlier levels for the first time in 2023 as demand faltered. Middle distillate and other product stocks built by 12.4 mb and 19.2 mb, respectively, in line with seasonal norms. Fuel oil inventories fell by 3.4 mb to 111.3 mb, the lowest level since December 2021. The loss of Russian fuel oil supplies has left OECD Americas and OECD Europe struggling to secure alternative import sources.

Preliminary data from the US, Europe and Japan for September show OECD commercial inventories built by 11.8 mb. They rose in the US (+16.5 mb) but fell in Europe (-5 mb) and were largely unchanged in Japan (+0.2 mb). Crude, NGL and feedstock inventories declined by 12.1 mb, led by Europe (-9 mb) followed by Japan (-2.1 mb) and the US (-1.1 mb). Oil product stocks increased by a large 23.9 mb, with stock builds in all product categories. The largest increase came from gasoline inventories (+15.7 mb), mainly in the US (+12.2 mb). Middle distillate stocks rose in all three regions, by 4.8 mb in total. Fuel oil inventories edged up by 0.9 mb and other products built by 2.5 mb.

Preliminary OECD Industry Stock Change in August 2023 and Second Quarter 2023												
	August 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	-27.7	-0.7	-12.8	-41.3	-0.9	0.0	-0.4	-1.3	-0.2	0.1	-0.1	-0.2
Gasoline	-2.8	0.1	1.7	-1.0	-0.1	0.0	0.1	0.0	-0.1	-0.1	0.0	-0.2
Middle Distillates	2.6	3.1	6.7	12.4	0.1	0.1	0.2	0.4	0.0	0.0	0.1	0.1
Residual Fuel Oil	-2.1	-2.1	0.8	-3.4	-0.1	-0.1	0.0	-0.1	0.0	0.0	0.0	0.0
Other Products	14.9	0.6	3.8	19.2	0.5	0.0	0.1	0.6	0.5	0.0	0.0	0.6
Total Products	12.6	1.7	13.0	27.3	0.4	0.1	0.4	0.9	0.5	-0.1	0.1	0.5
Other Oils ¹	-1.8	4.6	4.6	7.4	-0.1	0.1	0.1	0.2	0.0	0.0	0.0	0.0
Total Oil	-16.9	5.6	4.8	-6.5	-0.5	0.2	0.2	-0.2	0.3	0.0	0.1	0.4

¹ Other oils includes NGLs, feedstocks and other hydrocarbons.

OECD industry inventories for July were revised up by 8.5 mb following the submission of more complete data. The largest adjustment came from other oils (+7 mb), mainly due to historical data revisions in Canada going back to 2019. Crude oil stocks were lowered by 9.5 mb in OECD Europe, but were partially offset by an upward revision of 7.5 mb in OECD Asia Oceania. Product stocks in OECD Asia Oceania were raised by 3.7 mb. June figures were also adjusted higher, by 3.9 mb.

OECD Industry Stock Revisions versus September 2023 Oil Market Report								
	Americas		Europe		Asia Oceania		OECD	
	Jun-23	Jul-23	Jun-23	Jul-23	Jun-23	Jul-23	Jun-23	Jul-23
Crude Oil	3.0	0.1	0.0	-9.5	0.0	7.5	3.0	-2.0
Gasoline	-1.8	-0.2	0.0	2.3	0.0	0.1	-1.8	2.1
Middle Distillates	-1.4	4.7	0.0	-4.2	0.0	1.4	-1.4	1.9
Residual Fuel Oil	-0.4	0.1	0.0	-0.4	0.0	0.0	-0.4	-0.2
Other Products	0.0	-4.6	0.0	2.2	0.0	2.2	0.1	-0.2
Total Products	-3.5	0.0	0.0	-0.1	0.0	3.7	-3.5	3.6
Other Oils ¹	4.4	7.6	0.0	-0.5	0.0	-0.2	4.4	7.0
Total Oil	3.9	7.6	0.0	-10.1	0.0	11.0	3.9	8.5

¹ Other oils includes NGLs, feedstocks and other hydrocarbons.

Implied balance

In August, our balances indicate more than a 2 mb/d deficit between supply and demand, in line with observed global stock movements. OECD industry stocks fell by 210 kb/d, with a massive 1.3 mb/d draw in crude oil inventories. OECD government stocks built by 100 kb/d. Non-OECD crude inventories declined by 470 kb/d, mainly in China, while product stocks in Fujairah and Singapore were down by a combined 160 kb/d. Oil on water decreased by 1.3 mb/d, as lower crude oil volumes (-1.9 mb/d) by far offset a build in products.

Preliminary data indicate stock builds in September as oil on water rebounded in line with higher exports. On land stocks posted a marginal decrease, as a decline of 600 kb/d in non-OECD countries was offset by a 420 kb/d build in the OECD. As a result, known stocks were slightly down in 3Q23, smaller than global oil balance estimates that show a 1.3 mb/d decline. Product stocks in non-OECD countries, which are poorly covered in available datasets, could partly explain the unaccounted-for balance of -1.1 mb/d.

IEA Global oil balance (implied stock change) (mb/d)									
	2019	2020	2021	2022	1Q23	2Q23	Jul-23	Aug-23	Sep-23
Global oil balance	-0.04	2.26	-2.06	0.50	1.52	0.17	-0.99	-2.04	-0.73
Observed stock changes									
OECD industry stocks	0.05	0.41	-1.06	0.35	-0.25	0.36	1.01	-0.21	0.39
OECD government stocks	-0.04	0.02	-0.16	-0.74	0.03	-0.12	-0.02	0.10	0.03
Non-OECD crude stocks*	0.17	0.43	-0.46	0.26	0.20	0.53	0.56	-0.47	-0.67
Selected non-OECD product stocks**	-0.14	0.12	-0.02	-0.01	0.35	-0.16	0.12	-0.16	0.08
Oil on water	0.03	0.05	-0.03	0.27	0.10	-0.58	-1.13	-1.31	
Total observed stock changes	0.07	1.02	-1.73	0.14	0.43	0.03	0.55	-2.06	
Unaccounted for balance	-0.11	1.24	-0.34	0.36	1.08	0.14	-1.53	0.02	

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

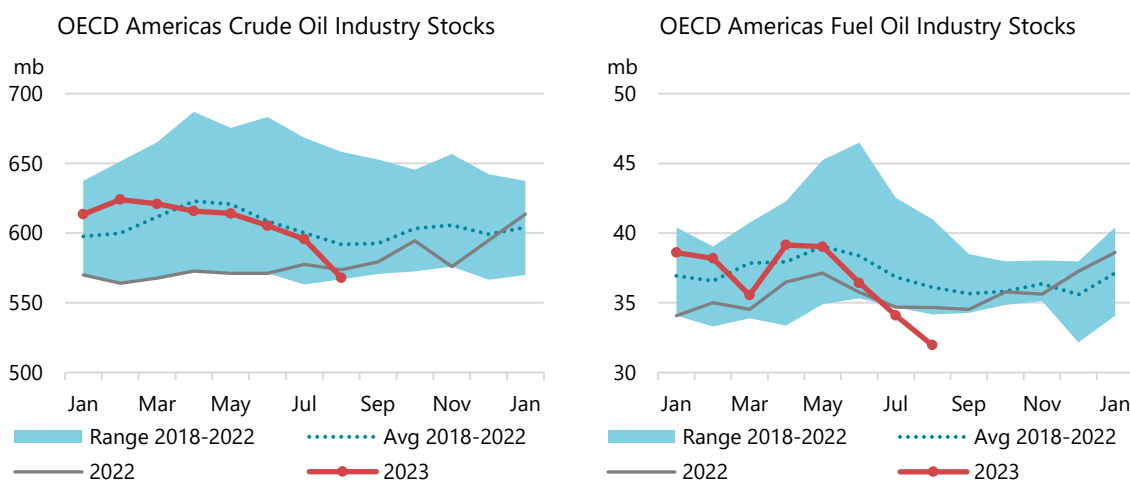
Kayros data are available for selected countries and include only, and not all, above-ground storage.

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

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

Recent OECD industry stock changes

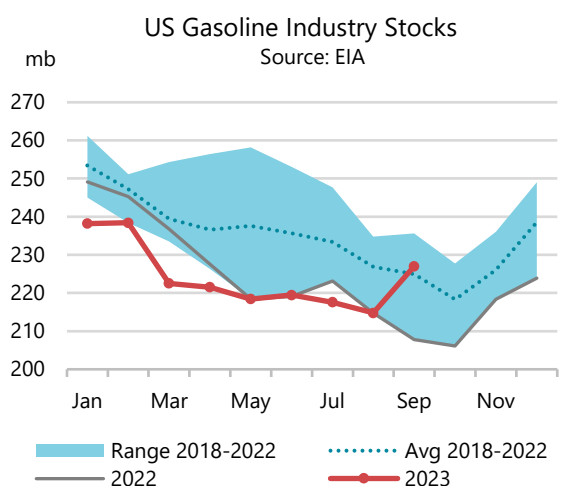
OECD Americas



Commercial stocks in the OECD Americas declined by 16.9 mb in August, a significantly greater decrease than the five-year average (-3.5 mb). At 1 510 mb, they were at a four-month low and 44.1 mb below the five-year average. The largest draw came from crude oil inventories (-27.7 mb), which hit their lowest since March 2022. US crude stocks fell by 26.5 mb due to multi-month high refinery intake and crude oil exports. Regional NGL and feedstock inventories also decreased, by 1.8 mb.

Oil product stocks built by 12.6 mb, twice the seasonal norm (+6.4 mb). Middle distillate inventories rose counter-seasonally by 2.6 mb. Gasoline stocks fell by 2.8 mb, less than the five-year average (-6 mb) due to weaker demand. Fuel oil inventories decreased by 2.1 mb to 32 mb, a level not seen in four decades of available data. US importers have struggled to find alternative supplies after shipments from Russia were halted. In August, regional fuel oil imports were the lowest since at least 2017, according to *Kpler*. Other product inventories posted a seasonal increase of 14.9 mb.

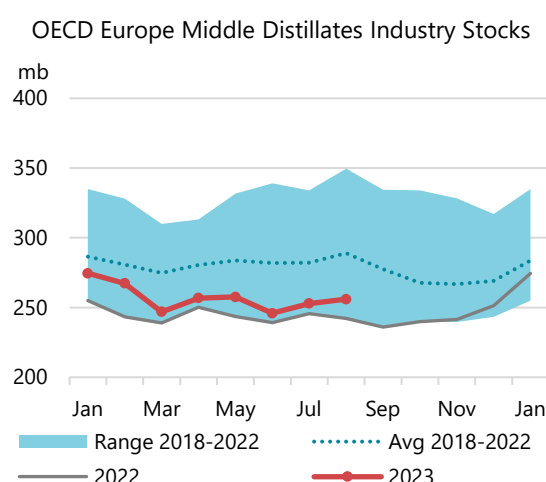
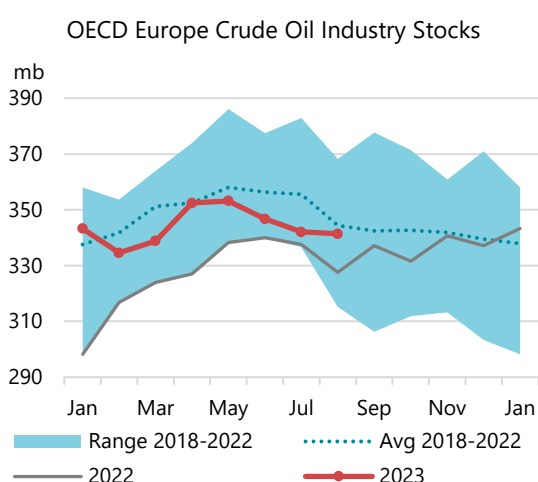
Weekly data from the US Energy Information Administration (EIA) showed industry stocks increased by 16.5 mb in September. Crude oil inventories were down 2.6 mb on the back of robust refinery activity and exports. At Cushing, crude contracted by 5.3 m to 22.1 mb, the lowest since June 2022 when WTI traded around \$110/bbl. By contrast, other oil inventories rose counter-seasonally by 1.5 mb while oil products were up by a substantial 17.6 mb. Gasoline led the increase with a notable 12.2 mb counter-seasonal build to above the five-year average, reflecting weak gasoline demand. Middle distillate and fuel oil stocks also increased counter-seasonally by 0.8 mb and 1.2 mb, respectively. Other products built by a smaller-than-normal 3.3 mb.



OECD Europe

Industry stocks in OECD Europe rose by 5.6 mb in August when they normally decline by 4.8 mb. At 933.8 mb, they were 43.4 mb below the 2018-2022 average. Crude oil stocks fell by a marginal 0.7 mb, compared with a more typical 11.1 mb seasonal decline. Crude oil imports hit a four-year high, with shipments from the US at an all-time record above 2 mb/d, according to *Kpler*. NGL and feedstock inventories built by 4.6 mb.

Oil product stocks increased by 1.7 mb, less than a quarter of the historical average (+7.5 mb). Middle distillate inventories rose by half the seasonal trend, at 3.1 mb, as Germany posted a counter-seasonal decline of 1.2 mb. Gasoline stocks edged up by 0.1 mb while fuel oil fell by 2.1 mb to the lowest since the end of 2021. As in OECD Americas, sanction-hit crude and product supplies from Russia are making it difficult for European fuel suppliers to maintain their inventories. Other product stocks were up by 0.6 mb, in line with the seasonal trend.



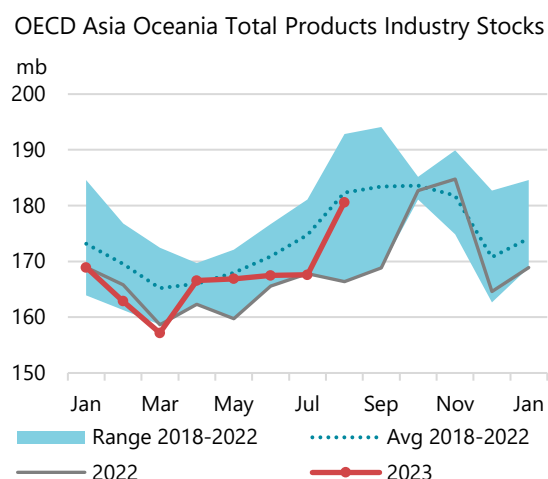
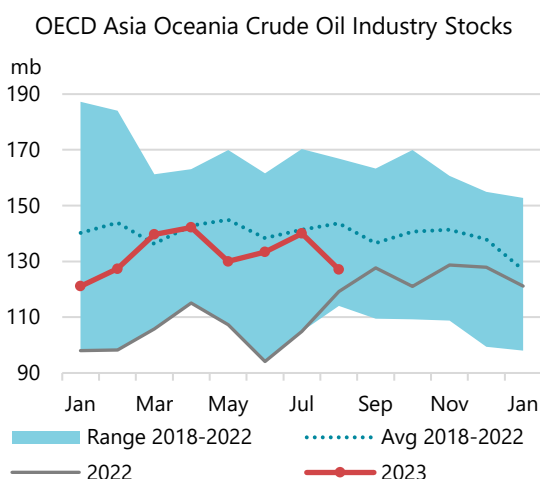
Preliminary data from *Euroilstock* showed total industry inventories dropped by 5 mb in September. Crude oil stocks led the decline with a hefty 9 mb decrease, mainly in the Netherlands (-2.7 mb) and Italy (-2.2 mb). Oil products built by 4 mb, with Germany and France posting increases of 2.5 mb

and 2 mb, respectively. Gasoline and middle distillate inventories rose by 2 mb each. Fuel oil and naphtha stocks were unchanged in the month.

OECD Asia Oceania

In August, industry stocks in OECD Asia Oceania built by 4.8 mb, significantly less than the seasonal trend (+12.4 mb). Crude oil stocks fell by a counter-seasonal 12.8 mb, despite weak regional refining activity. Both Japanese and Korean inventories decline, by 7.7 mb and 5.1 mb, respectively. Their combined crude imports fell by 800 kb/d y-o-y to 4.5 mb/d, the lowest in 10 years for August, according to *Kpler*. NGL and feedstock inventories rose by 4.6 mb.

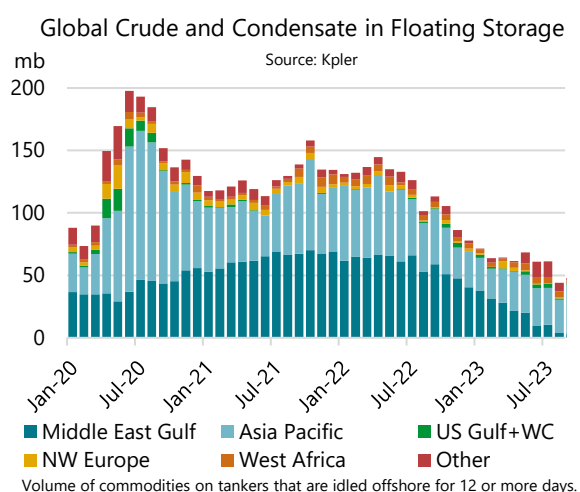
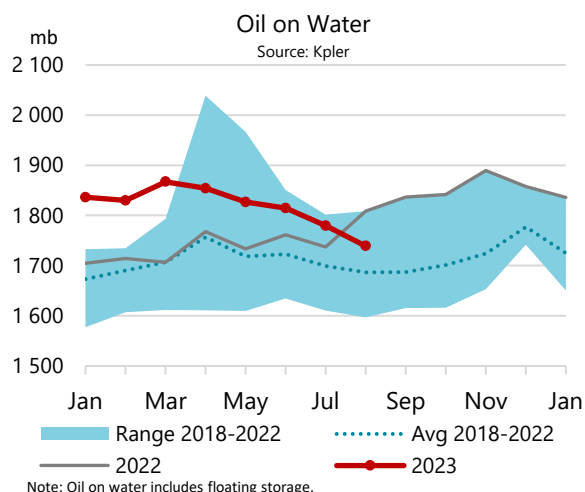
Oil product stocks increased by 13 mb. With builds in all product categories, inventories recovered to near their five-year average from the bottom of the range in July. Middle distillates were up by 6.7 mb, led by Japan at 5.3 mb. Gasoline, fuel oil and other product stocks built by 1.7 mb, 0.8 mb and 3.8 mb, respectively.



Preliminary data from the *Petroleum Association of Japan* show commercial stocks edged up by 0.2 mb in September. Crude oil inventories fell by 2.8 mb, largely in line with the seasonal norm, even though their crude refinery intake was 200 kb/d lower y-o-y. Other oil stocks built counter-seasonally by 0.7 mb. Oil product inventories rose by 2.3 mb when they usually increase by a smaller 0.9 mb. Middle distillate stocks were up by 2 mb, led by kerosene at 2.8 mb. Gasoline inventories were up by 1.5 mb. Fuel oil and other products inched down by 0.3 mb and 0.8 mb, respectively.

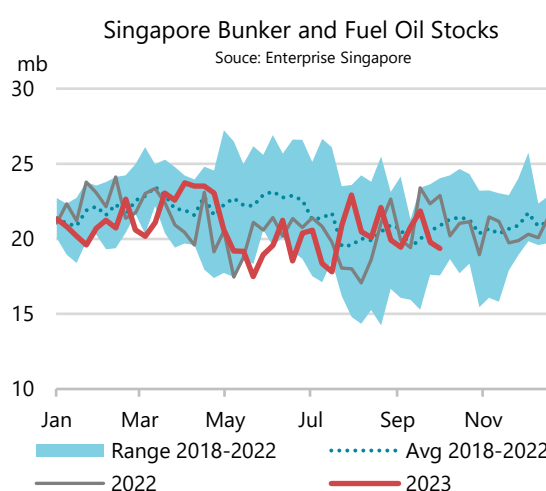
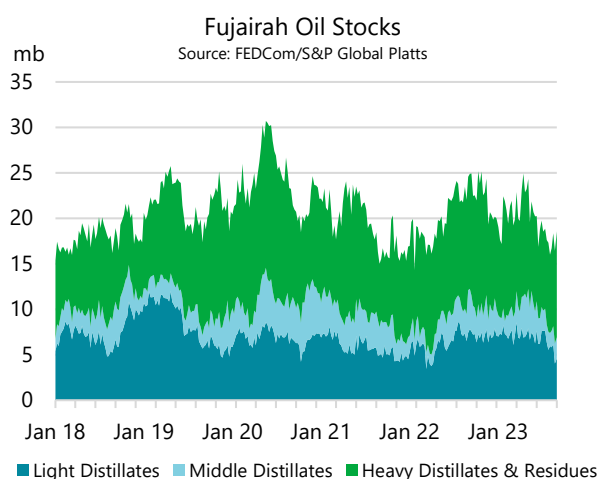
Other stock developments

Oil on water, including floating storage, plunged by 40.6 mb to a 13-month low of 1 739 mb in August, according to vessel tracking data from *Kpler*. Crude oil decreased by a massive 57.7 mb as global seaborne crude exports fell by 1.6 mb/d m-o-m. By contrast, oil products increased by 17.1 mb, mainly in diesel (+11.4 mb) and fuel oil (+4.6 mb). In parallel, crude oil held in short-term floating storage fell by 17 mb to 44.1 mb as Chinese demand for medium sour barrels rose after Middle East sour crude supply was reduced by OPEC+ cuts. This was the first time floating storage levels fell below 50 mb since April 2019. About half of the volumes of crude in floating storage are typically held in the Middle East, however, there were only two vessels storing Iranian oil at the end of August. Floating storage for oil products was up by 2.8 mb to 51.2 mb, with fuel oil near Singapore making up most of the difference.



In Fujairah, independent product stocks dropped for a third consecutive month in August, by 3 mb to 16.8 mb, according to *FEDCom* and *S&P Global Platts* data. This was the lowest since April 2022. The biggest draw came from light distillate inventories, which declined by 1.9 mb. Middle distillate stocks decreased by 0.9 mb to less than 1.8 mb, only half the level seen in June. Heavy distillate and residue inventories edged down by 0.2 mb. In September, total stocks recovered by 1.2 mb, thanks to a large build in heavy distillate stocks of 1.9 mb.

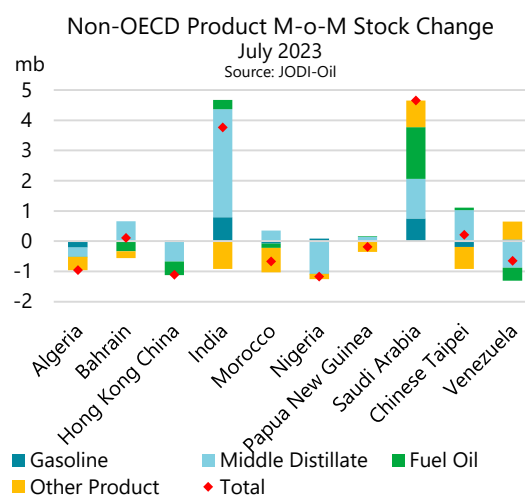
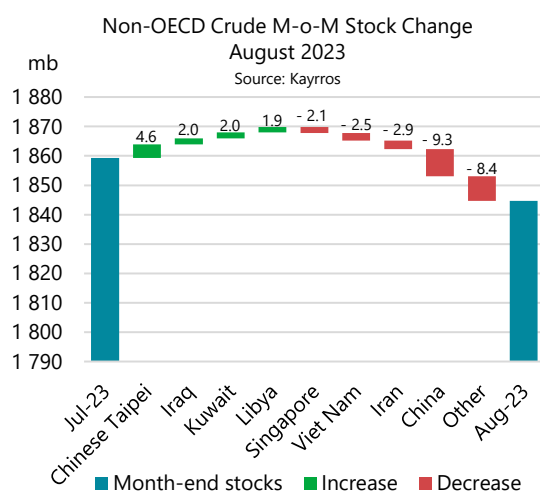
Independent product stocks in Singapore declined by 2.1 mb to 41 mb in August, according to *Enterprise Singapore*. Heavy distillate and residue inventories posted the largest decrease at 2.5 mb. Light distillate stocks also fell for the seventh month in a row, by 0.6 mb. Middle distillate inventories rose by 1 mb but were still well below the five-year average. Total stocks in Singapore increased by 1.1 mb in September, led by middle distillates at 1.5 mb.



Observed crude oil stored in floating-roof tanks in non-OECD countries declined by 14.6 mb in August, according to satellite data from *Kayrros*. The decrease was led by China (-9.3 mb), followed by Iran (-2.9 mb) and Viet Nam (-2.5 mb). In Iran, stocks were down to the lowest level since October 2017 due to robust exports, which have averaged 1.2 mb/d so far this year, according to *Kpler*. The Nghi Son refinery in Viet Nam, which entered major maintenance, reduced their inventories to less than 20% of capacity. By contrast, stocks in Chinese Taipei built by 4.6 mb, reversing the previous month's decline. In September, non-OECD crude inventories dropped by 20.2 mb. The top two crude

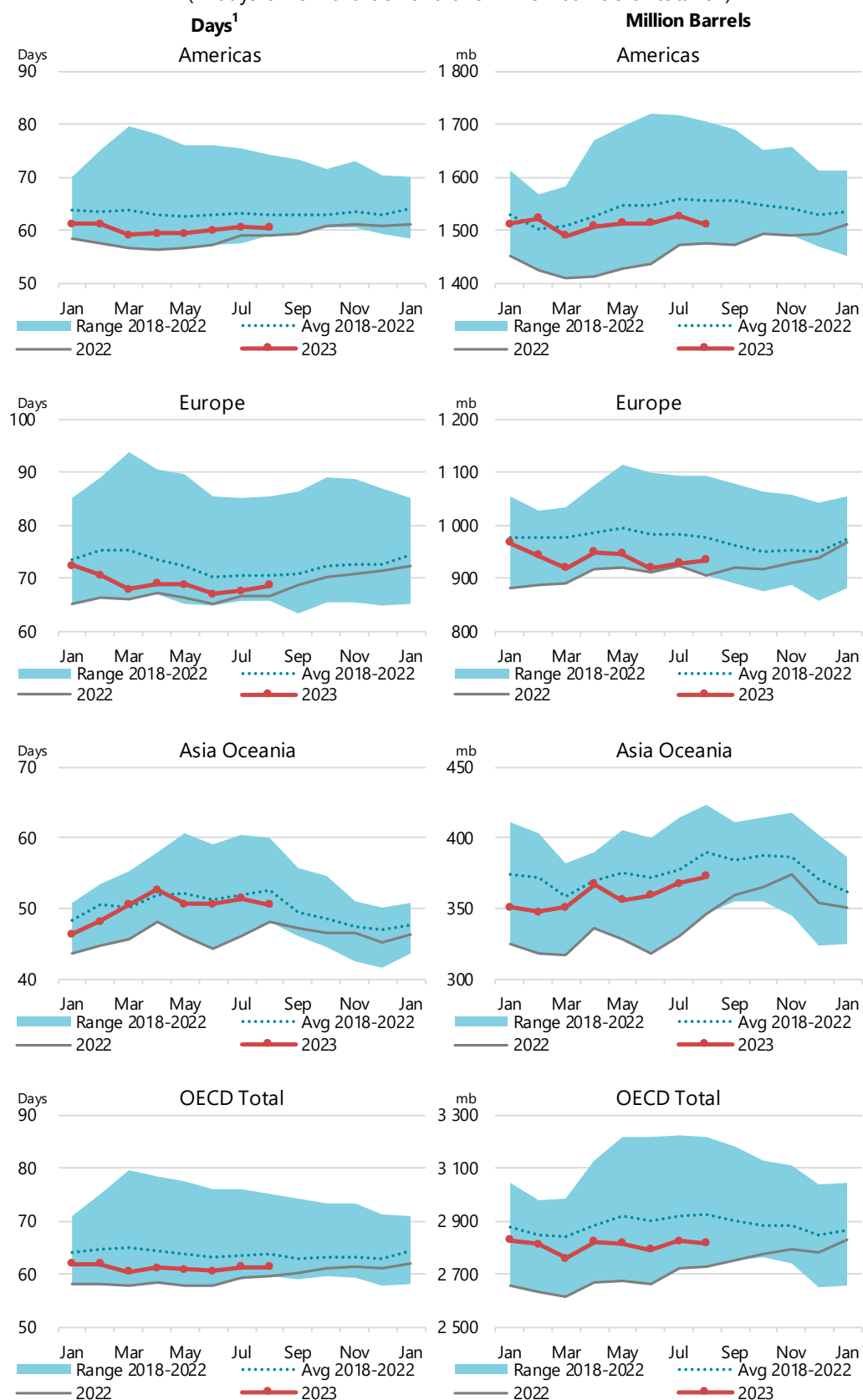
importers, China (-30.5 mb) and India (-6.5 mb), led the decline due to limited seaborne Middle Eastern supplies.

Oil product stocks in the 13 non-OECD economies reporting to the *JODI-Oil World Database* increased by 4 mb in July. Middle distillate inventories rose by 4.1 mb. India posted the largest build at 3.6 mb, in line with the seasonal trend. Gasoline stocks increased by 1.2 mb, mainly in India (+0.8 mb) and Saudi Arabia (+0.8 mb), as refinery output rose to its highest for July since at least 2002 in both countries. Fuel oil inventories inched up by 0.8 mb, while other product stocks fell by 2.1 mb.



Regional OECD End-of-Month Industry Stocks

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



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

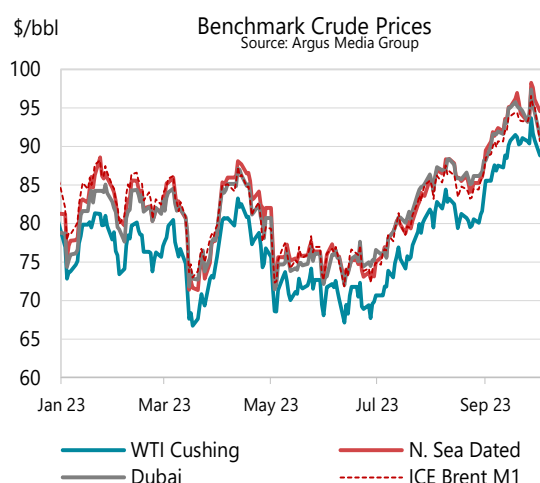
Prices

Overview

Global oil prices were jolted higher by \$3-4/bbl when markets opened on 9 October following Israel's official declaration of war in response to the surprise attack by Hamas on 7 October. While the prospect that oil supply flows will be impacted currently remains limited, the deadly strikes prompted traders to price in a higher geopolitical risk premium. Oil prices were in the process of reversing course in early October after their late-summer and September price rally, with benchmark ICE Brent futures plummeting to around \$84/bbl in the days prior to the attack amid harsher macroeconomic headwinds. At the time of writing, Brent was trading around \$87/bbl.

In September, North Sea Dated spot prices surged by almost \$8/bbl to about \$94/bbl, their third straight m-o-m increase, as anxiety about falling global crude supplies and ultra-low middle distillate inventories came to the fore. The bullish tone was set on 5 September, when Saudi Arabia and Russia said that voluntary output cuts would be extended until the end of 2023. Russia's ban of diesel exports announced two weeks later failed to inject new momentum as traders reckoned that the disruption would prove short-lived. Still, diesel time spreads and cracks remain near all-time highs and underscore the current historically tight middle distillate balances.

The strength in crude oil prices during September occurred amid extreme turmoil in financial markets sparked by the global bond sell-off that drove down stock markets and lifted the US Dollar Index (DXY) to its strongest level year-to-date. In the end, oil prices could not escape this negative sentiment and gave back most of their gains in early October. Investor liquidation of what had turned into a crowded trade added to the bearish shift.



September differentials saw WTI gain against the North Sea benchmark amid falling US inventories and surging exports, as European and Asian refiners sought marginal light, sweet barrels after cuts to medium sour grades from Saudi Arabia and Russia were extended. WTI's bullish narrative was reflected in its forward curve becoming steadily more backwardated and in exchange positioning, which saw large-scale investor inflows. North Sea Dated's time structure strengthened with a slight lag to WTI's, gaining on Dubai amid a tightening Atlantic Basin market. Diesel time spreads and cracks consolidated at last month's near-record levels.

US 10-year Treasury yields surged to their highest level since 2007 after the Federal Reserve signalled it was in no rush to cut rates. Growing concerns about fiscal deficits added to the bond sell-off, as did persistently high inflation (climbing to 3.7% y-o-y in August versus 3.2% in July) amid mostly robust data readings for employment and consumer spending. A listless eurozone, also struggling with elevated prices but lacking the economic resilience of the US, is once again teetering on the brink of recession. Germany's economy, the bloc's largest, has grown in only one of the last five quarters, as its manufacturers grapple with weak domestic demand and stagnant exports. Like

the US, there is growing uneasiness about Europe's public finances, as Italy's mounting budget deficit unnerves fixed income markets.

Chinese data came in somewhat better than expected but did little to dispel the country's overall economic malaise and "Japanification" concerns. Inflation returned to positive territory in August (+0.1% y-o-y), after tipping into deflation in July. However, any hope that consumers will loosen their purse strings will be conditional upon a recovery of the housing market, the main store of household wealth. In this regard, beleaguered property developer Evergrande's travails do not bode well after its debt restructuring ran into difficulties amid a government investigation of its mainland business. The news sent property shares lower - the Hang Seng Property index lost 4.2%, while iron ore prices, geared to Chinese construction demand, fell by a similar amount. Prices for other industrial commodities such as copper are equally subdued – in contrast to resilient oil prices.

Crude Prices and Differentials (\$/bbl)								
	Month		Week of:		Last:	Changes Sep-23		
	Jul 2023	Aug 2023	Sep 2023	25 Sep	09 Oct	*Monthly Δ	m-o-m Δ	y-o-y Δ
Crude Futures (M1)								
NYMEX WTI	76.03	81.32	89.43	91.25	86.38	7.16	8.11	5.63
ICE Brent	80.16	85.10	92.59	94.90	88.15	8.45	7.48	2.02
Crude Marker Grades								
North Sea Dated	80.09	86.18	93.96	95.82	91.39	8.75	7.78	4.20
WTI (Cushing)	76.39	81.41	89.57	91.45	86.38	7.16	8.17	5.71
Dubai (London close)	80.77	86.43	93.75	94.94	88.07	6.23	7.32	3.24
Differential to North Sea Dated								
WTI (Cushing)	-3.70	-4.77	-4.39	-4.37	-5.01	-1.59	0.38	1.51
Dubai (London close)	0.68	0.25	-0.22	-0.88	-3.32	-2.52	-0.47	-0.97
Differential to ICE Brent								
North Sea Dated	-0.07	1.08	1.38	0.92	3.24	0.30	0.30	2.19
NYMEX WTI	-4.13	-3.78	-3.16	-3.65	-1.77	-1.29	0.63	3.61

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

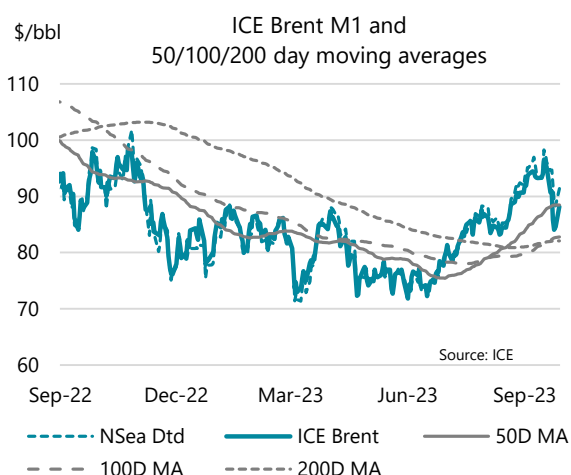
*Monthly Δ refers to the difference in price between the current and previous EOM

Futures markets

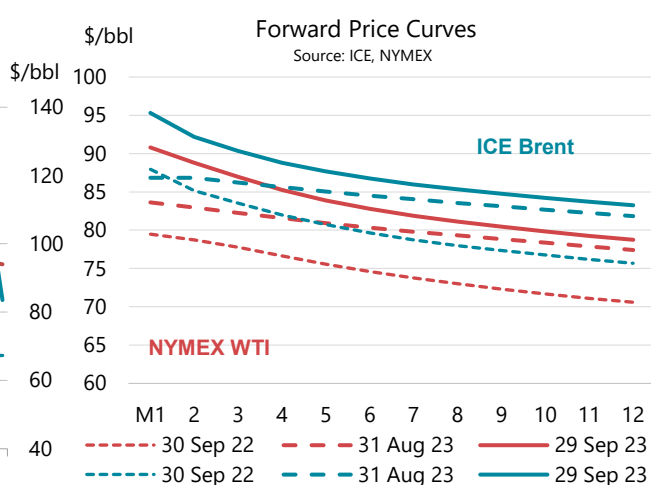
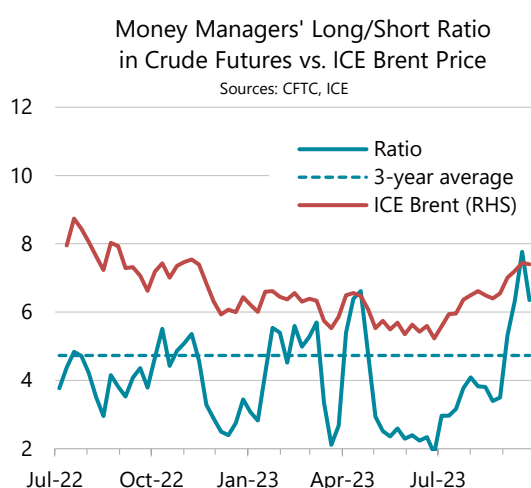
Front-month ICE Brent futures climbed by about \$8/bbl to just below \$95/bbl in September. The rally occurred amid subdued volatility - prices moved by a daily average of only \$0.75/bbl during September, their lowest in more than two years. WTI narrowed its discount to Brent by \$0.63/bbl m-o-m to \$3.16/bbl – a low mark since WTI Midland was added to the North Sea Dated basket in May. Crude stocks at Cushing, Oklahoma (the delivery hub for the NYMEX futures contract) drew by 7 mb during September to 22 mb, an eight-year seasonal low. Inventories have roughly halved since June amid the steady overseas pull for US barrels. Additionally, storage is discouraged by WTI's strongly backwardated structure. A relatively upbeat US economic outlook compared to Europe and Asia further buttressed WTI while lower transatlantic freight rates contributed to narrower discounts to Brent.

Oil's bull run buoyed its technical picture, with prices holding comfortably above key support levels during September. However, October's bearish turn caused Brent to dip \$4/bbl below the 50-day moving average, while remaining only marginally above 100- and 200-day levels.

In sharp contrast to muted moves in the flat price, market structure displayed large swings. Crude time spreads blew out, with 1–12-month backwardations for WTI and Brent more than doubling to \$12/bbl and \$9/bbl, respectively. The strength was concentrated at the front-end of the curve, pricing acute nearby scarcity. The WTI November-December spread soared to all-time seasonal highs, rising by \$1.30/bbl to \$2/bbl and trading as high as \$2.60/bbl. Front-month NYMEX diesel time spreads also showed unprecedented strength.



ULSD versus WTI front-month cracks were unchanged m-o-m at \$50/bbl. The diesel crack surged by about \$4/bbl intraday after Russia called a temporary halt on gasoline and diesel exports, but these gains subsequently dissipated on the expectation that the ban would not last for long. Gasoil cracks remain at record seasonal highs, with the exception of 2022. Lacking diesel's ultra-bullish narrative, the RBOB gasoline versus WTI crack crumbled by \$17/bbl m-o-m, as a lacklustre driving season concluded with pump prices at 11-month highs. Gasoline cracks ended the month at the lower end of their 10-year historical range.



Crude futures saw large speculative inflows, sending net managed money positions to 530 mb, their highest level since the immediate aftermath of the Ukraine invasion. Longs outnumbered shorts by about six to one – almost double the ratio of one month ago. WTI saw the biggest investor inflows, benefitting from a bullish chart pattern while the large front-month backwardation made for an attractive roll yield. Funds have added about 240 mb to NYMEX net crude length since June when speculative holdings were at decade lows, taking net holdings to 285 mb, thereby also exceeding Brent's for the first time since May.

Fund buying in crude was accompanied by selling in refined products, especially in the middle distillates, where funds had accumulated large long-positions in recent months. Total net longs in ICE gasoil, NYMEX ULSD and NYMEX RBOB of 185 mb are now in line with the three-year average.

Total open interest in the five main ICE and NYMEX futures contracts rose 230 mb m-o-m to 5 260 mb.

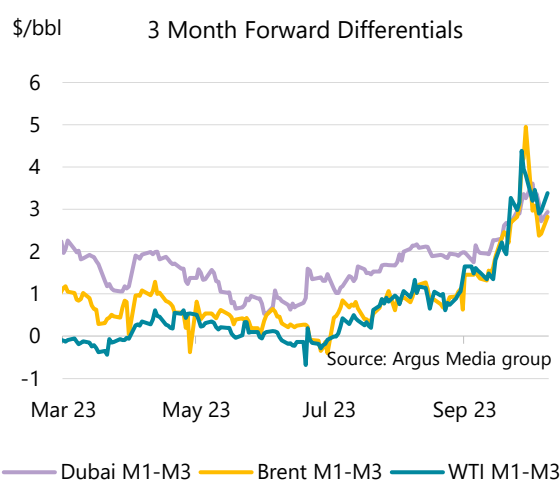
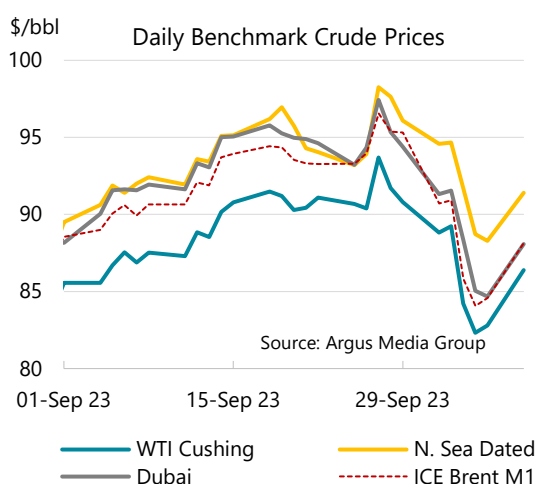
Prompt Month Oil Futures Prices											
(monthly and weekly averages, \$/bbl)											
	Sep 2023						Week Commencing:				Last:
	Jul 2023	Aug 2023	Sep 2023	*Monthly Δ	m-o-m Δ	y-o-y Δ	04 Sep	11 Sep	18 Sep	25 Sep	09 Oct
NYMEX											
Light Sweet Crude Oil (WTI) 1st contract	76.03	81.32	89.43	7.16	8.11	5.63	87.15	89.12	90.52	91.25	86.38
Light Sweet Crude Oil (WTI) 12th contract	73.71	78.18	83.28	-1.33	5.10	5.96	79.50	81.27	81.73	81.20	76.04
RBOB	114.76	118.80	110.24	-13.71	-8.57	7.48	109.82	114.54	110.52	106.26	94.00
ULSD	112.63	130.82	138.94	9.22	8.13	-4.27	135.70	142.72	139.97	138.44	124.60
ULSD (\$/mmbtu)	20.29	23.57	25.03	1.66	1.46	-0.77	24.45	25.71	25.22	24.94	22.45
NYMEX Natural Gas (\$/mmbtu)	2.64	2.65	2.70	0.16	0.05	-5.06	2.57	2.68	2.71	2.79	3.38
ICE											
Brent 1st contract	80.16	85.10	92.59	8.45	7.48	2.02	90.04	92.44	93.77	94.90	88.15
Brent 12th; contract	77.76	82.14	86.94	-1.45	4.80	5.23	83.50	85.16	85.61	85.42	79.99
Gasoil	104.42	122.11	130.61	14.24	8.50	-6.37	127.32	133.69	131.59	131.33	119.73
Prompt Month Differentials											
NYMEX WTI - ICE Brent	-4.13	-3.78	-3.16	-1.29	0.63	3.61	-2.89	-3.33	-3.25	-3.65	-1.77
NYMEX WTI 1st vs. 12th	2.33	3.15	6.15	8.49	3.01	-0.33	7.65	7.84	8.79	10.05	10.34
ICE Brent 1st - 12th	2.40	2.96	5.64	9.90	2.68	-3.22	6.54	7.28	8.17	9.48	8.16
NYMEX ULSD - WTI	36.59	49.50	49.51	2.06	0.02	-9.90	48.55	53.61	49.45	47.19	38.22
NYMEX RBOB - WTI	38.73	37.48	20.80	-20.87	-16.68	1.85	22.67	25.42	19.99	15.01	7.62
NYMEX 3-2-1 Crack (RBOB)	38.01	41.49	30.37	-13.23	-11.11	-2.07	31.29	34.82	29.81	25.74	17.82
NYMEX ULSD - Natural Gas (\$/mmbtu)	17.65	20.92	22.33	1.50	1.41	4.29	21.88	23.03	22.50	22.15	19.07
ICE Gasoil - ICE Brent	24.26	37.01	38.02	5.79	1.02	-8.38	37.28	41.25	37.82	36.44	31.58

Source: ICE, NYMEX.

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

Spot crude oil prices

Crude oil prices continued their rally in September, building on the previous month's trend driven by supply cuts from Saudi Arabia and Russia. Supply tensions and low stocks widened the premium for prompt physical crude prices over futures and drove a steepening backwardation. With spot trade concentrated in Atlantic Basin sweet grades, prices saw significant increases for North Sea Dated (+\$7.78/bbl m-o-m to \$93.96/bbl) and WTI at Cushing (+\$8.17/bbl to \$89.57/bbl), before easing in early October. The sour Dubai benchmark increased \$6.75/bbl m-o-m to \$93.19/bbl, but similarly gave back these gains, while also flipping back to a more typical discount versus North Sea Dated. The collapse of futures prices in early October on faltering macroeconomic sentiment saw physical premiums for North Sea Dated blow out to about \$4/bbl.

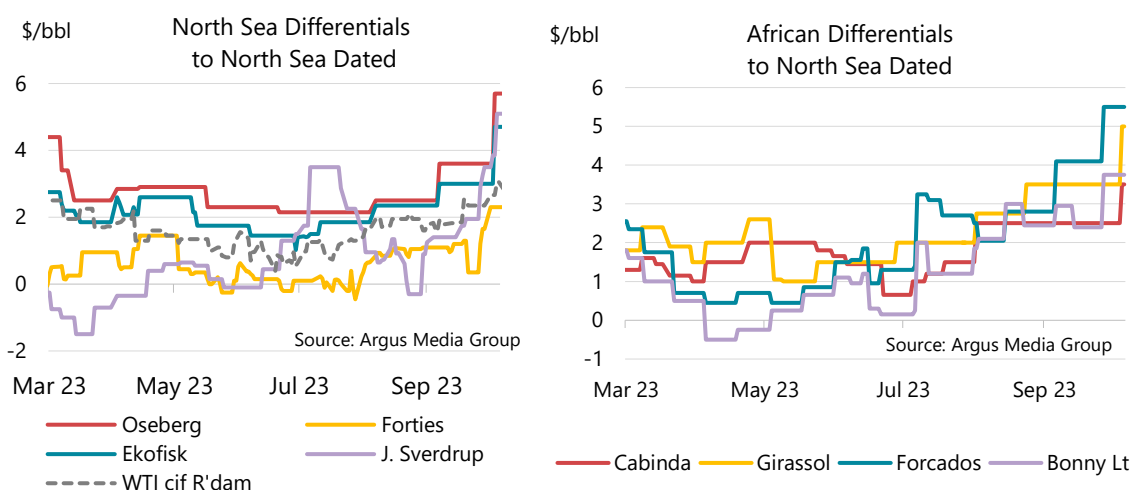


North Sea Dated's premium over ICE Brent widened by \$0.30/bbl m-o-m to \$1.38/bbl and expanded further on average by \$4.37/bbl in the week of 2 October. The exceptional late-month strength of prompt versus forward prices in the Atlantic Basin crude market reflects several factors. Firstly, low

diesel stocks and concerns for the impending winter season in Europe have exerted upward pressure on refinery margins. Russia's temporary ban on product exports added an extra layer of tightness to the market, propelling some physical spreads against Dated to 14-month highs as we entered October. Secondly, the North Sea market has tightened with a rebound in refining activity, lower crude arrivals from the Middle East and the scheduled maintenance at some North Sea platforms in October. Thirdly, the narrowing of the WTI-Brent spread (as US crude stocks tighten) undermined the transatlantic arbitrage, reducing the flow of North American crude to Europe by the end of the month. The WTI Houston discount versus North Sea Dated M2, a key measure for the transatlantic arbitrage, narrowed by \$0.50/bbl to -\$1.71/bbl, contracting even further in early October to -\$1.46/bbl.

Lastly, supply cuts and continued demand for prompt barrels across both sweet and sour grades have resulted in tighter markets globally, heightening backwardation in physical forward markets for all three main benchmarks. Brent and Dubai forward spreads both saw significant upward movement by the end of the month. The cash to futures spread for Dubai widened by \$0.47/bbl to \$2.44/bbl, while Brent expanded by \$1.36/bbl to average \$2.28/bbl. (The Dubai cash spread, Month 1 versus Month 3, is a key indicator of spot market call for sour crude in Asia).

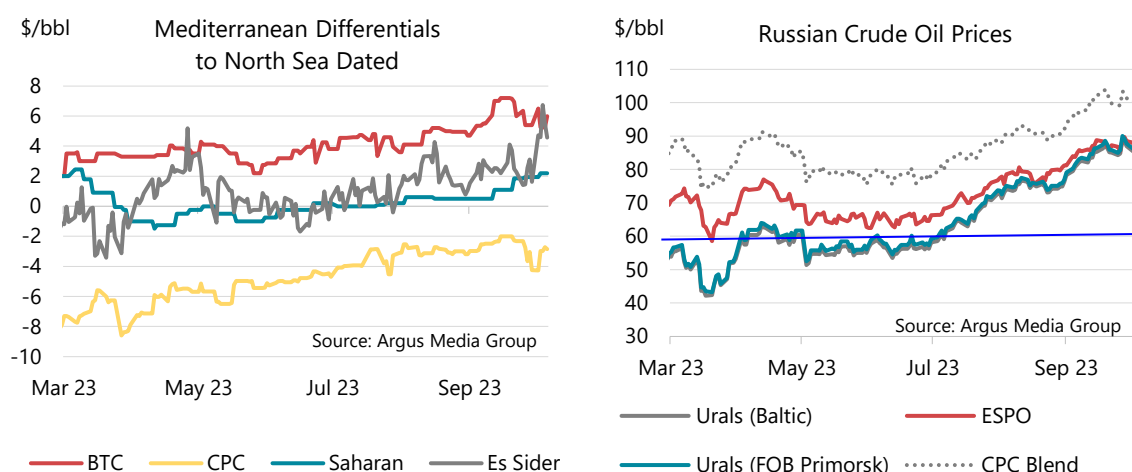
During September, Forties differentials to North Sea Dated averaged \$1.04/bbl, then surged to a premium of \$2.30/bbl in early October. Similarly, Johan Sverdrup rose \$1.13/bbl to \$1.82/bbl in September, and by over \$3/bbl to \$5.10/bbl in early October. Ekofisk climbed by \$0.62/bbl to \$2.88/bbl and to around \$4.70/bbl last week. Likewise, Oseberg gained \$0.95/bbl m-o-m to \$3.39/bbl and reached about \$5.70/bbl in early October. The WTI CIF Rotterdam premium to North Sea Dated widened by \$0.21/bbl m-o-m to \$2.04/bbl and gained a further \$1/bbl in early October. A steeper backwardation and a sharp narrowing of the WTI/Brent spread have complicated the WTI export arbitrage to Europe.



In September, West African grade differentials versus North Sea Dated strengthened, as competition from both Asian and European refiners drove up premiums for light sweet grades. This highlights the limited availability of alternative crude oil grades both within the Atlantic Basin and globally. For example, as delivered discounts on Russian barrels versus Dubai have narrowed, India's interest is shifting at the margin towards African and Mediterranean grades. Forcados differentials to North Sea Dated soared to an average of \$4.11/bbl (+\$1.61/bbl m-o-m). Brass River averaged \$2.84/bbl in September (+\$0.89/bbl m-o-m), Qua Iboe saw \$3.52/bbl (+\$0.16/bbl m-o-m), while Bonny Light reached \$2.76/bbl (+\$0.34/bbl m-o-m). Values for Angolan grades against Dated were mixed,

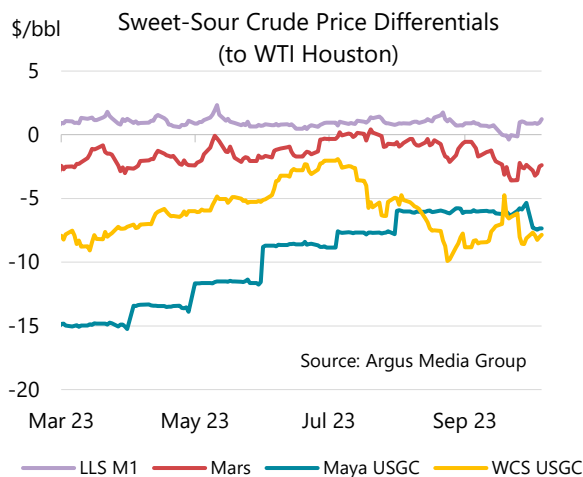
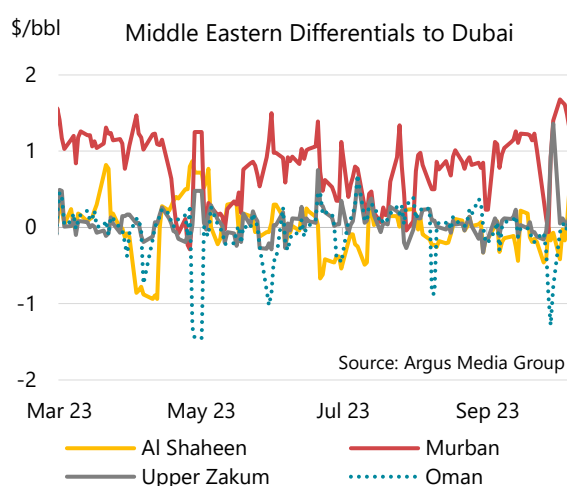
Girassol moved higher by \$0.61/bbl m-o-m to \$3.50/bbl while the premium for Cabinda edged up only \$0.05/bbl to \$2.50/bbl.

Mediterranean light sweet regional crude grades, known for their strong gasoil yields, emerged as an attractive option for refiners due to robust diesel margins. Among the Mediterranean grades, BTC claimed the highest premium. The BTC Blend against North Sea Dated premium surged by \$1.46/bbl m-o-m, reaching \$6.12/bbl. After peaking at \$7.20/bbl in the week of 16 September, it then fell back to \$5.40/bbl by month's end. The uptick was primarily influenced by competition from Indian buyers, constituting nearly 20% of BTC's exports in September. The CPC differential against the North Sea marker inched up by \$0.36/bbl, resulting in a narrower discount of -\$2.60/bbl; its slimmest margin since September 2022. However, the grade continues to face challenges from weakening naphtha margins. Algerian Saharan Blend witnessed a rise of \$0.66/bbl m-o-m to \$1.17/bbl, finding a peak of \$1.95/bbl on the last trading day of the month. Strong demand coupled with reduced WTI supplies to Europe bolstered the pricing of Saharan Blend. Es Sider's spread remained nearly unchanged, adding a mere \$0.03/bbl m-o-m to \$1.09/bbl. Weather-related disruptions, such as storm Daniel in Libya which led to the temporary closure of four export ports during the month, deterred many buyers.



Middle East grade differentials compared to Dubai mostly declined in September, but by month end, they had risen significantly as supply tensions and the strong increase in Atlantic Basin crude prices versus Dubai shifted demand to Middle East sour grades. The steepening of the Brent curve in the last week of the month had a direct impact. Grades such as Upper Zakum, where the average monthly spread increased by \$0.11/bbl m-o-m, reached a premium of \$0.14/bbl. The spread remained at parity with Dubai for most of September but saw its premium increase to an average of \$0.75/bbl in the final week, reaching as high as \$1.36/bbl on 29 September. Chinese refiner Rongsheng, who was previously a key buyer of Upper Zakum, recently shifted to a long-term contract for Saudi Arab Light. This made more barrels available on the spot market and contributed to very active trading. Light sour Murban saw an increase of \$0.18/bbl to \$0.97/bbl, as relatively stable differentials throughout September gave way to a jump at month's end (+\$1.40/bbl). Oman and Al Shaheen did not fare as well. Oman's differential to Dubai decreased by \$0.27/bbl, flipping it to a -\$0.19/bbl discount below Dubai, while Qatari Al-Shaheen's discount deepened by \$0.09/bbl to -\$0.14/bbl.

Backwardated crude prices along with robust diesel margins favoured ESPO Blend, whose premiums to Dubai rose \$9.01/bbl. This narrowed the spread from -\$15.44/bbl in August to an average of -\$6.43/bbl in September.



The Cushing discount to Houston narrowed to \$1.44/bbl on average in September (-\$0.13/bbl m-o-m) and fell to just \$0.80/bbl in the last week of September. Similarly, Midland WTI's discount to Houston narrowed to \$1.25/bbl (-\$0.15/bbl), closing the arbitrage for spot barrels from the Midcontinent to Houston. The Cushing backwardation to the forward month widened by \$0.46/bbl to \$1/bbl reaching \$1.99/bbl by 29 September as stocks continued to fall. Exports out of the US Gulf hit a five-month high in September at 4.2 mb/d, while Canadian export volumes to Cushing saw a steep decline due to maintenance. These factors contributed to a 7 mb draw in crude stocks at Cushing over the month, nearing the bottom of their five-year average. Sour crude price differentials to WTI weakened in September; WCS at Houston versus WTI Houston widened by \$0.51/bbl to -\$9.10/bbl and Mars by \$1.18/bbl to -\$2.09/bbl.

Spot Crude Oil Prices and Differentials (monthly and weekly averages, \$/bbl)											
	Sep 2023			Week Commencing:			Last:				
	Jul 2023	Aug 2023	Sep 2023	*Monthly Δ	m-o-m Δ	y-o-y Δ	04 Sep	11 Sep	18 Sep	25 Sep	09 Oct
Crudes											
North Sea Dated	80.09	86.18	93.96	8.75	7.78	4.20	91.66	93.83	95.44	95.82	91.39
North Sea Mth 1	80.50	85.87	93.76	8.10	7.89	2.26	91.06	93.24	95.51	96.19	90.39
North Sea Mth 2	80.13	85.17	92.72	6.81	7.54	2.01	90.28	92.50	94.50	94.56	87.92
WTI (Cushing) Mth 1	76.39	81.41	89.57	7.16	8.17	5.71	87.15	89.12	90.90	91.45	86.38
WTI (Cushing) Mth 2	76.23	80.86	88.57	5.84	7.71	5.19	86.44	88.47	90.08	89.63	84.60
WTI (Houston) Mth 1	77.91	82.97	91.01	6.59	8.04	4.76	88.57	90.84	92.58	92.37	87.46
Urals FOB Primorsk	60.99	70.96	80.25	10.80	9.29	14.03	77.28	79.95	82.05	82.86	78.39
Dubai (1st month)	80.33	86.44	93.19	7.07	6.75	2.21	90.33	93.37	94.40	94.64	87.21
Differentials to Futures											
North Sea Dated vs. ICE Brent	-0.07	1.08	1.38	0.30	0.30	2.19	1.62	1.39	1.67	0.92	3.24
WTI (Cushing) Mth1 vs. NYMEX	0.36	0.09	0.14	0.00	0.06	0.08	0.00	0.00	0.37	0.20	0.00
Differentials to Physical Markers											
WTI (Houston) vs. North Sea Mth 2	-2.21	-2.20	-1.71	-0.22	0.50	2.75	-1.71	-1.66	-1.91	-2.19	-0.46
WTI (Houston) vs. WTI (Cushing)	1.52	1.56	1.44	-0.58	-0.13	-0.95	1.42	1.72	1.69	0.92	1.08
Urals FOB Prim vs. North Sea Dated	-19.10	-15.22	-13.71	2.05	1.50	9.82	-14.38	-13.88	-13.39	-12.96	-13.00
Dubai vs. ICE Brent	0.17	1.33	0.60	-1.38	-0.73	0.32	0.29	0.93	0.63	-0.26	-0.94
Dubai vs. WTI (Cushing) Mth 2	4.10	5.58	4.62	1.23	-0.96	-2.99	3.89	4.91	4.33	5.01	2.61
Prompt Month Differentials											
Forward North Sea Mth1-Mth2	0.37	0.69	1.04	1.29	0.35	0.25	0.79	0.74	1.02	1.63	2.47
Forward WTI Cushing Mth1-Mth2	0.16	0.55	1.00	1.32	0.46	0.52	0.71	0.65	0.82	1.82	1.78
Forward Dubai Mth1-Mth2	0.69	1.08	1.17	0.33	0.10	-1.57	1.01	1.04	1.24	1.40	1.68

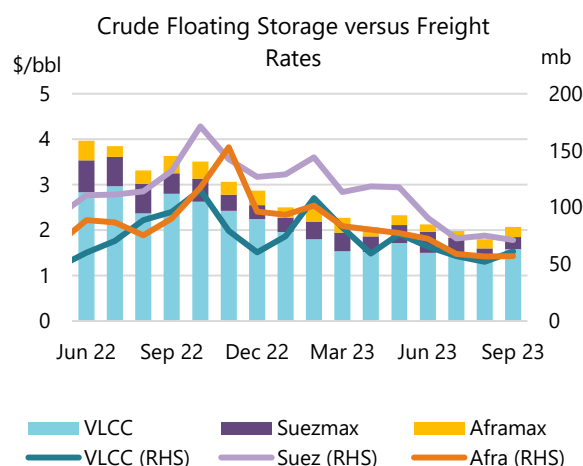
Source: Argus Media group, ICE, NYMEX

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

Freight

Global freight rates extended the downward trajectory for the eighth consecutive month in September, largely due to long tonnage lists and reduced demand with recent production cuts. This decline can be attributed to several key factors. Firstly, calls on “non-shadow” shipowners who previously moved Russian crude (primarily via Aframaxs and Suezmaxes) have eased in recent months and are now shifting their focus back to Western chartering. Secondly, ship scrapping has lagged deliveries of new tankers year-to-date, leaving ample available capacity in the market. Thirdly, the number of vessels used for floating storage have dropped over the past year, freeing up capacity to the market.

Dirty rates for September shipments fell, with Suezmax rates from West Africa to the UK-Continent the exception. Rates rose \$0.06/bbl m-o-m, to \$1.88/bbl, as an increase in demand for West African crudes drove freight prices higher. VLCC rates fell \$0.12/bbl to \$1.31/bbl as the production cuts in the Middle East and steeply backwardated curves have left many VLCCs looking for long-haul charters. Rates for USGC to Europe Suezmax charters plummeted \$0.31/bbl to \$1.64/bbl as refinery maintenance and shifting flows for sour crudes late in the month pushed demand down. North Sea Aframax rates declined by a mere \$0.05/bbl to \$0.82/bbl.

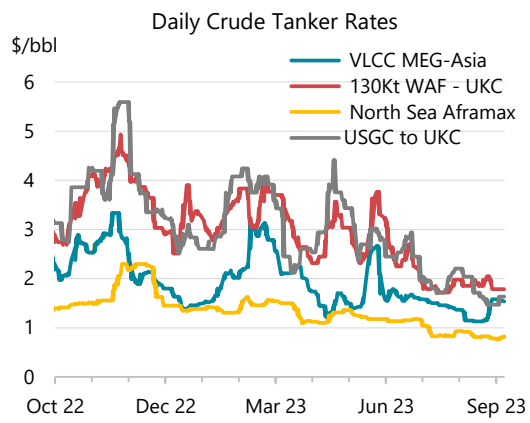


Freight Costs										
(monthly and weekly averages, \$/bbl)										
	Sep-23					Week Commencing				
	Jul 23	Aug 23	Sep 23	m-o-m chg	y-o-y chg	04-Sep	11-Sep	18-Sep	25-Sep	02-Oct
Crude Tankers										
VLCC MEG-Asia	1.63	1.43	1.31	-0.12	-0.92	1.14	1.13	1.41	1.57	1.53
130Kt WAF - UKC	2.27	1.82	1.88	0.06	-0.97	1.92	1.88	1.96	1.78	1.78
130Kt USGC to EUR	2.43	1.95	1.64	-0.31	-1.37	1.86	1.64	1.47	1.54	1.63
North Sea Aframax	1.13	0.87	0.82	-0.05	-0.34	0.85	0.82	0.81	0.78	0.83
Product Tankers										
LR MEG - Japan	3.37	4.37	4.35	-0.02	-2.64	4.32	4.53	4.33	4.22	4.37
MR Sing - JPN	2.78	2.89	3.73	0.84	-1.86	3.45	3.74	3.97	3.74	3.58
MR Carib - US Atlantic	2.85	3.05	2.74	-0.31	-1.22	3.11	2.46	2.25	3.16	2.63
MR UK-US Atlantic	3.08	3.91	3.84	-0.07	-0.48	3.81	3.72	3.80	3.86	3.98

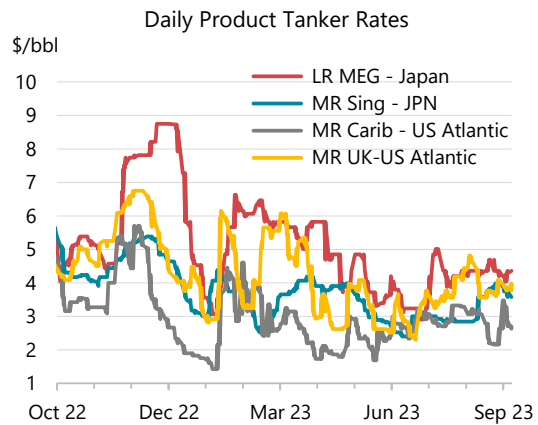
Source: Argus Media Group

Clean tanker rates posted a decline during the month, except for the regional Medium Range (MR) rates for Asian shipments, which surged by \$0.84/bbl m-o-m to reach \$3.73/bbl. This increase was attributed to a high level of activity among shipowners in the region and limited vessel availability in the East, stemming from the region's preparations for Golden Week holidays and anticipation of China's announcement of a halt to quotas for the remainder of the year. In contrast, MR rates for shipments in the Caribbean experienced a decrease, marking the first decline in several months, with a drop of \$0.31/bbl to \$2.74/bbl. This was driven by a reduction in activity through the Panama Canal. Additionally, MR charters from the UK to the US saw a decrease of \$0.07/bbl, falling to

\$3.84/bbl, influenced by the earlier-than-expected switch to winter-grade gasoline blending along with higher reported product inventories in the US.



Source: Argus Media Group



Source: Argus Media Group

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	24.8	24.9	25.0	24.8	24.9	24.5	25.2	25.2	25.0	25.0	24.4	24.8	25.0	24.7	24.7
Europe	12.4	13.2	13.2	13.5	14.0	13.3	13.5	13.1	13.5	13.8	13.4	13.5	13.1	13.4	13.5	13.3	13.3
Asia Oceania	7.2	7.3	7.8	6.9	7.2	7.6	7.4	7.8	7.0	7.1	7.6	7.4	7.7	7.0	7.2	7.7	7.4
Total OECD	42.1	44.9	45.7	45.3	46.2	45.8	45.8	45.4	45.7	46.1	46.0	45.8	45.2	45.1	45.7	45.7	45.4
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	4.9	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	16.7	16.6	16.4	16.6	17.0	17.2	17.2	17.0
Other Asia	13.0	13.5	14.2	14.2	13.6	14.3	14.1	14.4	14.4	14.1	14.7	14.4	14.6	14.6	14.4	15.3	14.7
Americas	5.4	6.0	6.0	6.2	6.4	6.3	6.2	6.2	6.3	6.5	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	9.3	8.8	8.9	8.9	9.1	9.4	9.0	9.1
Africa	3.8	4.0	4.3	4.2	4.2	4.4	4.3	4.3	4.2	4.1	4.2	4.2	4.3	4.4	4.4	4.5	4.4
Total Non-OECD	49.8	52.7	53.6	53.1	54.0	54.7	53.8	55.0	56.0	56.6	56.5	56.0	56.2	57.0	57.7	58.2	57.3
Total Demand¹	91.8	97.6	99.3	98.4	100.2	100.4	99.6	100.4	101.8	102.7	102.6	101.9	101.3	102.2	103.5	103.9	102.7
OECD SUPPLY																	
Americas	23.9	24.3	25.0	25.4	26.1	26.3	25.7	26.7	26.8	27.2	27.4	27.0	27.3	27.6	27.8	27.9	27.7
Europe	3.6	3.4	3.3	3.0	3.1	3.2	3.2	3.3	3.3	3.1	3.1	3.2	3.3	3.2	3.1	3.2	3.2
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 OECD²	28.0	28.2	28.8	28.9	29.6	30.0	29.3	30.4	30.6	30.8	31.0	30.7	31.1	31.3	31.5	31.5	31.3
NON-OECD SUPPLY																	
FSU	13.5	13.8	14.4	13.4	13.7	14.1	13.9	14.2	13.8	13.6	13.7	13.8	13.7	13.7	13.6	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	2.6	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-OECD²	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	31.7	31.7	31.8	31.7
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	3.6	3.2	3.2	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	67.5	67.8	67.8	67.5	68.0	68.8	69.2	69.0	68.8
OPEC⁴																	
Crude	25.7	26.5	28.6	28.7	29.6	29.4	29.1	29.4	28.9	28.0							
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	34.9	34.4	33.6							
Total Supply	94.1	95.5	98.9	98.9	101.1	101.4	100.1	101.9	101.9	101.4							
STOCK CHANGES AND MISCELLANEOUS																	
Reported OECD																	
Industry	0.4	-1.1	-0.4	0.5	0.9	0.3	0.4	-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	-0.1	0.0	-0.4	-0.2	0.2								
Floating storage/Oil in transit	0.0	0.0	-0.6	0.6	0.8	0.2	0.3	0.1	-0.6								
Miscellaneous to balance ⁵	1.8	-0.8	1.1	0.4	0.2	0.7	0.6	1.6	0.5								
Total Stock Ch. & Misc	2.3	-2.1	-0.4	0.5	0.9	1.0	0.5	1.5	0.2	-1.3							
Memo items:																	
Call on OPEC crude & stock changes ⁶	23.5	28.5	29.0	28.2	28.7	28.4	28.6	27.9	28.7	29.3	29.2	28.8	27.7	27.7	28.6	29.3	28.3

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, Netherlands, 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 throughout 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	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.2	-0.1	-0.1	0.1	0.0
Europe	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.2	-0.2	-0.2	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	0.0	0.0	0.0	0.0	-0.1	0.0	0.0
Total OECD	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.0	-0.1	0.2	0.0	0.3	-0.2	-0.4	0.2	0.0
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	0.2	0.1	0.1	0.1	0.0	0.0	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	-0.1	0.0	-0.1	-0.1	0.0	0.1	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	-0.1	0.0	0.0	0.0	-0.1	0.0	0.0
Africa	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	0.0	0.0	0.0
Total Non-OECD	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	-0.1	0.0	-0.1	-0.2	-0.2	0.2	-0.1
Total Demand	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.2	-0.4	-0.6	0.4	-0.1
OECD SUPPLY																	
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	0.1	0.1	0.1	0.0	0.1
Europe	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	-0.1	-0.2	-0.1	0.0	0.0	0.0	-0.1	0.0
Asia Oceania	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0	0.0	0.0	0.1	0.0	-0.2	0.0	0.0	0.1	0.1	0.0	0.0
NON-OECD SUPPLY																	
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	0.0	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	0.0	0.0	0.0	0.1	0.0	0.0	0.0	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	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0	0.0	0.0	0.1	0.0	-0.2	0.0	0.0	0.0	0.1	-0.1	0.0
OPEC																	
Crude	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total OPEC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0								
Total Supply	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1								
STOCK CHANGES AND MISCELLANEOUS																	
REPORTED OECD																	
Industry	0.0	0.0	0.0	0.0	0.1	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								
Total	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0								
Floating storage/Oil in transit	0.0	0.0	-0.1	0.0	0.0	0.0	0.0	0.0	0.0								
Miscellaneous to balance	-0.1	0.0	0.0	0.0	0.0	-0.1	0.0	0.0	0.1								
Total Stock Ch. & Misc	0.0	0.0	0.0	-0.1	0.0	-0.1	0.0	0.0	0.1								
Memo items:																	
Call on OPEC crude & stock changes	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.0	-0.1	0.0	0.3	0.0	0.2	-0.4	-0.6	0.5	-0.1

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 agreement¹)
(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	101.8	102.7	102.6	101.9	101.3	102.2	103.5	103.9	102.7
OECD SUPPLY																	
Americas ²	21.9	22.4	23.0	23.4	24.1	24.3	23.7	24.6	24.7	25.1	25.3	24.9	25.2	25.5	25.7	25.8	25.5
Europe	3.6	3.4	3.3	3.0	3.1	3.2	3.2	3.3	3.3	3.1	3.1	3.2	3.3	3.2	3.1	3.2	3.2
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	28.8	28.6	29.0	29.1	29.3	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	16.2	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	3.6	3.2	3.2	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	49.8	50.3	50.1	49.8	50.4	51.2	51.7	51.4	51.2
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	0.5	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	2.6	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	1.5	1.6	1.6	1.6	1.5	1.7	1.6
Kuwait	2.4	2.4	2.6	2.7	2.8	2.7	2.7	2.7	2.6	2.6	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	1.1	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	1.3	1.2	1.3	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	0.2	0.2	0.2	0.2	0.2
Sudan	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
UAE	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	42.8	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	8.1	8.2	8.1	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	51.1	51.2	51.8	52.2	52.2	52.1	52.2	52.2
Total Supply Oil	94.1	95.5	98.9	98.9	101.1	101.4	100.1	101.9	101.9	101.4	101.3	101.6	102.6	103.4	103.8	103.5	103.3
Memo items:																	
Call on OPEC+ crude & stock changes	38.3	43.6	44.5	42.9	43.7	43.7	43.7	43.1	43.7	44.1	44.2	43.8	42.7	42.7	43.5	44.3	43.3

¹ From Oct 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	24.76	24.87	25.03	24.80	24.87	24.52	25.21	25.24	24.97	24.98	24.38	24.78	25.01	24.73	24.72
Europe	13.19	13.20	13.47	14.01	13.35	13.51	13.10	13.54	13.76	13.43	13.46	13.09	13.36	13.53	13.27	13.31
Asia Oceania	7.34	7.78	6.93	7.17	7.63	7.38	7.81	6.96	7.10	7.64	7.38	7.69	6.98	7.20	7.75	7.40
Total OECD	44.85	45.74	45.27	46.22	45.78	45.75	45.43	45.71	46.10	46.03	45.82	45.16	45.12	45.74	45.74	45.44
Asia	28.62	29.30	28.21	28.11	29.27	28.72	30.00	30.99	30.83	31.32	30.79	31.15	31.62	31.63	32.44	31.71
Middle East	8.38	8.45	8.99	9.37	8.84	8.91	8.77	8.87	9.31	8.84	8.95	8.86	9.11	9.40	8.96	9.08
Americas	6.00	6.00	6.16	6.35	6.30	6.20	6.18	6.32	6.46	6.36	6.33	6.19	6.37	6.51	6.46	6.38
FSU	4.89	4.79	4.78	5.12	5.07	4.94	4.86	4.89	5.06	4.98	4.95	4.86	4.82	5.01	4.99	4.92
Africa	4.05	4.26	4.24	4.24	4.38	4.28	4.35	4.21	4.12	4.25	4.23	4.33	4.35	4.37	4.53	4.40
Europe	0.77	0.78	0.77	0.79	0.80	0.78	0.78	0.76	0.78	0.80	0.78	0.78	0.78	0.80	0.82	0.80
Total Non-OECD	52.71	53.58	53.15	53.98	54.65	53.84	54.95	56.04	56.56	56.55	56.03	56.18	57.04	57.73	58.20	57.29
World	97.56	99.31	98.42	100.20	100.43	99.60	100.38	101.76	102.66	102.58	101.85	101.34	102.16	103.47	103.94	102.73
of which:																
United States ¹	19.89	20.09	20.00	20.11	19.85	20.01	19.80	20.38	20.19	20.04	20.10	19.68	20.00	20.00	19.85	19.88
Europe 5 ²	7.38	7.43	7.66	7.83	7.43	7.59	7.37	7.53	7.66	7.49	7.51	7.39	7.41	7.49	7.34	7.41
China	15.09	15.08	14.04	14.51	15.01	14.66	15.59	16.58	16.74	16.65	16.39	16.56	17.03	17.20	17.18	16.99
Japan	3.41	3.70	3.04	3.20	3.57	3.38	3.73	3.10	3.12	3.54	3.37	3.68	3.07	3.25	3.62	3.41
India	4.90	5.38	5.29	5.01	5.42	5.28	5.57	5.52	5.25	5.58	5.48	5.53	5.47	5.36	5.93	5.57
Russia	3.68	3.69	3.64	3.95	3.84	3.78	3.74	3.74	3.89	3.74	3.78	3.70	3.63	3.79	3.70	3.70
Brazil	3.03	2.97	3.01	3.18	3.17	3.09	3.10	3.16	3.29	3.25	3.20	3.10	3.19	3.30	3.28	3.22
Saudi Arabia	3.51	3.35	3.84	3.98	3.74	3.73	3.59	3.69	3.90	3.72	3.73	3.56	3.80	3.94	3.75	3.76
Canada	2.26	2.36	2.36	2.44	2.47	2.41	2.33	2.47	2.62	2.48	2.48	2.36	2.45	2.60	2.43	2.46
Korea	2.56	2.69	2.45	2.51	2.54	2.55	2.57	2.34	2.47	2.55	2.49	2.53	2.41	2.44	2.56	2.48
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	1.90	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	70.42	69.15	70.52	70.81	70.23	71.13	72.19	72.87	72.77	72.25	71.89	72.19	73.15	73.42	72.67
% of World	70.9%	70.9%	70.3%	70.4%	70.5%	70.5%	70.9%	70.9%	71.0%	70.9%	70.9%	70.9%	70.7%	70.7%	70.6%	70.7%
Annual Change (% per annum)																
Americas	8.2	7.9	2.0	1.0	-1.3	2.2	-1.0	1.4	0.8	0.7	0.5	-0.5	-1.7	-0.9	-1.0	-1.0
Europe	6.3	9.9	5.9	0.3	-4.9	2.4	-0.7	0.5	-1.8	0.6	-0.4	-0.1	-1.4	-1.7	-1.2	-1.1
Asia Oceania	2.5	1.8	-0.2	2.1	-1.3	0.6	0.4	0.4	-1.0	0.1	0.0	-1.5	0.3	1.4	1.4	0.4
Total OECD	6.6	7.4	2.8	0.9	-2.4	2.0	-0.7	1.0	-0.3	0.5	0.1	-0.6	-1.3	-0.8	-0.6	-0.8
Asia	5.0	2.8	-1.4	0.2	-0.2	0.3	2.4	9.9	9.7	7.0	7.2	3.8	2.0	2.6	3.6	3.0
Middle East	4.0	4.8	7.9	6.7	6.1	6.4	3.9	-1.3	-0.6	0.0	0.4	1.0	2.7	1.0	1.4	1.5
Americas	11.0	3.4	5.2	2.7	2.3	3.4	3.1	2.5	1.7	1.0	2.0	0.1	0.9	0.8	1.6	0.8
FSU	6.6	2.6	-0.2	2.0	-0.2	1.0	1.4	2.4	-1.2	-1.8	0.2	0.0	-1.5	-1.0	0.1	-0.6
Africa	7.7	4.1	6.0	7.3	5.4	5.7	2.2	-0.6	-2.9	-2.9	-1.1	-0.3	3.4	6.3	6.7	4.0
Europe	6.6	2.7	1.9	1.5	1.2	1.8	0.3	-0.6	-1.2	0.5	-0.2	0.5	1.8	2.7	1.9	1.7
Total Non-OECD	5.9	3.2	1.6	2.3	1.5	2.1	2.6	5.5	4.8	3.5	4.1	2.2	1.8	2.1	2.9	2.2
World	6.2	5.1	2.1	1.7	-0.3	2.1	1.1	3.4	2.5	2.1	2.3	1.0	0.4	0.8	1.3	0.9
Annual Change (mb/d)																
Americas	1.83	1.82	0.48	0.24	-0.33	0.55	-0.25	0.34	0.20	0.16	0.12	-0.13	-0.43	-0.23	-0.24	-0.26
Europe	0.78	1.19	0.75	0.05	-0.69	0.32	-0.09	0.07	-0.25	0.08	-0.05	-0.01	-0.18	-0.23	-0.16	-0.15
Asia Oceania	0.18	0.14	-0.02	0.15	-0.10	0.04	0.03	0.03	-0.07	0.01	0.00	-0.12	0.02	0.10	0.11	0.03
Total OECD	2.79	3.15	1.21	0.43	-1.13	0.90	-0.31	0.44	-0.12	0.25	0.07	-0.27	-0.60	-0.36	-0.29	-0.38
Asia	1.37	0.79	-0.39	0.06	-0.05	0.10	0.70	2.78	2.72	2.05	2.07	1.14	0.62	0.80	1.12	0.92
Middle East	0.33	0.39	0.66	0.59	0.51	0.54	0.33	-0.12	-0.06	0.00	0.04	0.09	0.24	0.10	0.12	0.14
Americas	0.60	0.20	0.31	0.16	0.14	0.20	0.18	0.15	0.11	0.06	0.13	0.00	0.05	0.05	0.10	0.05
FSU	0.30	0.12	-0.01	0.10	-0.01	0.05	0.07	0.12	-0.06	-0.09	0.01	0.00	-0.07	-0.05	0.01	-0.03
Africa	0.29	0.17	0.24	0.29	0.23	0.23	0.09	-0.03	-0.12	-0.13	-0.05	-0.01	0.14	0.26	0.28	0.17
Europe	0.05	0.02	0.01	0.01	0.01	0.01	0.00	0.00	-0.01	0.00	0.00	0.00	0.01	0.02	0.02	0.01
Total Non-OECD	2.93	1.68	0.82	1.21	0.83	1.13	1.37	2.90	2.57	1.90	2.19	1.23	1.00	1.17	1.65	1.26
World	5.72	4.83	2.03	1.65	-0.30	2.04	1.06	3.33	2.46	2.15	2.25	0.96	0.40	0.81	1.36	0.88
Revisions to Oil Demand from Last Month's Report (mb/d)																
Americas	0.00	0.02	0.06	-0.03	0.07	0.03	-0.01	0.01	0.03	0.06	0.02	0.17	-0.06	-0.08	0.06	0.02
Europe	0.00	0.00	0.00	0.00	0.00	0.00	-0.01	-0.01	-0.04	0.13	0.02	0.15	-0.16	-0.20	0.11	-0.02
Asia Oceania	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.11	-0.04	-0.04	0.01	0.01	-0.12	0.03	-0.02
Total OECD	0.00	0.02	0.06	-0.03	0.07	0.03	-0.01	-0.00	-0.12	0.15	0.01	0.33	-0.21	-0.39	0.20	-0.02
Asia	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.33	0.09	0.12	-0.02	-0.14	-0.01	0.27	0.03
Middle East	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.14	-0.05	-0.05	0.00	-0.02	-0.13	-0.02	-0.04
Americas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.01	0.00	-0.01	0.00	0.00	0.00
FSU	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.01	-0.02	0.00	-0.01	0.00	-0.01	-0.01	-0.01
Africa	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.07	-0.08	-0.04	-0.06	-0.01	-0.01	-0.03	-0.03
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	-0.01	0.00	0.00	0.00
Total Non-OECD	-	-0.01	-0.00	-0.00	0.00	-0.00	0.01	0.04	0.14	-0.06	0.03	-0.09	-0.19	-0.16	0.21	-0.06
World	0.00	0.02	0.05	-0.03	0.07	0.03	-0.01	0.04	0.02	0.09	0.04	0.24	-0.40	-0.55	0.41	-0.08
Revisions to Oil Demand Growth from Last Month's Report (mb/d)																
World	-0.03	0.02	0.06	-0.03	0.06	0.03	-0.03	-0.01	0.06	0.02	0.01	0.25	-0.44	-0.58	0.32	-0.11

¹ US figures exclude US territories.

² France, Germany, Italy, Spain and UK.

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

										Latest month vs.	
	2021	2022	3Q22	4Q22	1Q23	2Q23	May 23	Jun 23	Jul 23 ²	Jun 23	Jul 22
Americas											
LPG and ethane	3.70	3.83	3.63	3.88	4.00	3.85	3.79	3.98	4.02	0.04	0.23
Naphtha	0.26	0.23	0.22	0.22	0.22	0.24	0.25	0.23	0.23	0.00	0.00
Motor gasoline	10.34	10.46	10.62	10.41	10.23	10.79	10.79	11.02	10.65	-0.37	0.14
Jet and kerosene	1.57	1.84	1.90	1.87	1.85	1.98	1.96	2.06	2.11	0.05	0.20
Gasoil/diesel oil	5.04	5.27	5.19	5.27	5.23	5.06	5.12	5.10	4.84	-0.26	-0.16
Residual fuel oil	0.56	0.55	0.60	0.53	0.51	0.43	0.43	0.48	0.45	-0.03	-0.12
Other products	2.86	2.68	2.88	2.62	2.49	2.85	2.91	2.90	2.88	-0.03	-0.06
Total	24.32	24.87	25.03	24.80	24.52	25.21	25.24	25.78	25.18	-0.60	0.23
Europe											
LPG and ethane	1.09	1.04	1.10	0.99	1.10	1.11	1.15	1.07	1.00	-0.07	-0.14
Naphtha	1.16	0.96	0.86	0.84	0.97	0.83	0.79	0.76	0.74	-0.01	-0.18
Motor gasoline	1.93	2.04	2.15	2.02	1.99	2.19	2.21	2.29	2.31	0.02	0.18
Jet and kerosene	0.86	1.29	1.50	1.32	1.26	1.46	1.44	1.57	1.64	0.07	0.16
Gasoil/diesel oil	6.29	6.25	6.37	6.31	5.98	6.06	6.17	6.24	6.10	-0.14	-0.02
Residual fuel oil	0.72	0.78	0.80	0.77	0.76	0.73	0.76	0.71	0.72	0.01	-0.08
Other products	1.16	1.16	1.24	1.11	1.05	1.16	1.14	1.26	1.21	-0.05	-0.01
Total	13.19	13.51	14.01	13.35	13.10	13.54	13.67	13.89	13.72	-0.18	-0.07
Asia Oceania											
LPG and ethane	0.76	0.79	0.71	0.80	0.90	0.70	0.69	0.69	0.71	0.02	0.02
Naphtha	1.97	1.85	1.89	1.84	1.94	1.69	1.72	1.59	1.69	0.11	-0.22
Motor gasoline	1.39	1.44	1.52	1.50	1.41	1.44	1.45	1.46	1.52	0.06	0.00
Jet and kerosene	0.60	0.68	0.53	0.83	0.94	0.67	0.64	0.68	0.66	-0.02	0.16
Gasoil/diesel oil	1.86	1.87	1.85	1.94	1.89	1.84	1.86	1.89	1.87	-0.02	0.08
Residual fuel oil	0.45	0.50	0.48	0.51	0.54	0.42	0.39	0.42	0.43	0.01	-0.04
Other products	0.30	0.24	0.20	0.22	0.19	0.19	0.16	0.21	0.18	-0.03	0.01
Total	7.34	7.38	7.17	7.63	7.81	6.96	6.93	6.94	7.07	0.13	0.00
OECD											
LPG and ethane	5.55	5.67	5.43	5.66	6.00	5.66	5.63	5.74	5.73	-0.01	0.12
Naphtha	3.39	3.04	2.97	2.89	3.13	2.76	2.75	2.57	2.66	0.09	-0.40
Motor gasoline	13.66	13.94	14.29	13.93	13.63	14.42	14.45	14.77	14.48	-0.28	0.32
Jet and kerosene	3.02	3.81	3.92	4.02	4.04	4.11	4.04	4.32	4.41	0.10	0.53
Gasoil/diesel oil	13.18	13.40	13.41	13.53	13.10	12.97	13.15	13.24	12.81	-0.43	-0.09
Residual fuel oil	1.73	1.82	1.88	1.81	1.80	1.59	1.59	1.61	1.60	-0.01	-0.25
Other products	4.32	4.08	4.31	3.95	3.73	4.20	4.22	4.37	4.27	-0.11	-0.06
Total	44.85	45.75	46.22	45.78	45.43	45.71	45.83	46.62	45.97	-0.65	0.16

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 COUNTRIES¹
(million barrels per day)

	2021	2022	3Q22	4Q22	1Q23	2Q23	May 23	Jun 23	Jul 23 ²	Latest month vs.	
										Jun 23	Jul 22
United States³											
LPG and ethane	2.88	3.08	2.91	3.08	3.24	3.08	3.05	3.14	3.13	-0.01	0.07
Naphtha	0.19	0.14	0.13	0.13	0.13	0.15	0.16	0.12	0.14	0.01	-0.01
Motor gasoline	8.82	8.81	8.93	8.74	8.67	9.13	9.10	9.28	9.01	-0.27	0.20
Jet and kerosene	1.38	1.56	1.60	1.58	1.57	1.68	1.69	1.74	1.78	0.04	0.18
Gasoil/diesel oil	3.97	4.03	3.91	4.00	4.01	3.93	3.93	3.96	3.65	-0.31	-0.07
Residual fuel oil	0.31	0.33	0.38	0.30	0.29	0.22	0.22	0.26	0.26	0.00	-0.05
Other products	2.35	2.06	2.25	2.01	1.90	2.20	2.24	2.22	2.15	-0.06	-0.12
Total	19.89	20.01	20.11	19.85	19.80	20.38	20.40	20.72	20.12	-0.59	0.20
Japan											
LPG and ethane	0.40	0.39	0.32	0.41	0.51	0.35	0.34	0.36	0.33	-0.02	0.04
Naphtha	0.69	0.61	0.62	0.64	0.64	0.56	0.56	0.49	0.51	0.02	-0.10
Motor gasoline	0.77	0.80	0.85	0.82	0.77	0.79	0.78	0.80	0.86	0.06	0.00
Jet and kerosene	0.37	0.38	0.23	0.47	0.57	0.33	0.30	0.33	0.29	-0.04	0.07
Diesel	0.42	0.42	0.43	0.43	0.41	0.41	0.39	0.43	0.43	0.00	0.00
Other gasoil	0.31	0.31	0.28	0.32	0.34	0.28	0.27	0.29	0.27	-0.02	-0.01
Residual fuel oil	0.25	0.26	0.25	0.27	0.30	0.21	0.19	0.22	0.23	0.00	-0.01
Other products	0.21	0.20	0.21	0.20	0.18	0.17	0.17	0.18	0.16	-0.02	-0.03
Total	3.41	3.38	3.20	3.57	3.73	3.10	3.01	3.10	3.08	-0.02	-0.03
Germany											
LPG and ethane	0.11	0.11	0.10	0.09	0.09	0.10	0.11	0.10	0.11	0.00	-0.01
Naphtha	0.37	0.31	0.27	0.27	0.30	0.28	0.26	0.26	0.24	-0.02	-0.05
Motor gasoline	0.46	0.45	0.47	0.44	0.45	0.46	0.47	0.47	0.46	-0.01	-0.01
Jet and kerosene	0.13	0.20	0.22	0.21	0.18	0.20	0.20	0.22	0.23	0.01	0.01
Diesel	0.73	0.71	0.74	0.71	0.67	0.69	0.72	0.71	0.67	-0.03	-0.05
Other gasoil	0.30	0.28	0.30	0.31	0.29	0.27	0.29	0.26	0.23	-0.03	-0.06
Residual fuel oil	0.05	0.06	0.06	0.05	0.04	0.05	0.05	0.06	0.05	-0.01	-0.01
Other products	0.08	0.06	0.08	0.05	0.04	0.04	0.03	0.06	0.07	0.01	-0.01
Total	2.23	2.18	2.24	2.13	2.06	2.10	2.14	2.12	2.06	-0.07	-0.19
Italy											
LPG and ethane	0.10	0.11	0.10	0.11	0.12	0.09	0.09	0.09	0.10	0.00	0.01
Naphtha	0.08	0.06	0.04	0.05	0.06	0.05	0.06	0.04	0.03	-0.01	-0.01
Motor gasoline	0.17	0.18	0.20	0.18	0.16	0.19	0.19	0.21	0.20	0.00	0.00
Jet and kerosene	0.05	0.09	0.11	0.08	0.07	0.10	0.09	0.11	0.13	0.02	0.02
Diesel	0.48	0.49	0.51	0.50	0.47	0.49	0.50	0.51	0.51	0.01	0.00
Other gasoil	0.07	0.05	0.06	0.05	0.03	0.04	0.04	0.06	0.06	0.00	0.00
Residual fuel oil	0.06	0.06	0.07	0.06	0.05	0.05	0.05	0.05	0.06	0.01	-0.01
Other products	0.15	0.16	0.17	0.16	0.15	0.16	0.16	0.16	0.16	0.00	-0.01
Total	1.16	1.19	1.25	1.18	1.13	1.18	1.18	1.23	1.25	0.02	0.00
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	0.12	0.10	0.10	0.00	-0.02
Motor gasoline	0.21	0.23	0.26	0.23	0.22	0.25	0.25	0.27	0.26	-0.01	0.01
Jet and kerosene	0.09	0.14	0.17	0.14	0.15	0.17	0.17	0.18	0.19	0.01	0.04
Diesel	0.72	0.73	0.75	0.72	0.69	0.71	0.69	0.78	0.72	-0.06	-0.03
Other gasoil	0.14	0.11	0.10	0.11	0.14	0.08	0.08	0.08	0.08	0.00	0.01
Residual fuel oil	0.04	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.04	0.00	0.00
Other products	0.09	0.09	0.11	0.08	0.07	0.10	0.10	0.12	0.10	-0.02	-0.02
Total	1.54	1.54	1.63	1.47	1.53	1.55	1.55	1.67	1.60	-0.07	-0.01
United Kingdom											
LPG and ethane	0.11	0.10	0.09	0.08	0.10	0.09	0.09	0.08	0.06	-0.03	-0.04
Naphtha	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00
Motor gasoline	0.25	0.28	0.28	0.27	0.28	0.30	0.30	0.31	0.35	0.04	0.08
Jet and kerosene	0.17	0.27	0.28	0.28	0.29	0.30	0.30	0.31	0.30	-0.01	0.03
Diesel	0.47	0.47	0.47	0.47	0.47	0.53	0.55	0.53	0.53	0.00	0.07
Other gasoil	0.13	0.13	0.15	0.12	0.12	0.09	0.08	0.09	0.08	-0.01	-0.08
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	0.12	0.12	0.12	-0.01	0.00
Total	1.25	1.38	1.41	1.36	1.40	1.44	1.47	1.46	1.46	-0.00	0.07
Canada											
LPG and ethane	0.46	0.38	0.34	0.41	0.38	0.41	0.37	0.47	0.51	0.03	0.16
Naphtha	0.05	0.06	0.07	0.06	0.06	0.07	0.06	0.07	0.07	-0.01	0.00
Motor gasoline	0.76	0.78	0.82	0.80	0.73	0.83	0.84	0.88	0.80	-0.07	0.00
Jet and kerosene	0.09	0.14	0.17	0.15	0.14	0.16	0.15	0.19	0.19	0.00	0.01
Diesel	0.29	0.32	0.34	0.34	0.31	0.28	0.35	0.27	0.32	0.06	0.00
Other gasoil	0.27	0.27	0.26	0.27	0.28	0.26	0.26	0.26	0.25	0.00	0.00
Residual fuel oil	0.03	0.03	0.03	0.04	0.04	0.02	0.00	0.02	0.03	0.01	-0.02
Other products	0.31	0.42	0.43	0.40	0.39	0.44	0.45	0.48	0.50	0.03	0.03
Total	2.26	2.41	2.44	2.47	2.33	2.47	2.49	2.63	2.67	0.04	0.18

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	2Q23	3Q23	4Q23	1Q24	2Q24	Jul 23	Aug 23	Sep 23
OPEC											
Crude Oil											
Saudi Arabia	10.53			10.14	9.02				9.08	8.96	9.03
Iran	2.55			3.00	3.11				3.04	3.14	3.14
Iraq	4.45			4.14	4.31				4.27	4.32	4.34
UAE	3.34			3.27	3.23				3.22	3.22	3.25
Kuwait	2.70			2.63	2.57				2.55	2.58	2.59
Angola	1.14			1.10	1.13				1.15	1.13	1.11
Nigeria	1.15			1.15	1.21				1.10	1.18	1.35
Libya	0.99			1.16	1.15				1.13	1.16	1.15
Algeria	1.01			0.97	0.95				0.96	0.93	0.95
Congo	0.26			0.28	0.27				0.28	0.27	0.25
Gabon	0.19			0.20	0.22				0.22	0.22	0.22
Equatorial Guinea	0.08			0.06	0.06				0.06	0.06	0.05
Venezuela	0.70			0.79	0.80				0.81	0.80	0.78
Total Crude Oil	29.08			28.89	28.01				27.87	27.97	28.21
<i>of which Neutral Zone¹</i>	<i>0.28</i>			<i>0.30</i>	<i>0.24</i>				<i>0.26</i>	<i>0.22</i>	<i>0.24</i>
Total NGLs²	5.43	5.53	5.61	5.51	5.55	5.58	5.60	5.60	5.53	5.56	5.58
Total OPEC³	34.51			34.40	33.57				33.40	33.53	33.79
NON-OPEC⁴											
OECD											
Americas											
United States	17.93	19.20	19.65	19.25	19.50	19.32	19.33	19.73	19.54	19.47	19.51
Mexico	2.01	2.13	2.12	2.14	2.12	2.15	2.14	2.14	2.09	2.12	2.14
Canada	5.76	5.69	5.87	5.42	5.58	5.93	5.84	5.71	5.66	5.55	5.52
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	3.18	3.22	3.30	3.08	3.06	3.30	3.22	3.08	3.10	3.08
UK	0.83	0.75	0.74	0.84	0.63	0.71	0.74	0.74	0.60	0.64	0.64
Norway	1.90	1.99	2.04	2.02	2.02	1.90	2.11	2.03	2.06	2.01	1.99
Others	0.43	0.44	0.44	0.44	0.44	0.45	0.44	0.44	0.42	0.45	0.45
Asia Oceania											
Australia	0.48	0.47	0.48	0.46	0.47	0.49	0.50	0.48	0.43	0.49	0.48
Others	0.41	0.40	0.40	0.38	0.40	0.42	0.42	0.40	0.37	0.42	0.40
Others	0.07	0.07	0.06	0.07	0.07	0.07	0.07	0.06	0.07	0.07	0.07
Total OECD	29.34	30.69	31.35	30.59	30.76	30.96	31.11	31.29	30.80	30.73	30.74
NON-OECD											
Former USSR											
Russia	13.90	13.80	13.71	13.79	13.58	13.67	13.70	13.73	13.58	13.50	13.66
Azerbaijan	11.09	10.94	10.80	10.91	10.79	10.84	10.82	10.80	10.79	10.78	10.81
Kazakhstan	0.67	0.63	0.66	0.62	0.62	0.64	0.65	0.65	0.62	0.62	0.61
Others	1.82	1.92	1.95	1.95	1.85	1.88	1.93	1.97	1.85	1.79	1.92
Asia	0.32	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31
China	6.88	6.93	6.91	7.00	6.83	6.84	6.96	6.94	6.83	6.84	6.84
Malaysia	4.18	4.27	4.33	4.34	4.21	4.21	4.36	4.35	4.18	4.23	4.22
India	0.56	0.56	0.55	0.55	0.54	0.56	0.56	0.55	0.57	0.52	0.54
Indonesia	0.70	0.69	0.68	0.69	0.69	0.68	0.68	0.68	0.70	0.69	0.69
Others	0.63	0.63	0.60	0.64	0.62	0.62	0.61	0.61	0.61	0.63	0.62
Europe	0.81	0.78	0.74	0.78	0.78	0.77	0.75	0.74	0.78	0.77	0.78
Americas	0.11	0.10	0.09	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Brazil	5.65	6.09	6.56	6.00	6.18	6.22	6.51	6.52	6.24	6.19	6.12
Argentina	3.12	3.42	3.70	3.32	3.54	3.52	3.69	3.64	3.59	3.55	3.49
Colombia	0.71	0.75	0.78	0.76	0.75	0.76	0.77	0.78	0.75	0.75	0.75
Ecuador	0.76	0.78	0.76	0.79	0.78	0.78	0.77	0.76	0.79	0.78	0.78
Others	0.47	0.45	0.45	0.45	0.46	0.46	0.46	0.46	0.46	0.46	0.46
Middle East	0.59	0.68	0.86	0.68	0.64	0.71	0.83	0.88	0.66	0.65	0.63
Oman	3.16	3.13	3.14	3.15	3.11	3.14	3.16	3.14	3.06	3.13	3.14
Qatar	1.07	1.06	1.04	1.06	1.05	1.04	1.04	1.04	1.05	1.05	1.04
Others	1.80	1.81	1.81	1.81	1.81	1.81	1.82	1.81	1.81	1.81	1.81
Africa	0.29	0.27	0.29	0.28	0.25	0.29	0.29	0.29	0.20	0.27	0.29
Egypt	1.29	1.28	1.31	1.27	1.32	1.31	1.31	1.31	1.31	1.31	1.33
Others	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60
Others	0.70	0.69	0.71	0.67	0.72	0.71	0.71	0.71	0.71	0.71	0.73
Total Non-OECD	30.99	31.34	31.73	31.32	31.12	31.29	31.73	31.73	31.12	31.07	31.18
Processing gains ⁵	2.31	2.35	2.44	2.35	2.38	2.37	2.44	2.44	2.40	2.39	2.36
Global biofuels	2.95	3.17	3.28	3.27	3.57	3.16	2.77	3.39	3.61	3.59	3.50
TOTAL NON-OPEC	65.59	67.54	68.79	67.53	67.83	67.78	68.04	68.84	67.93	67.77	67.79
TOTAL SUPPLY	100.10			101.92	101.40				101.34	101.30	101.57

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

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

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

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

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

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

	2022	2023	2024	2Q23	3Q23	4Q23	1Q24	2Q24	Jul 23	Aug 23	Sep 23
United States											
Alaska	437	428	437	429	392	449	455	436	397	384	396
California	349	315	306	318	316	314	311	308	317	317	316
Texas	5060	5515	5669	5488	5643	5563	5578	5664	5628	5658	5644
New Mexico	1589	1795	1902	1812	1778	1773	1817	1904	1781	1774	1779
Federal Gulf of Mexico ²	1730	1867	1911	1766	1931	1902	1968	1936	1929	1914	1951
Other US Lower 48	2746	2911	2950	2934	2951	2934	2929	2956	2940	2966	2947
NGLs ³	5933	6290	6401	6424	6410	6312	6187	6457	6446	6379	6404
Other Hydrocarbons	84	78	74	77	81	74	80	70	97	77	69
Total	17928	19200	19650	19249	19503	19321	19325	19731	19535	19469	19506
Canada											
Alberta Light/Medium/Heavy	491	514	537	498	519	516	542	538	515	525	517
Alberta Bitumen	1995	2003	2042	1841	2061	2131	1959	1955	2041	2023	2123
Saskatchewan	455	450	438	452	447	443	444	440	450	447	445
Other Crude	433	368	432	401	293	376	408	465	315	247	318
NGLs	1035	1021	1050	970	1030	1035	1041	1047	1027	1038	1023
Other Upgraders	181	183	186	174	168	195	196	174	178	167	159
Synthetic Crudes	1167	1158	1190	1092	1062	1234	1249	1096	1133	1098	951
Total	5757	5693	5873	5424	5577	5926	5836	5711	5656	5549	5524
Mexico											
Crude	1843	1956	1960	1965	1945	1982	1977	1974	1919	1944	1973
NGLs	158	168	159	173	169	166	163	160	171	169	167
Total	2006	2128	2122	2141	2117	2152	2143	2137	2093	2116	2143
UK											
Brent Fields	23	19	17	23	16	15	21	20	23	22	2
Forties Fields	210	188	149	186	176	187	181	109	195	143	190
Ninian Fields	20	26	22	27	26	25	24	23	26	26	25
Flotta Fields	40	31	27	28	31	30	29	25	30	31	30
Other Fields	474	439	487	520	337	416	451	532	273	373	366
NGLs	66	48	35	57	42	37	36	35	53	48	23
Total	833	752	737	841	627	710	741	745	600	643	637
Norway⁴											
Ekofisk-Ula Area	122	112	113	114	107	96	116	109	94	106	121
Oseberg-Troll Area	200	196	200	187	185	206	204	201	188	202	163
Statfjord-Gullfaks Area	250	202	183	198	202	172	190	185	210	196	199
Haltenbanken Area	237	231	239	230	228	240	244	243	226	227	230
Sleipner-Frigg Area	784	966	1050	979	1011	951	1056	988	1007	1011	1014
Other Fields	116	82	53	106	89	39	100	103	127	63	77
NGLs	190	203	199	208	198	201	201	201	204	202	189
Total	1899	1991	2037	2023	2019	1904	2112	2030	2057	2007	1993
Other OECD Europe											
Denmark	65	63	74	57	65	70	75	75	58	70	66
Italy	83	85	74	91	85	85	75	75	84	87	86
Türkiye	69	78	90	76	82	84	87	90	82	81	82
Other	78	72	79	65	68	84	82	80	35	85	85
NGLs	7	6	5	6	5	5	5	5	5	6	6
Non-Conventional Oils	129	136	120	145	132	119	120	120	156	117	124
Total	431	441	442	440	438	448	443	444	418	446	449
Australia											
Gippsland Basin	8	9	9	9	9	9	9	9	9	9	9
Cooper-Eromanga Basin	18	18	17	19	18	18	18	17	19	18	18
Carnarvon Basin	108	79	92	50	94	98	96	93	84	97	102
Other Crude	177	188	182	199	170	192	196	179	151	189	172
NGLs	102	103	98	108	104	102	100	98	103	105	103
Total	413	398	398	385	395	419	418	397	365	418	404
Other OECD Asia Oceania											
New Zealand	16	16	14	18	16	15	14	14	19	15	15
Japan	3	3	3	3	3	3	3	3	3	3	3
NGLs	11	10	8	10	9	8	8	8	10	8	8
Non-Conventional Oils	38	39	40	38	39	40	40	40	37	42	39
Total	68	68	65	69	67	66	65	65	68	69	65
OECD											
Crude Oil	20230	21234	21775	21096	21299	21423	21675	21767	21174	21254	21476
NGLs	7509	7858	7963	7966	7975	7875	7750	8020	8027	7965	7931
Non-Conventional Oils ⁵	1605	1594	1612	1525	1483	1663	1685	1499	1602	1508	1335
Total	29344	30687	31350	30587	30757	30961	31110	31286	30803	30727	30741

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 agreement¹)
(million barrels per day)

	2022	2023	2024	2Q23	3Q23	4Q23	1Q24	2Q24	Jul 23	Aug 23	Sep 23
OPEC+											
Crude Oil											
Algeria	1.01	0.97	0.96	0.97	0.95	0.96	0.96	0.96	0.96	0.93	0.95
Angola	1.14	1.09	1.03	1.10	1.13	1.08	1.05	1.04	1.15	1.13	1.11
Azerbaijan	0.56	0.51	0.54	0.50	0.50	0.52	0.53	0.53	0.50	0.50	0.49
Bahrain	0.19	0.18	0.19	0.20	0.17	0.20	0.20	0.19	0.12	0.19	0.20
Brunei	0.07	0.07	0.08	0.07	0.08	0.08	0.08	0.08	0.08	0.08	0.08
Congo	0.26	0.27	0.27	0.28	0.27	0.27	0.27	0.27	0.28	0.27	0.25
Equatorial Guinea	0.08	0.06	0.06	0.06	0.06	0.06	0.07	0.06	0.06	0.06	0.05
Gabon	0.19	0.20	0.17	0.20	0.22	0.17	0.17	0.17	0.22	0.22	0.22
Iran	2.55	2.99	3.14	3.00	3.11	3.14	3.14	3.14	3.04	3.14	3.14
Iraq	4.45	4.28	4.27	4.14	4.31	4.27	4.27	4.27	4.27	4.32	4.34
Kazakhstan	1.50	1.58	1.60	1.62	1.52	1.54	1.58	1.62	1.52	1.45	1.58
Kuwait	2.70	2.61	2.55	2.63	2.57	2.55	2.55	2.55	2.55	2.58	2.59
Libya	0.99	1.15	1.19	1.16	1.15	1.16	1.18	1.19	1.13	1.16	1.15
Malaysia	0.40	0.37	0.37	0.36	0.36	0.37	0.37	0.37	0.38	0.34	0.36
Mexico	1.62	1.67	1.69	1.67	1.66	1.70	1.70	1.70	1.64	1.67	1.69
Nigeria	1.15	1.22	1.23	1.15	1.21	1.26	1.25	1.24	1.10	1.18	1.35
Oman	0.85	0.81	0.80	0.82	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Russia	9.75	9.57	9.50	9.51	9.48	9.54	9.52	9.50	9.48	9.47	9.48
Saudi Arabia	10.53	9.64	9.98	10.14	9.02	8.98	9.98	9.98	9.08	8.96	9.03
South Sudan	0.14	0.16	0.15	0.15	0.19	0.17	0.16	0.15	0.19	0.18	0.19
Sudan	0.06	0.06	0.05	0.06	0.05	0.05	0.05	0.05	0.06	0.05	0.05
UAE	3.34	3.30	3.24	3.27	3.23	3.24	3.24	3.24	3.22	3.22	3.25
Venezuela	0.70	0.78	0.83	0.79	0.80	0.80	0.83	0.84	0.81	0.80	0.78
Total Crude Oil	44.22	43.53	43.90	43.84	42.81	42.92	43.94	43.95	42.62	42.69	43.14
<i>of which Neutral Zone</i>	<i>0.28</i>			<i>0.30</i>	<i>0.24</i>				<i>0.26</i>	<i>0.22</i>	<i>0.24</i>
Total NGLs	8.00	8.27	8.26	8.28	8.24	8.24	8.27	8.26	8.22	8.23	8.27
TOTAL OPEC+	52.2	51.8	52.2	52.1	51.1	51.2	52.2	52.2	50.8	50.9	51.4
NON-OPEC+											
OECD											
Americas²	23.69	24.90	25.53	24.68	25.09	25.26	25.17	25.45	25.20	25.03	25.04
United States	17.93	19.20	19.65	19.25	19.50	19.32	19.33	19.73	19.54	19.47	19.51
Canada	5.76	5.69	5.87	5.42	5.58	5.93	5.84	5.71	5.66	5.55	5.52
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	3.18	3.22	3.30	3.08	3.06	3.30	3.22	3.08	3.10	3.08
UK	0.83	0.75	0.74	0.84	0.63	0.71	0.74	0.74	0.60	0.64	0.64
Norway	1.90	1.99	2.04	2.02	2.02	1.90	2.11	2.03	2.06	2.01	1.99
Others	0.43	0.44	0.44	0.44	0.44	0.45	0.44	0.44	0.42	0.45	0.45
Asia Oceania	0.48	0.47	0.48	0.46	0.47	0.49	0.50	0.48	0.43	0.49	0.48
Australia	0.41	0.40	0.40	0.38	0.40	0.42	0.42	0.40	0.37	0.42	0.40
Others	0.07	0.07	0.08	0.07	0.07	0.07	0.08	0.08	0.07	0.07	0.07
Total OECD (non-OPEC+)	27.34	28.56	29.23	28.45	28.64	28.81	28.97	29.15	28.71	28.61	28.60
Non-OECD											
FSU	0.32	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31
Asia	6.23	6.28	6.26	6.37	6.20	6.19	6.30	6.29	6.16	6.22	6.20
China	4.18	4.27	4.33	4.34	4.21	4.21	4.36	4.35	4.18	4.23	4.22
India	0.70	0.69	0.68	0.69	0.69	0.68	0.68	0.68	0.70	0.69	0.69
Indonesia	0.63	0.63	0.60	0.64	0.62	0.62	0.61	0.61	0.61	0.63	0.62
Others	0.71	0.68	0.64	0.69	0.68	0.67	0.65	0.65	0.68	0.68	0.68
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	6.00	6.18	6.22	6.51	6.52	6.24	6.19	6.12
Brazil	3.12	3.42	3.70	3.32	3.54	3.52	3.69	3.64	3.59	3.55	3.49
Argentina	0.71	0.75	0.78	0.76	0.75	0.76	0.77	0.78	0.75	0.75	0.75
Colombia	0.76	0.78	0.76	0.79	0.78	0.78	0.77	0.76	0.79	0.78	0.78
Ecuador	0.47	0.45	0.45	0.45	0.46	0.46	0.46	0.46	0.46	0.46	0.46
Others	0.59	0.68	0.86	0.68	0.64	0.71	0.83	0.88	0.66	0.65	0.63
Middle East	1.89	1.89	1.90	1.89	1.88	1.89	1.91	1.89	1.88	1.88	1.89
Qatar	1.80	1.81	1.81	1.81	1.81	1.81	1.82	1.81	1.81	1.81	1.81
Others	0.09	0.08	0.09	0.07	0.07	0.08	0.09	0.09	0.07	0.07	0.08
Africa	1.09	1.07	1.11	1.07	1.08	1.09	1.10	1.10	1.07	1.08	1.08
Egypt	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60
Others	0.49	0.48	0.51	0.46	0.48	0.49	0.50	0.50	0.47	0.48	0.49
Total non-OECD (non-OPEC+)	15.28	15.74	16.22	15.74	15.75	15.80	16.22	16.21	15.77	15.78	15.71
Processing gains	2.31	2.35	2.44	2.35	2.38	2.37	2.44	2.44	2.40	2.39	2.36
Global biofuels	2.95	3.17	3.28	3.27	3.57	3.16	2.77	3.39	3.61	3.59	3.50
TOTAL NON-OPEC+	47.87	49.82	51.16	49.80	50.34	50.14	50.39	51.18	50.49	50.37	50.16
TOTAL SUPPLY	100.10	101.63	103.33	101.92	101.40	101.30	102.60	103.39	101.34	101.30	101.57

¹ From Oct 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			
	Apr2023	May2023	Jun2023	Jul2023	Aug2023 ³	Aug2020	Aug2021	Aug2022	3Q2022	4Q2022	1Q2023	2Q2023
OECD INDUSTRY-CONTROLLED STOCKS¹												
OECD Americas												
Crude	615.8	614.1	605.4	595.7	568.0	658.3	587.6	573.7	0.09	0.17	0.29	-0.17
Motor Gasoline	250.6	247.5	247.4	247.5	244.7	265.2	251.0	242.1	-0.11	0.17	0.03	-0.07
Middle Distillate	184.6	184.2	183.4	191.6	194.3	249.1	212.0	179.7	-0.04	0.10	-0.04	0.03
Residual Fuel Oil	39.2	39.0	36.4	34.1	32.0	41.0	36.4	34.7	-0.01	0.03	-0.02	0.01
Total Products ⁴	725.6	738.6	747.7	767.7	780.3	866.4	776.8	733.2	0.33	0.00	-0.30	0.47
Total⁵	1506.5	1512.9	1513.1	1527.0	1510.1	1703.3	1525.8	1474.0	0.41	0.20	-0.03	0.27
OECD Europe												
Crude	352.5	353.2	346.7	342.1	341.4	368.2	315.1	327.6	-0.03	0.00	0.02	0.09
Motor Gasoline	86.2	82.7	80.5	84.7	84.8	94.9	83.6	87.7	0.01	0.00	0.02	-0.10
Middle Distillate	256.8	257.5	245.9	252.8	255.9	349.5	293.5	242.2	-0.03	0.17	-0.05	-0.01
Residual Fuel Oil	68.9	70.2	65.5	62.8	60.8	71.6	64.3	61.5	0.02	0.04	-0.03	-0.02
Total Products ⁴	516.8	514.8	495.9	508.5	510.2	636.9	541.6	502.8	0.03	0.19	-0.14	-0.11
Total⁵	948.1	945.9	919.6	928.2	933.8	1092.0	930.9	906.0	0.07	0.20	-0.19	0.00
OECD Asia Oceania												
Crude	142.2	130.0	133.4	140.0	127.2	166.8	114.0	119.2	0.36	0.00	0.13	-0.07
Motor Gasoline	26.7	24.8	25.1	23.5	25.2	26.2	28.3	23.8	-0.02	0.01	0.00	0.01
Middle Distillate	61.2	62.5	60.1	61.0	67.7	78.4	75.0	62.0	0.01	0.00	-0.09	0.06
Residual Fuel Oil	17.3	17.7	17.2	17.7	18.6	16.5	18.2	16.2	0.01	0.00	0.00	0.01
Total Products ⁴	166.6	166.9	167.5	167.6	180.6	190.6	186.7	166.4	0.04	-0.05	-0.08	0.11
Total⁵	366.9	355.6	358.9	367.6	372.4	422.9	363.8	345.9	0.45	-0.06	-0.03	0.09
Total OECD												
Crude	1110.5	1097.3	1085.5	1077.8	1036.5	1193.4	1016.7	1020.5	0.42	0.17	0.44	-0.15
Motor Gasoline	363.5	355.0	352.9	355.7	354.7	386.3	362.9	353.5	-0.12	0.18	0.04	-0.16
Middle Distillate	502.5	504.2	489.4	505.5	517.9	677.1	580.4	483.9	-0.05	0.27	-0.17	0.08
Residual Fuel Oil	125.3	126.9	119.2	114.6	111.3	129.1	118.9	112.4	0.01	0.07	-0.05	0.00
Total Products ⁴	1409.0	1420.3	1411.0	1443.8	1471.1	1694.0	1505.1	1402.3	0.39	0.15	-0.52	0.47
Total⁵	2821.5	2814.3	2791.5	2822.9	2816.3	3218.2	2820.4	2725.9	0.93	0.34	-0.25	0.36
OECD GOVERNMENT-CONTROLLED STOCKS⁶												
OECD Americas												
Crude	363.7	354.4	347.2	347.5	350.4	647.5	621.3	445.1	-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	185.0	186.8	189.3	191.1	190.9	208.0	204.0	195.1	-0.01	-0.01	-0.06	0.02
Products	273.7	276.2	278.8	279.0	278.9	281.4	278.0	254.3	-0.04	0.15	0.05	0.09
OECD Asia Oceania												
Crude	348.5	352.1	351.3	348.1	349.1	377.5	371.3	350.1	-0.17	0.01	0.06	0.04
Products	35.5	35.7	35.7	35.5	34.8	39.4	38.8	37.3	0.00	-0.02	0.00	0.00
Total OECD												
Crude	897.2	893.2	887.8	886.6	890.4	1233.0	1196.5	990.3	-1.02	-0.49	-0.01	-0.21
Products	311.2	313.9	316.5	316.5	315.7	322.8	318.8	293.6	-0.04	0.13	0.04	0.09
Total⁵	1210.0	1208.7	1205.8	1205.3	1208.3	1557.8	1517.0	1285.0	-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 STOCKS¹ ON LAND IN SELECTED COUNTRIES

(million barrels)

	March			April			May			June			July		
	2022	2023	%	2022	2023	%	2022	2023	%	2022	2023	%	2022	2023	%
United States²															
Crude	414.2	465.4	12.4	417.4	459.9	10.2	415.1	460.8	11.0	417.8	454.7	8.8	424.1	439.8	3.7
Motor Gasoline	238.5	225.3	-5.5	230.0	223.6	-2.8	220.7	222.1	0.6	221.0	223.2	1.0	225.1	222.1	-1.3
Middle Distillate	151.6	151.3	-0.2	145.2	154.3	6.3	152.1	156.8	3.1	151.6	156.6	3.3	154.9	164.3	6.1
Residual Fuel Oil	28.1	29.6	5.3	29.5	32.1	8.8	29.5	32.8	11.2	29.3	30.4	3.8	29.2	28.5	-2.4
Other Products	180.0	212.9	18.3	191.5	228.2	19.2	211.6	245.1	15.8	219.4	258.9	18.0	238.8	272.1	13.9
Total Products	598.2	619.1	3.5	596.2	638.2	7.0	613.9	656.8	7.0	621.3	669.1	7.7	648.0	687.0	6.0
Other ³	141.9	145.7	2.7	140.2	146.9	4.8	143.2	141.7	-1.0	141.3	140.5	-0.6	143.2	144.7	1.0
Total	1154.3	1230.2	6.6	1153.8	1245.0	7.9	1172.2	1259.3	7.4	1180.4	1264.3	7.1	1215.3	1271.5	4.6
Japan															
Crude	76.0	76.7	0.9	80.3	83.2	3.6	74.9	77.1	2.9	67.0	84.2	25.7	66.7	91.3	36.9
Motor Gasoline	9.8	9.9	1.0	10.3	10.4	1.0	10.3	10.6	2.9	9.9	10.1	2.0	8.8	8.8	0.0
Middle Distillate	23.3	23.7	1.7	24.7	26.3	6.5	26.6	27.4	3.0	26.6	27.4	3.0	28.8	28.2	-2.1
Residual Fuel Oil	5.7	6.7	17.5	6.2	6.9	11.3	6.8	7.4	8.8	6.7	8.0	19.4	6.2	7.6	22.6
Other Products	32.0	34.5	7.8	33.1	37.1	12.1	34.8	34.9	0.3	34.8	36.0	3.4	35.8	37.3	4.2
Total Products	70.8	74.8	5.6	74.3	80.7	8.6	78.5	80.3	2.3	78.0	81.5	4.5	79.6	81.9	2.9
Other ³	42.0	42.9	2.1	47.3	46.3	-2.1	49.9	47.1	-5.6	47.8	47.5	-0.6	47.1	49.5	5.1
Total	188.8	194.4	3.0	201.9	210.2	4.1	203.3	204.5	0.6	192.8	213.2	10.6	193.4	222.7	15.1
Germany															
Crude	48.2	49.5	2.7	48.8	51.7	5.9	50.7	53.7	5.9	49.6	50.3	1.4	48.4	51.8	7.0
Motor Gasoline	10.8	9.1	-15.7	11.7	8.9	-23.9	11.9	8.8	-26.1	10.2	9.0	-11.8	10.5	10.2	-2.9
Middle Distillate	24.4	23.6	-3.3	27.3	24.0	-12.1	26.2	25.4	-3.1	25.2	23.7	-6.0	23.6	25.2	6.8
Residual Fuel Oil	8.0	8.8	10.0	8.1	9.0	11.1	8.3	8.8	6.0	8.7	8.6	-1.1	8.1	8.7	7.4
Other Products	9.7	9.3	-4.1	10.4	10.0	-3.8	9.7	9.8	1.0	9.4	9.6	2.1	9.7	9.9	2.1
Total Products	52.9	50.8	-4.0	57.5	51.9	-9.7	56.1	52.8	-5.9	53.5	50.9	-4.9	51.9	54.0	4.0
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	101.1	100.3	-0.8	106.3	103.6	-2.5	106.8	106.5	-0.3	103.1	101.2	-1.8	100.3	105.8	5.5
Italy															
Crude	32.7	39.8	21.7	34.1	39.3	15.2	36.4	39.0	7.1	38.2	36.7	-3.9	34.3	37.3	8.7
Motor Gasoline	11.3	10.5	-7.1	10.5	10.3	-1.9	11.6	10.0	-13.8	10.2	9.0	-11.8	10.0	9.6	-4.0
Middle Distillate	23.1	23.8	3.0	22.6	23.1	2.2	22.5	25.0	11.1	21.2	23.6	11.3	22.6	23.5	4.0
Residual Fuel Oil	7.9	7.1	-10.1	8.7	7.2	-17.2	8.3	7.2	-13.3	7.8	6.3	-19.2	7.2	6.1	-15.3
Other Products	11.0	11.4	3.6	11.4	11.3	-0.9	11.8	11.7	-0.8	11.5	10.8	-6.1	11.6	11.2	-3.4
Total Products	53.3	52.8	-0.9	53.2	51.9	-2.4	54.2	53.9	-0.6	50.7	49.7	-2.0	51.4	50.4	-1.9
Other ³	14.7	14.9	1.4	14.6	15.6	6.8	13.8	15.1	9.4	14.9	15.8	6.0	14.6	15.4	5.5
Total	100.7	107.5	6.8	101.9	106.8	4.8	104.4	108.0	3.4	103.8	102.2	-1.5	100.3	103.1	2.8
France															
Crude	12.1	7.5	-38.0	10.2	15.5	52.0	11.9	13.6	14.3	13.5	10.6	-21.5	12.0	11.9	-0.8
Motor Gasoline	4.2	4.9	16.7	4.9	5.2	6.1	4.5	5.4	20.0	4.4	4.7	6.8	5.6	5.2	-7.1
Middle Distillate	18.6	16.2	-12.9	19.3	20.9	8.3	19.7	20.2	2.5	17.2	17.9	4.1	19.5	17.6	-9.7
Residual Fuel Oil	0.7	1.9	171.4	1.1	1.4	27.3	1.5	1.3	-13.3	2.1	0.8	-61.9	2.6	0.7	-73.1
Other Products	3.6	3.6	0.0	3.8	3.2	-15.8	3.5	3.5	0.0	3.6	3.6	0.0	3.7	4.1	10.8
Total Products	27.1	26.6	-1.8	29.1	30.7	5.5	29.2	30.4	4.1	27.3	27.0	-1.1	31.4	27.6	-12.1
Other ³	7.1	6.1	-14.1	7.6	7.7	1.3	8.2	7.1	-13.4	7.7	6.8	-11.7	7.0	7.3	4.3
Total	46.3	40.2	-13.2	46.9	53.9	14.9	49.3	51.1	3.7	48.5	44.4	-8.5	50.4	46.8	-7.1
United Kingdom															
Crude	26.5	25.3	-4.5	25.2	27.3	8.3	24.1	28.2	17.0	23.6	25.6	8.5	27.4	26.9	-1.8
Motor Gasoline	9.2	8.9	-3.3	9.9	8.3	-16.2	9.7	8.2	-15.5	9.4	8.7	-7.4	8.9	8.7	-2.2
Middle Distillate	16.8	20.4	21.4	18.4	23.3	26.6	18.1	20.9	15.5	17.9	18.2	1.7	18.9	19.4	2.6
Residual Fuel Oil	1.4	1.2	-14.3	1.7	1.3	-23.5	1.7	1.0	-41.2	1.4	1.3	-7.1	1.2	1.4	16.7
Other Products	5.6	5.8	3.6	6.8	6.7	-1.5	6.8	6.2	-8.8	6.8	5.9	-13.2	6.7	6.2	-7.5
Total Products	33.0	36.3	10.0	36.8	39.6	7.6	36.3	36.3	0.0	35.5	34.1	-3.9	35.7	35.7	0.0
Other 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	7.8	7.2	-7.7
Total	67.2	69.6	3.6	69.5	74.9	7.8	67.2	72.1	7.3	66.3	66.9	0.9	70.9	69.8	-1.6
Canada⁴															
Crude	119.4	119.1	-0.3	122.6	120.4	-1.8	121.6	117.3	-3.5	120.1	114.2	-4.9	119.8	119.2	-0.5
Motor Gasoline	16.6	16.6	0.0	15.4	15.6	1.3	13.1	14.0	6.9	13.4	14.2	6.0	14.3	16.1	12.6
Middle Distillate	17.8	19.9	11.8	18.0	20.4	13.3	16.8	17.9	6.5	16.0	17.8	11.3	16.9	19.3	14.2
Residual Fuel Oil	2.2	2.2	0.0	1.9	1.8	-5.3	2.7	2.2	-18.5	2.1	2.1	0.0	1.6	1.8	12.5
Other Products	13.7	13.7	0.0	14.2	13.7	-3.5	13.5	13.4	-0.7	13.3	12.3	-7.5	13.0	13.2	1.5
Total Products	50.3	52.4	4.2	49.5	51.5	4.0	46.1	47.5	3.0	44.8	46.4	3.6	45.8	50.4	10.0
Other ³	15.9	16.9	6.3	17.1	18.1	5.8	19.5	18.4	-5.6	21.2	19.4	-8.5	23.5	18.8	-20.0
Total	185.6	188.4	1.5	189.2	190.0	0.4	187.2	183.2	-2.1	186.1	180.0	-3.3	189.1	188.4	-0.4

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

² US figures exclude US territories.

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

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

Table 5
TOTAL STOCKS ON LAND IN OECD COUNTRIES¹
(‘millions of 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	186.1	76	188.1	76	199.8	86	188.3	76	180.0	-
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	1613.6	-
Total⁴	1930.5	77	1891.4	77	1865.7	76	1862.0	74	1862.3	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	105
OECD Europe⁵										
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	132	264.4	126	264.8	-
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	39.2	-
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	4007.6	87	3996.0	87	3995.1	88	3975.9	87	3997.4	87
DAYS OF IEA Net Imports⁶ -	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 entropot 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 Millions of Barrels	Industry	Total	Government ¹ controlled Days of Fwd. Demand ²	Industry
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	2769	91	32	59
4Q2021	4135	1484	2651	90	32	58
1Q2022	4057	1442	2615	90	32	58
2Q2022	4008	1343	2664	87	29	58
3Q2022	3996	1246	2750	87	27	60
4Q2022	3995	1214	2781	88	27	61
1Q2023	3976	1217	2759	87	27	60
2Q2023	3997	1206	2792	87	26	61

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 STREAMS¹
(million barrels per day)

												Year Earlier	
	2020	2021	2022	3Q22	4Q22	1Q23	2Q23	May 23	Jun 23	Jul 23		Jul 22	change
Saudi Light & Extra Light													
Americas	0.26	0.34	0.46	0.52	0.41	0.39	0.39	0.40	0.41	0.30		0.38	-0.09
Europe	0.59	0.48	0.62	0.60	0.67	0.73	0.67	0.62	0.61	0.47		0.57	-0.10
Asia Oceania	1.39	1.30	1.51	1.53	1.58	1.58	1.43	1.39	1.42	1.37		1.44	-0.07
Saudi Medium													
Americas	0.14	0.01	-	-	-	-	-	-	-	-		-	-
Europe	0.02	0.01	0.02	0.03	0.01	0.01	-	-	-	0.02		0.05	-0.03
Asia Oceania	0.25	0.21	0.23	0.26	0.23	0.25	0.16	0.17	0.08	0.22		0.24	-0.02
Canada Heavy													
Americas	2.39	2.59	2.61	2.58	2.63	2.70	2.57	2.49	2.61	2.42		2.66	-0.24
Europe	0.03	0.03	0.08	0.08	0.11	0.07	0.14	0.15	0.11	0.11		0.12	-0.01
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	0.23	0.21	0.18		0.27	-0.09
Europe	0.58	0.62	0.69	0.82	0.69	0.71	0.75	0.66	0.82	0.80		0.84	-0.04
Asia Oceania	0.22	0.17	0.23	0.26	0.26	0.27	0.26	0.26	0.30	0.22		0.27	-0.05
Kuwait Blend													
Americas	-	-	-	-	-	-	-	-	-	-		-	-
Europe	0.04	-	-	-	-	-	-	-	-	-		-	-
Asia Oceania	0.55	0.48	0.48	0.47	0.46	0.51	0.45	0.45	0.43	0.50		0.52	-0.02
Iranian Light													
Americas	-	-	-	-	-	-	-	-	-	-		-	-
Europe	-	-	-	-	-	-	-	-	-	-		-	-
Asia Oceania	-	-	-	-	-	-	-	-	-	-		-	-
Iranian Heavy ³													
Americas	-	-	-	-	-	-	-	-	-	-		-	-
Europe	-	-	-	-	-	-	-	-	-	-		-	-
Asia Oceania	-	-	-	-	-	-	-	-	-	-		-	-
BFOE													
Americas	-	0.00	-	-	-	-	-	-	-	0.02		-	-
Europe	0.42	0.36	0.41	0.44	0.38	0.50	0.48	0.63	0.31	0.53		0.60	-0.08
Asia Oceania	0.03	0.05	0.03	0.02	-	-	-	-	-	-		-	-
Kazakhstan													
Americas	-	0.01	-	-	-	-	-	-	-	-		-	-
Europe	0.74	0.69	0.73	0.67	0.70	0.98	0.97	0.92	1.02	0.93		0.76	0.17
Asia Oceania	0.07	0.09	0.13	0.09	0.14	0.15	0.14	0.20	0.07	0.14		0.10	0.03
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	0.05		0.11	-0.06
Asia Oceania	-	-	-	-	-	-	-	-	-	-		-	-
Mexican Maya													
Americas	0.48	0.40	0.40	0.40	0.36	0.43	0.38	0.39	0.46	0.37		0.40	-0.03
Europe	0.16	0.14	0.10	0.09	0.12	0.09	0.10	0.08	0.10	0.03		0.10	-0.07
Asia Oceania	0.12	0.14	0.06	0.04	0.08	0.05	0.05	0.05	0.05	0.05		0.05	0.00
Russian Urals													
Americas	-	-	-	-	-	-	-	-	-	-		-	-
Europe	1.12	1.05	0.74	0.71	0.40	0.13	0.09	0.10	0.10	0.10		0.71	-0.61
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	0.20	0.20	0.19		0.36	-0.17
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	0.43	0.23	0.47	0.46		0.35	0.11
Asia Oceania	0.02	0.01	0.01	0.02	0.02	0.00	0.00	-	-	-		-	-
Libya Light and Medium													
Americas	-	0.02	-	-	-	-	-	-	-	-		-	-
Europe	0.19	0.80	0.63	0.52	0.76	0.65	0.76	0.81	0.76	0.91		0.25	0.66
Asia Oceania	0.01	0.02	0.01	0.01	0.01	0.02	0.00	0.01	-	0.02		-	-

¹ Data based on monthly submissions from IEA countries to the crude oil import register (in '000 bbl), subject to availability. May differ from Table 8 of the Report. IEA Americas includes United States and Canada. IEA Europe includes all countries in OECD Europe except Estonia, Hungary, Slovenia and Latvia. IEA Asia Oceania includes Australia, New Zealand, Korea and Japan.

² Iraqi Total minus Kirkuk.

³ Iranian Total minus Iranian Light.

⁴ 33° API and lighter (e.g., Bonny Light, Escravos, Qua Iboe and Oso Condensate).

Table 7
REGIONAL OECD IMPORTS^{1,2}
(thousand barrels per day)

	2020	2021	2022	3Q22	4Q22	1Q23	2Q23	May 23	Jun 23	Jul 23	Year Earlier	
											Jul 22	% change
Crude Oil												
Americas	1895	2077	2116	2161	2129	2105	2182	2193	2135	2262	2338	-3%
Europe	8349	8520	9090	9302	8986	8368	8337	7831	8576	8331	9522	-13%
Asia Oceania	5579	5514	5871	6228	5724	5926	5400	5162	5280	5605	6152	-9%
Total OECD	15823	16110	17077	17692	16839	16399	15918	15186	15991	16197	18013	-10%
LPG												
Americas	28	21	25	24	18	31	23	18	18	23	20	17%
Europe	422	404	525	514	578	543	538	524	473	482	565	-15%
Asia Oceania	559	562	579	532	538	677	486	486	492	532	508	5%
Total OECD	1009	987	1130	1070	1134	1251	1048	1027	983	1037	1093	-5%
Naphtha												
Americas	7	8	7	7	8	5	14	19	8	7	8	-13%
Europe	409	513	306	225	195	176	134	140	125	189	309	-39%
Asia Oceania	1003	1146	1046	1063	1074	1118	933	842	942	897	1130	-21%
Total OECD	1419	1667	1359	1294	1277	1298	1082	1001	1075	1093	1447	-24%
Gasoline³												
Americas	576	805	675	733	590	548	988	979	1040	834	776	7%
Europe	109	106	101	108	69	63	53	38	47	63	111	-44%
Asia Oceania	116	153	176	179	179	196	197	230	164	199	142	40%
Total OECD	800	1064	953	1021	838	807	1238	1247	1252	1096	1030	6%
Jet & Kerosene												
Americas	159	165	134	115	177	178	160	173	164	166	161	3%
Europe	337	329	453	535	536	383	478	539	394	625	520	20%
Asia Oceania	60	69	87	67	139	160	113	129	132	113	67	69%
Total OECD	556	563	674	717	852	721	751	841	691	904	748	21%
Gasoil/Diesel												
Americas	134	197	99	41	120	158	59	78	34	46	49	-5%
Europe	1192	1188	1225	1136	1486	1164	1261	1255	1300	1215	1036	17%
Asia Oceania	328	349	319	311	325	344	389	459	419	477	293	63%
Total OECD	1654	1735	1644	1489	1931	1666	1709	1792	1754	1738	1378	26%
Heavy Fuel Oil												
Americas	143	102	122	82	132	105	51	31	68	29	59	-51%
Europe	295	374	260	244	241	146	158	154	136	167	250	-33%
Asia Oceania	88	119	89	68	75	109	86	97	92	121	48	151%
Total OECD	526	594	470	393	448	361	295	281	296	318	357	-11%
Other Products												
Americas	592	581	498	504	457	473	477	358	523	468	608	-23%
Europe	574	605	629	643	605	561	615	597	653	633	711	-11%
Asia Oceania	207	229	213	225	209	197	255	269	272	233	186	25%
Total OECD	1373	1415	1340	1372	1271	1230	1347	1224	1449	1334	1506	-11%
Total Products												
Americas	1639	1879	1560	1506	1502	1499	1772	1655	1856	1574	1681	-6%
Europe	3339	3518	3500	3405	3711	3035	3238	3247	3129	3375	3503	-4%
Asia Oceania	2360	2628	2510	2445	2538	2800	2460	2512	2513	2571	2375	8%
Total OECD	7339	8025	7570	7355	7751	7334	7470	7413	7498	7520	7559	-1%
Total Oil												
Americas	3535	3957	3676	3667	3632	3604	3954	3848	3991	3836	4020	-5%
Europe	11688	12037	12590	12707	12697	11403	11574	11078	11704	11705	13025	-10%
Asia Oceania	7939	8141	8381	8673	8262	8726	7860	7673	7793	8176	8527	-4%
Total OECD	23162	24135	24647	25047	24591	23733	23388	22600	23489	23717	25572	-7%

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	May 23	Jun 23	Jul 23	Year Earlier	
											Jul 22	% change
Crude Oil												
Americas	1835	1982	2049	2094	2057	2053	2110	2155	2064	2209	2251	-2%
Europe	7115	7265	7523	7612	7251	6564	6441	5969	6781	6288	7883	-20%
Asia Oceania	5051	4904	5293	5690	5083	5372	4912	4709	4827	5025	5603	-10%
Total OECD	14002	14151	14865	15396	14392	13989	13464	12832	13672	13522	15737	-14%
LPG												
Americas	22	20	25	24	18	31	23	18	18	23	20	17%
Europe	252	243	256	236	283	263	275	259	245	251	216	17%
Asia Oceania	58	46	62	54	52	50	34	51	15	28	41	-33%
Total OECD	331	309	343	314	353	345	332	328	278	302	277	9%
Naphtha												
Americas	1	4	3	2	6	3	6	8	4	6	2	146%
Europe	390	426	272	224	194	162	103	116	82	180	308	-42%
Asia Oceania	832	974	945	952	958	1047	889	780	908	863	1029	-16%
Total OECD	1223	1404	1220	1179	1158	1212	998	905	994	1049	1339	-22%
Gasoline³												
Americas	195	248	174	214	137	155	329	338	328	287	232	24%
Europe	104	100	84	90	58	49	38	23	37	52	88	-41%
Asia Oceania	98	149	176	179	179	196	197	230	164	199	142	40%
Total OECD	397	497	434	483	374	399	564	590	529	538	461	17%
Jet & Kerosene												
Americas	55	63	48	25	89	91	60	80	59	87	33	161%
Europe	297	294	393	461	423	370	423	493	361	565	481	17%
Asia Oceania	60	69	87	67	139	160	113	129	132	113	67	69%
Total OECD	413	426	528	553	650	622	597	702	552	765	581	32%
Gasoil/Diesel												
Americas	103	134	43	12	48	98	39	38	22	36	10	269%
Europe	1062	1107	1120	1034	1315	1008	1021	1046	973	908	979	-7%
Asia Oceania	323	349	319	311	325	344	389	459	419	477	293	63%
Total OECD	1488	1591	1482	1358	1688	1450	1449	1544	1415	1421	1282	11%
Heavy Fuel Oil												
Americas	110	86	90	56	96	86	38	27	47	16	51	-69%
Europe	279	347	239	215	220	126	133	145	94	161	221	-27%
Asia Oceania	88	119	89	68	75	109	86	97	92	121	48	151%
Total OECD	477	552	418	339	390	320	257	268	232	297	320	-7%
Other Products												
Americas	514	530	421	398	360	385	421	318	448	379	469	-19%
Europe	352	427	443	453	415	314	365	395	365	470	552	-15%
Asia Oceania	130	151	140	148	138	131	167	184	174	169	118	44%
Total OECD	996	1108	1004	999	912	830	953	897	988	1018	1139	-11%
Total Products												
Americas	1001	1086	804	732	754	848	917	827	926	834	817	2%
Europe	2735	2944	2806	2715	2907	2291	2357	2476	2157	2587	2845	-9%
Asia Oceania	1590	1857	1818	1779	1864	2038	1876	1930	1905	1970	1738	13%
Total OECD	5325	5886	5428	5225	5525	5177	5150	5233	4988	5390	5400	0%
Total Oil												
Americas	2836	3068	2853	2825	2811	2901	3027	2982	2989	3043	3067	-1%
Europe	9850	10209	10330	10327	10158	8855	8799	8445	8938	8874	10729	-17%
Asia Oceania	6641	6760	7111	7469	6948	7409	6789	6639	6732	6995	7341	-5%
Total OECD	19327	20037	20294	20621	19917	19166	18614	18066	18660	18912	21137	-11%

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

	2020	2021	2022	3Q22	4Q22	1Q23	2Q23	May 23	Jun 23	Jul 23	Year Earlier	
											Jul 22	% change
Crude Oil												
Americas	60	95	66	68	72	52	71	38	71	53	88	-40%
Europe	1234	1255	1567	1690	1735	1804	1895	1862	1795	2043	1639	25%
Asia Oceania	527	610	578	538	641	554	487	453	453	579	549	5%
Total OECD	1821	1959	2212	2296	2448	2410	2454	2354	2319	2675	2276	18%
LPG												
Americas	6	1	1	0	0	0	0	0	0	0	0	na
Europe	171	161	269	278	296	280	264	265	227	231	349	-34%
Asia Oceania	501	516	517	478	486	626	452	435	477	504	467	8%
Total OECD	678	678	787	756	782	906	716	699	704	735	816	-10%
Naphtha												
Americas	6	4	3	4	2	2	8	11	4	2	6	-73%
Europe	20	87	35	1	1	14	31	24	44	10	1	1521%
Asia Oceania	170	172	101	110	115	70	44	62	33	33	101	-67%
Total OECD	196	263	139	115	119	86	83	97	81	45	108	-59%
Gasoline³												
Americas	381	557	501	519	452	394	660	641	712	547	545	0%
Europe	5	6	17	18	11	15	15	15	10	11	24	-53%
Asia Oceania	18	5	0	0	0	0	0	0	0	0	0	-72%
Total OECD	403	567	518	537	464	408	675	656	722	558	568	-2%
Jet & Kerosene												
Americas	103	102	87	90	88	87	99	93	106	79	128	-38%
Europe	40	35	60	74	114	12	54	47	33	60	39	52%
Asia Oceania	0	0	0	0	0	0	0	0	0	0	0	na
Total OECD	144	137	147	164	202	100	154	140	139	139	167	-17%
Gasoi/Diesel												
Americas	31	63	56	29	72	61	20	39	12	10	39	-75%
Europe	131	81	106	101	171	156	241	210	327	307	57	440%
Asia Oceania	4	0	0	0	0	0	0	0	0	0	0	14%
Total OECD	166	144	162	131	243	217	261	249	339	317	96	230%
Heavy Fuel Oil												
Americas	33	16	31	25	35	20	12	3	22	14	8	62%
Europe	16	27	21	28	22	21	26	9	42	7	29	-77%
Asia Oceania	0	0	0	0	0	0	0	0	0	0	0	na
Total OECD	49	42	52	53	57	40	38	12	64	20	37	-45%
Other Products												
Americas	78	51	78	106	98	88	56	40	76	89	139	-35%
Europe	222	178	186	190	190	247	250	202	288	163	160	2%
Asia Oceania	77	78	73	77	71	66	87	85	98	64	69	-7%
Total OECD	377	307	336	373	359	401	393	327	461	316	367	-14%
Total Products												
Americas	639	794	756	774	748	650	855	828	930	740	864	-14%
Europe	604	574	694	690	805	744	881	771	972	788	658	20%
Asia Oceania	770	771	692	666	673	763	584	582	608	601	637	-6%
Total OECD	2013	2139	2141	2130	2226	2157	2320	2180	2510	2129	2159	-1%
Total Oil												
Americas	699	889	823	842	820	702	927	866	1002	793	952	-17%
Europe	1838	1829	2261	2380	2539	2548	2776	2633	2767	2831	2297	23%
Asia Oceania	1297	1381	1270	1204	1314	1317	1071	1035	1061	1181	1186	0%
Total OECD	3834	4098	4353	4426	4674	4568	4773	4534	4829	4805	4435	8%

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#>.

2 Excludes intra-regional trade.

3 Includes additives.

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

	2020	2021	2022	3Q22	4Q22	1Q23	2Q23	May 23	Jun 23	Jul 23	Year Earlier	
											Jul 22	change
OECD Americas												
Venezuela	-	-	-	-	-	69	151	185	126	153	-	-
Other Central & South America	745	719	845	917	879	837	808	802	884	967	900	67
North Sea	59	92	64	60	72	52	63	26	60	53	65	-12
Other OECD Europe	1	3	-	-	-	-	4	12	-	-	-	-
Non-OECD Europe	-	-	-	-	-	-	-	-	-	-	-	-
Former Soviet Union	91	229	43	25	19	23	32	24	25	60	49	11
Saudi Arabia	588	427	535	487	516	487	434	432	420	460	523	-63
Kuwait	21	21	27	14	42	14	19	24	20	26	23	4
Iran	-	3	1	-	-	-	-	-	-	-	-	-
Iraq	177	152	244	277	245	257	190	194	182	204	386	-181
Oman	-	-	-	-	-	-	-	-	-	-	-	-
United Arab Emirates	5	17	12	19	-	16	-	-	-	-	32	-
Other Middle East	-	-	-	-	-	-	-	-	-	-	-	-
West Africa ²	145	228	186	202	160	264	288	266	235	301	170	131
Other Africa	45	161	153	139	196	80	186	229	162	38	168	-130
Asia	17	25	5	21	-	-	7	-	21	-	23	-
Other	3	-	-	-	-	6	-	-	-	-	-	-
Total	1895	2077	2116	2161	2129	2105	2182	2193	2135	2262	2338	-76
of which Non-OECD	1835	1982	2049	2094	2057	2053	2110	2155	2064	2209	2251	-41
OECD Europe												
Canada	95	83	129	124	172	131	207	194	148	210	188	21
Mexico + USA	1139	1172	1438	1566	1562	1673	1689	1669	1647	1822	1451	372
Venezuela	44	-	15	35	23	8	25	-	38	57	103	-47
Other Central & South America	208	219	409	561	443	610	580	375	676	449	667	-218
Non-OECD Europe	25	23	15	12	15	19	17	23	15	14	5	9
Former Soviet Union	3504	3538	3179	2951	2528	1813	1845	1754	1980	1978	3099	-1121
Saudi Arabia	756	518	763	867	882	873	854	756	897	744	832	-88
Kuwait	48	0	-	-	-	-	-	-	-	-	-	-
Iran	6	1	-	-	-	-	-	-	-	-	-	-
Iraq	814	912	989	1121	940	932	876	748	978	799	1217	-418
Oman	-	-	-	-	-	11	11	-	33	-	-	-
United Arab Emirates	-	-	48	86	76	75	49	13	37	110	21	89
Other Middle East	8	9	7	11	10	22	-	-	-	-	31	-
West Africa ²	1074	822	1001	970	1055	1090	980	1015	936	835	1114	-278
Other Africa	596	1198	1071	979	1269	1064	1186	1245	1189	1285	763	521
Asia	0	0	1	-	-	-	-	-	-	11	-	-
Other	11	1	3	-	-	0	-	-	-	-	-	-
Total	8329	8496	9067	9282	8976	8321	8318	7791	8576	8314	9492	-1177
of which Non-OECD	7115	7265	7523	7612	7251	6564	6441	5969	6781	6288	7883	-1596
OECD Asia Oceania												
Canada	1	16	6	10	-	-	-	-	-	-	-	-
Mexico + USA	477	496	538	486	633	554	479	453	453	579	491	88
Venezuela	-	-	-	-	-	-	-	-	-	-	-	-
Other Central & South America	91	110	120	140	109	95	94	145	74	79	142	-63
North Sea	49	98	34	42	8	-	8	-	-	-	59	-
Other OECD Europe	-	-	-	-	-	-	-	-	-	-	-	-
Non-OECD Europe	-	-	-	-	-	-	-	-	-	-	-	-
Former Soviet Union	300	335	239	116	161	154	145	202	69	136	152	-16
Saudi Arabia	1867	1766	1991	2040	2033	2128	1845	1759	1778	1819	1860	-40
Kuwait	584	506	534	516	524	586	485	449	487	569	537	32
Iran	-	-	-	-	-	-	-	-	-	-	-	-
Iraq	224	167	220	262	241	247	241	235	296	221	274	-52
Oman	22	32	40	68	26	28	49	32	65	32	113	-81
United Arab Emirates	1096	1083	1287	1509	1288	1220	1325	1408	1128	1157	1625	-468
Other Middle East	387	362	370	424	289	371	394	415	347	322	412	-90
West Africa ²	65	71	64	88	55	35	5	-	15	14	76	-62
Other Africa	42	56	40	33	43	44	27	19	43	29	20	8
Non-OECD Asia	161	175	119	97	135	131	118	113	125	132	141	-9
Other	210	235	265	397	173	332	184	-68	399	504	251	253
Total	5577	5509	5868	6228	5720	5926	5400	5162	5280	5594	6152	-558
of which Non-OECD	5051	4904	5293	5690	5083	5372	4912	4709	4827	5025	5603	-578
Total OECD Trade	15801	16083	17051	17671	16825	16352	15899	15146	15991	16170	17982	-1812
of which Non-OECD	14002	14151	14865	15396	14392	13989	13464	12832	13672	13522	15737	-2215

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

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

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

	2020	2021	2022	3Q22	4Q22	1Q23	2Q23	May 23	Jun 23	Jul 23	Year Earlier	
											Jul 22	change
OECD Americas												
Venezuela	-	-	-	-	-	-	-	-	-	-	-	-
Other Central & South America	40	41	45	61	62	49	65	75	75	47	45	3
ARA (Belgium Germany Netherlands)	148	194	170	199	100	97	216	215	233	219	238	-19
Other Europe	213	327	293	266	320	259	389	369	445	296	252	44
FSU	56	83	8	0	-	-	-	-	-	-	-	-
Saudi Arabia	6	24	27	19	20	8	33	37	44	33	19	15
Algeria	4	1	1	2	1	-	21	-	1	21	-	-
Other Middle East & Africa	13	13	14	22	13	15	20	39	6	10	27	-17
Singapore	1	4	2	4	2	10	29	28	42	36	1	36
OECD Asia Oceania	21	37	38	54	32	38	63	63	43	35	55	-20
Non-OECD Asia (excl. Singapore)	72	81	76	107	38	71	153	153	152	136	141	-5
Other	-	0	0	-	0	-	-	-	-	-	-	-
Total²	576	805	675	733	590	548	988	979	1040	834	776	58
of which Non-OECD	195	248	174	214	137	155	329	338	328	287	232	56
OECD Europe												
OECD Americas	3	5	16	17	11	11	14	15	8	10	23	-13
Venezuela	0	2	2	3	2	3	2	2	2	1	3	-2
Other Central & South America	4	7	10	14	6	7	6	6	1	2	8	-6
Non-OECD Europe	16	10	8	14	6	8	9	0	8	9	4	6
FSU	31	8	9	3	2	7	1	1	1	1	2	-1
Saudi Arabia	8	3	1	2	-	0	-	-	-	10	-	-
Algeria	1	-	6	7	4	7	2	-	-	10	11	-1
Other Middle East & Africa	3	5	8	6	5	5	5	6	6	3	6	-3
Singapore	2	0	2	1	3	2	3	2	4	1	1	0
OECD Asia Oceania	1	1	1	1	1	4	1	0	3	1	1	0
Non-OECD Asia (excl. Singapore)	0	3	3	4	3	3	4	2	8	3	2	0
Other	37	63	36	37	26	8	6	3	6	11	51	-40
Total²	107	106	101	108	69	63	53	38	47	63	111	-48
of which Non-OECD	104	100	84	90	58	49	38	23	37	52	88	-36
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	-
Other Europe	10	0	0	0	0	0	0	0	0	0	0	0
FSU	0	-	-	-	-	-	-	-	-	-	-	-
Saudi Arabia	-	-	-	-	-	-	4	-	-	-	-	-
Algeria	-	-	-	-	-	-	-	-	-	-	-	-
Other Middle East & Africa	1	-	-	-	-	-	-	-	-	-	-	-
Singapore	51	100	126	121	125	140	123	154	91	121	118	2
Non-OECD Asia (excl. Singapore)	37	29	30	35	27	39	54	60	56	62	7	54
Other	9	20	21	23	27	17	17	16	17	16	16	0
Total²	116	153	176	179	179	196	197	230	164	199	142	57
of which Non-OECD	98	149	176	179	179	196	197	230	164	199	142	57
Total OECD Trade²	798	1064	953	1021	838	807	1238	1247	1252	1096	1030	66
of which Non-OECD	397	497	434	483	374	399	564	590	529	538	461	76

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

² Total figure excludes intra-regional trade.

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

	2020	2021	2022	3Q22	4Q22	1Q23	2Q23	May 23	Jun 23	Jul 23	Year Earlier	
											Jul 22	change
OECD Americas												
Venezuela	-	-	-	-	-	-	-	-	-	-	-	-
Other Central and South America	34	28	6	12	3	15	17	23	11	34	10	25
ARA (Belgium Germany Netherlands)	11	34	15	3	11	3	1	-	3	0	5	-5
Other Europe	4	5	2	0	3	0	0	1	-	2	-	-
FSU	12	25	6	-	-	-	1	2	-	-	-	-
Saudi Arabia	8	15	9	-	5	9	-	-	-	-	-	-
Algeria	-	-	-	-	-	-	-	-	-	-	-	-
Other Middle East and Africa	9	25	4	-	8	7	8	-	9	2	-	-
Singapore	-	2	1	-	2	3	-	-	-	-	-	-
OECD Asia Oceania	16	25	39	26	58	57	19	38	9	8	34	-26
Non-OECD Asia (excl. Singapore)	34	27	5	-	17	52	12	13	2	-	-	-
Other	6	12	11	-	13	12	-	-	-	-	-	-
Total²	134	197	99	41	120	158	59	78	34	46	49	-3
of which Non-OECD	103	134	43	12	48	98	39	38	22	36	10	27
OECD Europe												
OECD Americas	99	38	76	84	126	126	214	173	313	280	48	232
Venezuela	-	-	-	-	-	-	-	-	-	-	-	-
Other Central and South America	3	1	1	3	0	-	-	-	-	-	-	-
Non-OECD Europe	30	35	44	43	45	24	32	29	26	7	10	-3
FSU	627	612	530	506	538	299	287	296	305	329	567	-238
Saudi Arabia	193	141	169	184	221	231	209	290	200	154	148	6
Algeria	2	-	-	-	-	-	-	-	-	-	-	-
Other Middle East and Africa	71	156	161	143	200	208	270	236	302	269	152	117
Singapore	17	19	37	28	33	33	32	27	29	28	19	9
OECD Asia Oceania	32	42	30	18	45	30	26	36	14	27	9	18
Non-OECD Asia (excl. Singapore)	101	123	152	105	269	204	182	155	101	120	65	55
Other	15	21	23	23	9	9	7	12	10	1	18	-17
Total²	1190	1188	1223	1136	1486	1164	1260	1255	1300	1215	1036	179
of which Non-OECD	1062	1107	1120	1034	1315	1008	1021	1046	973	908	979	-71
OECD Asia Oceania												
OECD Americas	4	0	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	0
Other Europe	-	0	0	0	-	0	-	-	-	-	-	-
FSU	2	1	-	-	-	-	-	-	-	-	-	-
Saudi Arabia	-	-	-	-	-	-	-	-	-	-	-	-
Algeria	-	-	-	-	-	-	-	-	-	-	-	-
Other Middle East and Africa	13	4	6	14	-	-	3	-	11	16	41	-25
Singapore	91	109	112	112	97	124	82	99	81	82	128	-46
Non-OECD Asia (excl. Singapore)	208	229	191	176	209	218	297	358	315	377	122	254
Other	9	6	10	9	20	3	7	2	12	2	2	0
Total²	328	349	319	311	325	344	389	459	419	477	293	184
of which Non-OECD	323	349	319	311	325	344	389	459	419	477	293	184
Total OECD Trade²	1652	1734	1641	1489	1931	1666	1708	1792	1754	1738	1378	360
of which Non-OECD	1488	1591	1482	1358	1688	1450	1449	1544	1415	1421	1282	139

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

² Total figure excludes intra-regional trade.

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

	2020	2021	2022	3Q22	4Q22	1Q23	2Q23	May 23	Jun 23	Jul 23	Year Earlier	
											Jul 22	change
OECD Americas												
Venezuela	-	-	-	-	-	-	-	-	-	-	-	-
Other Central and South America	5	1	0	-	1	1	3	-	6	1	-	-
ARA (Belgium Germany Netherlands)	-	5	0	-	0	-	1	1	3	2	-	-
Other Europe	4	7	1	-	4	11	1	-	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	50	32	49	3	46
Singapore	4	2	1	1	2	-	5	6	5	-	-	-
OECD Asia Oceania	100	91	85	90	85	80	97	92	103	77	128	-51
Non-OECD Asia (excl. Singapore)	23	27	24	17	44	48	12	24	5	14	26	-12
Other	4	1	3	1	1	4	3	-	10	10	4	6
Total²	159	165	134	115	177	178	160	173	164	166	161	5
of which Non-OECD	55	63	48	25	89	91	60	80	59	87	33	54
OECD Europe												
OECD Americas	13	3	6	6	11	6	6	2	9	5	4	1
Venezuela	-	-	-	-	-	-	-	-	-	-	-	-
Other Central and South America	0	0	0	1	-	3	-	-	-	-	1	-
Non-OECD Europe	0	0	3	4	5	1	3	9	-	7	4	3
FSU	21	27	16	16	14	15	19	20	25	9	18	-9
Saudi Arabia	40	27	57	62	61	45	51	59	53	64	74	-9
Algeria	9	5	4	5	-	-	-	-	-	-	-	-
Other Middle East and Africa	155	153	172	208	145	186	199	242	193	338	225	113
Singapore	10	11	13	25	10	11	-	-	-	7	-	-
OECD Asia Oceania	27	32	54	68	102	6	49	45	24	54	35	19
Non-OECD Asia (excl. Singapore)	50	61	121	125	187	107	149	159	88	137	124	13
Other	10	9	5	14	0	1	0	0	0	0	36	-35
Total²	336	328	452	535	536	380	475	536	392	622	519	103
of which Non-OECD	297	294	393	461	423	370	423	493	361	565	481	84
OECD Asia Oceania												
OECD Americas	-	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	5	-	-
Singapore	14	16	34	41	39	44	41	45	39	23	47	-25
Non-OECD Asia (excl. Singapore)	28	34	38	20	72	83	41	68	35	65	16	49
Other	18	19	15	5	27	33	32	16	58	19	3	16
Total²	60	69	87	67	139	160	113	129	132	113	67	46
of which Non-OECD	60	69	87	67	139	160	113	129	132	113	67	46
Total OECD Trade²	555	562	673	716	852	719	748	837	689	901	747	154
of which Non-OECD	413	426	528	553	650	622	597	702	552	765	581	184

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

² Total figure excludes intra-regional trade.

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

	2020	2021	2022	3Q22	4Q22	1Q23	2Q23	May 23	Jun 23	Jul 23	Year Earlier	
											Jul 22	change
OECD Americas												
Venezuela	-	-	-	-	-	-	-	-	-	-	-	-
Other Central and South America	52	34	53	36	69	44	16	20	8	1	43	-42
ARA (Belgium Germany Netherlands)	12	6	12	14	18	9	4	3	7	3	3	0
Other Europe	21	10	19	11	18	11	1	0	-	10	5	5
FSU	43	34	21	4	9	1	4	1	7	-	-	-
Saudi Arabia	2	0	7	8	6	3	0	0	-	-	5	-
Algeria	2	7	4	4	1	18	4	-	11	-	0	-
Other Middle East and Africa	10	8	4	3	5	15	10	6	12	12	2	10
Singapore	1	0	-	-	-	-	-	-	-	-	-	-
OECD Asia Oceania	-	0	-	-	-	-	8	-	15	-	-	-
Non-OECD Asia (excl. Singapore)	-	2	2	2	6	4	4	-	9	3	-	-
Other	-	-	-	-	-	-	-	-	-	-	-	-
Total²	143	102	122	82	132	105	51	31	68	29	59	-30
of which Non-OECD	110	86	90	56	96	86	38	27	47	16	51	-35
OECD Europe												
OECD Americas	12	24	13	21	11	5	16	2	35	7	16	-9
Venezuela	-	-	-	-	-	-	-	-	-	-	-	-
Other Central and South America	6	4	5	6	10	4	11	21	4	15	13	2
Non-OECD Europe	13	12	31	47	25	21	25	33	23	25	55	-31
FSU	141	247	121	89	63	45	59	65	45	99	115	-16
Saudi Arabia	2	-	-	-	-	10	0	0	-	-	-	-
Algeria	2	2	5	4	2	5	9	7	14	10	5	4
Other Middle East and Africa	13	14	21	9	31	27	26	16	4	4	7	-3
Singapore	3	3	2	2	0	1	-	-	-	-	2	-
OECD Asia Oceania	4	3	8	7	11	16	10	6	7	-	13	-
Non-OECD Asia (excl. Singapore)	-	0	2	3	6	8	-	-	-	-	-	-
Other	93	59	45	51	67	2	1	1	1	5	22	-18
Total²	288	368	254	238	227	144	157	152	134	164	248	-85
of which Non-OECD	279	347	239	215	220	126	133	145	94	161	221	-61
OECD Asia Oceania												
OECD Americas	-	-	0	0	-	-	-	-	-	-	-	-
Venezuela	-	-	-	-	-	-	-	-	-	-	-	-
Other Central and South America	0	-	-	-	-	-	-	-	-	-	-	-
ARA (Belgium Germany Netherlands)	-	0	0	0	0	-	-	-	-	-	-	-
Other Europe	-	-	0	0	0	-	-	-	-	-	-	-
FSU	5	0	-	-	-	-	-	-	-	-	-	-
Saudi Arabia	1	13	16	15	7	7	11	22	-	30	26	4
Algeria	-	-	-	-	-	-	-	-	-	-	-	-
Other Middle East and Africa	38	30	7	2	13	9	7	3	20	-	-	-
Singapore	18	29	22	18	14	39	19	25	14	61	8	53
Non-OECD Asia (excl. Singapore)	26	47	44	32	41	54	49	47	58	30	14	16
Other	-	-	-	-	-	-	-	-	-	-	-	-
Total²	88	119	89	68	75	109	86	97	92	121	48	73
of which Non-OECD	88	119	89	68	75	109	86	97	92	121	48	73
Total OECD Trade²	519	588	464	387	434	358	294	279	294	314	356	-42
of which Non-OECD	477	552	418	339	390	320	257	268	232	297	320	-23

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

	2020	2021	2022	3Q22	4Q22	1Q23	2Q23	Apr 23	May 23	Jun 23	Jul 23	Aug 23	Sep 23
CRUDE PRICES													
IEA CIF Average Import¹													
IEA Europe	42.91	70.67	100.22	102.36	89.42	82.16	79.75	84.16	78.41	76.56	81.62		
IEA Americas	37.31	64.78	90.77	92.16	77.18	67.91	70.63	72.32	70.03	69.70	72.26		
IEA Asia Oceania	46.28	70.41	102.56	111.62	96.43	86.14	83.19	83.91	85.27	80.00	80.59		
IEA Total	42.19	68.87	98.20	101.90	87.96	79.25	78.03	80.98	77.70	75.33	78.77		
SPOT PRICES²													
North Sea Dated	41.76	70.82	101.10	100.66	88.36	81.11	78.02	84.84	75.49	74.73	80.09	86.18	93.96
North Sea Dated M1	42.90	71.51	101.17	100.16	89.54	82.37	78.02	84.29	75.57	75.13	80.50	85.87	93.76
WTI (Cushing) M1	39.25	68.10	94.58	91.63	82.82	75.96	73.54	79.44	71.59	70.24	76.39	81.41	89.57
WTI (Houston) M1	40.71	69.01	96.19	93.77	84.33	77.74	74.69	80.31	72.57	71.83	77.91	82.97	91.01
Urals	41.21	69.00	76.58	75.41	62.46	46.77	54.63	58.00	52.00	54.26	63.31	72.91	82.13
Dubai M1	42.36	69.35	96.27	96.57	84.68	80.20	77.56	83.40	74.94	74.88	80.33	86.44	93.19
PRODUCT PRICES²													
Northwest Europe													
Gasoline	44.64	80.07	117.01	113.82	99.41	96.17	99.44	103.69	97.06	98.12	105.34	116.85	114.93
Diesel	49.34	78.41	142.36	145.01	139.55	113.71	96.12	100.97	91.52	96.34	105.24	122.52	131.73
Jet/Kero	45.80	77.31	139.91	141.82	130.90	114.74	95.43	100.50	91.73	94.64	106.12	124.27	131.44
Naphtha	40.18	71.58	86.51	76.81	72.63	77.95	67.47	76.17	65.87	61.81	64.42	72.14	78.59
HSFO	33.99	61.18	76.58	70.47	59.55	60.51	67.96	70.30	63.97	69.68	73.63	85.20	88.93
0.5% Fuel Oil	48.50	76.78	107.05	106.21	87.19	83.99	79.21	83.18	76.06	78.84	81.92	89.91	92.59
Mediterranean Europe													
Gasoline	45.57	80.50	119.73	116.78	103.89	100.36	98.77	104.65	94.33	98.01	105.88	115.19	117.04
Diesel	48.82	77.93	136.11	135.88	130.46	112.08	94.97	99.34	90.68	95.30	104.35	120.94	128.88
Jet/Kero	45.57	77.19	140.02	142.03	131.28	114.89	95.43	100.50	91.73	94.64	106.08	124.27	131.28
Naphtha	39.04	70.65	84.62	75.15	70.36	75.83	65.93	73.96	64.60	60.56	62.93	70.50	76.51
HSFO	34.17	60.05	73.40	65.38	56.73	56.97	65.19	68.44	63.34	64.21	74.44	82.14	86.37
US Gulf Coast													
Gasoline	47.30	86.49	123.00	118.71	103.04	105.58	103.93	109.52	101.24	101.70	112.06	120.82	117.59
Diesel	50.26	84.73	145.74	146.73	141.65	120.39	100.11	105.72	96.61	98.68	109.56	128.02	135.95
Jet/Kero	46.30	77.95	140.05	140.46	134.73	125.00	94.79	99.44	91.39	94.14	105.09	125.34	129.27
Naphtha	40.12	72.24	91.24	84.50	76.09	80.92	74.87	77.93	74.69	72.30	69.63	71.31	77.91
HSFO	34.71	59.90	76.96	75.98	55.48	57.10	64.07	66.85	60.29	65.53	72.69	79.81	82.98
0.5% Fuel Oil	49.88	79.69	112.92	111.76	92.69	90.54	82.18	88.34	78.88	80.06	84.63	94.78	99.55
Singapore													
Gasoline	45.28	78.49	110.86	105.71	89.89	95.15	89.57	96.26	85.69	87.43	93.13	101.68	104.47
Diesel	49.60	77.80	135.47	137.89	126.25	108.44	93.09	98.44	89.05	92.31	101.79	119.07	125.32
Jet/Kero	45.06	75.29	126.90	129.27	118.30	106.38	91.57	96.68	88.49	90.06	98.85	116.28	122.77
Naphtha	40.94	71.02	83.79	74.51	70.92	74.21	63.26	71.48	62.12	57.01	62.43	70.65	74.73
HSFO	38.33	63.20	77.65	69.60	58.60	62.36	68.53	72.77	66.96	66.28	74.54	83.93	82.46
0.5% Fuel Oil	52.85	80.81	116.78	115.77	97.77	90.95	86.97	89.84	84.10	87.25	86.94	95.78	99.72

¹ IEA CIF Average Import price for Jul 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.

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Table 14
MONTHLY AVERAGE END-USER PRICES FOR PETROLEUM PRODUCTS

September 2023

NATIONAL CURRENCY ¹							US DOLLARS					
Total	% change from		Ex-Tax	% change from			Total	% change from		Ex-Tax	% change from	
Price	Aug-23	Sep-22	Price	Aug-23	Sep-22		Price	Aug-23	Sep-22	Price	Aug-23	Sep-22
GASOLINE ² (per litre)												
France	1.964	2.2	24.9	0.946	3.8	8.9	2.097	-0.0	34.8	1.010	1.6	17.4
Germany	1.941	1.3	- 3.2	0.908	2.4	-27.5	2.072	-0.9	4.4	0.969	0.2	-21.8
Italy	1.980	2.1	16.3	0.895	3.8	-2.5	2.114	-0.1	25.4	0.955	1.6	5.2
Spain	1.745	2.6	0.9	0.969	3.9	-10.4	1.863	0.4	8.8	1.034	1.6	-3.3
United Kingdom	1.536	3.4	- 7.8	0.750	5.9	-12.6	1.903	0.8	0.9	0.929	3.3	-4.4
Japan	183.5	0.3	8.1	110.2	0.5	12.8	1.243	-1.7	4.9	0.746	-1.6	9.4
Canada	1.714	- 1.8	7.8	1.202	-2.3	7.2	1.266	-2.2	6.1	0.888	-2.7	5.6
United States	1.014	-	3.7	0.880	-	4.0	1.014	-	3.7	0.880	-	4.0
AUTOMOTIVE DIESEL FOR NON COMMERCIAL USE (per litre)												
France	1.903	4.3	10.5	0.977	7.1	-9.2	2.031	2.0	19.2	1.043	4.8	-2.1
Germany	1.830	3.4	- 12.2	0.993	5.4	-28.4	1.954	1.2	-5.3	1.060	3.2	-22.8
Italy	1.898	3.8	5.0	0.939	6.5	-15.7	2.026	1.5	13.3	1.002	4.2	-9.1
Spain	1.653	4.0	- 12.0	0.987	5.7	-24.0	1.765	1.8	-5.1	1.054	3.4	-18.0
United Kingdom	1.574	4.2	- 13.4	0.782	7.3	-20.5	1.950	1.6	-5.2	0.969	4.6	-13.1
Japan	163.0	0.4	8.9	116.2	0.4	11.6	1.104	-1.6	5.6	0.787	-1.6	8.3
Canada	1.917	3.9	1.0	1.424	4.9	-1.4	1.416	3.5	-0.6	1.052	4.5	-2.9
United States	1.205	4.3	- 8.6	1.050	5.0	-9.9	1.205	4.3	-8.6	1.050	5.0	-9.9
DOMESTIC HEATING OIL (per litre)												
France	1.363	4.4	- 10.7	0.979	5.2	-12.2	1.455	2.2	-3.6	1.045	2.9	-5.3
Germany	1.191	5.0	- 22.6	0.859	5.9	-30.2	1.272	2.8	-16.5	0.917	3.7	-24.7
Italy	1.677	4.6	- 7.5	0.971	6.7	-10.3	1.790	2.4	-0.2	1.037	4.4	-3.2
Spain	1.148	4.4	- 15.0	0.852	4.9	-16.5	1.225	2.2	-8.4	0.909	2.7	-9.9
United Kingdom	0.873	7.6	- 15.8	0.730	8.8	-17.6	1.082	5.0	-7.8	0.904	6.1	-9.8
Japan ³	123.2	1.4	10.2	109.2	1.4	10.5	0.835	-0.7	6.9	0.740	-0.6	7.2
Canada	1.894	6.2	5.1	1.578	6.8	-1.7	1.399	5.8	3.4	1.166	6.3	-3.3
United States	-	-	-	-	-	-	-	-	-	-	-	-
LOW SULPHUR FUEL OIL FOR INDUSTRY ⁴ (per kg)												
France	0.752	2.8	- 5.7	0.613	3.5	-6.9	0.803	0.6	1.7	0.654	1.3	0.4
Germany	-	-	-	-	-	-	-	-	-	-	-	-
Italy	0.709	2.5	- 4.7	0.677	2.6	-4.9	0.756	0.3	2.8	0.723	0.4	2.6
Spain	0.656	7.0	- 2.6	0.639	7.2	-2.7	0.700	4.7	5.1	0.682	4.9	5.0
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	4Q22	1Q23	2Q23	3Q23	Apr 23	May 23	Jun 23	Jul 23	Aug 23	Sep 23
NW Europe													
Light sweet hydroskimming	1.11	2.54	10.05	10.81	8.41	4.42	11.90	2.15	4.06	6.61	8.24	14.96	12.36
Light sweet cracking	2.07	3.51	16.22	18.77	14.08	7.07	15.37	5.47	6.44	8.95	10.82	18.58	16.57
Light sweet cracking + Petchem	3.23	6.55	18.44	19.59	14.69	7.03	14.72	6.45	6.56	7.93	9.99	17.99	16.02
Medium sour cracking*	4.30	6.11	39.13	38.86	19.33	11.87	21.64	10.93	10.64	13.75	16.00	25.35	23.38
Mediumsour cracking + Petchem*	5.44	9.07	41.28	39.67	19.94	11.82	20.98	11.89	10.76	12.73	15.18	24.76	22.84
Mediterranean													
Light sweet hydroskimming	2.36	2.90	9.08	10.84	8.45	5.24	12.37	3.22	4.48	7.59	9.37	15.20	12.41
Light sweet cracking	3.34	4.97	16.82	19.14	15.80	9.42	18.58	8.19	8.10	11.63	14.56	21.71	19.31
Medium sour cracking	5.70	5.68	21.65	24.36	21.78	12.02	20.47	11.03	10.46	14.25	16.04	22.86	22.39
US Gulf Coast													
Light sweet cracking	4.28	11.04	26.64	25.10	25.53	18.83	26.07	18.65	18.13	19.72	23.51	30.40	23.53
Medium sour cracking	6.61	15.79	35.69	35.01	33.40	23.21	31.06	23.75	22.27	23.71	26.58	35.19	30.55
Heavy sour coking	9.73	19.98	45.92	49.73	44.90	28.64	38.57	30.31	28.05	27.74	32.59	43.60	38.46
US Midwest													
Light sweet cracking	3.74	12.33	29.90	30.81	25.23	22.00	20.43	20.25	23.01	22.53	17.66	25.99	16.66
Heavy sour coking	13.26	26.02	50.61	55.59	46.84	36.17	36.30	36.77	37.14	34.61	31.77	42.07	33.98
Singapore													
Light sweet cracking	0.20	3.10	11.46	8.75	9.94	3.19	8.94	2.82	2.54	4.16	5.99	11.93	8.89
Light sweet cracking + Petchem	2.03	4.82	12.94	10.05	10.83	4.45	9.44	4.00	3.94	5.37	6.73	12.34	9.24
Medium sour cracking	1.80	3.92	12.81	10.83	11.35	5.04	11.65	4.77	4.99	5.33	7.91	14.77	12.31
Medium sour cracking + Petchem	3.61	5.61	14.27	12.11	12.23	6.29	12.14	5.93	6.37	6.53	8.63	15.17	12.65

Source: IEA, Argus Media Ltd prices.

Methodology notes are available 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

	May-23	Jun-23	Jul-23	Jul-22	Jul 23 vs Previous Month	Jul 23 vs Previous Year	Jul 23 vs 5 Year Average	5 Year Average
OECD Americas								
Naphtha	1.1	1.0	1.0	1.0	0.0	-0.1	-0.3	1.3
Motor gasoline	43.8	43.9	44.3	43.3	0.4	0.9	-0.1	44.4
Jet/kerosene	9.3	9.4	9.6	9.1	0.2	0.4	1.2	8.3
Gasoil/diesel oil	27.6	27.3	27.7	28.4	0.4	-0.8	-0.7	28.4
Residual fuel oil	3.2	2.9	2.8	2.7	-0.1	0.1	0.0	2.9
Petroleum coke	4.1	4.2	4.3	4.2	0.1	0.1	-0.1	4.4
Other products	13.8	14.2	14.2	14.3	0.0	-0.1	0.3	14.0
OECD Europe								
Naphtha	9.2	8.4	8.2	8.2	-0.3	0.0	0.0	8.2
Motor gasoline	21.4	22.1	22.2	20.6	0.0	1.6	1.6	20.6
Jet/kerosene	9.0	9.0	9.3	8.4	0.3	0.9	1.7	7.6
Gasoil/diesel oil	39.0	38.1	38.2	39.7	0.1	-1.5	-2.5	40.7
Residual fuel oil	7.8	7.5	7.2	8.1	-0.3	-0.9	-0.8	8.0
Petroleum coke	1.5	1.6	1.4	1.5	-0.1	-0.1	0.0	1.4
Other products	15.2	15.8	16.2	16.0	0.4	0.1	0.0	16.1
OECD Asia Oceania								
Naphtha	18.7	16.9	16.4	16.2	-0.6	0.2	0.5	15.8
Motor gasoline	21.0	21.7	21.6	21.4	-0.1	0.2	-0.3	21.8
Jet/kerosene	13.7	13.2	13.9	13.0	0.7	0.8	0.5	13.4
Gasoil/diesel oil	29.7	30.6	29.9	30.8	-0.7	-0.9	-0.7	30.6
Residual fuel oil	7.2	8.3	8.1	8.8	-0.2	-0.7	0.7	7.5
Petroleum coke	0.4	0.4	0.4	0.5	0.0	-0.1	0.0	0.4
Other products	11.9	11.6	11.9	11.3	0.3	0.6	-0.7	12.6
OECD Total								
Naphtha	6.5	5.7	5.7	5.9	0.0	-0.2	-0.3	6.0
Motor gasoline	33.1	33.8	33.6	32.3	-0.1	1.3	0.7	32.9
Jet/kerosene	9.9	9.8	10.2	9.6	0.3	0.6	1.2	9.0
Gasoil/diesel oil	31.5	31.2	31.4	32.5	0.2	-1.1	-1.3	32.7
Residual fuel oil	5.3	5.2	5.1	5.5	-0.1	-0.4	-0.2	5.3
Petroleum coke	2.7	2.8	2.8	2.7	0.0	0.0	0.0	2.8
Other products	13.9	14.3	14.5	14.4	0.2	0.1	0.0	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	1Q23	2Q23	3Q23	Jul 23	Aug 23	Sep 23
ETHANOL									
OECD Americas	1031	1035	1017	1035	1039	1040	1067	1026	1026
United States	1002	1000	982	1000	1005	1005	1033	992	992
Other ¹	29	34	35	34	34	34			
OECD Europe	107	108	110	100	110	111	112	110	110
France	20	20	22	20	24	19	23	17	17
Germany	13	13	13	18	20	11	24	5	5
Spain	10	10	10	7	7	12	8	14	14
United Kingdom	9	9	9	5	5	11	5	14	14
Other ¹	54	55	55	50	53	57			
OECD Asia Oceania	4	4	4	4	4	5	4	5	5
Australia	4	4	4	4	4	4	4	4	4
Other ¹	0	1	1	0	0	1			
Total OECD Ethanol	1142	1147	1131	1139	1153	1155	1184	1141	1141
Total Non-OECD Ethanol	763	850	872	399	935	1234	1285	1255	1159
Brazil	528	593	603	141	677	976	1027	997	901
China ¹	81	136	146	136	136	136			
Argentina ¹	21	22	23	22	22	22			
Other	133	100	100	100	100	100	258	258	258
TOTAL ETHANOL	1904	1997	2004	1537	2087	2389	2468	2396	2300
BIODIESEL									
OECD Americas	209	267	308	252	296	257	247	262	262
United States	202	252	291	243	288	239	239	239	239
Other ¹	6	15	18	9	9	18			
OECD Europe	307	314	323	290	295	327	295	343	343
France	48	48	48	47	54	47	55	43	43
Germany	64	63	62	58	56	67	58	71	71
Italy ¹	25	25	25	23	27	26			
Spain	31	32	35	28	29	34	29	37	37
Other	139	146	153	134	129	153	127	166	166
OECD Asia Oceania	14	13	13	9	17	15	19	13	13
Australia	0	0	0	0	0	0	0	0	0
Other ¹	14	13	13	9	17	15			
Total OECD Biodiesel	530	594	644	551	608	599	561	618	618
Total Non-OECD Biodiesel	513	580	630	580	580	580	580	580	580
Brazil	108	126	156	102	130	140	146	144	131
Argentina ¹	42	40	40	40	40	40			
Other ¹	363	414	434	438	410	400			
TOTAL BIODIESEL	1043	1174	1275	1131	1187	1178	1141	1197	1197
GLOBAL BIOFUELS	2947	3171	3278	2668	3274	3567	3609	3593	3497

¹ monthly data not available.

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