Organization of the Petroleum Exporting Countries

OPEC Monthly Oil Market Report

14 November 2022

Feature article:
Global oil inventory developments

Organization of the Petroleum Exporting Countries

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Oil Market Highlights

Crude Oil Price Movements

The OPEC Reference Basket (ORB) fell m-o-m by $1.70, or 1.8%, in October to average $93.62/b. The ICE Brent front-month rose $3.02, or 3.3%, to average $93.59/b, while NYMEX WTI increased by $3.23, or 3.9%, to average $87.03/b. The Brent/WTI futures spread narrowed m-o-m, contracting by 21¢ to average $6.56/b. The market structure of ICE Brent and NYMEX WTI strengthened and the first-to-third month spreads moved into stronger backwardation. The combined futures and options net long positions of hedge funds and other money managers increased in both ICE Brent and NYMEX WTI.

World Economy

The world economic growth forecast for 2022 and 2023 remains unchanged at 2.7% and 2.5%, respectively. This reflects the uncertainties that might affect GDP growth in 4Q22 and subsequent quarters. For the US, GDP growth in 2022 remained at 1.5%, while the forecast for 2023 is unchanged at 0.8%. Euro-zone economic growth for 2022 and 2023 are also unchanged at 3.0% and 0.3%, respectively. Japan's economic growth forecast remains at 1.5% for 2022 and 1% for 2023. China's 2022 growth forecast is unchanged at 3.1% for 2022 and 4.8% for 2023. The forecast for India is in line with the previous assessment for both 2022 and 2023 at 6.5% and 5.6%, respectively. Similarly, Brazil's economic growth forecast is unchanged at 1.5% for 2022 and 1% for 2023. Russia's GDP contraction in 2022 is estimated at 5.7%, followed by a growth of 0.2% in 2023, unchanged from last month's assessment. The global growth has clearly entered into a period of significant uncertainty and mounting challenges. This includes high inflation levels and the consequences of monetary tightening by major central banks, high sovereign debt levels in many regions and ongoing supply chain issues. Moreover, geopolitical risks persist and developments related to the COVID-19 pandemic, mainly in the Northern Hemisphere and China, remain a key uncertainty.

World Oil Demand

The world oil demand growth forecast for 2022 is revised down by 0.1 mb/d to now stand at 2.5 mb/d. Oil demand in the OECD is estimated to increase by around 1.3 mb/d, while the non-OECD is seen growing by about 1.3 mb/d. The second quarter of this year was revised slightly higher amid better-than-anticipated oil demand in the main OECD consuming countries. However, oil demand in 3Q22 and 4Q22 is revised lower due to the zero-COVID-19 policy in China, ongoing geopolitical uncertainties and weaker economic activities. For 2023, the global oil demand growth forecast is revised down by 0.1 mb/d from the previous assessment to stand at 2.2 mb/d. The OECD is expected to grow by 0.3 mb/d and the non-OECD by 1.9 mb/d. Oil demand growth is anticipated to be challenged by uncertainties related to economic activities, COVID-19 containment measures and geopolitical developments.

World Oil Supply

Non-OPEC liquids supply is forecast to grow by 1.9 mb/d in 2022, following a slight downward revision of 30 tb/d compared with the previous assessment. An upward revision to Latin America and Russia liquids production was more than offset by downward revisions to Other Eurasia, OECD Europe and Other Asia. The main drivers of liquids supply growth for 2022 are expected to be the US, Canada, Guyana, China and Brazil, while Norway and Thailand are set to contribute the largest declines. For 2023, the forecast for non-OPEC liquids supply growth remains broadly unchanged at 1.5 mb/d. The main drivers are expected to be the US, Norway, Brazil, Canada, Kazakhstan and Guyana, whereas oil production is forecast to decline primarily in Russia and Mexico. Nevertheless, considerable uncertainties persist regarding the potential for US shale production and the geopolitical situation in Eastern Europe, including the looming EU sanctions on imports of Russian oil. OPEC NGLs and non-conventional liquids are forecast to grow by 0.1 mb/d in 2022 to average 5.39 mb/d and in 2023 by 50 tb/d to average 5.44 mb/d. OPEC-13 crude oil production in October decreased by 210 tb/d m-o-m to average 29.49 mb/d, according to available secondary sources.

Product Markets and Refining Operations

Refinery margins increased globally in October and showed solid gains in line with market expectations and historic seasonal trends. This was the result of a significant reduction in refinery product output as maintenance interventions further intensified in the West and offline capacities reached a peak in October. The resulting contraction of product balances in the Atlantic Basin provided a profitable environment for Asia to capitalize on product exports that ultimately supported their refining economics too, although the gains in Asia were more limited. Over the month, global refinery processing rates declined further, in line with historical trends, dropping 960 tb/d in response to a rise in offline capacity amid peak autumn maintenance works. In the coming month, refinery intakes are expected to reverse course and recover. This will add nearly 1.5 mb/d m-o-m, according to preliminary data, as major turnarounds come to an end. The need to restock diesel inventories, mainly in the West, should lend further support.

Tanker Market

Dirty spot freight rates moved higher in October, with m-o-m gains seen on almost all major routes. Spot VLCC rates on the Middle East-to-East route rose 8%, while on the West Africa-to-East route they gained 10%. Rates on the midsize Suezmax and Aframax routes were broadly higher. Suezmax rates on the US Gulf Coast (USGC)-to-Europe route rose 16%, while Aframax spot rates on the Cross-Med route increased 30%. Only Aframax rates on the Indonesia-to-East route saw a decline, falling 11%. All monitored routes were well above the levels seen in the same month last year. Clean rates saw diverging trends, with losses East of Suez outweighing gains West of Suez. On the Middle East-to-East route, clean spot rates fell 38% m-o-m in October.

Crude and Refined Products Trade

Preliminary data show US crude imports fell to a six-month low in October at an average of 6.1 mb/d, while US crude exports remained close to record high levels at an average of 4.0 mb/d. US product imports recovered from the previous month's decline, while product exports fell back from the strong September levels to average 6.1 mb/d. Preliminary estimates show OECD Europe's crude imports have averaged around 9 mb/d over the last three months. Product imports into OECD Europe have risen gradually since August, amid higher flows from the Middle East and India. Japan's crude imports in September fell back from an over two-year high to average 2.8 mb/d, although flows still registered the 14th-month of consecutive y-o-y gains. Japan's product exports increased further in September, reaching the highest monthly figure since February. China's crude imports continued to recover in September, averaging 9.8 mb/d. Gains came as Chinese refiners began to boost product exports, particularly gasoil, amid tight regional demand and the availability of product export quotas. China's product imports jumped 26% on the back of higher inflows of LPG. Recently released October data shows China's crude imports increased to 10.2 mb/d, while product exports fell 21% amid improved domestic demand. India's crude imports continued to decline in September, reaching an 11-month low of 4.0 mb/d. This broke a seven consecutive months of y-o-y gains. India's product imports and exports were broadly stable m-o-m in September.

Commercial Stock Movements

Preliminary September data shows total OECD commercial oil stocks up 13.4 mb m-o-m. At 2,749 mb, inventories were 21 mb less than the same month a year ago, 198 mb lower than the latest five-year average and 218 mb below the 2015–2019 average. Within components, crude and product stocks rose 6.5 mb and 6.8 mb, respectively, compared with the previous month. At 1,335 mb, OECD crude stocks were 36 mb higher than the same month last year, 70 mb below the latest five-year average and 100 mb lower than the 2015–2019 average. OECD product stocks stood at 1,414 mb, representing a m-o-m deficit of 56 mb. This was 128 mb lower than the latest five-year average and 118 mb below the 2015–2019 average. In terms of days of forward cover, OECD commercial stocks remained unchanged m-o-m in September to stand at 58.4 days. This is 0.8 days below September 2021 levels, 5.0 days less than the latest five-year average and 4.1 days lower than the 2015–2019 average.

Balance of Supply and Demand

Demand for OPEC crude in 2022 is revised down by 0.1 mb/d from the previous month's assessment to stand at 28.6 mb/d, which is around 0.5 mb/d higher than in 2021. Demand for OPEC crude in 2023 is also revised down by 0.2 mb/d from the previous month's assessment to stand at 29.3 mb/d, which is 0.7 mb/d higher than in 2022.

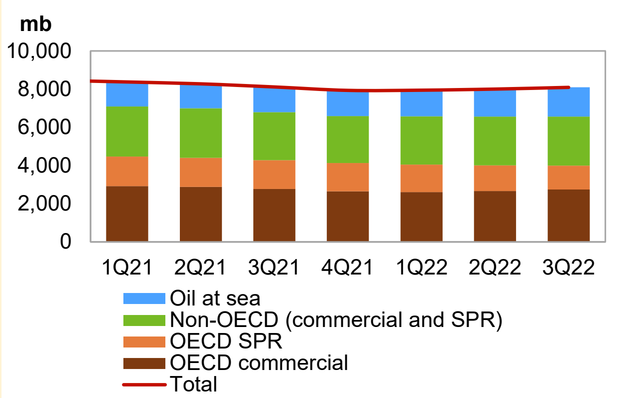
Feature Article

Global oil inventory developments

Global oil inventories consist of three major components. The first component is the total OECD oil stocks, commercial and Strategic Petroleum Reserves (SPRs), with OECD national government reporting systems providing data on their inventories. The second major component is non-OECD inventories, which have grown in importance in recent years as rising non-OECD oil demand – which has surpassed OECD oil demand levels – requires more stockpiling in these countries. Unfortunately, inventories in the non-OECD are hard to track due to incomplete data or the lack thereof. In the absence of regularly reported data, estimates are arrived at using information released by companies and ministries, as well as figures published in the Joint Organisations Data Initiative (JODI) database, which features official country data. The final component is oil at sea, which has increased in recent years, providing an important operational link between exporting and consumer countries.

Global oil inventories have increased since the beginning of this year by 158 mb and stood at 8,096 mb at the of September 2022. OECD commercial stocks, non-OECD stocks and oil at sea witnessed stock builds, while SPRs in the OECD registered significant stock draws.

Graph 1: Global oil inventory stocks

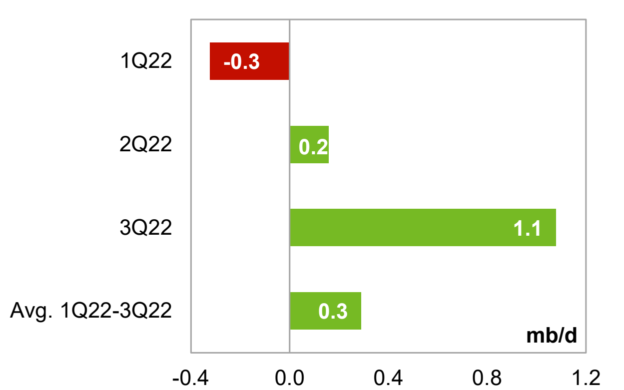


Sources: Argus Media, EIA, Euroilstock, IEA, METI and OPEC.

Over this period, total OECD commercial stocks have increased by 98 mb. At the same time, non-OECD stocks and oil at sea rose by 111 mb and 184 mb, respectively. By contrast, SPRs were expected to register a significant draw of 236 mb over the first three quarters of this year, with the bulk coming from the US, amounting to a planned 176 mb ***(Graph 1),*** followed by OECD Europe drawing some 31 mb and OECD Asia Pacific 29 mb. These volumes are estimated to consist of 208 mb of crude and 28 mb of products, notably gasoline and middle distillates.

In 1Q22, global oil inventory levels continued the declining trend observed since late 2020, as total oil demand outpaced global oil supply by 0.3 mb/d ***(Graph 2)***. However, this trend was reversed in 2Q22 and 3Q22, as global oil supply outpaced total oil demand by 0.2 mb/d and 1.1 mb/d, respectively. This underlines the apparent move from a balance deficit to a surplus in terms of oil supply.

Graph 2: Supply/demand balance



Source: OPEC.

During the first three quarters of this year, the observed global oil stock build reflected that the global oil market saw a supply surplus of around 0.3 mb/d vis-à-vis total world oil demand. This supply surplus was confirmed by low crude refinery runs, which are an indicator of oil demand performance. The drop in oil demand occurred on the back of weakening economic activity, spurred by rising inflation, monetary tightening by major central banks, aggravated geopolitical tensions, tightening labour markets and additional supply chain constraints.

The significant uncertainty regarding the global economy, accompanied by fears of a global recession contributes to the downside risk for lowering global oil demand growth. In addition, China's strict adherence to the "zero COVID-19 policy" adds to this uncertainty, making the country's recovery path even more unpredictable. To address this significant uncertainty and heightened market volatility, the proactive and pre-emptive decisions taken by the OPEC and non-OPEC producing countries in the Declaration of Cooperation (DoC) will continue to contribute to global oil market stability.

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Crude Oil Price Movements

Lower official selling prices (OSPs) and weaker crude differentials for some grades resulted in lower OPEC Reference Basket (ORB) values in October; the ORB fell by $1.70 m-o-m, or 1.8%, to stand at $93.62/b. On a yearly average, the ORB was up by $34.80, or 50.9%, from $68.33/b in 2021, to average $103.13/b so far this year.

Crude oil futures prices bounced back in October amid easing selling pressure in futures and financial markets, and a drop in US dollar value against a basket of major currencies. Investors turned their focus to the supply outlook in anticipation of an EU ban on seaborne crude oil imports from Russia for cargoes loading as of 5 December 2022.

The ICE Brent front-month averaged $3.02, or 3.3%, higher in October to stand at $93.59/b, and NYMEX WTI rose by $3.23, or 3.9%, to average $87.03/b. DME Oman crude oil futures prices increased m-o-m in October by 95¢, or 1.1%, to settle at $91.07/b.

After significantly reducing their net long positions in recent months, hedge funds and other money managers recovered part of their combined futures and options net long positions in October. A recovery in oil prices from September lows, along with a rally in equity markets and expectations of tighter oil supply in Europe amid geopolitical developments, likely urged speculators to expect higher oil prices.

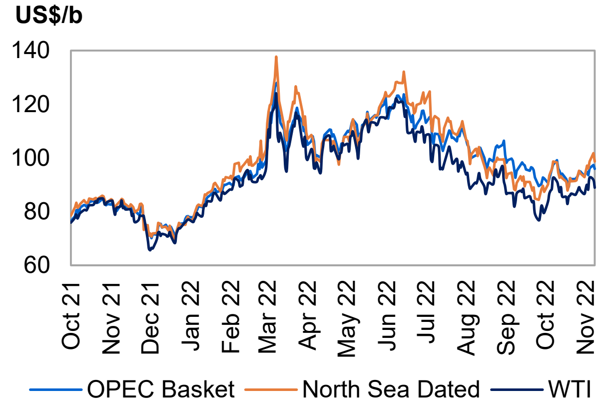
The price structure of ICE Brent and NYMEX WTI strengthened further in October and the nearest months' time-spreads moved into stronger backwardation. Market participants weighed the EU decision to impose import bans on Russian crude oil starting next month. A tight diesel market in the Atlantic Basin also supported the value of prompt month prices. However, the DME Oman and Dubai price structure flattened slightly last month, though remaining in strong backwardation. Soft demand from Asia Pacific refiners and a well-supplied crude market weighed on the value of prompt month prices compared with forward month prices.

The value of light sweet crude in October strengthened against the value of medium and heavy sour crude in all major markets. Strong gasoline, jet fuel, and gasoil/diesel margins in Europe and the US Gulf Coast (USGC) supported the light sweet value, while a sharp drop in high-sulphur fuel oil margins weighed on the value of sour crude. A relatively high price for natural gas continued to support demand for sweeter crudes from refiners.

Crude spot prices

Crude oil spot prices rebounded in October from the low level registered the previous month, with North Sea Dated increasing by about 3.7% on a monthly average from September. After three consecutive months of large declines, spot oil prices rose in October, buoyed by strong middle distillate margins and a tight diesel/gasoil market, specifically in the Atlantic Basin, and as selloffs in futures markets eased. The expected entry into force of the import ban on Russian crude oil to Europe on 5 December 2022 raised concern about the supply outlook in Europe, which contributed to supporting oil prices.

Graph 1 - 1: Crude oil price movement



Sources: Argus, OPEC and Platts.

Stronger refining margins were seen in October m-o-m, specifically in Europe and the US Gulf Coast (USGC),driven by a stronger middle distillate and gasoline crack spreads amid a tighter diesel/gasoil market, adding support to spot prices. However, in the Asia Pacific region, refining margins rose at a slower rate compared with other regions, due to higher supply and limited demand.

Nonetheless, signs of a well-supplied spot crude market, including East of Suez and in the Atlantic Basin, capped the oil price rise amid accumulating unsold volumes for prompt loading cargoes in the North Sea and West African markets, continued supply from strategic petroleum reserves (SPR) and US crude exports soaring to record highs. Moreover, the market was expecting higher crude supply in the Caspian and Nigeria after several months of supply disruption. Meanwhile, refinery maintenance and a strike in France that halted about 0.8 mb/d of refining capacity for several weeks and signs of soft demand from Asian refiners, including China, reduced demand for crude in the spot market and limited the Dubai price gain.

Spot crude prices remained below futures prices in October in a sign that the crude market is adequately supplied. North Sea Dated stayed at a discount to ICE Brent's first-month contract in September and October on a monthly basis, after pricing at a premium since May. On a monthly average, the North Sea Dated-ICE Brent spread stood at a discount of 48¢/b in October, compared with a discount of 75¢/b in September. The spread was at a premium of $7.51/b in July and $1.88/b in August.

In October, a rise in spot prices was mainly seen in North Sea Dated and WTI first month, which increased respectively by $3.29 and $3.26, or 3.7% and 3.9%, to settle at $93.11/b and $87.26/b. However, Dubai first month rose only slightly by 6¢, or 0.1%, to settle at $91.04.

Table 1 - 1: OPEC Reference Basket and selected crudes, US$/b

			Change		*Year-to-date*	
OPEC Reference Basket (ORB)	**Sep 22**	**Oct 22**	**Oct 22/Sep 22**	**%**	**2021**	**2022**
ORB	**95.32**	**93.62**	**-1.70**	**-1.8**	**68.33**	**103.13**
Arab Light	99.33	96.20	-3.13	-3.2	69.08	104.55
Basrah Medium	91.16	89.45	-1.71	-1.9	67.31	100.60
Bonny Light	95.73	95.02	-0.71	-0.7	69.18	106.97
Djeno	82.37	85.66	3.29	4.0	61.91	96.70
Es Sider	90.47	93.91	3.44	3.8	67.56	104.62
Girassol	92.26	95.61	3.35	3.6	69.77	107.21
Iran Heavy	97.18	93.21	-3.97	-4.1	68.17	103.09
Kuwait Export	98.69	94.72	-3.97	-4.0	68.88	104.35
Merey	73.70	71.56	-2.14	-2.9	50.08	79.82
Murban	92.45	93.54	1.09	1.2	68.38	101.54
Rabi Light	89.36	92.65	3.29	3.7	68.90	103.69
Sahara Blend	92.72	95.66	2.94	3.2	69.25	107.41
Zafiro	90.72	93.61	2.89	3.2	69.59	106.19
Other Crudes						
North Sea Dated	89.82	93.11	3.29	3.7	69.36	104.15
Dubai	90.98	91.04	0.06	0.1	67.84	99.24
Isthmus	81.44	83.57	2.13	2.6	64.99	95.52
LLS	86.35	90.07	3.72	4.3	68.21	99.52
Mars	82.94	83.84	0.90	1.1	66.02	94.84
Minas	88.91	91.06	2.15	2.4	67.26	99.47
Urals	68.63	70.54	1.91	2.8	67.95	82.11
WTI	84.00	87.26	3.26	3.9	66.64	97.38
Differentials						
North Sea Dated/WTI	5.82	5.85	0.03	-	2.72	6.77
North Sea Dated/LLS	3.47	3.04	-0.43	-	1.16	4.63
North Sea Dated/Dubai	-1.16	2.07	3.23	-	1.52	4.91

Sources: Argus, Direct Communication, OPEC and Platts.

Crude differentials were mixed in October m-o-m amid soft demand in the spot crude market. They trended lower in the second half of the month on increasing unsold cargoes for late October and November loadings, amid refinery maintenance, a strike in France and softer demand from European and Asia Pacific refiners.

North Sea crude differentials mostly weakened in the second half of October, with Forties dropping again to a discount against North Sea Dated. Low demand from refineries in Europe, limited arbitrage to the east, and high supply into Europe from the USGC, West Africa and other regions put downward pressure on the value of crude differentials. Ekofisk crude differentials fell on a monthly average in October by 35¢ to settle at a premium of $2.91/b. However, Forties crude differentials rose on average by 74¢ to settle at a premium of 41¢/b.

The value of West African crude differentials also weakened in the second half of October due to increasing unsold cargoes amid weaker demand compared with previous months. Deteriorating west-to-east arbitrage and soft demand from the Asia Pacific region also weighed on crude differentials. Qua Iboe crude differentials to

North Sea Dated fell in October by 11¢ m-o-m on average to stand at a premium of $2.72/b. However, Bonny Light and Forcados crude differentials to North Sea Dated both rose slightly by 7¢ respectively, to stand at premiums of $1.87/b and $2.07/b. The crude differential of Cabinda rose m-o-m by 36¢ to a premium of $2.09/b.

In the Mediterranean and Caspian regions, crude differentials mostly weakened on softer demand and the expectation of higher supply in November and December. Azeri Light and CPC Blend differentials declined m-o-m, decreasing by $1.61 and 94¢ to average a premium of $4.91/b and a discount of $1.61/b to North Sea Dated. However, Saharan Blend crude differentials rose by 20¢ m-o-m to stand at a premium of $1.51/b.

In the USGC, crude differentials were mixed last month on lower demand from US refiners and sustained crude supply in the region from SPR. Light Louisiana Sweet (LLS) rose by 46¢ last month on a monthly basis to stand at a premium of $2.81/b to the WTI benchmark, while Mars sour crude differentials decreased by $2.37 to an average discount of $3.43/b.

In the Middle East, soft demand from Asian refiners, lower fuel oil margins, specifically high-sulphur fuel oil (HSFO), weighed on the value of spot prices. The value of Oman crude differentials to Dubai fell again by 75¢ m-o-m in October to a premium of $4.55/b.

OPEC Reference Basket (ORB)

The **ORB** value declined in October, falling by $1.70 m-o-m, or 1.8%, to stand at $93.62/b, despite a rise in ORB component-related crude benchmarks. This was on the back of a sharp decline in OSPs and weaker crude differentials of some grades. The decline was seen mainly in medium sour grades and Dubai-related components amid softer market fundamentals in the East of Suez market. Compared with the previous year, the ORB was up by $34.80, or 50.9%, from $68.33/b in 2021, to an average of $103.13/b so far this year.

All ORB component values fell in October, although West and North African Basket components – Bonny Light, Djeno, Es Sider, Girassol, Rabi Light, Sahara Blend and Zafiro – rose by $2.64, or 2.9% m-o-m on average to $93.16/b. However, multiple region destination grades – Arab Light, Basrah Light, Iran Heavy, and Kuwait Export – decreased m-o-m by $3.19, or 3.3% on average, to settle at $93.40/b. Murban crude rose m-o-m by $1.09, or 1.2% on average, to settle at $93.54/b. The Merey component fell m-o-m by $2.14, or 2.9% on average, to settle at $71.56/b.

The oil futures market

After three consecutive months of sharp declines, **crude oil futures prices** bounced back in October from low levels recorded a month earlier. This took place amid easing selling pressure in futures and financial markets, and a drop in US dollar value against a basket of major currencies to its lowest point since mid-September. Between 27 September and 26 October, the US dollar index fell by about 4%. Oil futures were also supported by an improving supply/demand outlook in the short term and a tight diesel/gasoil market, particularly in Europe and the US East Coast, which was exacerbated by refinery outages in several regions and a workers' strike in French refineries for several weeks that reduced the supply of petroleum products. Investors turned their focus to the supply outlook in anticipation of an EU ban on seaborne crude oil imports from Russia for cargoes loading as of 5 December 2022. Supportive 3Q22 economic data from the US and China added support to oil futures.

A higher financial flow in oil futures contracts, mainly ICE Brent, was reflected in higher open interest, likely contributing to supporting the oil market. Between the weeks of 27 September and 25 October, open interest related to ICE Brent rose by 11%.

However, the oil price rally was limited as the market remained cautious about the rise of COVID-19 cases in China and the reinstatement of some mobility restrictions, which weighed on the demand outlook, although official data showed an uptick in China’s gross domestic product in 3Q22. Moreover, market sentiment remained dominated by concerns about slowing global economic growth and energy demand as major central banks, including the US Federal Reserve (Fed) and the European Central Bank (ECB), consistently raised their benchmark interest rates in an attempt to contain high inflation.

Supply from US SPR continued to flow in October and US commercial crude oil stocks rose in the month to reach their highest point since July 2021 in the week of 21 October, according to US Energy Information Administration (EIA) weekly data. US crude stocks rose by 7.6 mb between the weeks of 30 September and 28 October.

The ICE Brent front-month averaged $3.02, or 3.3%, higher in October to stand at $93.59/b, and NYMEX WTI rose by $3.23, or 3.9%, to average $87.03/b. Y-t-d, ICE Brent was $32.09, or 46.2%, higher at $101.61/b, while

NYMEX WTI was higher by $30.45, or 45.7%, at $97.12/b, compared with the same period a year earlier. DME Oman crude oil futures prices increased m-o-m in October by 95¢, or 1.1%, to settle at $91.07/b. Y-t-d, DME Oman was higher by $31.22, or 45.9%, at $99.28/b.

Table 1 - 2: Crude oil futures, US$/b

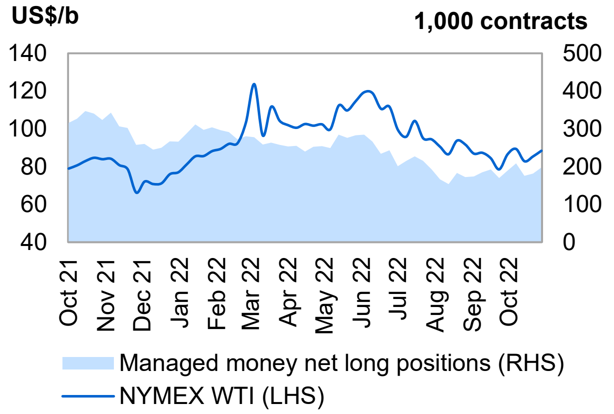
Crude oil futures	Sep 22	Oct 22	*Change* Oct 22/Sep 22	%	*Year-to-date* 2021	2022
NYMEX WTI	83.80	87.03	3.23	3.9	66.67	97.12
ICE Brent	90.57	93.59	3.02	3.3	69.52	101.61
DME Oman	90.12	91.07	0.95	1.1	68.06	99.28
Spread						
ICE Brent-NYMEX WTI	6.77	6.56	-0.21	-3.1	2.85	4.49

Note: Totals may not add up due to independent rounding. Sources: CME, DME, ICE and OPEC.

The **front-month ICE Brent/NYMEX WTI spread** narrowed slightly in October, but remained above $6/b, as Brent futures remained more supported by a geopolitical risk premium compared with NYMEX WTI. Meanwhile, sustained US oil supply from SPR kept the US Petroleum Administration for Defense District 3 (PADD3) well supplied. Lower refinery intakes and rising crude stocks at Cushing compared with September kept the value of NYMEX WTI well below ICE Brent. Crude stocks at Cushing stood at 28.2 mb in the week of 28 October, their highest point since the first week of May. The ICE Brent/NYMEX WTI spread narrowed by a m-o-m average of 21¢ in October to settle at $6.56/b. A wide Brent-WTI spread bolstered US crude exports last month, which reached a record high of 5.13 mb/d in the week of 21 October, according to EIA weekly data. However, North Sea Dated premium to WTI Houston widened in October, rising slightly by 16¢ on a monthly average to stand at a premium of $3.51/b, as the high availability of crude supply in US PADD3 weighed on spot prices.

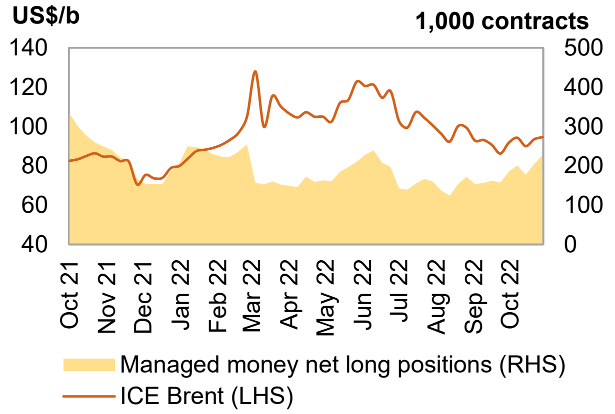
After significantly reducing their net long positions in recent months, **hedge funds and other money managers** recovered part of their combined futures and options net long positions in October. Total futures and options net long positions in both ICE Brent and NYMEX WTI rose to their highest point since late June 2022. A recovery in oil prices from September lows, along with a rally in equity markets and expectations of tighter oil supply in Europe amid geopolitical developments, likely urged speculators to bet on higher oil prices. A tight middle distillate market and anticipation of an EU ban on crude imports of Russian oil also prompted money managers to raise their bullish positions. Between the week of 27 September and 01 November, money managers were net buyers of an equivalent of about 98 mb in both Brent and WTI. This took place in addition to a rise in total open interest. However, speculators were more bullish about Brent prices as a global crude benchmark.

Graph 1 - 2: NYMEX WTI vs. Managed Money net long positions



Sources: CFTC, CME and OPEC.

Graph 1 - 3: ICE Brent vs. Managed Money net long positions



Sources: ICE and OPEC.

The rise of net long positions was more pronounced in futures and options related to ICE Brent, which increased by 44.2%. Money managers raised their futures and options net long positions in ICE Brent by 69,792 lots between the weeks of 27 September and 1 November to 227,665 contracts, according to the ICE Exchange. During the same period, gross long positions rose by 65,161 lots, or 32.2%, to 267,511 contracts, while gross short positions declined by 4,631 lots, or 10.4%, to 39,846 contracts.

Meanwhile, speculators were net buyers of about 28 mb in the NYMEX WTI contracts between the weeks of 27 September and 01 November, and combined futures and options net long positions rose by 28,382 contracts, or 16.7%, to reach 198,044 lots in the week to 1 November, according to the US Commodity Futures Trading Commission (CFTC). This is due to a combination of an increase in long positions and a rise in short positions. In the week ending 1 November, gross short positions declined by 8,345 lots, or 19.8%, to stand at 33,801 contracts, while gross long positions rose by 20,037 lots, or 9.5%, to 231,845 contracts during the same period.

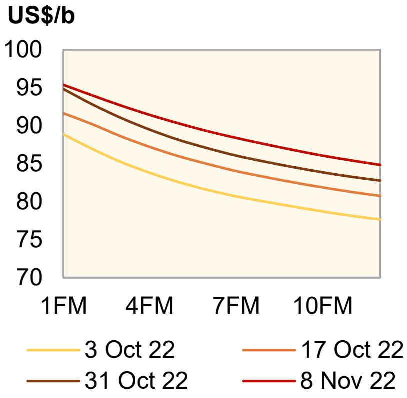
Consequently, the long-to-short ratio of speculative positions in the ICE Brent contracts increased in early November to 7:1, compared with 5:1 in late September. The NYMEX WTI long-to-short ratio also rose to about 7:1 contracts in early November, compared with 5:1 in late September. Total futures and options open interest volumes on the two exchanges reversed their downtrend in October, increasing by 5.5%, or 241,936 contracts, to stand at 4.7 million contracts in the week ending 25 October, but declining to 4.5 million contracts in the week to 1 November, with futures and options related to ICE Brent mainly affected.

The futures market structure

The **price structure** of ICE Brent and NYMEX WTI strengthened further in October, with the nearest-month time spread moving into stronger backwardation amid evidence that the oil market perception of the supply/demand balance outlook tightened due to the prospect of supply disruptions in Eastern Europe. Market participants weighed the EU decision to impose import bans on Russian crude oil starting next month. A tight diesel market in the Atlantic Basin also supported the value of prompt month prices. However, the DME Oman and Dubai price structure flattened slightly last month, though remaining in strong backwardation. Soft demand from Asia Pacific refiners and a well-supplied crude market weighed on the value of prompt month prices compared with forward month prices.

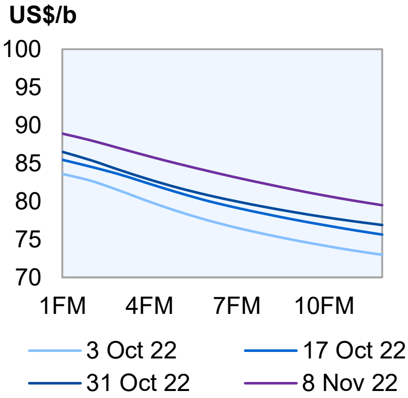
The forward curve for **Brent futures** steepened further in October compared with the previous month, despite signs of a well-supplied crude market in the Atlantic Basin for late October and November loadings, as several cargoes struggled to find buyers. However, traders focused on a potential supply disruption in Eastern Europe that could significantly reduce crude availability in Europe in the coming months. The ICE Brent first-month premium to third month rose m-o-m by 98¢ to a backwardation of $3.58/b, and the ICE Brent M1-M6 also moved into deeper backwardation last month to settle at $7.42/b on average, compared with a backwardation of $5.93/b in September.

Graph 1 - 4: ICE Brent forward curves



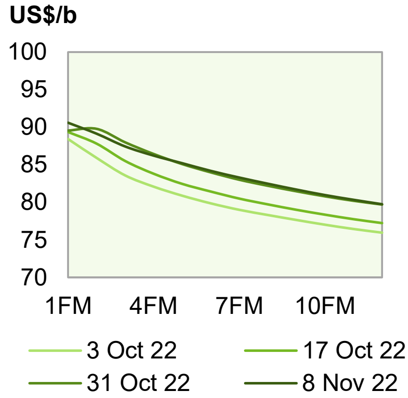
Sources: ICE and OPEC.

Graph 1 - 5: NYMEX WTI forward curves



Sources: CME and OPEC.

Graph 1 - 6: DME Oman forward curves



Sources: DME and OPEC.

The **NYMEX WTI** forward curve also steepened in October as the outlook for supply/demand fundamentals improved on supportive US economic data, and refining margins strengthened amid a tight petroleum product market. However, the first-to-third month spread remained well below $3/b on average, as high supply availability, including from SPR, and lower refinery intakes weighed on prompt-month prices. The NYMEX WTI first-to-third month spread widened by $1.15 to a backwardation of $2.35/b on average in October, compared with a backwardation of $1.20/b in September.

However, the market structure of **DME Oman** and **Dubai** flattened last month, with buying interest in the crude spot market softening in the East of Suez market, while demand from some Asian refiners weakened. Concerns about the demand outlook in China amid restrictive COVID-19 policy also contributed to putting pressure on prompt month prices. Nonetheless, the DME Oman and Dubai piece structure remained in strong backwardation. On a monthly average, the DME Oman M1-M3 spread narrowed by 67¢ to a backwardation of $4.04/b in October from a backwardation of $4.71/b in September.

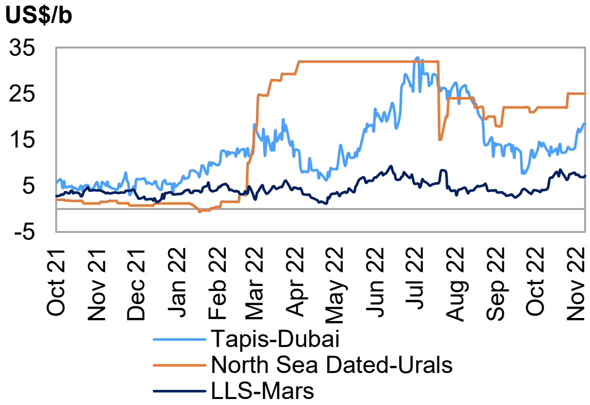
Regarding the M1/M3 structure, the **North Sea Brent** and **WTI** M1/M3 spreads widened in October on a monthly average by 93¢ and $1.26, respectively, to a backwardation of $2.76/b and $2.41/b, compared with $1.84/b and $1.15/b in September. However, the **Dubai** M1/M3 backwardation narrowed in October by 78¢ to $4.70/b, compared with backwardation of $5.48/b in September.

Crude spreads

The value of light sweet crude in October strengthened against the value of medium and heavy sour crude in all major markets, amid a higher margins of light and medium sweet crudes compared with heavier sour crudes. Strong gasoline, jet fuel, and gasoil/diesel margins in Europe and the USGC supported the light sweet value higher, while a sharp drop in high sulphur fuel oil margins weighed on the value of sour crude. A relatively high price for natural gas also meant some refiners raised their demand for sweeter crudes and reduced their hydrocracking and hydro-treating rates, which added downward pressure on sour grades.

In **Europe**, sweet-sour crude spreads were mixed in October, despite high supply availability of light/medium sweet crude in Northwest Europe, including from the USGC and West African markets. Concerns about supply disruptions in Eastern Europe due to EU sanctions on Russian crude imports that are will enter into force next month, were partly offset by weak HSFO refining margins and low demand from French refineries due to a strike. Meanwhile, light distillate margins strengthened. While Urals crude differentials against North Sea Dated rose in Northwest Europe by $1.33 m-o-m to a discount of $19.83/b in October, Urals crude differentials to North Sea Dated in the Mediterranean narrowed by $1.43 m-o-m to stand at a discount of $22.57/b. The value of light sweet Ekofisk crude against Johan Sverdrup narrowed by $1.11/b to stand at $3.78/b on average in October, due to a recovery in the value of Johan Sverdrup.

Graph 1 - 7: Differential in Asia, Europe and USGC



Sources: Argus, OPEC and Platts.

In **Asia**, the Tapis premium over Dubai widened last month on the higher value of light sweet crude as Brent-Dubai differentials rose, flipping again to a premium. This made west-to-east arbitrage less favourable and limited the flow of light sweet crude from the Atlantic Basin to the Asia Pacific region, consequently boosting demand for local crude of a similar quality in the East of Suez market. The Brent-Dubai differential rose by $3.23 on a monthly average in October to stand at a premium of $2.07/b, compared with a discount of $1.16/b in September. The Brent-Dubai exchange of futures for swaps contract (EFS) also widened in October by $1.34 m-o-m to stand at a $5.88/b premium. A drop in HSFO margins, stronger gasoil margins and a slight recovery in naphtha margins in Singapore contributed to a widening spread between sweet and sour crude. The Tapis-Dubai spread widened by $1.14 m-o-m in October to an average of $13.05/b.

In the **USGC**, the LLS premium over medium sour Mars also widened in October by $2.82/b m-o-m to $6.23/b, its highest monthly average since last June. The sour crude market on the USGC coast was under pressure amid lower demand from domestic refiners, sustained supply from US SPR, and a sharp drop in HSFO margins in the USGC, which declined in October to a discount of below $20/b, a multi-year low. Meanwhile, light sweet crude values like LLS were supported by stronger light product crack spreads, such as those for gasoil, gasoline and jet fuel, which rose firmly last month.

Commodity Markets

Selected commodity price indices declined for the second consecutive month. M-o-m, the divergence between energy and non-energy indices narrowed as the movement within components of the indices was mixed across the board with no clear direction.

In the paper market, overall sentiment remains bearish, but the price declines of some commodities have added support for money managers to increase their net long positions. Open interest and net length across selected commodities saw some gains m-o-m after several months of decline.

While macroeconomic headwinds continue to remain a drag on demand for commodities, renewed concerns related to supply uncertainties amid ongoing geopolitical developments in Eastern Europe have provided support to some commodities.

Trends in selected commodity markets

The **energy price index** fell for the second consecutive month, declining by 7.5% m-o-m. Movement within the index remained mixed for the seventh consecutive month and skewed towards the downside. Prices for all index components fell except for crude oil. Y-o-y, the index was up by 19.6%, a much lower rate compared with the previous month.

The **non-energy index** also fell for the second consecutive month, declining by 1.2% m-o-m. Agricultural prices experienced high volatility throughout the month of October amid ongoing geopolitical developments in Eastern Europe. Nonetheless, the ongoing harvest in the US and strong seasonal crop output in South Asia continued to offset mounting concerns related to supply disruptions from the Black Sea safe corridor. The index was down by 1.8% y-o-y.

Table 2 - 1: Commodity prices

Commodity	Unit	*Monthly averages*			*% Change*	*Year-to-date*	
		Aug 22	Sep 22	Oct 22	Oct 22/Sep 22	2021	2022
Energy*	Index	**172.8**	**158.2**	**146.3**	**-7.5**	**91.7**	**156.1**
Coal, Australia	US$/mt	407.0	430.8	389.8	-9.5	132.9	341.7
Crude oil, average	US$/b	96.0	88.2	90.3	2.4	67.6	100.0
Natural gas, US	US$/mbtu	8.8	7.8	5.6	-27.6	3.7	6.6
Natural gas, Europe	US$/mbtu	70.0	59.1	39.0	-34.0	12.8	41.2
Non-energy*	Index	**117.0**	**114.8**	**113.5**	**-1.2**	**110.9**	**125.5**
Base metal*	Index	**110.6**	**104.6**	**103.7**	**-0.9**	**116.3**	**124.5**
Precious metals*	Index	**132.5**	**126.4**	**125.8**	**-0.4**	**140.5**	**137.2**

*Note: * World Bank commodity price indices (2010 = 100).*
Sources: World Bank and OPEC.

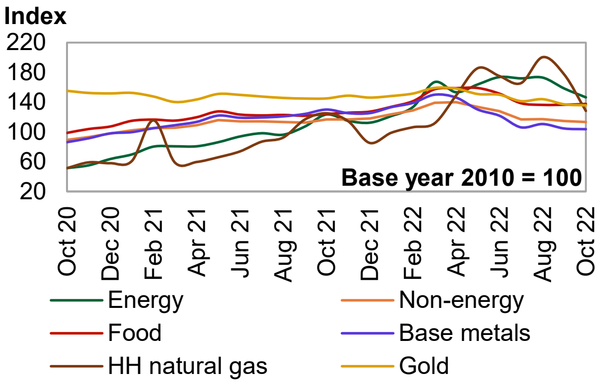
Average crude oil prices turned around after three consecutive months of losses, increasing by 2.4% m-o-m. Strong market fundamentals helped offset pressure from weak macroeconomic indicators. Y-o-y, prices were up by 10.1%, a lower rate compared with the previous month, highlighting the impact of macroeconomic headwinds.

Henry Hub's natural gas prices fell sharply for the second consecutive month, declining by 27.6% m-o-m. Mild weather weighed on gas demand for residential heating. Additionally, US LNG exports declined m-o-m amid ongoing plant maintenance at several key hubs. Both of these factors contributed to the increase in US underground storage, thus putting downward pressure on prices. According to data from the US Energy Information Administration, average underground storage rose from 2,884 bcf in September to 3,367 bcf in October, a 16.7% increase m-o-m. Prices were up by 2.6% y-o-y, a considerably lower rate compared with the previous month (51.9%). This underscored the impact of increasing supplies on prices.

Natural gas prices in Europe declined for the second consecutive month. The **average Title Transfer Facility (TTF) price** went from $59.1/mmbtu in September to $39.0/mmbtu in October, a 34.0% decline m-o-m. Prices fell sharply as most storage sites across the EU reached near capacity amid strong LNG imports. Additionally, mild weather across the EU held down demand for residential heating, which contributed to the increase in gas inventories. The latest data from Gas Infrastructure Europe shows EU gas storage at 94.5% capacity. Nonetheless, prices are still elevated, and significant upside risks remain amid ongoing geopolitical developments in the region. Y-o-y, prices were up by 25.7%, a lower trend compared with last month.

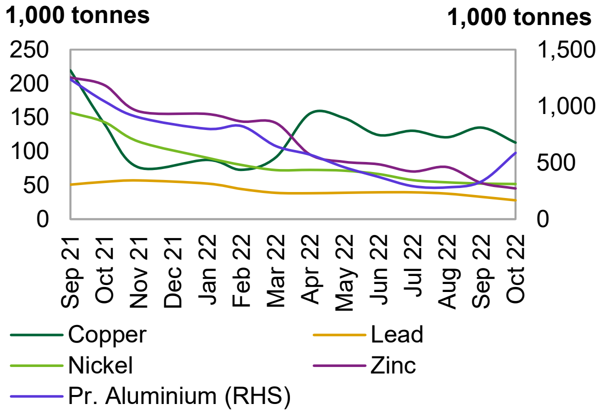
Australian thermal coal prices declined by 9.5% m-o-m, erasing all of the gains from the previous month. Prices fell following a decline in demand in the Asia Pacific region, particularly in China, which helped redirect supplies to the EU amid self-imposed embargoes on Russian coal imports. The combination of increasing supplies in the EU and declining demand in the Asia Pacific region eased concerns of supply uncertainty ahead of expected rising winter demand, thus putting downward pressure on prices. Nonetheless, upside potential to prices remains, as competition for Asia Pacific coal continues to be high. Y-o-y, prices were up by 73.6%.

Graph 2 - 1: Major commodity price indices



Sources: World Bank, S&P Goldman Sachs, Haver Analytics and OPEC.

Graph 2 - 2: Inventories at the LME



Sources: LME, Thomson Reuters and OPEC.

The **base metal index** declined for the second consecutive month, falling by 0.9% m-o-m. Movement within the index components was mixed as reports of a ban by the London Metal Exchange (LME) added upside risks to some metals. Meanwhile, weak manufacturing activity in China and Europe remained a challenge as the Purchasing Managers' Index (PMI) for both declined m-o-m to below 50. China's construction and property challenges remained a drag on demand for metals amid the government's ongoing zero-COVID policy, while in the EU, high energy costs continued to weigh on demand for metals. Y-o-y, the index was down by 20.3%.

Aluminium prices partially recovered from the previous month's decline, increasing by 1.4% m-o-m. Prices advanced on reports of a potential sanction on Russian aluminium by the LME. Meanwhile, data from the LME shows that inventories rose for the second consecutive month, increasing by 76.5% m-o-m. Inventories jumped as Rusal, Russia's biggest aluminium producer, offloaded its inventories at the LME ahead of a potential ban by the exchange. Y-o-y, prices continued to trend downwards, dropping by 23.1%.

Average monthly **copper prices** fell for the second consecutive month, declining by 1.2% m-o-m. Meanwhile, at the LME, inventories declined m-o-m by 16.4%, erasing gains from the previous month. Despite the decline in inventories, demand remained weak and was impacted by global macroeconomic headwinds, thus putting downward pressure on prices. Y-o-y, prices continued to trend downwards, falling by 22.2%.

Lead prices partially recovered from the previous month's decline, increasing by 6.9% m-o-m. The recovery of prices was supported by the ongoing surge in electric vehicle (EV) production in Indonesia, in addition to declining inventories. Data from the LME showed inventories falling for the second consecutive month, decreasing m-o-m by 15.6%. Prices were down by 14.7% y-o-y.

Prices for both **nickel and zinc** fell m-o-m, owing to declining demand in China and falling iron ore prices (down by 7.3% m-o-m). Nickel prices declined after two consecutive months of gains, falling by 3.3% m-o-m; meanwhile, zinc prices fell for the second consecutive month, declining by 5.0% in the same period. In terms of inventories, nickel inventories declined by 1.2% m-o-m, while zinc inventories rose by 9.2% in the same period. Despite this mixed movement, nickel rose by 2.7% m-o-m, while zinc declined by 15.1% in the same period. Y-o-y, nickel prices were up by 13.8%, while zinc was down by 11.7%.

The **precious metals index** declined for the second consecutive month, falling marginally by 0.4% m-o-m. The index received some support in the month of October as the strength of the US Dollar waned. However, the rise in US bond yields offset the gains and weighed on gold prices in particular. Gold prices fell for the second consecutive month, declining by 1.0% m-o-m; meanwhile, silver and platinum advanced, increasing m-o-m by 2.5% and 3.8%, respectively. The industrial activity also added support to both silver and platinum prices, particularly from EV production. Y-o-y, the index was down by 7.4%. Gold was down by 6.3%, silver by 17.0% and platinum by 10.1% y-o-y.

Investment flows into commodities

Total money managers' net length positions turned around after six consecutive months of decline, increasing by 17.6% m-o-m. The net length increase was driven mainly by a sharp decline in short positions held by money managers across selected commodities. Total open interest also rose after seven consecutive months of decline, increasing marginally by 0.6% m-o-m. The increase in open interest was led by copper, followed by crude oil and natural gas, but was partially offset by a decline in gold.

Table 2 - 2: CFTC data on non-commercial positions, 1,000 contracts

Selected commodity	*Open interest*		*Net length*			
	Sep 22	Oct 22	Sep 22	% OI	Oct 22	% OI
Crude oil	2,072	2,090	180	9	189	9
Natural gas	978	982	-81	-8	-91	-9
Gold	598	588	-21	-3	-12	-2
Copper	178	188	-8	-4	-3	-1

Note: Data on this table is based on a monthly average.

Sources: CFTC and OPEC.

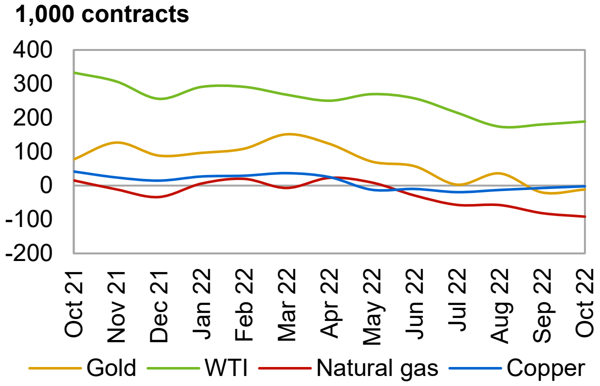
Total crude oil (WTI) open interest (OI) rose after seven consecutive months of decline, increasing m-o-m by 0.9%; meanwhile, money managers' net length rose for the second consecutive month, increasing by 4.8% over the same period. Money managers continued to increase their net length positions by reducing their short positions amid strong market fundamentals.

The **total Henry Hub natural gas OI** increased by 0.4% m-o-m, while money managers increased the net length by 12.4% in the same period. Net length continued to rise due to declining short positions. Market sentiment remained bearish on prices due to rising supplies.

Gold's OI declined for the third consecutive month, falling by 1.7% m-o-m, while net length declined by 42.9% in the same period. As stated in the previous reports, sentiment towards gold remains subdued by a stronger US dollar and expectations of rising interest rates.

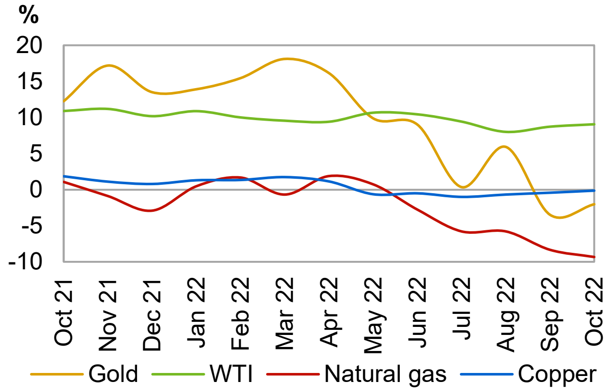
Copper's OI rose after three consecutive months of decline, increasing by 5.4% m-o-m. Meanwhile, money managers' net length declined for the second consecutive month, falling by 66.1% over the same period. Concerns about global manufacturing activity remained a drag on market sentiment towards copper.

Graph 2 - 3: Money managers' activity in key commodities, net length



Note: Data on this graph is based on a monthly average.
Sources: CFTC and OPEC.

Graph 2 - 4: Money managers' activity in key commodities, as % of open interest



Note: Data on this graph is based on a monthly average.
Sources: CFTC and OPEC.

World Economy

The world economy has entered a period of significant uncertainty and rising challenges in 4Q22. Downside risks include high inflation, monetary tightening by major central banks, high sovereign debt levels in many regions, tightening labour markets and persisting supply chain constraints. Other uncertainties include geopolitical risks and the course of the pandemic in the Northern Hemisphere during the winter months.

While growth was better than anticipated in 3Q22, particularly in the US and Euro-zone, a global slowdown is expected to materialise in 4Q22. As a result, the global economic growth forecast for 2022 remains unchanged at 2.7%. Given that this slowdown is likely to carry over into 1H23, global growth in 2023 is forecast at 2.5%, unchanged from the previous month's assessment.

The energy supply situation in the EU represents a notable downside risk as further supply-related issues could lead to a more accentuated slowdown of the region's economy this winter and beyond, possibly pushing the region into an annual recession next year. Therefore, the global economic situation in 4Q22 and 1Q23 will require close monitoring.

While risks are skewed to the downside, there exists some upside potential for the global economic growth forecast. This may come from a variety of sources. Predominantly, inflation could be positively impacted by any resolution of the geopolitical situation in Eastern Europe, allowing for less hawkish monetary policies. This, in turn, could lift consumer and business sentiment and trigger a wide range of other supportive effects. Additionally, ongoing fiscal stimulus and compensatory measures for consumers, amid rising prices, could potentially lift global economic growth beyond the current base case.

Table 3 - 1: Economic growth rate and revision, 2022–2023*, %

	World	OECD	US	Euro-zone	UK	Japan	China	India	Brazil	Russia
2022	**2.7**	**2.3**	**1.5**	**3.0**	**3.0**	**1.5**	**3.1**	**6.5**	**1.5**	**-5.7**
Change from previous month	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2023	**2.5**	**0.8**	**0.8**	**0.3**	**0.0**	**1.0**	**4.8**	**5.6**	**1.0**	**0.2**
Change from previous month	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

*Note: * 2022 and 2023 = Forecast. The GDP numbers have been adjusted to reflect 2017 ppp.*

Source: OPEC.

Update on the latest global developments

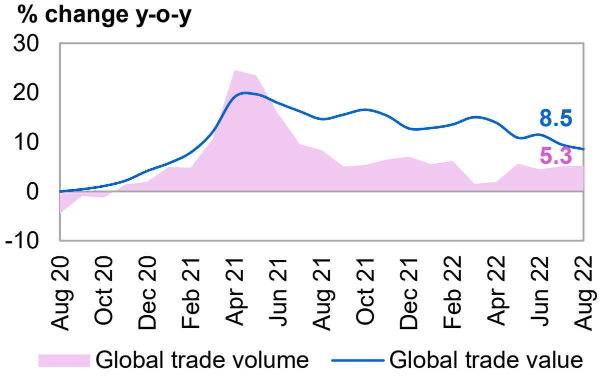
Economic growth levels have varied regionally during the first three quarters of the year. After strong Euro-zone growth during 1H22, 3Q22 growth slowed but was better-than-expected. Nevertheless, the effects of ongoing monetary tightening and continued rising inflation are forecast to be associated with a slowdown in consumption and investment, leading to a decline in the Euro-zone economy in 4Q22. The latest fiscal support measures that were announced by key Euro-zone countries continue to counterbalance some challenges associated with rising inflation. Additionally, 3Q22 growth in the US and China showed a rebound and was better-than-anticipated, after both economies faced challenges in 1H22. India has seen a good recovery in 1H22, a trend that seems to continue in 3Q22, while economic growth in Brazil rebounded somewhat as well.

Inflation continues to grow at a high level in the US, albeit the rise in prices seem to have stabilised. Core inflation of the personal consumption expenditure index, which is a general guideline for the Fed, remained persistently high at more than 5%, indicating that inflation may result in further monetary policy actions by the US central bank. In the Euro-zone, inflation started to accelerate, while core inflation stood at even more than 6% in October. Hence, both the Fed and the ECB are expected to continue to carry out their monetary tightening efforts. Both the Fed and the ECB increased their key interest rates by a further 75 basis points (bp) in November and October, respectively.

World trade performed well in volume terms, less so in value terms, considering the strong US dollar and the softening of commodity prices since mid-year. Global trade in value terms retracted as it increased by 8.5% y-o-y in August, after growth of 9.5% y-o-y in July and 11.5% y-o-y in June, based on the CPB World Trade Monitor Index provided by the CPB Netherlands Bureau for Economic Policy Analysis.

Trade in volume terms rose by 5.3% y-o-y in August, following 5.1% y-o-y in July and compared with 4.4% y-o-y in June.

Graph 3 - 1: Global trade



Sources: Netherlands Bureau for Economic Policy Analysis, Haver Analytics and OPEC.

Near-term global expectations

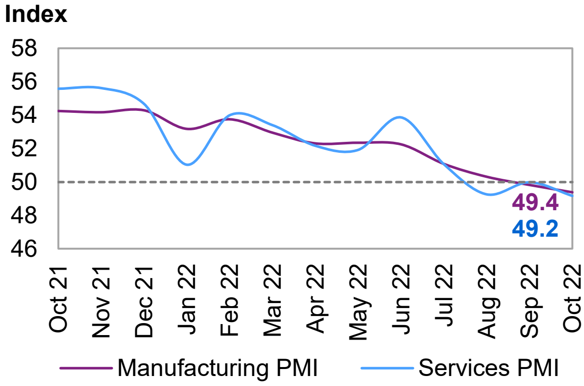
The Euro-zone enjoyed strong 1H22 GDP growth, with some positive carry-over into 3Q22, while 4Q22 is forecast to decline. The strength in the first three quarters of the year was in contrast to the general business and consumer sentiment and inflationary trends in the region but very much supported by an ongoing relative accommodative monetary policy. The US and Chinese economies were facing challenges in 1H22 but recovered to some extent in 3Q22. However, the growth dynamic in 2H22 is forecast to remain below potential. So far this year, consumer spending, especially in the wealthier economies, has been supported by a combination of ongoing social welfare measures in the advanced economies, rising wages and salaries, and increasing debt-financed consumption (particularly in the US), as well as consumers tapping into their savings. The depth of this support in consumer spending will taper off towards the end of the year and in 2023. Additionally, some of the wealthier economies have indicated that they would reach limitations in fiscal spending in 2023 if they were to continue at this year's and past years' pace. Hence, counterbalancing fiscal measures are expected to be restricted in 2023. In the emerging economies, India experienced a sound recovery in 1H22, and the strength is expected to continue over 2H22 growth. Additionally, economic growth in Brazil is forecast to continue recovering. In contrast, China's growth momentum is forecast to remain dampened by COVID-19 lockdowns throughout 2022.

Downside risks to near-term growth, especially for 2023, have risen most recently as core inflation in major advanced economies remains persistently high, and the respective major central banks have indicated that they will continue to lift key policy rates. In particular, any additional energy-supply disruptions in the EU may lead to a more accentuated slowdown of the EU's economy in the coming winter period and beyond, possibly pushing the region into an annual recession next year. However, an EU recession is currently not anticipated in the growth forecast. With these ongoing challenges, the economic dynamic, especially in 4Q22 and 1Q23, warrants close monitoring. Moreover, the following factors may push growth below the current base case assumption: A persistent inflationary trend and consequently ongoing forceful monetary action by major central banks; any development that amplifies the impact of the conflict in Eastern Europe; a worsening of the pandemic in the winter period beyond the already anticipated mildly negative economic effect; a worsening of supply chain constraints; tightening labour markets; and an aggravation of geopolitical conflicts.

Importantly, the forecast assumes that the geopolitical situation in Eastern Europe will not escalate further in 4Q22 and beyond. Moreover, increasingly tight labour markets in major advanced economies are expected to further fuel wage and salary increases, feeding into an extended inflationary trend while, at the same time, positively compensating for rising prices to some extent. In light of these developments, both the ECB and the Fed are expected to accelerate their monetary-tightening efforts towards the end of 2022 and in 2023.

Global purchasing managers' indices (PMIs) reflect the latest slowdown in major economies. The global manufacturing PMI in September retracted to stand at 49.4 in October, after 49.8 in September, remaining below the growth-indicating level of 50. The global services sector PMI fell to stand at 49.2 in October, also in contractionary territory, compared with 50 in September.

Graph 3 - 2: Global PMI



Sources: JP Morgan, IHS Markit, Haver Analytics and OPEC.

While there is some upside to the 2022 GDP growth assumption, based on better-than-anticipated momentum in the first three quarters of 2022, the 4Q22 growth trend remains uncertain to some extent. Hence, the 2022 GDP growth forecast is unchanged to stand at 2.7%. Moreover, the growth forecast for 2023 remains at 2.5%, showing a further slowdown from this year's growth dynamic. While some upside potential may materialise for the 2022 GDP growth forecast, the 2023 growth risks are tilted towards the downside with a variety of factors to consider, including inflation and further monetary tightening, both of which could potentially dampen world economic growth going forward.

Table 3 - 2: World economic growth rate and revision, 2022–2023*, %

	World
2022	**2.7**
Change from previous month	0.0
2023	**2.5**
Change from previous month	0.0

*Note: * 2022 and 2023 = Forecast.*

Source: OPEC.

OECD

OECD Americas

US

Update on the latest developments

US economy growth rebounded more than expected in 3Q22 following reported GDP declines of 1.6% q-o-q SAAR and 0.6% q-o-q SAAR in 1Q22 and 2Q22, respectively. Growth in 3Q22 stood at 2.6% q-o-q SAAR based on preliminary data provided by the US Bureau of Economic Analysis (BEA). Personal consumption rose by 1.6% q-o-q SAAR in 3Q22, the same level as in 2Q22, compared with growth of only 0.9% q-o-q SAAR in 1Q22.

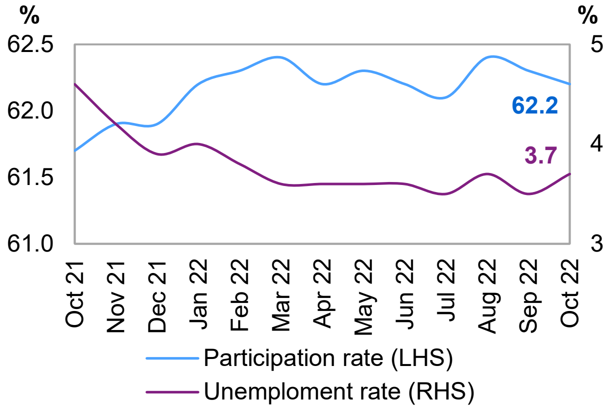
Inflation has stabilised but remained elevated amid a tight labour market. The US Federal Reserve increased its monetary tightening efforts and lifted its key policy rate again by 75 bp in November, pushing it to 4% at the upper level. The trend of further monetary tightening is likely to continue in December, as indicated by the Fed. The Fed's guiding inflation measure, the core inflation level of the personal consumption expenditures index, remained persistently high at around 5% in the past months. The measure stood at 5.1% y-o-y in September, 4.9% in August and 4.7% in July, well above the Fed's 2% target. Inflation based on the broader consumer price index stabilised as well at a very high level of 8.2% y-o-y in September, the same as in August and compared with 8.5% in July. Consumer confidence fell in October, reaching a level of 102.5, compared with 107.8 in September in the Conference Board index.

The labour market remains tight but has shown some early signs of easing, with the **unemployment rate** rising to 3.7% in October from 3.5% in September.

Further relief may come if the **participation rate** rises further. However, it fell slightly to 62.2% in October, compared with 62.3% in September and 62.4% in August.

Non-farm payrolls continued to rise but were slightly lower than in the previous month. There were 261,000 new jobs recorded in October, following an upwardly revised increase of 315,000 in September. The corresponding hourly wage growth remained strong but fell slightly, rising by 4.7% y-o-y compared with 5% in September and 5.2% in August. While retracting, this trend remains substantially above the pre-COVID-19 annual growth levels of between 2% and 3%. Ongoing labour market tightness and corresponding wage developments need to be closely monitored as they could augment the risk of inflation.

Graph 3 - 3: US monthly labour market



Sources: Bureau of Labor Statistics and Haver Analytics.

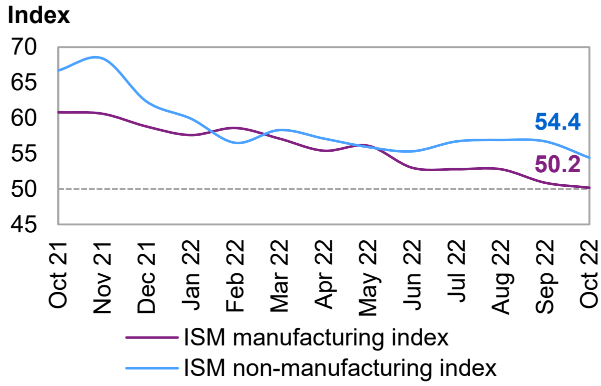
Near-term expectations

Considering better-than-anticipated growth in 3Q22, there is some upside potential for 4Q22 growth and, consequently for 2022 overall. However, given the ongoing challenges of inflation and monetary tightening in combination with labour market tightness, growth in 2023 is forecast to slow sharply. The services sector, a strong motor in 3Q22 growth, is predicted to recover further in 4Q22 and beyond. An important factor that is inhibiting a stronger recovery is the expectation of continued monetary tightening by the Fed, which has indicated its intention to lift interest rates further and tighten its monetary policy rates. Some moderation in inflation is forecast towards the end of the year, which could lead to a full-year inflation level of more than 8% for 2022 and around 4% in 2023. With these factors in mind, the Fed is likely to lift interest rates by another 50 bp in December, followed by an increase of up to 50 bp in 1H23. By 4Q23, the Fed is expected to start lowering interest rates again, although that remains to be seen.

Moreover, the rising sovereign debt levels and associated debt services may cause fiscal constraints going forward. These factors require close monitoring but are not expected to pose an imminent challenge.

October **PMI** levels, as provided by the Institute for Supply Management (ISM), reflect a weakening in both the manufacturing and the services sectors. The October manufacturing PMI fell by 0.7 points to 50.2. The index level for the services sector, representing around 70% of the US economy, retracted more significantly to stand at 54.4 in October, compared with 56.7 in September. In this respect, further COVID-19-related developments, along with factors like inflation and monetary tightening, will need close monitoring.

Graph 3 - 4: US-ISM manufacturing and non-manufacturing indices



Sources: Institute for Supply Management and Haver Analytics.

Taking into consideration the decline in 1H22 growth and the potential for a shallow rebound in 2H22, the **US GDP growth** in **2022** is unchanged at 1.5%.

GDP growth in **2023** is forecast to slow to 0.8%, also unchanged from last month, as further monetary tightening efforts – in combination with sustained high inflation levels – further dampen the growth dynamic in the coming year.

Table 3 - 3: US economic growth rate and revision, 2022–2023*, %

	US
2022	**1.5**
Change from previous month	0.0
2023	**0.8**
Change from previous month	0.0

*Note: * 2022 and 2023 = Forecast.*

Source: OPEC.

OECD Europe

Euro-zone

Update on the latest developments

Euro-zone growth was better-than-expected in 3Q22. After strong 1Q22 GDP growth of 2.4% q-o-q SAAR, it accelerated to 3.3% q-o-q SAAR in 2Q22. In 3Q22, GDP growth slowed considerably but was also higher than anticipated at 0.7% q-o-q SAAR. Supported by the relatively accommodative monetary policies of the ECB, this growth dynamic materialised despite COVID-19 restrictions in 1H22, rising inflation and geopolitical tensions in Eastern Europe. The services sector, travel and transportation, as well as leisure and hospitality, helped drive economic growth. Amid inflation and rising energy prices, general support came from fiscal spending following the outbreak of tensions in Eastern Europe at the end of February. Additionally, rising wages, consumers tapping their savings and an increase in consumer credit helped counterbalance a negative trend in consumer sentiment.

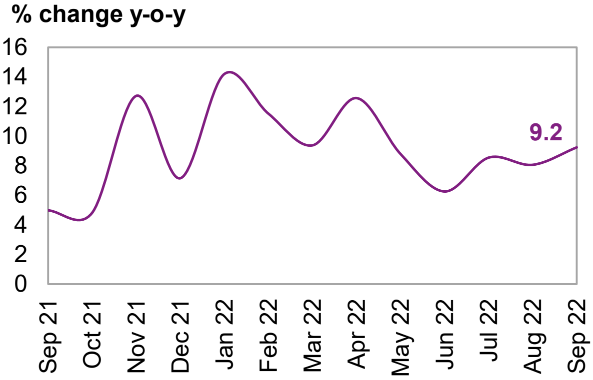
While the ECB monetary policies remained relatively accommodative throughout 1H22, this has changed considerably, with the ECB lifting key policy rates by 2 percentage points between July and October.

Inflation continued to rise, reaching a record-high10.7% y-o-y compared with an already elevated level of 9.9% y-o-y in September and 9.1% y-o-y in August. When excluding volatile items such as food and energy, inflation stood at 6.4% y-o-y in October, after a rise of 6% y-o-y in September and 5.5% y-o-y in August. The ECB's still relatively accommodative monetary policy led to a continued expansion of debt-related financing to the private sector. Lending to the private sector by financial institutions also continued to expand significantly, at least until September, the latest available month, rising by 6.8% y-o-y compared with 6.6% y-o-y in August and 6.1% y-o-y in July, all strong growth rates. However, the course may go into reverse towards the end of the year as the ECB shifts towards monetary tapering and higher interest rates. After the ECB lifted interest rates by 50 bp in July, it hiked its key policy rate by 75 bp in both September and October and has indicated that it will continue to stay the course in monetary tightening.

The **labour market** maintained its positive trajectory. According to the latest numbers from Eurostat, the unemployment rate retracted to 6.6% in September from 6.7% in the previous five months.

Retail sales in value terms increased considerably again in September, reaching a level of 9.2% y-o-y compared with 8.1% y-o-y in August and 8.5% y-o-y in July. In a sign of positive spending trends, consumers have not scaled back their spending despite higher retail prices.

Graph 3 - 5: Euro-zone retail sales



Sources: Statistical Office of the European Communities and Haver Analytics.

Industrial production turned positive in August, rising by 2.5% y-o-y compared with a decline of 2.3% y-o-y in July. Positively this yearly uptick compared to a strong last year August level, consequently also translating into a solid monthly rise of 1.5% m-o-m.

Near-term expectations

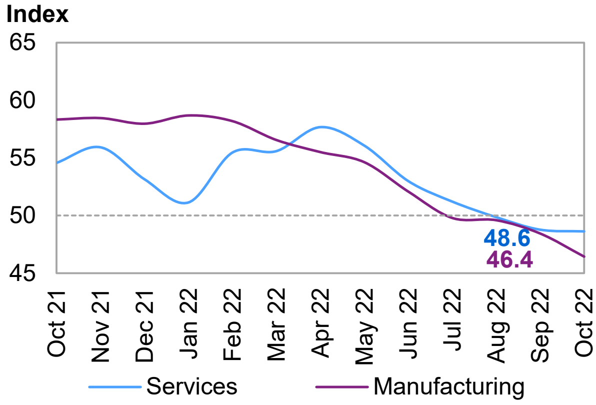
Continued high inflation, energy supply-related challenges and the ECB's envisaged aggressive monetary tightening efforts are expected to significantly dampen growth in the near term. Up to 3Q22, however, the **Euro-zone** experienced higher growth than other advanced economies due mainly to monetary and fiscal support. As the ECB started to gradually tighten its monetary policies and is forecast to lift its key policy rate further in December, strong lending activity was recorded up to 3Q22, but it is forecast to slow in 4Q22 and beyond, with a consequent negative impact, especially in the real estate sector and in business-related investments in general. In addition, fiscal stimulus measures are expected to face limitations in several key Euro-zone economies amid rising debt levels. The ECB's tightening measures are, however, forecast to have a positive impact on the Euro exchange rate and import prices. Hence, they may also have a dampening effect on inflation next year.

The **Euro-zone's October PMI** pointed to a continued slowdown in the manufacturing and services sectors.

The PMI for services, the largest sector in the Euro-zone, is on a clear downward trend. It remained below the growth-indicating level of 50 to stand at 48.6 in October, compared with 48.8 in September and 49.8 in August.

The manufacturing PMI retracted further as well, dropping to 46.4 in October compared with 48.4 in September and 49.6 in August.

Graph 3 - 6: Euro-zone PMIs



Sources: IHS Markit and Haver Analytics.

The region's GDP grew respectively by 2.4%, 3.3% and 0.7% q-o-q SAAR in 1Q22, 2Q22 and 3Q22. The Euro-zone's GDP is forecast to decline by 5.1% q-o-q SAAR in 4Q22.

Despite the growth momentum in the first three quarters, recent developments call for keeping the **GDP annual growth forecast for 2022** unchanged at 3.0%.

This forecast is followed by a further anticipated slowdown into 2023. Considering the ongoing inflation and monetary tightening, as well as expected energy supply constraints and other dampening factors, **2023** GDP growth stands at 0.3%, unchanged from last month.

Table 3 - 4: Euro-zone economic growth rate and revision, 2022–2023*, %

	Euro-zone
2022	**3.0**
Change from previous month	0.0
2023	**0.3**
Change from previous month	0.0

*Note: * 2022 and 2023 = Forecast.*

Source: OPEC.

OECD Asia Pacific

Japan

Update on latest developments

Japan's economic growth surprised to the upside in 1H22, and current lead indicators point to ongoing momentum in 3Q22 on the back of a pick-up in both exports and domestic demand. This comes despite a rise in COVID-19 infections in 3Q22 that led to a drop-off in mobility and may have dampened some services sector activity. GDP growth in 1Q22 was reported at 0.2% q-o-q SAAR. Japan's GDP growth picked up strongly in 2Q22 to reach a level of 3.5% q-o-q SAAR. With a recovery in consumption and an expansion in exports in recent months, growth seems to have held up well in 3Q22. Some concern comes from the weakening yen, an obviously supportive factor for exports, but it also has led to rising import prices, with a potentially dampening effect on domestic prices.

Consumer **inflation** rose by 3% for a second consecutive month in September, a high level for Japan and the highest since the beginning of the 1990s, except for a period in 2014 when a sales tax increase briefly lifted total inflation. The 3% reported in September and August compared with 2.6% y-o-y in July and 2.4% y-o-y in June. The Bank of Japan (BoJ) is forecast to gradually tighten its monetary policy, yet it will still remain relatively accommodative. The limited monetary policy tightening that has occurred has significantly contributed to the weakening of the yen, especially compared to the US dollar, but also the euro. The exchange rate stood at around 145 yen to the US dollar at the beginning of November and more than 150 at the end of October. This also reflects the rising gap in interest rate levels as well as the economic growth differentials between the US and Japanese economies.

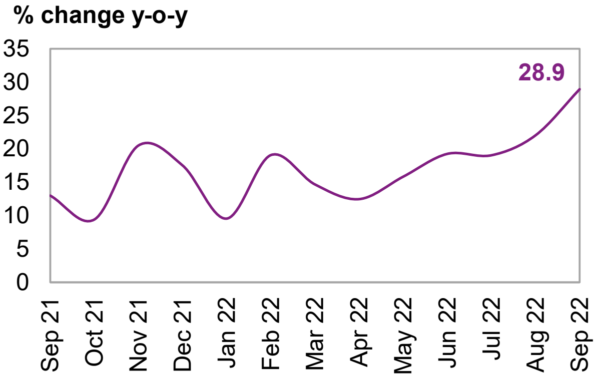
Graph 3 - 7: Japan's exports

Industrial production (IP) rose by a strong 9.7% in September compared with a rise of 4.2% y-o-y in August. It had declined in all previous months of the year except for February.

After a weakening trend in 1Q22**, export growth** accelerated in September, rising by 28.9% y-o-y, compared with 22% y-o-y in August and 19% y-o-y in July, all on a non-seasonally adjusted basis.

Retail sales rose by 4.5% y-o-y in September, compared with 4.1% y-o-y in August and a rise of 2.4% y-o-y in July.

Consumer confidence has, however, retracted, standing at an index level of 30.7 in October compared with 31 in September and 31.9 in August, indicating a slowdown in consumption towards the end of the year.



Sources: Ministry of Finance, Japan Tariff Association and Haver Analytics.

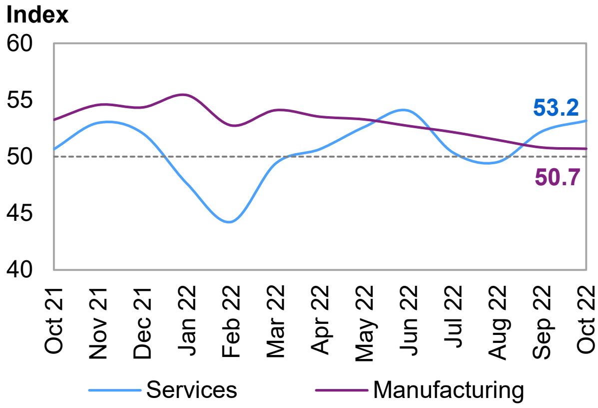
Near-term expectations

Japan's economy seems to have recovered well in 3Q22, despite COVID-19-related lockdowns. The economy appears to be defying the slowing trend observed elsewhere in the OECD. Following slow growth in 1Q22 due to the impact of COVID-19-related lockdowns, a strong rebound occurred in 2Q22 and growth is forecast to continue at a solid pace in 2H22. Japan's growth is forecast to be supported by domestic demand and external trade as well as by expectations for higher 2H22 growth in both the US and China. While the momentum in 2023 will slow, Japan's economy will continue to be well supported by exports and local consumption. Some downside risks may come from a resurgence in COVID-19 infections, further rises in inflation and the need for more forceful monetary tightening by the BoJ.

As already noted, 1Q22 GDP growth was reported to have expanded by 0.2% q-o-q SAAR and by 3.5% q-o-q SAAR in 2Q22. This 2Q22 trend is forecast to continue in 3Q22 with expected growth of 1.8% q-o-q SAAR. Growth in 4Q22 is forecast to slow slightly to settle at 0.5% q-o-q SAAR.

October PMI numbers point to a pick-up in both the manufacturing and the services sectors. After August numbers signalled that rising COVID-19 infections dampened the recovery in the contact-intensive services sector, it recovered in both September and October. The services sector PMI, which constitutes around two-thirds of the Japanese economy, rose to 53.2 from 52.2 in September. These levels were recorded after the index had retracted to 49.5 in August, below the growth indicating a level of 50 and hence indicating a contraction of the sector. The manufacturing PMI remained almost unchanged, standing at 50.7 in October compared with 50.8 in September and 51.5 in August.

Graph 3 - 8: Japan's PMIs



Sources: IHS Markit, Nikkei and Haver Analytics.

Japan's GDP growth seems to be well supported, and **the 2022 GDP growth forecast** remains at 1.5%. However, challenges may lie ahead, including a further rise in inflation, weakening external trade and a continued weak Japanese yen.

GDP growth in **2023** is forecast at 1.0%, also unchanged from the previous month.

Table 3 - 5: Japan's economic growth rate and revision, 2022–2023*, %

	Japan
2022	**1.5**
Change from previous month	0.0
2023	**1.0**
Change from previous month	0.0

*Note: * 2022 and 2023 = Forecast.*

Source: OPEC.

Non-OECD

China

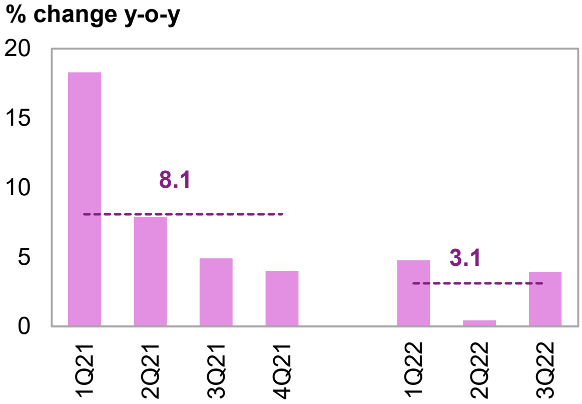
Update on the latest developments

China's real GDP expanded 3.9% y-o-y in 3Q22, following growth of 0.4% y-o-y in 1Q22. China's recovery is still not solid due to domestic and global headwinds. For the first nine months of 2022, China's GDP grew by 3.1%, which is below the government's growth target of 5.5% for 2022. On a seasonally adjusted quarter-on-quarter basis, the GDP grew 3.9% from -2.7% q-o-q in 2Q22.

Household consumption has been severely disrupted by COVID-19 outbreaks, and the impact of prolonged restrictions has altered consumer behaviour.

Private consumption remained weak in 3Q22, growing at 3.5% y-o-y. Moreover, China's retail trade reported its slowest growth in four months at 2.5% y-o-y, as consumption slowed due to the impact of strict COVID-19 curbs in several big cities. Over the first nine months of the year, retail sales were up 0.7%.

Graph 3 - 9: China's GDP growth



Sources: National Bureau of Statistics and Haver Analytics.

The October trade surplus was $85.2 billion; in September, it was $84.8 billion. Exports fell 0.3% y-o-y from 5.7% in September, registering the first y-o-y decline since June 2020. The deterioration in exports was affected by the global trend in monetary policy toward interest rate tightening, which slowed consumption and investment growth in China's key export partners. October export growth across all major destinations has declined, with US purchases dropping by 12.6% y-o-y and the EU by 9% y-o-y. Import growth was also crippled in October, illustrating the weak domestic demand. October data suggested that China's imports contracted by 0.7% y-o-y compared with 0.3% y-o-y growth in September. China's import weakness poses challenges for regional trade partners.

The annual inflation rate declined to 2.1% in October from 2.8% y-o-y in September, recording the lowest inflation rate since May 2022 amid moderation in both food and non-food overall price levels . Nevertheless, on an m-o-m basis, consumer prices increased by 0.1% in October, compared with estimates and September's reading of 0.3%. The People's Bank of China (PBoC) has set a CPI target of around 3% y-o-y for 2022, the same as in 2021.

A bright spot in an otherwise challenging environment was the manufacturing sector. Recent industrial production data suggested that China's manufacturing output growth kept its upward momentum. In September, the industrial sector advanced by 6.3% y-o-y exceeding August's growth of 4.2% y-o-y.

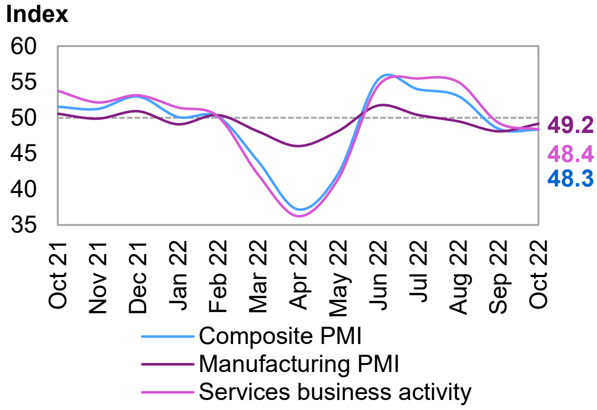
On the policy side, following the key interest rates cuts in August, the PBoC kept the key lending rates unchanged for two straight months, cautioning about the rapid decline in the yuan as policymakers tried to avoid stark policy divergence with other major economies. The one-year loan prime rate (LPR), which is used for corporate and household loans, was kept at 3.65%, while the five-year rate, a reference for mortgages, was kept at 4.3%. The PBoC maintained the medium-term policy rate at 2.75% while offering no injection or withdrawal from the banking system.

Near-term expectations

China's economy faces internal and external challenges as consumers have become even more risk-averse in financial planning and, resultantly, are cutting unnecessary spending. This cautious consumption trend might dominate in the longer term if China maintains the "zero-COVID" policy. Many major economic indicators saw significant improvements compared with the second quarter and the previous month. However, the threat of fresh lockdowns continues to weigh on business and consumer sentiment, and thus is keeping growth subdued. Moreover, external demand for China's products might fall under increasing pressure heading into 2023, as faltering global demand places pressure on export-oriented manufacturing activity, which in turn might impact industrial output. Furthermore, the recent US Department of Commerce decision of sweeping US export controls on microchips would restrict the export to China of goods containing US-made technology in the fields of semiconductor manufacturing, supercomputing and artificial intelligence. It would effectively halt the development of advanced chips and many other high-tech industries in China. However, it might also contribute to achieving China's supply-chain self-sufficiency in the high-tech industry.

October's manufacturing PMI edged up to 49.2 from 48.1 in the previous month. Nevertheless, the reading indicated the third consecutive month of contraction in manufacturing activities as the reading remains below the 50 points threshold level. The services PMI deteriorated further in October 2022 to 48.4 from 49.3 in September as COVID-19 containment measures are disrupting services business activity and weighing on demand.

Graph 3 - 10: China's PMI



Sources: Caixin, IHS Markit and Haver Analytics.

Given 3Q22 GDP growth data and recent developments, China's GDP growth forecast for both 2022 and 2023 remained unchanged from the last MOMR at 3.1% and 4.8% respectively. Several headwinds might continue to skew the 2023 forecast to the downside, including a rise in COVID-19 cases.

Table 3 - 6: China's economic growth rate and revision, 2022–2023*, %

	China
2022	**3.1**
Change from previous month	0.0
2023	**4.8**
Change from previous month	0.0

*Note: * 2022 and 2023 = Forecast.*

Source: OPEC.

Other Asia

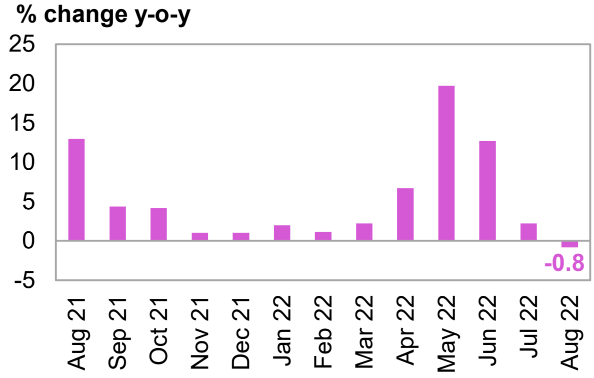
India

Update on the latest developments

While India's major economic activities kept its positive momentum, inflation and a slowdown in industrial activities might overshadow the steady economic activities.

Due to global supply chain disruptions, industrial output kept deteriorating in August, contracting by 0.8% y-o-y compared with 2.2% y-o-y growth in July. Nevertheless, the pick-up in capital infrastructure and consumer durables output continued to build momentum.

Graph 3 - 11: India's industrial production

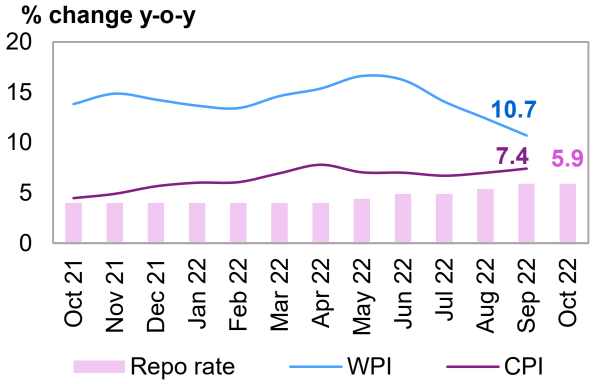


Sources: Ministry of Statistics and Program Implementation of India and Haver Analytics.

The annual inflation rate in September rose to 7.4% from 7.0% in August. Prices increased faster for food, recording a food inflation rate of 8.6% up from 7.6% in August. Compared to the previous month, consumer prices were up by 0.6%. India's annual wholesale price inflation rate fell to 10.7% in September 2022 from 12.4% in the prior month, marking the lowest reading since September 2021, amid a slowdown in prices of manufactured products. On a monthly basis, the wholesale prices index dropped by 0.7% percent in September.

The RBI hiked **the repo rate** for the fourth time this year to help shift the inflation rate towards the central bank's short- and medium-term target of 2%–6%. It increased the repo rate level by 50 bp to 5.9%. The central bank maintained its inflation forecast for FY 2023 at 6.7%, while it revised down the economic growth rate to 7.0% from 7.2%.The central bank also increased the standing deposit facility (SDF) rate as well as the marginal standing facility (MSF) rate and the bank rate by 50 bp to 5.65% and 6.15%, respectively.

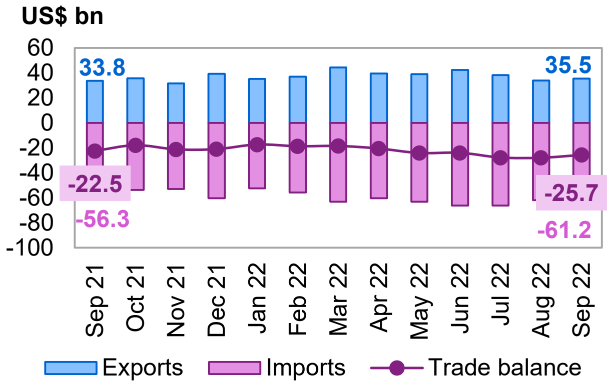
Graph 3 - 12: Repo rate and inflation in India



Sources: Ministry of Commerce and Industry, Reserve Bank of India and Haver Analytics.

In September, India's trade deficit dropped to $25.71 billion, compared to a preliminary estimate of $28.72 billion a year earlier. Imports surged by 8.7% y-o-y to $61.16 billion amid higher commodity prices, while exports rose at a slower pace of 4.9% to $35.45 billion.

Graph 3 - 13: India's trade balance



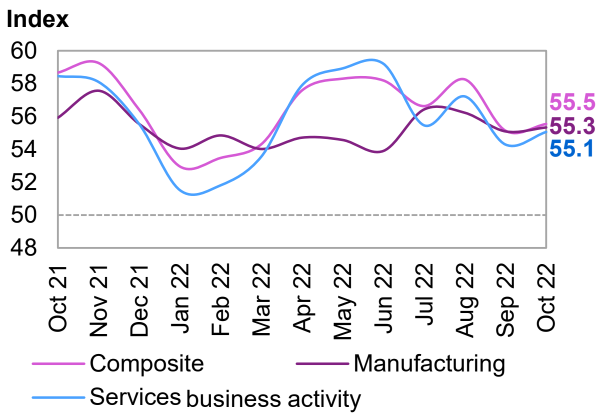
Sources: Ministry of Commerce and Industry and Haver Analytics.

Near-term expectations

India's recovery will continue to be supported by private consumption and investment. Nevertheless, the growth might be tempered by higher inflation and an easing of external demand. Urban demand might outdo its rural counterpart, as income flow in rural areas has shown signs of slowing down. The pace of the recovery, however, could ease given several risk factors. Downside inflation risks might appear, for example, through a depreciation of the local currency. Moreover, the recent policy rate normalization may also weaken the country's growth prospects since it could prompt the deferral of investment plans in sectors without adequate capacity utilization. However, the current repo rate remains low by historical standards.

For October, manufacturing and services PMI edged up based on the increased business confidence in both sectors. The manufacturing PMI went slightly up to 55.3 from 55.1, showing a continuation of the factories' output and orders expansion. The S&P Global India Services PMI surged to 55.1 from 54.3 following the acceleration of new services orders growth.

Graph 3 - 14: India's PMIs



Sources: IHS Markit and Haver Analytics.

For this MOMR, the growth forecast for India in 2022 and 2023 remained unchanged at 6.5% and 5.6%, respectively. Potential growth might come in the form of better-than-anticipated 3Q22 growth as well as faster stabilizing for the elevated inflation rates. Downside risks include higher inflationary pressures, slower credit growth, and potentially, the deterioration of the global economy and a surge in COVID-19 cases.

Table 3 - 7: India's economic growth rate and revision, 2022–2023*, %

	India
2022	**6.5**
Change from previous month	0.0
2023	**5.6**
Change from previous month	0.0

*Note: * 2022 and 2023 = Forecast.*

Source: OPEC.

Latin America

Brazil

Update on latest developments

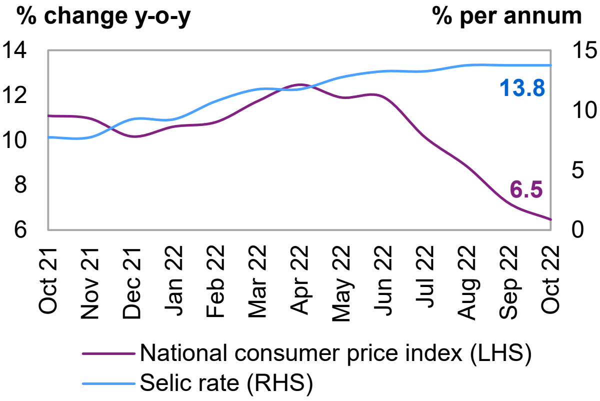
Brazil's economic recovery has been dominated by the expansion of the services sector. Other economic activities have shown signs of softening. The IBC-Br index of economic activity in Brazil fell by 1.13% from a month earlier in August of 2022, compared to a revised 1.67% growth in July. Yet, the services sector, which accounts for about 70% of the Brazilian economy, grew above expectations in August.

Industrial production growth slowed down to 0.4% y-o-y in September compared with 2.2% y-o-y in August. Domestic demand has been steadily supported by a lower jobless rate, the additional cash transfers to households under the fiscal stimulus package, and the 35% decline in gasoline prices since June, which led to increased fuel consumption and other goods and services.

Based on a three-month moving average, Brazil's unemployment rate dropped to 8.7% in September, down from 8.9% in August. This comes amid the overall improving consumer confidence driven by the impact of the government's stimulus measures. Nevertheless, the ongoing slowdown in global growth combined with high domestic interest rates and elevated inflation might increasingly weigh on the near-term labour market outlook.

Recent data from the national statistical institute (IBGE) indicated the consumer price index declined to 6.5% in October from 7.2% in the previous month. The monetary tightening cycle might have effectively tamed inflation, allowing the central bank in its September meeting to hold the Selic benchmark rate at 13.75%, unchanged from August. Furthermore, the recent data may indicate a gradual monetary easing, although it would mostly kick off later in 2Q23. With regard to external demand, Brazil's trade surplus stood at $3.9 billion in October 2022. Exports grew 27.1% y-o-y, while imports expanded 19.8% y-o-y. High commodity prices, especially for raw materials, boosted exporters' profits and Brazil's exchange rate. Moreover, the elevated terms of trade and high domestic inflation are bolstering tax collection. However, the higher fuel, fertilizers and other inputs have raised import costs for several sectors.

Graph 3 - 15: Brazil's inflation vs. interest rate



Sources: Banco Central do Brasil, Instituto Brasileiro de Geografia e Estatística and Haver Analytics.

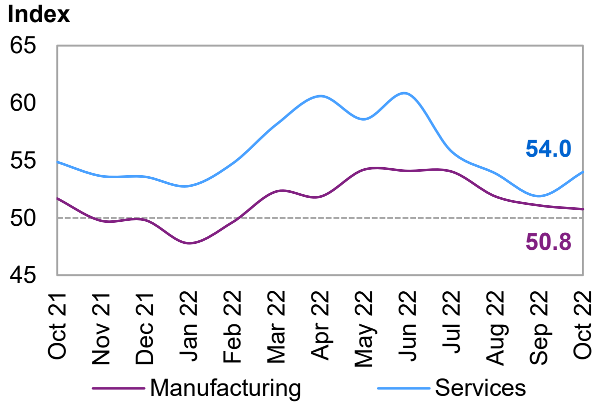
Near-term expectations

The contentious political election season has culminated in the victory of Luiz Inácio Lula da Silva in the presidential vote, which indicates that the temper of the political uncertainties has somewhat reduced. Nevertheless, the fiscal outlook for 2023 might be bearish. The economy is challenged with a significant budget deficit resulting from the pre-election fiscal stimulus measures, while the incoming administration has not only dismissed the need to tighten policies but also pledged to increase public spending. In such a case, Brazil's debt/GDP ratio might increase exponentially, leading to higher inflation accompanied by a higher interest rate. Indeed Brazil's GDP growth might remain constrained by the burden of public and private debt, and the economy might continue to be severely disrupted by the surge in imported inflation since 2021.

In October 2022, PMI readings carried mixed signals. The manufacturing PMI dropped to 50.8 from 51.1 in the previous months. The rate of manufacturing output was moderate, and the growth of new order demand fell as well. This might suggest underlying weak demand.

The S&P Global Brazil Services PMI rose to 54 in October from 51.9 in the previous month. The October reading pointed to the sharpest expansion in the services sector since July of this year amid an upturn in the services business and faster growth in services business activities. Moreover, according to the S&P Global PMI report, the outlook within the services sector is optimistic amid increased investment.

Graph 3 - 16: Brazil's PMIs



Sources: IHS Markit and Haver Analytics.

Given the recent political developments as well as the mixed signals of the recent macroeconomic indicators, Brazil's 2022 GDP forecast is kept unchanged at 1.5%, the same as the last MOMR. There might be potential growth added to the 2022 forecast depending on the direction of the 2H22 post-election growth. Similarly, the 2023 GDP forecast remains at 1.0%, the same as the previous month's assessment, with downside risks possibly emerging out of the increase in public consumption and the budget deficit, as well as elevated inflation.

Table 3 - 8: Brazil's economic growth rate and revision, 2022–2023*, %

	Brazil
2022	**1.5**
Change from previous month	0.0
2023	**1.0**
Change from previous month	0.0

*Note: * 2022 and 2023 = Forecast.*

Source: OPEC.

Africa

South Africa

Update on the latest developments

The 2Q22 GDP quarterly contraction pointed to a drag in South Africa's post-COVID recovery path. Comparable relative to the rest of the world, South Africa might be slower in getting growth back to pre-COVID levels. Statistics South Africa (StatsSA) data indicated that more than half of the economic industries have yet to recover from the ramifications of COVID-19. While the economy is still challenged by the power rationing, which intensified in September, two Transnet unions, covering 80% of the South African transport authority's staff, have gone on an almost two-week strike, affecting all ports in the country. According to the South African Association of Freight Forwarders (SAAFF), the 11-day strike, which kicked off on 6 October, caused South Africa to lose the opportunity to move R65.3 billion worth of goods. The inflation rate eased for the second successive month; it was 7.5% in September, down from 7.6% in August. August's Quarterly Labour Force Survey (QLFS) indicated that the jobless rate retreated to 33.9% in 2Q22, the lowest level in more than a year. However, the improvement might be hard to sustain given a deterioration in key growth indicators such as real GDP. Nevertheless, on a seasonally adjusted monthly basis, the manufacturing sector grew by 2.1% in July, after a contraction of 0.2% in July. The largest positive contributions came from the manufacture of motor vehicles, parts and accessories and other transport equipment.

The country's surplus trade widened to ZAR 19.7 billion in September of 2022 from a downwardly revised ZAR 6.2 billion in August. Exports rose by 10% month-over-month to ZAR 191.6 billion. Meanwhile, imports increased only by 2.3% to ZAR 171.9 billion, mainly driven by purchases of precious metals and stones. However, higher international energy costs might push up the import bill.

Near-term expectations

The discouraging 2Q22 GDP data and the anticipated slowdown might lead to another contraction in 3Q22. Some of the government's measures and improvements in the sporadic power outages might support growth in the 4Q22. However, the uncertainties and risks are skewed to the downside, considering the impact of the recent Transnet strike on local industry and logistics. Furthermore, faltering global demand might hurt external demand. The seasonally adjusted Absa Purchasing Managers' Index rose to 50 points in October from 48.2 in September, which is slightly above the average of 49.6 recorded during the 2Q22.

South Africa's real GDP for both 2022 and 2023 remains unchanged from last month's assessment, amounting to 1.8% and 1.1%, respectively. More downside risks might surface, depending on domestic and global economic developments over the short-term horizon.

Table 3 - 9: South Africa's economic growth rate and revision, 2022–2023*, %

	South Africa
2022	**1.8**
Change from previous month	0.0
2023	**1.1**
Change from previous month	0.0

*Note: * 2022 and 2023 = Forecast.*

Source: OPEC.

Russia and Central Asia

Russia

Update on the latest developments

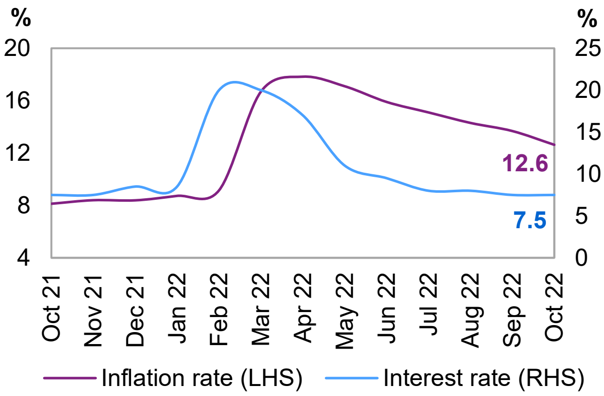
Recent data indicated that fixed investment growth in Russia has expanded by 3.2% y-o-y in 2Q22, while private consumption had dropped less sharply compared to the previous period, contracting by 55% y-o-y in 2Q22. Retail trade plunged 9.8% y-o-y in September following a decline of 8.8% y-o-y in August, amid slower sales in both food and non-food products. Vehicle sales statistics suggest the worst may be over, with a drop of 59.7% y-o-y in September following the 62.2% y-o-y contraction in August. Indeed, the slower-than-anticipated pace of contraction has been the trend for the last three months, indicating a recovery in domestic demand. Moreover, m-o-m retail sales increased by 3.3%. September's **industrial activities** contracted deeper on a year-on-year base compared to the previous month. Industrial output fell 3.1% y-o-y in September, following a contraction of only 0.1% y-o-y in August. The decline was mainly driven by manufacturing, which shrunk by 4% y-o-y. However, on a monthly basis, industrial production increased by 0.5%, following a 1.8 percent rise in each of the previous two months. Over the 3Q22, Russia's industrial output contracted 1.3% y-o-y, while on a quarterly basis, industrial output grew by 3.9% when compared to 2Q22.

Consumer inflationary pressures eased as the CPI fell to 12.6% y-o-y in October from 13.7% y-o-y in September. The moderation in price pressures partly reflects the recent strength of the rouble, which has been supported by central bank intervention measures.

Similarly, **producer price** growth eased to 3.8% y-o-y in August from 6.1% y-o-y in July.

In its October meeting, Russia's central bank held the key interest rate unchanged at 7.5%, maintaining an accommodative monetary policy by cutting aimed at stimulating economic growth while boosting credit growth and preventing a further drop in consumption. Russia's **jobless rate** increased slightly to 3.9% in September 2022 from 3.8% in August 2022.

Graph 3 - 17: Russia's inflation vs. interest rate



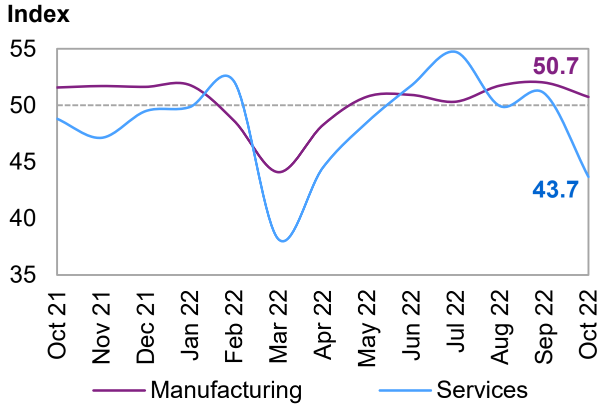
Sources: Federal State Statistics Service, Central Bank of Russia and Haver Analytics.

Near-term expectations

In recent months, Russia's economic activities have been much stronger than expected. It is likely that the real GDP contraction might have worsened in the last two months of the year, mostly due to the reduction in export volumes of gas. This trend might carry on to the 1H23. Moreover, the September "partial" mobilisation announcement might likely reverse the gradual improvements in domestic demand observed in 2H22, affecting labour market dynamics and pushing up nominal wages. In 2023, public spending, especially military spending, might act as the main growth engine, while household spending might weaken mainly due to consumer tendency to save in response to geopolitical tension. The rouble might fluctuate significantly following the EU ban on hydrocarbons imports. Nevertheless, the hydrocarbons exports revenues might remain resilient, facing the EU ban on imports as well as the G7 price cap. Consequently, the anticipated high hydrocarbons exports revenues might provide significant appreciating pressures.

October's S&P Global Russia PMI mirrored the resilience of private sector activities. The Manufacturing PMI declined to 50.7 from 52.0 in October, yet it pointed to the sixth straight month of growth in factory activity. But the concerns regarding labour market pressures, anticipated higher input costs and reduced purchasing power of clients, and economic uncertainty have filled the services activities outlook with more pessimism. October's Service PMI slugged to 43.7 from 51.1 in the previous month.

Graph 3 - 18: Russia's PMI



Sources: IHS Markit and Haver Analytics.

Considering the uptick in major economic activities combined with a privative labour market outlook, **Russia's economic** contraction in 2022 remained at 5.7%. Similarly, in 2023, Russia's GDP was kept at growth of 0.2 %, similar to the previous month's assessment. However, further downside risks might materialise in 2023 in the form of labour market pressures and nominal wage increase, anticipated higher inflation, reduced purchasing power of clients and economic uncertainty stemming from the headwinds of the conflict with Ukraine.

Table 3 - 10: Russia's economic growth rate and revision, 2022–2023*, %

	Russia
2022	**-5.7**
Change from previous month	0.0
2023	**0.2**
Change from previous month	0.0

*Note: * 2022 and 2023 = Forecast.*

Source: OPEC.

OPEC Member Countries

Saudi Arabia

According to preliminary estimates, Saudi Arabia's real GDP expanded by 8.6% y-o-y in 3Q22, following 12.2% growth in 2Q22. The 3Q22 growth marked the sixth straight quarter of economic expansion, largely driven by a 14.5% increase in oil activities and non-oil activities, which expanded 5.6%. On a seasonally adjusted quarterly basis, the Saudi GDP grew by 2.6%, following a 2.2% rise in 2Q22. September official inflation data suggested that the annual inflation rate went slightly up to 3.1% from 3.0% in August, amid the growth in both food and housing prices. October Manufacturing PMI in Saudi Arabia increased to 57.20 from 56.60 in September, indicating a continued expansion in the non-oil private sector. The momentum of the expansion is likely to continue in the short term, yet the higher inflation and rising tightness in the monetary policy in the advanced economies might weigh on the Saudi Arabian property and financial markets.

Nigeria

Nigeria's economic outlook has been impacted by the devastating rains and floods that affected 31 of Nigeria's 36 states and has resulted in a significant loss of land, lives and livelihoods. The latest data suggested that record-high inflation continues to persist. Even after a recent 150 bps rate hike by the central bank, September's annual inflation rate accelerated to 20.77% from 20.52% in August. Upward price pressures were mainly caused by supply disruptions amid the widespread flooding and higher import costs. However, considering the broad money-supply growth of 21% y-o-y in August, there is a significant monetary component behind the inflationary spiral. On a monthly basis, consumer prices increased by 1.36%, the least in ten months, after rising by 1.77% in the previous month. The Stanbic IBTC Bank Nigeria PMI dropped to 53.6 in October of 2022 from 53.7 in September; nevertheless, it pointed to solid growth in Nigeria's private sector activity. A sustained accumulation of outstanding business suggests that hiring activity could continue in the months ahead. However, the inflationary pressures are suppressing consumption spending, which might weigh on the growth of household volume consumption.

The United Arab Emirates (UAE)

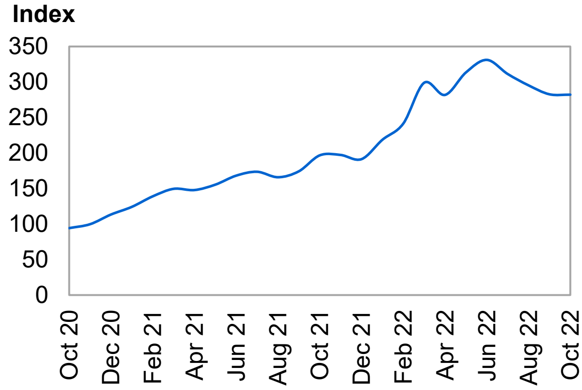
Recent inflation data suggested that the inflation rate in the UAE might has peaked after averaging 6.8% in 2Q22. Both food and transportation inflation has eased, suggesting that the inflation rate might continue the decreasing trend. However, it might not fall back to pre-COVID when the overall price level was at the deflation trend. October's S&P Global United Arab Emirates increased to 56.6 from 56.1 in the previous month following the higher growth in the non-oil private sector's output and the strengthening of demand conditions. The near-term outlook for the UAE's economy might sustain its strong growth momentum considering the government launched supply-side reforms to increase the country's attractiveness to foreign direct investments (FDI) by allowing 100% foreign ownership of onshore companies, lowering costs to establish businesses, visa and citizenship reforms, implementation of job security measures, and changes to local laws. Meanwhile, Dubai has announced "Operation AED300bn" and the "2040 Masterplan" to boost development.

The impact of the US dollar (USD) and inflation on oil prices

The **US dollar (USD) index** advanced for the ninth consecutive month, increasing by 1.1% m-o-m. The USD was under pressure by the increased hawkishness from other major central banks, particularly in **developed market (DM)** economies. Nonetheless, the USD continued to advance, supported by a stronger US economy relative to its peers and the increased safe-haven appeal of the USD, amid rising US bond yields. In DM currencies, the USD rose against the euro by 1.4% m-o-m, and 2.6% and 1.7% against the yen and the pound sterling, respectively, in the same period.

In terms of **emerging market (EM)** currencies, the USD advanced by 0.9% m-o-m against the rupee and by 1.1% against the yuan in the same period. Meanwhile, the USD fell marginally against the real by 0.7% m-o-m.

Graph 3 - 19: The Modified Geneva I + US$ Basket (base June 2017 = 100)



Sources: IMF and OPEC.

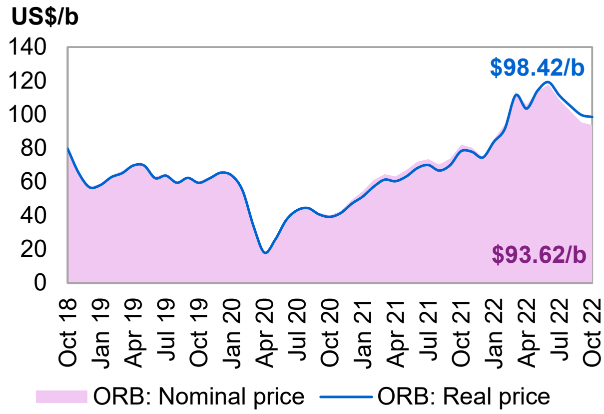
The gap between nominal and real **ORB** prices widened further, supported by the strengthening of the USD and strong inflation readings in October.

In absolute terms**, inflation** (nominal price minus real price) rose from $4.37/b in September to $4.80/b in October, a 9.8% increase m-o-m.

In **nominal terms**, accounting for inflation, the ORB price declined for the fourth consecutive month, going from $95.32/b in September to $93.62/b in October, a 1.8% decline m-o-m.

In **real terms** (excluding inflation), the ORB went from $99.65/b in September to $98.42/b in October, a 1.3% decline m-o-m.

Graph 3 - 20: Impact of inflation and currency fluctuations on the spot ORB price (base June 2017 = 100)



Source: OPEC.

World Oil Demand

World oil demand growth in 2022 has been revised down by 0.1 mb/d from the last month's assessment. The demand is now forecast at 2.5 mb/d y-o-y, reflecting observed trends and developments in various regions. These include the extension of China's zero-COVID-19 restrictions and some economic challenges in OECD Europe that have weighed on oil demand.

Total oil demand is projected to average 99.6 mb/d in 2022. In the OECD region, oil demand is anticipated to rise by about 1.3 mb/d to 46.1 mb/d y-o-y. OECD Americas demand is expected to rise the most in 2022, led by the US on the back of recovering gasoline and diesel demand. Light distillates are also projected to support demand growth this year.

In the non-OECD region, total oil demand for the year is anticipated to rise by nearly 1.3 mb/d to 53.5 mb/d. A steady increase in industrial and transportation fuel demand, supported by a potential recovery in economic activity is forecasted to boost the region's demand in 2022.

In 2023, world oil demand growth is also revised down by around 0.1 mb/d to stand at 2.2 mb/d to average 101.8 mb/d, supported by expected geopolitical improvements and the containment of COVID-19 in China. The OECD is projected to grow by 0.3 mb/d to 46.5 mb/d. OECD Americas is expected to climb firmly, with US oil demand, is expected to rise above 2019 levels mainly due to the recovery in transportation fuels and light distillate demand. However, OECD Europe and the Asia Pacific are not expected to rise above 2019 consumption levels.

In the non-OECD, oil demand is expexted to rise by 1.9 mb/d to 55.4 mb/d, with the largest growth seen in China and India, supported by a recovery in transportation fuels and firm industrial fuel demand, including petrochemical feedstock. Regions such as Other Asia, Latin America and the Middle East are also expected to see decent gains, supported by a positive economic outlook. In terms of fuels, gasoline and diesel are assumed to lead oil demand growth next year.

Table 4 - 1: World oil demand in 2022*, mb/d

World oil demand	2021	1Q22	2Q22	3Q22	4Q22	2022	Change 2022/21 Growth	%
Americas	24.33	24.78	25.00	25.04	25.21	25.01	0.68	2.78
of which US	*20.03*	*20.38*	*20.41*	*20.58*	*20.74*	*20.53*	*0.49*	*2.46*
Europe	13.13	13.15	13.41	14.03	13.90	13.63	0.50	3.79
Asia Pacific	7.38	7.85	6.99	7.31	7.81	7.49	0.11	1.44
Total OECD	**44.84**	**45.78**	**45.40**	**46.37**	**46.92**	**46.12**	**1.28**	**2.85**
China	14.97	14.74	14.56	14.69	15.44	14.86	-0.11	-0.73
India	4.77	5.18	5.16	4.95	5.35	5.16	0.39	8.11
Other Asia	8.63	9.09	9.27	8.76	8.85	8.99	0.36	4.20
Latin America	6.23	6.32	6.36	6.58	6.40	6.41	0.19	3.04
Middle East	7.79	8.06	8.13	8.52	8.17	8.22	0.43	5.49
Africa	4.22	4.51	4.15	4.27	4.53	4.37	0.14	3.39
Russia	3.61	3.67	3.42	3.45	3.59	3.53	-0.08	-2.32
Other Eurasia	1.21	1.22	1.16	1.00	1.21	1.15	-0.06	-5.07
Other Europe	0.75	0.79	0.75	0.73	0.80	0.77	0.01	1.63
Total Non-OECD	**52.18**	**53.58**	**52.95**	**52.94**	**54.33**	**53.45**	**1.27**	**2.43**
Total World	**97.03**	**99.36**	**98.35**	**99.32**	**101.25**	**99.57**	**2.55**	**2.62**
Previous Estimate	97.03	99.36	98.34	99.33	101.64	99.67	2.64	2.72
Revision	0.00	0.00	0.02	-0.02	-0.39	-0.10	-0.10	-0.10

*Note: * 2022 = Forecast. Totals may not add up due to independent rounding. Source: OPEC.*

Table 4 - 2: World oil demand in 2023*, mb/d

World oil demand	2022	1Q23	2Q23	3Q23	4Q23	2023	Change 2023/22 Growth	%
Americas	25.01	25.01	25.26	25.34	25.47	25.27	0.26	1.05
of which US	*20.53*	*20.51*	*20.52*	*20.82*	*20.87*	*20.68*	*0.15*	*0.74*
Europe	13.63	13.19	13.44	14.06	13.95	13.66	0.03	0.24
Asia Pacific	7.49	7.88	7.04	7.35	7.83	7.52	0.04	0.48
Total OECD	**46.12**	**46.08**	**45.73**	**46.75**	**47.24**	**46.46**	**0.33**	**0.72**
China	14.86	15.03	15.41	15.24	15.84	15.38	0.52	3.53
India	5.16	5.41	5.44	5.21	5.59	5.41	0.25	4.94
Other Asia	8.99	9.42	9.61	9.12	9.20	9.33	0.35	3.85
Latin America	6.41	6.48	6.48	6.74	6.54	6.56	0.15	2.29
Middle East	8.22	8.45	8.46	8.85	8.46	8.55	0.33	4.05
Africa	4.37	4.71	4.34	4.46	4.72	4.56	0.19	4.36
Russia	3.53	3.65	3.44	3.62	3.77	3.62	0.09	2.52
Other Eurasia	1.15	1.22	1.16	1.02	1.22	1.16	0.01	0.72
Other Europe	0.77	0.80	0.76	0.75	0.82	0.78	0.02	2.32
Total Non-OECD	**53.45**	**55.17**	**55.09**	**55.01**	**56.15**	**55.36**	**1.91**	**3.58**
Total World	**99.57**	**101.26**	**100.83**	**101.76**	**103.40**	**101.82**	**2.24**	**2.25**
Previous Estimate	99.67	101.33	100.94	101.91	103.88	102.02	2.34	2.35
Revision	-0.10	-0.07	-0.11	-0.14	-0.48	-0.20	-0.10	-0.10

*Note: * 2022 and 2023 = Forecast. Totals may not add up due to independent rounding. Source: OPEC.*

OECD

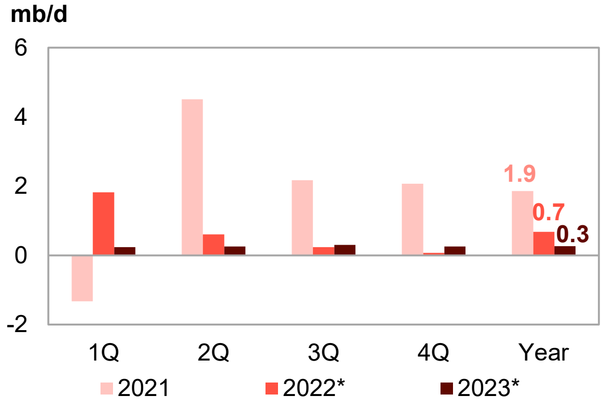
OECD Americas

Update on the latest developments

Oil demand in the US weakened further and was almost flat at 0.03 mb/d y-o-y growth in August compared with 0.2 y-o-y growth in July, partly attributable to the strong baseline of comparison. However, Mexico and Canada recorded healthy y-o-y growth of 0.3 mb/d and 0.2 mb/d, respectively.

Demand in the US was mostly affected by high inflation and interest rates eating into consumers' purchasing power and rising manufacturing production costs. The US inflation rate slipped to 8.5% in August, with average policy rates at about 4% in 2022. According to the US Department of Transportation's Federal Highway Administration (FHA), travel on all roads and streets in the US grew by 0.7% (+1.9 billion vehicle miles) for August 2022 compared with August 2021.

Graph 4 - 1: OECD Americas oil demand, y-o-y change



*Note: * 2022-2023 = Forecast. Source: OPEC.*

Oil demand in August was driven by other fuels, which posted growth of 0.3 mb/d y-o-y. On the back of stable air travel activity in the US, jet/kerosene posted growth of 0.1 mb/d (19%) y-o-y. According to the International Air Transport Association (IATA) Air Passenger Market Analysis, US airline revenue passenger kilometres (RPKs) and available seat kilometres (ASKs) in August increased by 7.0% and 3.3% y-o-y, respectively. Similarly, residual fuels posted a marginal increase of 0.03 mb/d y-o-y. Gasoline demand has shown signs of improvement, going from a strong decline of 0.6 mb/d in July to a decline of 0.1 mb/d y-o-y in August.

Table 4 - 3: US oil demand, mb/d

By product	Aug 21	Aug 22	Change Aug 22/Aug 21 Growth	%
LPG	3.38	3.31	-0.07	-2.1
Naphtha	0.18	0.12	-0.07	-35.3
Gasoline	9.18	9.08	-0.10	-1.1
Jet/kerosene	1.57	1.65	0.09	5.5
Diesel	3.98	3.87	-0.11	-2.8
Fuel oil	0.34	0.37	0.03	7.6
Other products	2.22	2.49	0.27	12.0
Total	**20.86**	**20.89**	**0.03**	**0.1**

Note: Totals may not add up due to independent rounding. Sources: EIA and OPEC.

Near-term expectations

In 4Q22, the US GDP is projected to decline. Rising inflation and limited household spending due to recent hikes in interest rates will weigh on consumers' purchasing power, potentially dampening oil demand. In 4Q22, oil demand is expected to grow by 0.06 mb/d y-o-y. Gasoline demand is due for a slight rebound following a steady and expected further decline in retail prices. The beginning of winter in 4Q22 will aid demand for heating fuels. In addition, on the back of continued steady improvements in air travel demand, jet/kerosene will remain positive. However, the risk is skewed to downside.

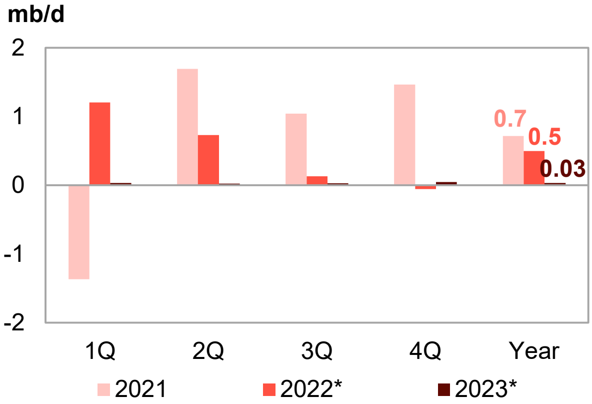
In 1Q23, the US GDP growth forecast is to rebound. However, economic activity is not expected to significantly improve due to the factors mentioned for 4Q22. In addition, industrial output is on a downward trend. Oil demand is projected to grow by 0.1 mb/d y-o-y, mostly supported by distillates and heating fuels, while improvements in air travel will support jet/kerosene demand. Road mobility activity is expected to soften due to reduced economic activity in the winter, thus dampening gasoline demand. The risks are still skewed to the downside in 1Q23.

OECD Europe

Update on the latest developments

Oil demand in OECD Europe improved from 0.08 mb/d y-o-y growth in July to 0.2 mb/d y-o-y growth in August. The demand was driven by robust improvements in the region's aviation as European airline operations sustained growth of 78.8% y-o-y in international RPKs, according to IATA's Air Passenger Market Analysis for August 2022. Consequently, jet/kerosene posted y-o-y growth of 0.3 mb/d (32%). Utility demand for residual fuels remains high in OECD Europe due to high natural gas prices, with the demand for residual fuel growing by 0.1 mb/d y-o-y in August. Improved mobility in the region helped gasoline demand recover from a decline of 0.07 mb/d in July to a growth of 0.01 mb/d y-o-y in August.

Graph 4 - 2: OECD Europe's oil demand, y-o-y change



*Note: * 2022-2023 = Forecast. Source: OPEC.*

Similarly, LPG has also improved from a decline of 0.02 mb/d y-o-y in July to a growth of 0.02 mb/d y-o-y in August. LPG recorded a marginal improvement to post growth of 0.02 mb/d y-o-y as naphtha declined further to 0.2 mb/d y-o-y in August.

However, manufacturing activity in the region continued to weaken due to a slowdown in economic activity and trade-related bottlenecks stemming from geopolitical tensions. According to S&P Global and Haver Analytics, the August manufacturing PMI in Euro-zone was 49.5, compared to 48.5 in July. Furthermore, the euro area's annual inflation rate reached 9.1% in August 2022, up from 8.9% in July. These and other factors weighed on diesel demand, which fell by 0.06 mb/d y-o-y.

Table 4 - 4: Europe's Big 4* oil demand, mb/d

By product	Aug 21	Aug 22	Change Aug 22/Aug 21 Growth	%
LPG	0.41	0.38	-0.02	-5.2
Naphtha	0.52	0.35	-0.17	-33.3
Gasoline	1.23	1.27	0.04	3.1
Jet/kerosene	0.53	0.78	0.25	47.4
Diesel	3.13	3.12	-0.01	-0.2
Fuel oil	0.16	0.22	0.06	37.1
Other products	0.45	0.49	0.04	7.9
Total	**6.43**	**6.61**	**0.18**	**2.9**

*Note: * Germany, France, Italy and the UK. Totals may not add up due to independent rounding.*

Sources: JODI, UK Department for Business, Energy & Industrial Strategy, Unione Petrolifera and OPEC.

Near-term expectations

The region's GDP is expected to decline in 4Q22. The ongoing geopolitical tension as well as a counter-seasonal slowdown in mobility activity during the winter are expected to weigh on the region's gasoline and diesel demand in 4Q22. However, rising natural gas prices are expected to lead to gas to oil switching, particularly during the winter. Accordingly, demand for fuel oil and residuals are expected to rise due to switching. Furthermore, sustained growth in both international and regional air travel will boost demand for jet/kerosene during 4Q22. Accordingly, oil demand is projected to decline by 0.05 mb/d y-o-y, but the consumption level will reach 13.90 mb/d.

The outlook for European oil demand in 1Q23 is not expected to improve as the region's GDP growth is projected to decline. Additionally, rising energy prices, geopolitical tension and supply-chain bottlenecks are likely to continue weighing on the input costs in the manufacturing sector. This will potentially lead to slackening oil demand in the region's manufacturing sector in 1Q23. Nevertheless, expected high heating demand amidst the natural gas crisis will continue favouring gas-to-oil switching that will increase regional demand for distillate and fuel oil. In addition, healthy air travel will aid jet/kerosene demand. Accordingly, oil demand in OECD Europe is projected to rise by a slight 0.03 mb/d annually in 1Q23.

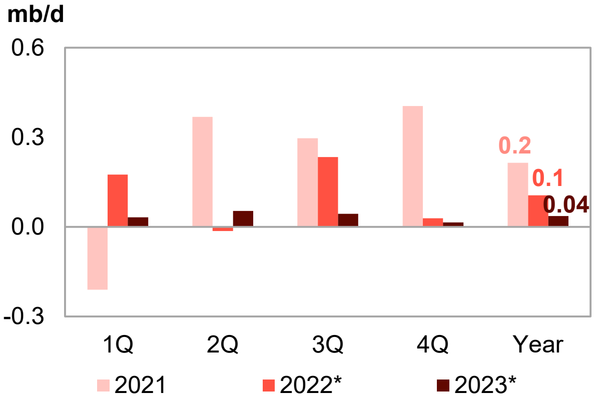
OECD Asia Pacific

Update on the latest developments

OECD Asia Pacific posted very robust oil demand growth in August, rising 0.2 mb/d y-o-y in July to a historic high of 0.6 mb/d y-o-y in August. This was driven by strong demand from Japan and Australia, where strong manufacturing activity supported diesel demand growth of 0.1 mb/d y-o-y in the region compared to 0.04 mb/d y-o-y in July. Data from Haver Analytics and S&P Global indicates that the manufacturing PMI in Japan and Australia in August were 52.2 and 53.07, respectively.

On the back of strong mobility improvements, gasoline posted growth of 0.1 mb/d y-o-y as compared to 0.09 mb/d in July. Air travel in both Japan and Australia rose, according to IATA's Air Passenger Market Analysis, with air traffic volumes in Japan up 112.3% y-o-y and RPKs were close to pre-pandemic levels.

Graph 4 - 3: OECD Asia Pacific oil demand, y-o-y change



*Note: * 2022-2023 = Forecast. Source: OPEC.*

Similarly, the air domestic market in Australia recorded a 449.0% y-o-y increase. Accordingly, jet/kerosene demand grew by 0.1 mb/d y-o-y compared to 0.08 mb/d y-o-y in July. Naphtha demand also increased by 0.1 mb/d y-o-y, and LPG recovered by 0.04 mb/d y-o-y as compared to a decline of 0.2 mb/d y-o-y in July. Other products posted growth of 0.1 mb/d y-o-y compared to 0.02 mb/d y-o-y growth in July.

Table 4 - 5: Japan's oil demand, mb/d

By product	Sep 21	Sep 22	Change Growth	Sep 22/Sep 21 %
LPG	0.38	0.27	-0.10	-27.6
Naphtha	0.75	0.57	-0.18	-23.9
Gasoline	0.74	0.72	-0.02	-2.5
Jet/kerosene	0.24	0.24	0.01	2.8
Diesel	0.75	0.72	-0.02	-3.1
Fuel oil	0.22	0.28	0.05	24.1
Other products	0.24	0.26	0.02	9.1
Total	**3.31**	**3.07**	**-0.24**	**-7.3**

Note: Totals may not add up due to independent rounding. Sources: JODI, METI and OPEC.

Near-term expectations

As COVID-19 gradually wanes on a regional basis, its effects are becoming more localised. Therefore, mobility and other economic activity have started to improve, as the July data shows. The gradual resumption of economic activity is expected to support consumer confidence and the mobility recovery in the region. In 4Q22, Japanese economy is projected to grow by 1.5%. Furthermore, improvements in the region's aviation operations could boost demand for transportation fuels, including jet/kerosene, and petrochemical feedstock. Accordingly, oil demand is projected to grow by 0.03 mb/d y-o-y, reaching 7.81 mb/d.

In 1Q23, the pace of the economic recovery is expected to grow further. Japan, the region's largest economy, is forecast to grow by almost 2% on a yearly base in 1Q23. However, geopolitical-induced bottlenecks are additional challenges that are spilling over into the economy of the region and will weigh on oil demand in 2023. On average, oil demand is expected to remain at about 0.03 mb/d in 1Q23.

Nevertheless, many governments in the region are under pressure to increase spending to provide relief from rising inflation, which should boost consumers' purchasing power. Additionally, the South Korean government's subsidy rate hike and current Japanese subsidies on gasoline will bring succour to oil demand in the region in the short term.

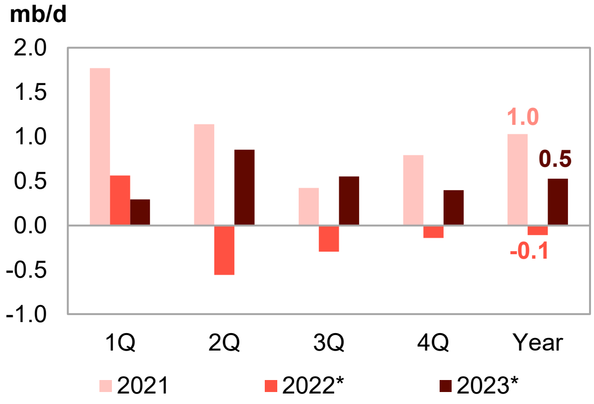
Non-OECD

China

Update on the latest developments

Against some expectations, **oil demand in China** bounced back in September despite the zero-COVID-19 policy. Oil demand recorded a strong growth of 0.6 mb/d, y-o-y, compared to a decline of 0.5 mb/d y-o-y in August. S&P Global and Haver Analytics reported an improvement in China's manufacturing PMI, which stood at 50.1 in September compared with 49.5 in August. Diesel led the September demand recovery with 0.8 mb/d y-o-y growth, while naphtha and LPG grew by 0.3 mb/d y-o-y. Demand for the latter two products was supported by petrochemical plant requirements for feedstock as several propane dehydrogenation plants opened, causing the propylene margin to rebound.

Graph 4 - 4: China's oil demand, y-o-y change



*Note: * 2022-2023 = Forecast. Source: OPEC.*

However, the demand for jet/kerosene softened from 0.02 mb/d y-o-y in August to a decline of 0.3 mb/d in September, despite reported improvements in airline activity in August. Moreover, as COVID-19 mobility restrictions continued, several cities in China went into full or partial lockdowns, and gasoline demand weakened by 0.2 mb/d y-o-y. Other products also declined by 0.2 mb/d y-o-y.

Table 4 - 6: China's oil demand*, mb/d

By product	Sep 21	Sep 22	Change Sep 22/Sep 21 Growth	%
LPG	2.40	2.65	0.25	10.6
Naphtha	1.34	1.66	0.32	24.0
Gasoline	3.45	3.24	-0.21	-6.0
Jet/kerosene	0.48	0.22	-0.26	-54.0
Diesel	3.22	4.00	0.78	24.3
Fuel oil	0.73	0.65	-0.08	-11.0
Other products	1.65	1.43	-0.22	-13.6
Total	**13.26**	**13.85**	**0.59**	**4.4**

*Note: * Apparent oil demand. Totals may not add up due to independent rounding.*
Sources: Argus Global Markets, China OGP (Xnhua News Agency), Facts Global Energy, JODI, National Bureau of Statistics China and OPEC.

Near-term expectations

September data suggest that Chinese oil demand is likely to remain healthy throughout 4Q22. With projected GDP growth of 3.1%, demand is expected to rise as COVID-19 restrictions are eased further. Air travel has also staged a gradual recovery. There is also expected increased demand from the petrochemical industry as several propane dehydrogenation plants are expected to open in 4Q22. Following a decline in 3Q22, oil demand is projected to soften by 0.1 mb/d y-o-y at 15.44 mb/d.

In 2023, China's economy is projected to grow by 4.8% as the COVID-19 situation improves. The gradual easing of lockdowns will pave the way for a rise in mobility and manufacturing activity. Similarly, domestic and international air travel should improve considerably in 1Q23. Accordingly, oil demand is projected to grow by 0.3 mb/d y-o-y to 15.03 mb/d.

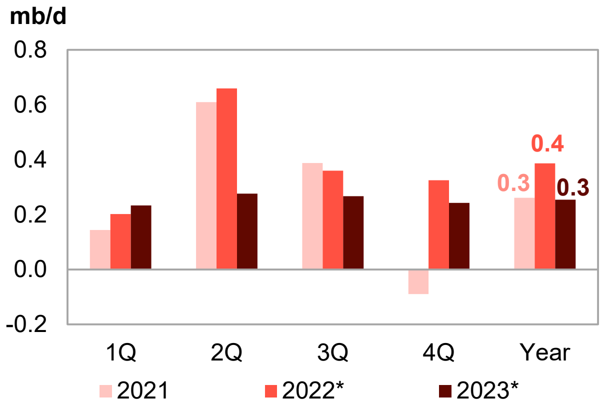
India

Update on the latest developments

India's September oil demand growth remained healthy at 0.3 mb/d (6.2%) y-o-y, supported by strong economic activity that aided mobility and social activity. Furthermore, strong growth in factory activity for the fifth month and post-monsoon agricultural and construction activity supported oil demand growth.

Oil demand in September was led by gas oil, which posted growth of 0.2 mb/d (11%) y-o-y. Diesel consumption was boosted by the rise in economic activity around the festival period, the end of the monsoon season and the corresponding rise in agricultural activity, resulting in greater use of irrigation pumps and tractors and the harvest season in some states. Historically high manufacturing activity, as suggested by the manufacturing PMI of 55.1, also supported diesel demand in September.

Graph 4 - 5: India's oil demand, y-o-y change



*Note: * 2022-2023 = Forecast. Source: OPEC.*

On the back of strong mobility due to a rise in economic activity and the heavy influx of travellers in September, gasoline posted a growth of 0.06 mb/d y-o-y. India's Petroleum Planning & Analysis Cell reported that the sale of passenger and utility vehicles grew by 9.7% y-o-y in September 2022 as compared to the same month in 2021. The combined effects of these factors contributed to the rise in gasoline demand in the month. LPG posted growth of 0.03 mb/d (3%) y-o-y. India's LPG demand is mainly driven by cooking (89%), small-scale petrochemical industries, and fuel for three- and four-wheel vehicles. With regard to other fuels, jet fuel demand was up 18%, or 0.02 mb/d y-o-y, while demand for naphtha fell by 0.02 mb/d year. Aviation fuel benefited from improvements in air travel, while naphtha was affected by softening demand in the petrochemical and power-generation industries.

Table 4 - 7: India's oil demand, mb/d

By product	Sep 21	Sep 22	Change Growth	Sep 22/Sep 21 %
LPG	1.01	1.04	0.03	3.2
Naphtha	0.29	0.27	-0.02	-7.1
Gasoline	0.78	0.85	0.06	8.3
Jet/kerosene	0.13	0.16	0.02	18.1
Diesel	1.60	1.78	0.17	10.8
Fuel oil	0.22	0.23	0.01	6.1
Other products	0.80	0.82	0.01	1.9
Total	**4.84**	**5.14**	**0.30**	**6.2**

Note: Totals may not add up due to independent rounding.

Sources: JODI, Petroleum Planning and Analysis Cell of India and OPEC.

Near-term expectations

India's oil demand outlook in 4Q22 should continue to benefit from strong annual GDP growth of 6.5% in 2022 and robust manufacturing activity. An expected rise in consumer confidence will support mobility and demand for industrial products. Furthermore, the post-monsoon kharif harvesting season and construction activity are also expected to support demand growth. Accordingly, oil demand in 4Q22 is projected to grow by 0.3 mb/d y-o-y.

Distillates are expected to be supported by harvesting, construction and manufacturing activity in October. Additionally, annual traditional festivities and an influx of travellers will support mobility and boost gasoline demand, and improvements in air travel will aid jet/kerosene demand. Finally, rising natural gas prices will lead to gas-to-oil switching in power generation and the industrial sector, thus improving the demand for fuel oil and distillates.

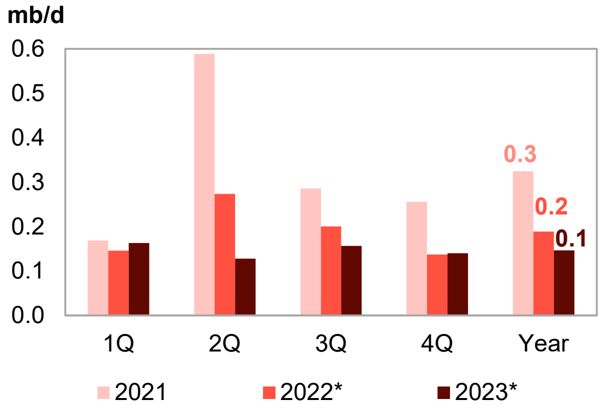
In 1Q23, India's oil demand is expected to remain on a positive trajectory, growing on average at 0.2 mb/d y-o-y. In 1Q23, gas-to-oil switching is expected to continue. Similarly, zaid crops are sown and harvested between March and July. Given these factors, combined with healthy annual GDP growth of 5.6% in 2023, the total demand in 1Q23 is expected to remain healthy. The improvement in demand growth will be aided by mobility and steady demand for distillates in manufacturing and construction. The residential and petrochemical sectors' demand for light distillates will also remain steady amidst the aviation sector's demand for jet/kerosene.

Latin America

Update on the latest developments

Oil demand in Latin America posted healthy growth of 0.3 mb/d y-o-y in August, driven by requirements in Venezuela and supported by Brazil and Argentina. The demand improvement was led by residual and other fuels posting annual growth of 0.1 mb/d y-o-y each, while gasoline improved and grew by 0.05 mb/d y-o-y. Airlines in Latin America recorded y-o-y growth in RPKs of 110.4%, and international RPKs for regional carriers were at 77.3% of the pre-pandemic level. Accordingly, jet/kerosene grew by 0.05 mb/d y-o-y in August. Furthermore, diesel posted growth of 0.05 mb/d y-o-y as the manufacturing PMI in Brazil remains relatively healthy at 51.86. Finally, LPG grew by a marginal 0.01 mb/d, and naphtha declined by 0.01 mb/d y-o-y.

Graph 4 - 6: Latin America's oil demand, y-o-y change



*Note: * 2022-2023 = Forecast. Source: OPEC.*

Near-term expectations

Oil demand in the region is expected to continue to improve in 4Q22, supported by projected healthy annual GDP growth of 2.7% in 2022. The improved manufacturing PMI amidst a decline in COVID-19 in big consuming countries will support oil demand recovery in the region. Accordingly, oil demand growth in the region is expected to increase by 0.1 mb/d y-o-y in 4Q22 to 6.40 mb/d, about 0.14 mb/d above the 3Q21 level.

In 2023, oil demand growth is forecast to remain at 0.2 mb/d to 6.48 mb/d in 1Q23, about 0.14 mb/d above the same period in 2022. Demand will be supported by annual GDP growth of 1.6 % in 2023, combined with continuous improvements in the COVID-19 situation in the region as vaccination programmes accelerate. Nonetheless, the prospects for oil demand still largely hinge on the strength of the region's economic recovery and containment of the pandemic, as well as spill-over from the slowdown in the global economy.

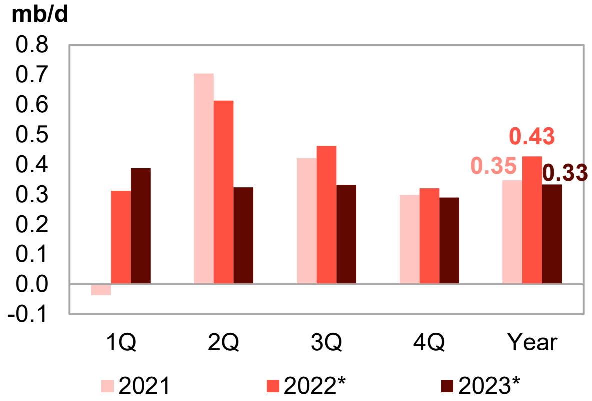
Middle East

Update on the latest developments

Oil demand growth in the Middle East remained strong at 0.6 mb/d y-o-y in August. Requirements for power generation, diesel and other fuels supported demand, with other products posting growth of 0.2 mb/d y-o-y while diesel grew by 0.2 mb/d y-o-y. Demand in the Saudi Arabian and Iraqi power generation sectors due to hot weather are the main driver of the region's demand growth for residual fuels and diesel. Residual fuels remain on a positive growth trajectory at 0.04 mb/d y-o-y.

Furthermore, mobility in the region remains very strong, with gasoline demand growing by 0.1 mb/d y-o-y. IATA's Air Passenger Market Analysis for August suggests that airline activity continues on a strong positive trend in the Middle East, with jet/kerosene growing by 0.02 mb/d y-o-y in August.

Graph 4 - 7: Middle East's oil demand, y-o-y change



*Note: * 2022-2023 = Forecast. Source: OPEC.*

LPG has remained at 0.02 mb/d y-o-y, the same as in July. However, naphtha improved from a y-o-y decline of 0.01 mb/d.

The latest data on Iraq indicates strong growth of 0.3 mb/d y-o-y in September. Other fuels posted growth of 0.2 mb/d y-o-y. Similarly, residuals grew by 0.04 mb/d y-o-y as gasoline posted growth of 0.02 mb/d y-o-y.

Table 4 - 8: Saudi Arabia's oil demand, mb/d

			Change Sep 22/Sep 21	
By product	**Sep 21**	**Sep 22**	**Growth**	**%**
LPG	0.04	0.05	0.00	10.8
Gasoline	0.52	0.53	0.01	2.3
Jet/kerosene	0.06	0.08	0.01	22.5
Diesel	0.56	0.63	0.07	12.4
Fuel oil	0.65	0.68	0.03	4.2
Other products	0.63	0.61	-0.02	-2.5
Total	**2.46**	**2.57**	**0.11**	**4.5**

Note: Totals may not add up due to independent rounding.

Sources: JODI and OPEC.

Near-term expectations

Strong economic activity in the region will continue to support oil demand in the near future. Saudi Arabia's economy is expected to expand by 9% in 2022. Similarly, the United Arab Emirates (UAE) is optimistic its economy will grow robustly this year as it continues to recover from the pandemic. The anticipated robust economic growth in the region is expected to support consumer spending as well as accelerate mobility and industrial activity. In addition, the hot season is expected to boost electricity demand due to the requirements for air conditioning. Hence, demand for residual and fuel oil will continue to accelerate in 4Q22.

Accordingly, oil demand in the region is projected to increase by 0.3 mb/d y-o-y. Similarly, jet/kerosene demand will further support the region's oil demand growth as the recovery in international air traffic remains on an upward trajectory.

In 2023, the oil demand momentum will increase from the pace of 4Q22 and is projected to grow by 0.4 mb/d y-o-y in 1Q23. Economic growth in the region is expected to be stable and support consumer confidence, which will spur the region's demand for social services and consumer goods. Gasoline, transportation diesel and jet/kerosene are expected to lead oil demand growth. Gasoil/diesel and fuel oil demand for power generation are also expected to play a significant role in demand growth.

World Oil Supply

Non-OPEC liquids supply in 2022 (including processing gains) is estimated to grow by 1.9 mb/d to average 65.6 mb/d. This is revised down slightly by 30 tb/d compared with the previous assessment. Upward revisions to liquids production in Latin America and Russia were more than offset by downward revisions to Other Eurasia, OECD Europe and Other Asia. It should be noted, however, that considerable uncertainty remains with regard to Russia's liquid output in 4Q22.

In the US, drilling and completion activities have expanded, with movement no longer limited to core areas. However, supply chain issues and higher costs related to inflation remain challenges for equipment and service demand. Although higher crude oil production was broadly offset by lower non-crude oil output in August, US liquids production is expected to rise at a slow and steady rate in the coming months. Accordingly, the US liquids supply growth forecast for 2022 is unchanged at 1.1 mb/d. The production forecast for Other Eurasia was revised down, due to lower-than-expected output in Azerbaijan, as well as on emergency repairs at an export terminal and planned maintenance in Kazakhstan. Extended maintenance on North Sea platforms also reduced 3Q22 output in the region. The main drivers of liquids supply growth for 2022 are expected to be the US, Canada, Guyana, China and Brazil, while production is expected to see the largest declines in Norway and Thailand.

Non-OPEC liquids production growth in 2023 is forecast to grow by 1.5 mb/d to average 67.1 mb/d, broadly unchanged from last month. Liquids supply in OECD countries is forecast to increase by 1.7 mb/d, while the non-OECD region is expected to show a decline of 0.2 mb/d. The main growth drivers are expected to be the US, Norway, Brazil, Canada, Kazakhstan and Guyana, whereas oil production is forecast to see declines in Russia and Mexico. Nevertheless, large uncertainties persist around US shale production potential, as well as the development of the geopolitical situation in Eastern Europe, particularly the looming EU sanctions on Russian oil imports.

OPEC NGLs and non-conventional liquids production in 2022 are forecast to grow by 0.1 mb/d to average 5.4 mb/d and to grow by 50 tb/d to average 5.4 mb/d in 2023. OPEC-13 crude oil production in October decreased by 210 tb/d m-o-m to average 29.49 mb/d, according to available secondary sources.

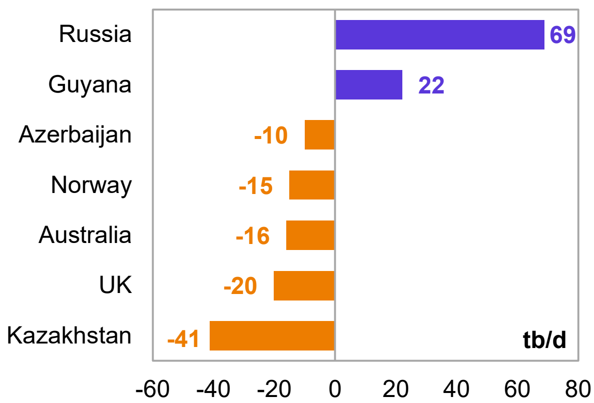
Non-OPEC liquids production in October, including OPEC NGLs, is estimated to have increased m-o-m by 0.9 mb/d to average 72.0 mb/d, up by 2.0 mb/d y-o-y. As a result, preliminary data indicates that October's global oil supply increased by 0.7 mb/d m-o-m to average 101.5 mb/d, up by 4.0 mb/d y-o-y.

The **non-OPEC liquids supply forecast for 2022** was revised down slightly by 24 tb/d to average 65.6 mb/d. Y-o-y growth averaged 1.9 mb/d, which is lower by 30 tb/d compared to the previous month.

The **OECD** supply growth forecast for 2022 was revised down by 39 tb/d. OECD Europe and OECD Asia Pacific saw downward revisions, while OECD Americas was revised up from the previous month's assessment.

The **non-OECD** supply growth forecast for 2022 was revised up by a minor 9 tb/d. A downward revision to Other Eurasia and Other Asia was offset by upward revisions to Latin America and Russia.

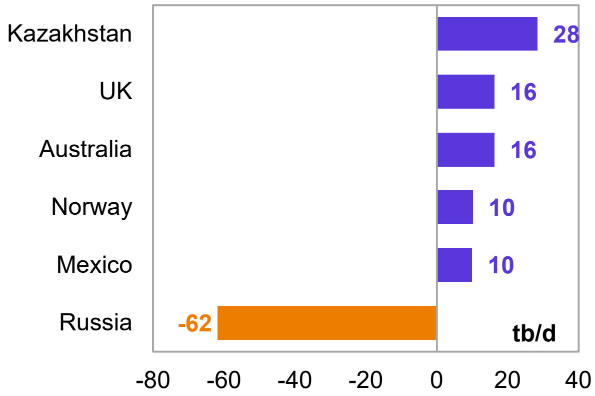
Graph 5 - 1: Major revisions to annual supply change forecast in 2022*, MOMR Nov 22/Oct 22



*Note: * 2022 = Forecast. Source: OPEC.*

Non-OPEC liquids production growth in 2023 was revised up by a minor 16 tb/d compared with the previous month's assessment, mainly due to higher expected growth in Kazakhstan and the North Sea.

Graph 5 - 2: Major revisions to annual supply change forecast in 2023*, MOMR Nov 22/Oct 22

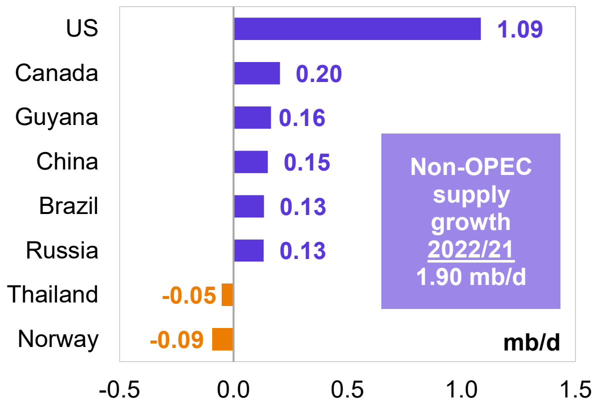


*Note: * 2023 = Forecast. Source: OPEC.*

Key drivers of growth and decline

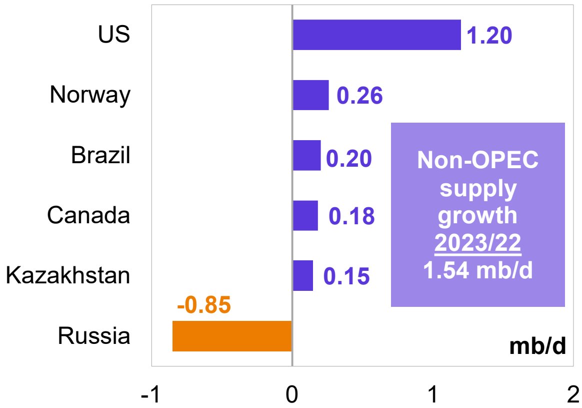
The **key drivers of non-OPEC liquids supply growth in 2022** are projected to be the US, Canada, Guyana, China and Brazil, while oil production is expected to see the largest declines in Norway and Thailand.

Graph 5 - 3: Annual liquids production changes for selected countries in 2022*



*Note: * 2022 = Forecast. Source: OPEC.*

Graph 5 - 4: Annual liquids production changes for selected countries in 2023*



*Note: * 2023 = Forecast. Source: OPEC.*

For **2023**, the key drivers of non-OPEC supply growth are forecast to be the US, Norway, Brazil, Canada, Kazakhstan and Guyana, while oil production is projected to decline, mainly in Russia and Mexico.

Non-OPEC liquids production in 2022 and 2023

Table 5 - 1: Non-OPEC liquids production in 2022*, mb/d

Non-OPEC liquids production	2021	1Q22	2Q22	3Q22	4Q22	2022	*Change 2022/21* Growth	%
Americas	25.25	25.86	26.27	26.93	27.29	26.59	1.34	5.31
of which US	*17.85*	*18.27*	*18.83*	*19.19*	*19.44*	*18.93*	*1.09*	*6.08*
Europe	3.76	3.73	3.43	3.51	3.87	3.64	-0.12	-3.13
Asia Pacific	0.51	0.49	0.51	0.43	0.53	0.49	-0.02	-4.11
Total OECD	**29.52**	**30.08**	**30.22**	**30.88**	**31.69**	**30.72**	**1.20**	**4.08**
China	4.31	4.51	4.52	4.38	4.43	4.46	0.15	3.51
India	0.78	0.78	0.77	0.75	0.80	0.78	0.00	-0.27
Other Asia	2.41	2.35	2.30	2.25	2.38	2.32	-0.09	-3.56
Latin America	5.95	6.11	6.18	6.44	6.56	6.32	0.37	6.18
Middle East	3.24	3.29	3.33	3.37	3.37	3.34	0.10	3.08
Africa	1.35	1.33	1.31	1.33	1.32	1.32	-0.03	-1.89
Russia	10.80	11.33	10.63	11.01	10.77	10.93	0.13	1.23
Other Eurasia	2.93	3.05	2.77	2.62	3.08	2.88	-0.05	-1.59
Other Europe	0.11	0.11	0.11	0.10	0.10	0.11	-0.01	-6.36
Total Non-OECD	**31.87**	**32.85**	**31.92**	**32.25**	**32.81**	**32.46**	**0.58**	**1.84**
Total Non-OPEC production	61.39	62.93	62.14	63.13	64.50	63.18	1.79	2.91
Processing gains	2.29	2.40	2.40	2.40	2.40	2.40	0.11	4.90
Total Non-OPEC liquids production	**63.68**	**65.33**	**64.54**	**65.53**	**66.90**	**65.58**	**1.90**	**2.98**
Previous estimate	63.67	65.34	64.51	65.77	66.78	65.60	1.93	3.03
Revision	0.01	0.00	0.03	-0.24	0.12	-0.02	-0.03	-0.05

*Note: * 2022 = Forecast. Totals may not add up due to independent rounding. Source: OPEC.*

Table 5 - 2: Non-OPEC liquids production in 2023*, mb/d

Non-OPEC liquids production	2022	1Q23	2Q23	3Q23	4Q23	2023	*Change 2023/22* Growth	%
Americas	26.59	27.60	27.70	28.05	28.43	27.95	1.35	5.09
of which US	*18.93*	*19.75*	*20.05*	*20.24*	*20.47*	*20.13*	*1.20*	*6.33*
Europe	3.64	3.97	3.95	3.84	3.97	3.93	0.29	8.10
Asia Pacific	0.49	0.51	0.48	0.50	0.49	0.50	0.00	0.97
Total OECD	**30.72**	**32.08**	**32.13**	**32.40**	**32.89**	**32.38**	**1.65**	**5.38**
China	4.46	4.51	4.50	4.47	4.47	4.49	0.03	0.64
India	0.78	0.80	0.79	0.78	0.77	0.79	0.01	1.12
Other Asia	2.32	2.38	2.38	2.35	2.37	2.37	0.05	2.16
Latin America	6.32	6.47	6.65	6.71	6.78	6.66	0.33	5.27
Middle East	3.34	3.35	3.36	3.39	3.39	3.37	0.03	0.99
Africa	1.32	1.32	1.34	1.35	1.37	1.35	0.02	1.87
Russia	10.93	9.92	10.07	10.14	10.19	10.08	-0.85	-7.78
Other Eurasia	2.88	3.10	3.07	3.04	3.08	3.07	0.19	6.65
Other Europe	0.11	0.10	0.10	0.10	0.10	0.10	0.00	-2.83
Total Non-OECD	**32.46**	**31.96**	**32.26**	**32.33**	**32.53**	**32.27**	**-0.18**	**-0.57**
Total Non-OPEC production	63.18	64.04	64.39	64.73	65.42	64.65	1.47	2.33
Processing gains	2.40	2.47	2.47	2.47	2.47	2.47	0.07	2.96
Total Non-OPEC liquids production	**65.58**	**66.51**	**66.86**	**67.20**	**67.89**	**67.12**	**1.54**	**2.35**
Previous estimate	65.60	66.56	66.83	67.23	67.88	67.13	1.52	2.32
Revision	-0.02	-0.04	0.04	-0.03	0.01	-0.01	0.02	0.02

*Note: * 2022-2023 = Forecast. Totals may not add up due to independent rounding. Source: OPEC.*

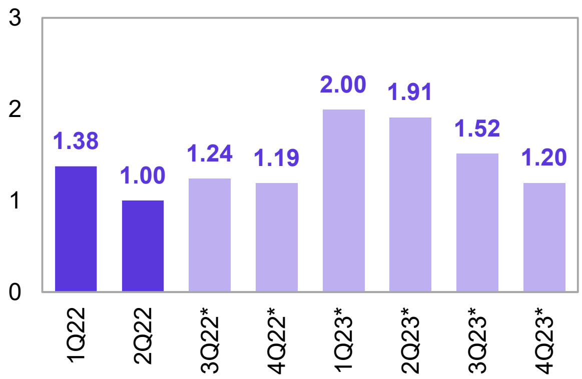
OECD

OECD liquids production in 2022 is forecast to increase by 1.2 mb/d y-o-y to average 30.7 mb/d. This has been revised down by 38 tb/d compared with a month earlier, due to downward revisions for OECD Europe and Australia.

OECD Americas was revised up slightly by 13 tb/d compared with last month's assessment and is now expected to grow by 1.3 mb/d to average 26.6 mb/d. OECD Europe is anticipated to decline y-o-y by 0.1 mb/d to average 3.6 mb/d. OECD Asia Pacific is forecast to drop by 21 tb/d y-o-y to average 0.5 mb/d.

For **2023**, oil production in the OECD is forecast to grow by 1.7 mb/d to average 32.4 mb/d. Growth is led by OECD Americas at 1.4 mb/d to average 27.9 mb/d. Yearly liquids production in OECD Europe is anticipated to grow by 0.3 mb/d to average 3.9 mb/d, while OECD Asia Pacific is expected to remain broadly unchanged, to average 0.5 mb/d.

Graph 5 - 5: OECD quarterly liquids supply, y-o-y changes



*Note: * 3Q22-4Q23 = Forecast. Source: OPEC.*

OECD Americas

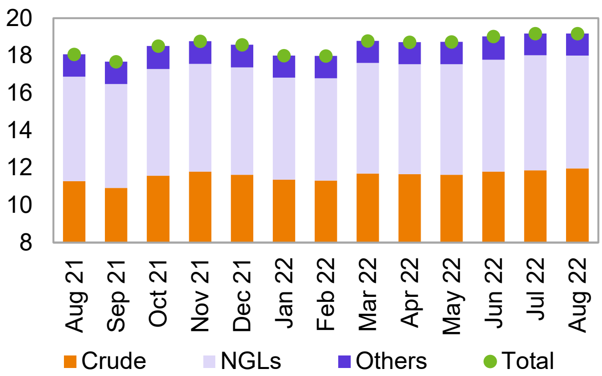
US

US liquids production remained broadly unchanged m-o-m in **August 2022** to average 19.2 mb/d, albeit up by 1.1 mb/d compared with August 2021.

Crude oil and condensate production rose m-o-m by 102 tb/d in **August 2022** to average 12.0 mb/d, up by 0.7 mb/d y-o-y.

In terms of the **crude and condensate production breakdown by region (PADDs)**, production increased mainly in the US Gulf Coast (USGC). The region was up by 104 tb/d to average 8.6 mb/d. Production in the Rocky Mountain region rose by 17 tb/d, while the West Coast showed a slight decrease of 19 tb/d. The Midwest and the East Coast remained broadly unchanged m-o-m. Production growth in the main regions was primarily driven by higher completion and fracking activities and a recovery in Gulf of Mexico (GoM) production to normal levels.

Graph 5 - 6: US monthly liquids output by key component



Source: OPEC.

NGLs production was down by 113 tb/d m-o-m to average 6.0 mb/d in August, but this was higher y-o-y by 0.4 mb/d. Production of **non-conventional liquids** (mainly ethanol) increased by 8 tb/d m-o-m to average 1.2 mb/d in August, according to the US Department of Energy (DoE). Preliminary estimates see non-conventional liquids averaging 1.1 mb/d in September 2022, down by 80 tb/d compared with the previous month.

GoM production rose m-o-m by 21 tb/d in August to average 1.8 mb/d, as maintenance wrapped up in the Gulf Coast offshore platforms. In the **onshore Lower 48**, August production increased m-o-m by 100 tb/d to average 9.8 mb/d.

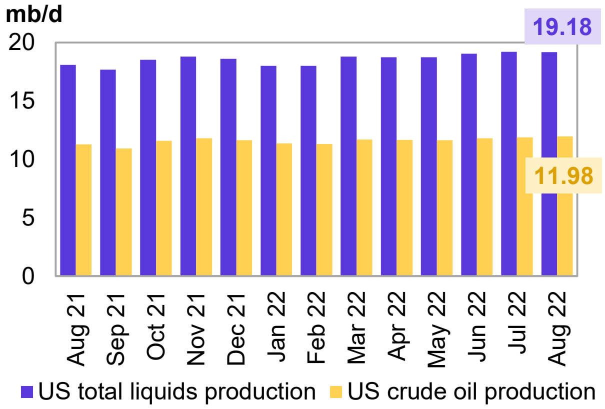
Looking at **individual states**, New Mexico's oil production increased by a minor 9 tb/d m-o-m to average 1.6 mb/d, which is 203 tb/d higher than a year ago. Texas production was up by 78 tb/d to average 5.1 mb/d, which is 231 tb/d higher than a year ago. In the Midwest, North Dakota production dropped m-o-m by just 6 tb/d to average 1.1 mb/d, down by 39 tb/d y-o-y, while Oklahoma's production was up by 7 tb/d to average 0.4 mb/d. Alaska's output was down by 19 tb/d m-o-m, and in Colorado, production dropped by a minor 6 tb/d.

Table 5 - 3: US crude oil production by selected state and region, tb/d

State	Aug 21	Jul 22	Aug 22	Change m-o-m	Change y-o-y
Texas	4,865	5,018	5,096	*78*	*231*
Gulf of Mexico (GOM)	1,549	1,762	1,783	*21*	*234*
New Mexico	1,378	1,572	1,581	*9*	*203*
North Dakota	1,098	1,065	1,059	*-6*	*-39*
Colorado	418	431	425	*-6*	*7*
Alaska	409	432	413	*-19*	*4*
Oklahoma	385	406	413	*7*	*28*
Total	**11,277**	**11,873**	**11,975**	***102***	***698***

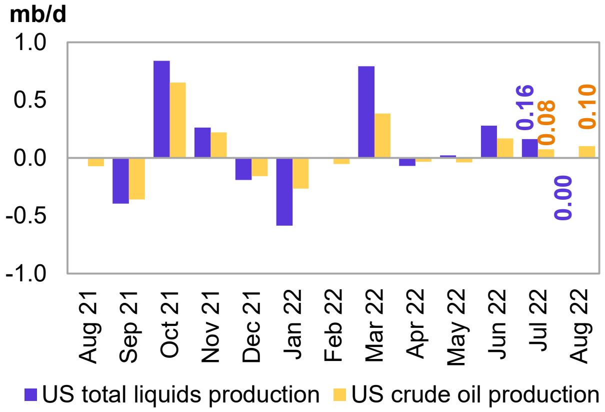
Sources: EIA and OPEC.

Graph 5 - 7: US monthly crude oil and total liquids supply



Sources: EIA and OPEC.

Graph 5 - 8: US monthly crude oil and total liquids supply, m-o-m changes



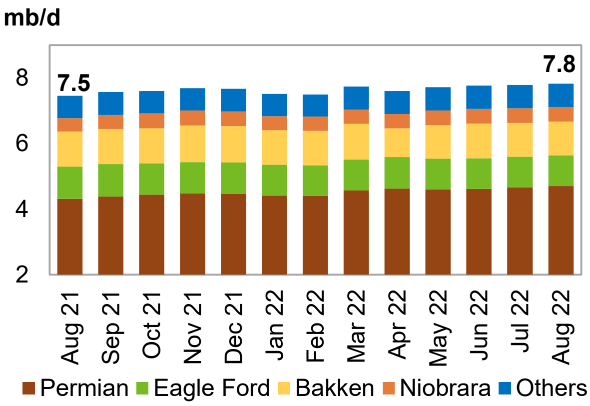
Sources: EIA and OPEC.

US tight crude output in **August 2022** is estimated to have risen by 38 tb/d m-o-m to average 7.8 mb/d, according to data from the Energy Information Administration (EIA). This was 0.4 mb/d higher than in the same month a year earlier.

The m-o-m increase from shale and tight formations using horizontal wells came mainly from the Permian, which increased by 42 tb/d to average 4.7 mb/d. This was up by 0.4 mb/d y-o-y.

In the Williston Basin, Bakken shale production remained broadly unchanged m-o-m to average 1.0 mb/d. This is down by 36 tb/d y-o-y. Tight crude output at Eagle Ford in Texas fell marginally by 5 tb/d to average 0.9 mb/d. This is down by 53 tb/d y-o-y. Production in Niobrara-Codell in Colorado and Wyoming was unchanged to average 0.45 mb/d.

Graph 5 - 9: US tight crude output breakdown



Sources: EIA, Rystad Energy and OPEC.

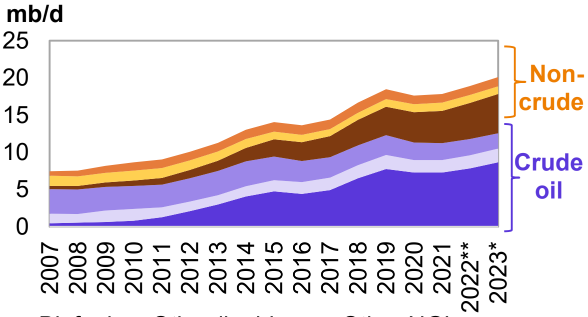
US liquids production in 2022, excluding processing gains, is forecast to expand y-o-y by 1.1 mb/d to average 18.9 mb/d, unchanged compared with the previous assessment. Tight crude is forecast to expand by 0.6 mb/d in 2022 to average 7.9 mb/d. In addition, NGLs (mainly from unconventional basins) are projected to grow by 0.5 mb/d to average 5.9 mb/d, and production in the GoM is anticipated to increase by 20 tb/d. Non-conventional liquids are projected to expand by 40 tb/d to average 1.2 mb/d. However, the expected growth is likely to be partially offset by y-o-y natural declines of 0.1 mb/d in onshore conventional fields.

Given the current pace of oil field drilling and well completions, **crude oil and condensate production** is forecast to grow by 0.5 mb/d y-o-y to average 11.8 mb/d in 2022. This forecast assumes continued capital discipline, current inflation rates, continuing supply chain issues and oil field service limitations (labour and equipment). Tightness in the hydraulic fracking market has been one of the biggest issues for US producers in recent months.

US liquids production in 2023, excluding processing gains, is forecast to grow by 1.2 mb/d y-o-y to average 20.1 mb/d, unchanged from the previous assessment. Higher drilling activities and fewer supply chain/logistical issues in the prolific Permian, Eagle Ford and Bakken shale sites are assumed for 2023. Crude oil output is anticipated to increase by 0.8 mb/d y-o-y to average 12.6 mb/d. Average tight crude output in 2023 is forecast at 8.7 mb/d, up by 0.8 mb/d y-o-y.

At the same time, NGLs production and non-conventional liquids, particularly ethanol, are forecast to increase y-o-y by 0.35 mb/d and 40 tb/d, to average 6.3 mb/d and 1.3 mb/d, respectively.

Graph 5 - 10: US liquids supply developments by component



*Note: * 2022-2023 = Forecast.*
Source: OPEC.

Table 5 - 4: US liquids production breakdown, mb/d

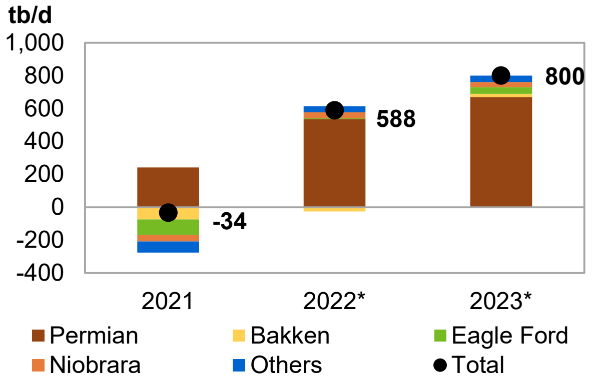
US liquids	2021	Change 2021/20	2022*	Change 2022/21	2023*	Change 2023/22
Tight crude	7.28	-0.03	7.87	0.59	8.67	0.80
Gulf of Mexico crude	1.71	0.04	1.73	0.02	1.83	0.10
Conventional crude oil	2.27	-0.07	2.19	-0.08	2.10	-0.09
Total crude	**11.25**	**-0.06**	**11.78**	**0.53**	**12.59**	**0.81**
Unconventional NGLs	4.30	0.22	4.86	0.55	5.26	0.40
Conventional NGLs	1.12	0.03	1.10	-0.03	1.04	-0.05
Total NGLs	**5.42**	**0.25**	**5.95**	**0.53**	**6.30**	**0.35**
Biofuels + Other liquids	1.17	0.02	1.21	0.04	1.25	0.04
US total supply	**17.85**	**0.21**	**18.94**	**1.09**	**20.13**	**1.20**

*Note: * 2022-2023 = Forecast. Sources: EIA, OPEC and Rystad Energy.*

US tight crude production in the **Permian** in 2022 is estimated to increase y-o-y by 0.5 mb/d to 4.7 mb/d and then forecast to grow by 0.7 mb/d y-o-y to average 5.4 mb/d in 2023.

The **Bakken** shale production decline that occurred in 2020 and 2021 is expected to continue in 2022. Tight crude production in the Bakken is estimated to drop by 25 tb/d in 2022 to average 1.1 mb/d, which is lower than the pre-pandemic average output of 1.4 mb/d. Drilling activities in North Dakota and available DUC wells are lower than the required levels to revive output. In 2023, growth is forecast to resume at 21 tb/d to average 1.1 mb/d.

Graph 5 - 11: US tight crude output by shale play, y-o-y changes



*Note: * 2022-2023 = Forecast.*
Sources: EIA, Rystad Energy and OPEC.

The **Eagle Ford** in Texas saw output of 1.2 mb/d in 2019 but then declined in 2020 and 2021. It is estimated to grow in 2022 by a minor 5 tb/d to average 1.0 mb/d. Growth of 40 tb/d is then forecast for 2023, to average just over 1.0 mb/d.

Niobrara production is estimated to grow y-o-y by 37 tb/d in 2022 and forecast to increase by 30 tb/d in 2023 to average 450 tb/d and 480 tb/d, respectively. Other shale plays are expected to show marginal increases totalling 36 tb/d and 40 tb/d in 2022 and 2023, given current drilling and completion activities.

Table 5 - 5: US tight oil production growth, mb/d

US tight oil	2021	Change 2021/20	2022*	Change 2022/21	2023*	Change 2023/22
Permian tight	4.15	0.24	4.69	0.54	5.36	0.67
Bakken shale	1.08	-0.07	1.05	-0.03	1.08	0.02
Eagle Ford shale	0.96	-0.09	0.97	0.00	1.01	0.04
Niobrara shale	0.41	-0.04	0.45	0.04	0.48	0.03
Other tight plays	0.67	-0.07	0.71	0.04	0.75	0.04
Total	**7.28**	**-0.03**	**7.87**	**0.59**	**8.67**	**0.80**

*Note: * 2022-2023 = Forecast. Source: OPEC.*

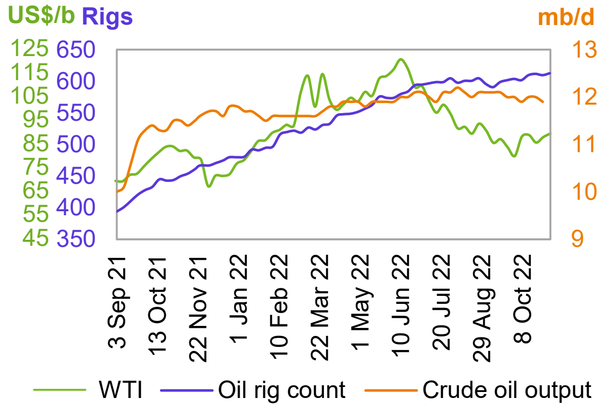
US rig count, spudded, completed, DUC wells and fracking activity

Total **US active drilling rigs** increased by two units to 770 rigs in the week ending 4 November. This was up by 220 rigs compared with a year ago. The number of active offshore rigs remained unchanged w-o-w at 14, up from 13 in the same month a year earlier. Onshore oil and gas rigs increased by two w-o-w to stand at 754 rigs, up by 219 rigs y-o-y, with two rigs in inland waters.

The **US horizontal rig count** rose by two w-o-w to 705, compared with 492 horizontal rigs a year ago. The number of drilling rigs for oil rose w-o-w by three to 613, while gas-drilling rigs fell by one to 155.

The Permian's rig count remained unchanged w-o-w at 346 rigs. This was also the case in the Eagle Ford, Cana Woodford and DJ-Niobrara at 70, 28 and 20, respectively. However, the rig count increased w-o-w by two in the Williston to 41. There have been just three operating oil rigs in the Barnett basin since mid-September.

Graph 5 - 12: US weekly rig count vs. US crude oil output and WTI price



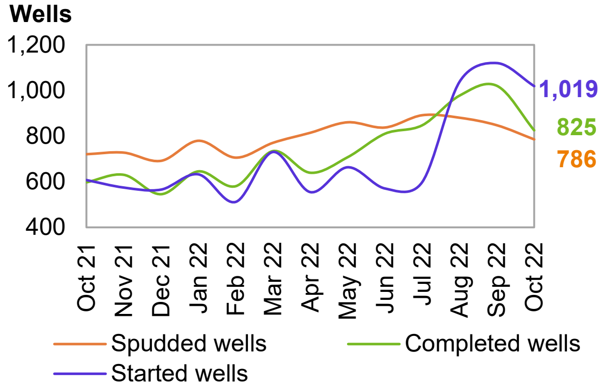
Sources: Baker Hughes, EIA and OPEC.

Drilling and completion (D&C) activities for spudded, completed and started wells in all US shale plays, based on the EIA-DPR regions, saw 848 horizontal wells spudded in September 2022 (as per preliminary data). This is down by 33 m-o-m but 28% higher than in September 2021.

In September 2022, preliminary data indicates a higher number of completed wells at 1,020. This is up 80% y-o-y. Moreover, the number of started wells was estimated at 1,120, which is 115% higher than a year earlier.

Preliminary data for October estimates 786 spudded, 825 completed and 1,019 started wells, according to Rystad Energy.

Graph 5 - 13: Spudded, completed and started wells in US shale plays

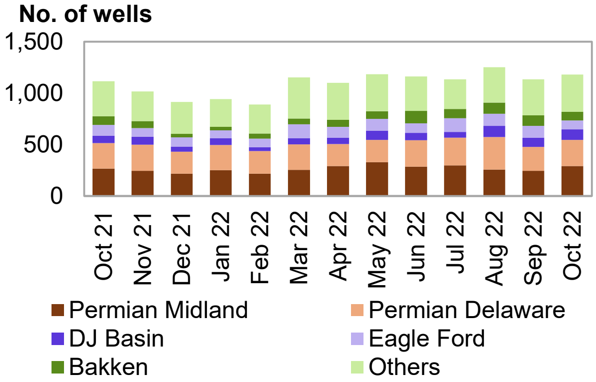


Note: Sep 22-Oct 22 = Preliminary data.
Sources: Rystad Energy and OPEC.

In terms of identified **US oil and gas fracking operations by region**, Rystad Energy reported that 1,251 wells were fracked in August 2022. In September and October, it stated that 1,134 and 1,179 wells started fracking, respectively. These preliminary numbers are based on an analysis of high-frequency satellite data.

Preliminary September data on fracking showed that 244 and 234 wells were fracked in the Permian Midland Tight and Permian Delaware Tight, respectively. In comparison with August, there was a decline of 14 wells fracked in the Midland and a drop of 83 wells fracked in the Delaware tight, according to preliminary data. Data also indicated that 90 wells were fracked in the DJ Basin, 114 in the Eagle Ford and 103 in the Bakken during August.

Graph 5 - 14: Fracked wells count per month



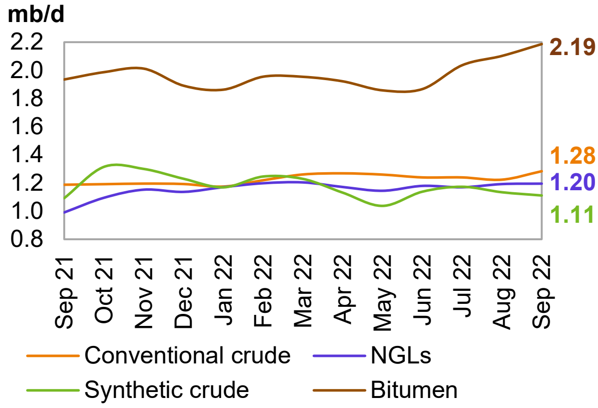
Note: Sep 22-Oct 22 = Preliminary data.
Sources: Rystad Energy Shale Well Cube and OPEC.

Canada

Canada's liquids production in September is estimated to have increased m-o-m by 124 tb/d to average 5.8 mb/d, as seasonal 2Q22 maintenance was completed. This was the highest Canadian production on record.

Crude bitumen production output fell m-o-m by 23 tb/d in August, while synthetic crude increased by 84 tb/d. Taken together, crude bitumen and synthetic crude production rose by 61 tb/d to 3.3 mb/d. Conventional crude production increased by 60 tb/d m-o-m to average 1.3 mb/d. NGLs output remained broadly unchanged m-o-m to average 1.2 mb/d.

Graph 5 - 15: Canada's monthly liquids production development by type

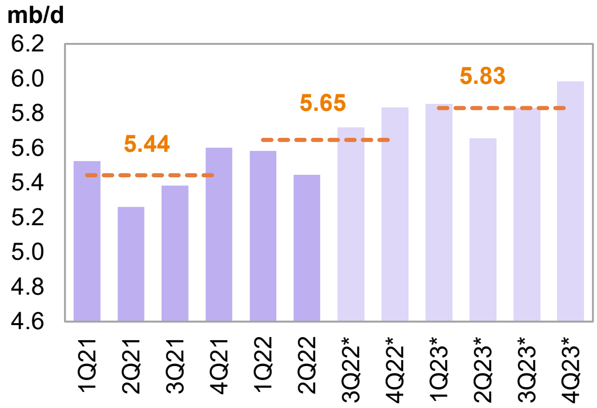


Sources: National Energy Board and OPEC.

Canada's liquids supply in **2022** is forecast to expand by 0.2 mb/d to average 5.6 mb/d, up by a minor 9 tb/d from the previous assessment. Canada's production is forecast to grow in 4Q22, as upgraders return from maintenance and oil sands optimizations and ramp-ups continue. Fort Hills is set to undergo maintenance near the end of the year , and the facility will only be operating one train. Imperial's Kearl Lake production is expected to remain steady for the remainder of the year, partially offsetting the expected December decline from Fort Hills. Additionally, the Terra Nova FPSO is expected to resume production by the end of the year, adding 30 tb/d of supply.

For **2023**, Canada's liquids production is forecast to increase gradually at a pace similar to 2022, rising by 0.2 mb/d to average 5.8 mb/d. Incremental production will come mainly from Alberta's oil sands, which saw an average output of 3.1 mb/d from January to September 2022.

Graph 5 - 16: Canada's quarterly liquids production and forecast



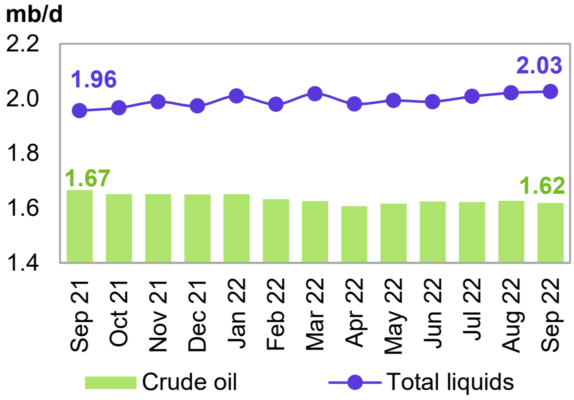
*Note: * 3Q22-4Q23 = Forecast. Source: OPEC.*

Mexico

Mexico's crude output remained largely flat m-o-m in **September** to average 1.6 mb/d, while NGLs output increased by 12 tb/d due to the extended ramp-up of condensate fields like Quesqui. This saw Mexico's total September liquids output increase by a minor 5 tb/d m-o-m to average 2.0 mb/d, according to Pemex.

For **2022**, liquids production in Mexico is forecast to average 2.0 mb/d, broadly unchanged from the previous month. The 50 tb/d growth in 2022 is expected to be driven by foreign-operated fields, while minor growth is also anticipated in Pemex-operated fields. High decline rates in mature fields like Ku-Maloob-Zaap and Xanab are expected to be partially offset by the ramp up of the Quesqui and Tulpico fields in 4Q22.

Graph 5 - 17: Mexico's monthly liquids and crude production development



Sources: PEMEX and OPEC.

For **2023**, liquids production is forecast to decline by 29 tb/d to average 1.98 mb/d, although this is10 tb/d higher than the previous assessment, due to expected higher output from Pemex-operated fields. Nevertheless, the total crude production decline in Pemex's mature fields is projected to outweigh production ramp-ups from other fields.

OECD Europe

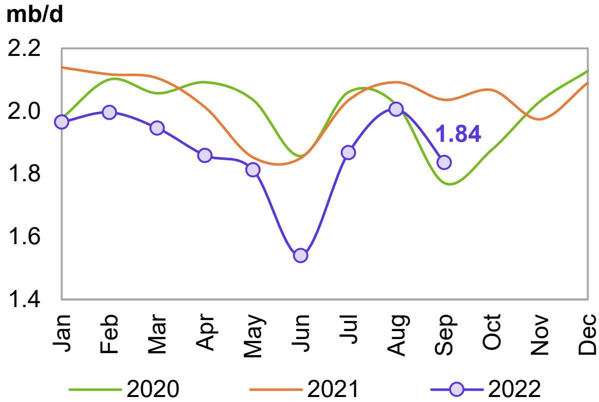
Norway

Norwegian liquids production in **September** declined by 170 tb/d m-o-m, to average 1.8 mb/d. Some offshore fields returned from summer maintenance, but this was outweighed by September maintenance in the Oseberg and Troll fields.

Norway's crude production fell by 141 tb/d m-o-m in September to average 1.6 mb/d, down by 137 tb/d y-o-y. Monthly oil production was 9.5% lower than the Norwegian Petroleum Directorate's (NPD) forecast.

At the same time, the production of NGLs and condensates decreased by 29 tb/d m-o-m to average 0.2 mb/d, according to NPD data.

Graph 5 - 18: Norway's monthly liquids production development



Sources: NPD and OPEC.

For **2022**, production growth is revised down by 15 tb/d y-o-y to average 1.9 mb/d. This is mainly due to the downward revision in 3Q22 output on the back of maintenance at a number of key fields, including Oseberg and Troll. In addition, for October, unspecified production issues at Troll are expected to impact production levels. However, further growth from some small start-ups is expected in 4Q22, in addition to some fields returning from maintenance and the potential start of production from Phase 2 of the Johan Sverdrup field development. Equinor has not yet provided a firm start-up date for this phase beyond a fourth-quarter window.

For **2023**, Norwegian liquids production is forecast to expand by 0.3 mb/d, revised up by 10 tb/d compared with the previous month, to average 2.2 mb/d. A number of small-to-large projects are scheduled to ramp up in 2023. Importantly, the Johan Sverdrup Phase 2 ramp-up is projected to be the main source of increased output for the year, accounting for roughly 35% of Norway's total crude and condensate production.

It should be noted that the Norwegian government has announced plans to hike tax rates for the country's oil and gas industry, citing the surge in crude and gas prices as the driver. However, the higher rate is not expected to negatively impact future offshore developments as operators were already aware that the previous temporary tax package would expire by the end of the year.

UK

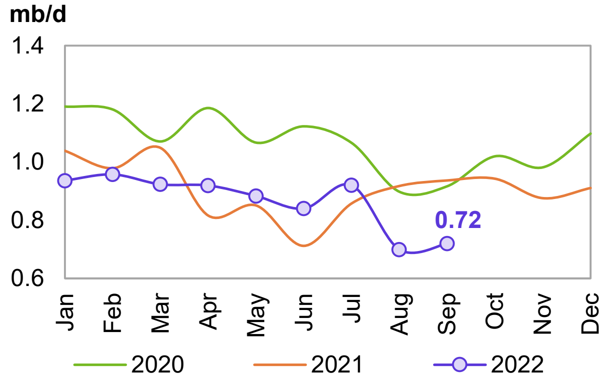
UK liquids production increased m-o-m in **September** by 21 tb/d to average 0.7 mb/d. Crude oil output increased by 16 tb/d m-o-m to average 0.6 mb/d, according to official data, but was lower by 222 tb/d y-o-y. NGLs output declined by a minor 5 tb/d to average 84 tb/d. UK liquids output in September was down 23% from the same month a year earlier, which was mainly due to extended maintenance.

For **2022**, UK liquids production is forecast to decline by 29 tb/d to average 0.9 mb/d. This was revised down by 20 tb/d from the previous assessment, owing to lower-than-expected production in 3Q22 and a lower forecast for 4Q22.

For **2023**, UK liquids production is forecast to increase by 30 tb/d to average 0.9 mb/d. After repeated delays, the Penguins FPSO delivery date has been confirmed for November 2022. Shell indicated that peak production from the redeveloped Penguins field is expected to reach 28 tboe/d, given a one-year ramp up period after first oil.

Project sanctioning will be essential to maintain future oil and gas output, as UK output has been in long-term decline. Therefore, a number of larger-sized projects would need to be implemented, just to maintain UK oil production levels.

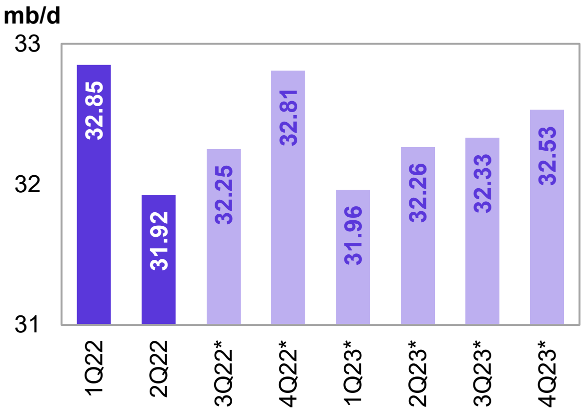
Graph 5 - 19: UK monthly liquids production development



Sources: Department of Energy & Climate Change and OPEC.

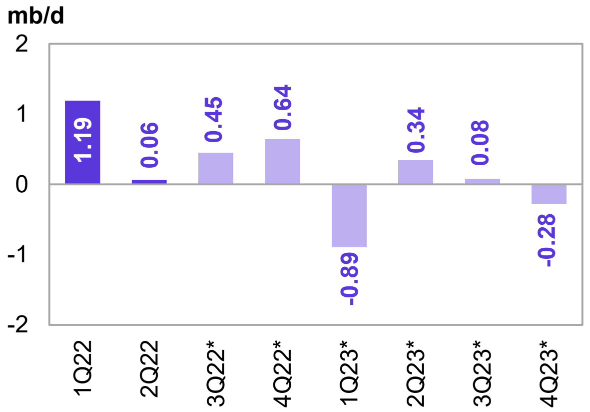
Non-OECD

Graph 5 - 20: Non-OECD quarterly liquids production and forecast



*Note: * 3Q22-4Q23 = Forecast. Source: OPEC.*

Graph 5 - 21: Non-OECD quarterly liquids supply, y-o-y changes



*Note: * 3Q22-4Q23 = Forecast. Source: OPEC.*

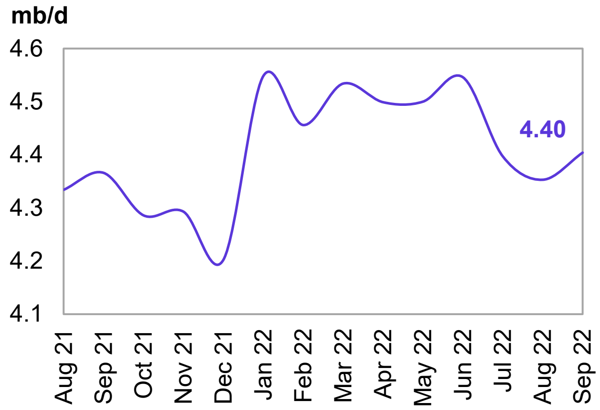
China

China's liquids production increased m-o-m in **September** by 51 tb/d to average 4.4 mb/d, which was up by 38 tb/d y-o-y, according to official data. Crude oil output in September averaged 4.0 mb/d, up by 53 tb/d compared with the previous month, but stood at the same level y-o-y. Liquids production over the first nine months of 2022 averaged 4.5 mb/d, higher by 3.4% compared with the same period last year.

For **2022**, growth of 151 tb/d is estimated for an average of 4.5 mb/d. This is revised down by a minor 9 tb/d from the previous assessment, mainly due to data revisions in 3Q22. Natural decline rates are expected to be offset by additional growth through more infill wells and enhanced oil recovery projects amid efforts by state-owned oil companies to ensure energy supply security.

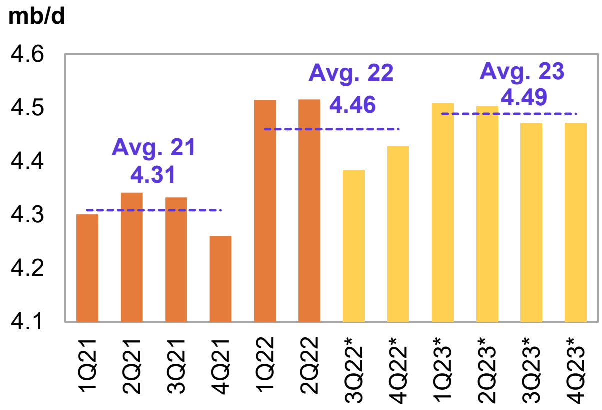
For **2023**, y-o-y growth of 30 tb/d is forecast for an average of 4.5 m/d, broadly unchanged from last month's assessment. New projects will slightly offset declines from the mature onshore production base. According to China's latest Five-Year Plan (FYP) and guidelines, from 2021 to 2025, the country aims to maintain liquids production well above 4 mb/d. To achieve this target, China will need to compensate for declining output rates at producing fields and accelerate the exploitation of deepwater reservoirs and challenging resources through infill drilling and expansion projects. Besides, China is anticipated to invest further in high-risk exploration activities in the central and western offshore regions where commercial discoveries have been made.

Graph 5 - 22: China's monthly liquids production development



Sources: CNPC and OPEC.

Graph 5 - 23: China's quarterly liquids production and forecast



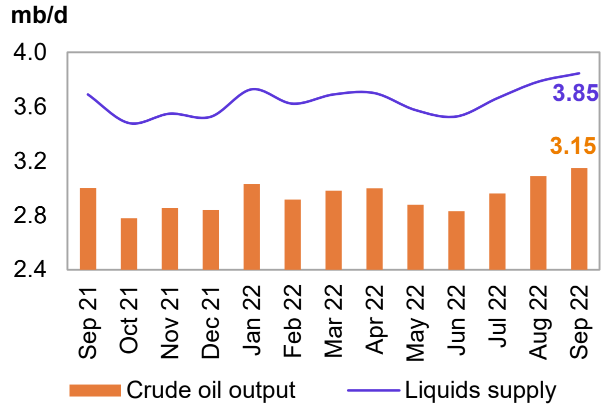
*Note: * 3Q22-4Q23 = Forecast. Sources: CNPC and OPEC.*

Latin America

Brazil

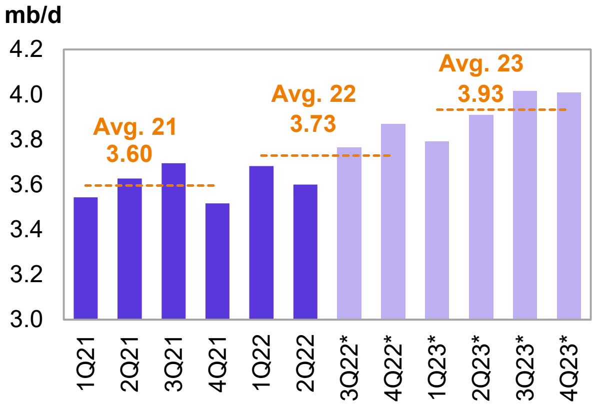
Brazil's crude output in **September** increased m-o-m by 61 tb/d, to average 3.1 mb/d. NGLs production was largely unchanged at an average of 84 tb/d and is expected to remain flat in October. Biofuels output (mainly ethanol) was flat in September to average 612 tb/d, with preliminary data showing a flat trend in October, as well. Total liquids production increased by 62 tb/d in September to average 3.8 mb/d, which is up by 156 tb/d y-o-y. Crude and condensate production rose for the third consecutive month through September, as offshore maintenance eased and new projects, mostly fields under production-sharing contracts, continued to ramp up production.

Graph 5 - 24: Brazil's monthly liquids production development by type



Sources: ANP, Petrobras and OPEC.

Graph 5 - 25: Brazil's quarterly liquids production



*Note: * 3Q22-4Q23 = Forecast. Sources: ANP and OPEC.*

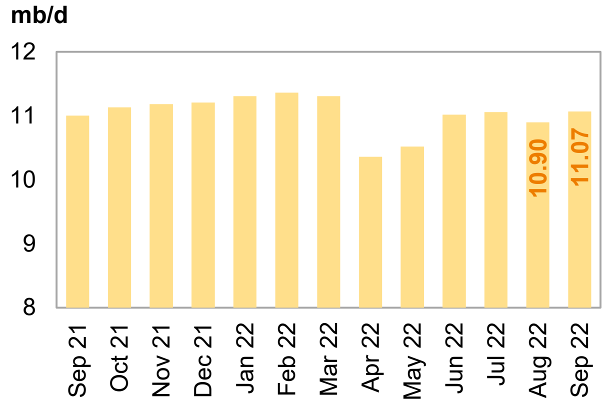
For **2022,** Brazil's liquids supply, including biofuels, is forecast to increase by 0.1 mb/d y-o-y to average 3.7 mb/d. This is up by a minor 8 tb/d from the previous month's assessment, due to output growth in 3Q22. Equinor pumped first oil from a newly installed third production platform at the Peregrino heavy oil field, which is part of an expansion project to boost the field's output to a peak of 110 tb/d. Growth in 2022 is being driven by the continued ramp up of the Sepia field and the start-up of Mero 1 in the pre-salt Santos basin, as well as Peregrino (Phases 1 and 2) in the Campos basin.

For **2023**, Brazil's liquids supply, including biofuels, is forecast to increase by 0.2 mb/d y-o-y to average 3.9 mb/d, broadly unchanged from the previous forecast. Crude oil output is set to increase through production ramp ups in the Mero (Libra NW), Buzios (Franco), Tupi (Lula), Peregrino, Sepia, Marlim and Itapu (Florim) fields. However, offshore maintenance is expected to cause interruptions in major fields. Much of Brazil's production growth will be from the sub-salt frontier, where highly productive reservoirs containing light and low sulphur oil have been explored.

Russia

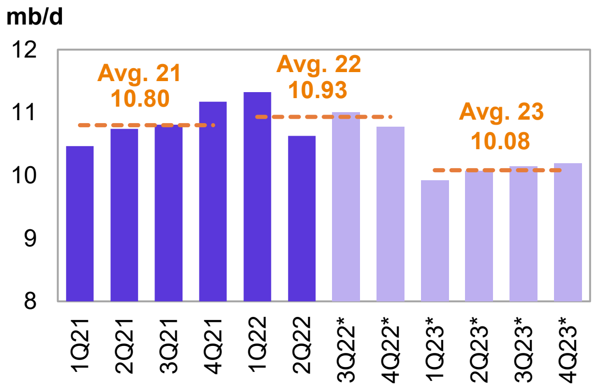
Russia's liquids production in September increased m-o-m by 169 tb/d to average 11.1 mb/d. This includes 9.8 mb/d of crude oil and 1.3 mb/d of NGLs and condensate.

Graph 5 - 26: Russia's monthly liquids production



Sources: Nefte Compass and OPEC.

Graph 5 - 27: Russia's quarterly liquids production



*Note: * 3Q22-4Q23 = Forecast.*
Sources: Nefte Compass and OPEC.

Russian liquids output in **2022** is forecast to increase y-o-y by 133 tb/d to average 10.9 mb/d. This is revised up by 69 tb/d from the previous month's assessment, mainly due to higher output in September and higher-than-expected preliminary production data in October.

For **2023**, Russian liquids production is forecast to drop by 0.85 mb/d to average 10.1 mb/d. This is revised down by 62 tb/d from the previous assessment, due to base changes in 2022. It should be noted that Russia's oil forecast remains subject to high uncertainty.

Caspian

Kazakhstan & Azerbaijan

Liquids output in Kazakhstan fell by 50 tb/d to average 1.5 mb/d in **September**. Crude production was up by 72 tb/d m-o-m to average 1.3 mb/d, while NGLs declined by 122 tb/d to average 0.2 mb/d. Higher oil output was due to the gradual Kashagan oil field ramp up, while planned maintenance in the Karachaganak gas condensate field, as well as emergency repairs at the Caspian Pipeline Consortium (CPC) terminal on Russia's Black Sea coast, reduced total monthly liquids output.

Kazakhstan's liquids supply for **2022** is now forecast to decline by 25 tb/d y-o-y to average 1.8 mb/d. This is down by 41 tb/d compared with the previous month's assessment, due to downward revisions applied to 3Q22 and 4Q22. According to preliminary estimates by the Kazakh Energy Ministry, output was supposed to be fully restored by the end of October. According to CPC, however, as of 21 October, emergency repairs at the CPC crude terminal were delayed due to stormy weather. No revised timeline has been given for completion of the work.

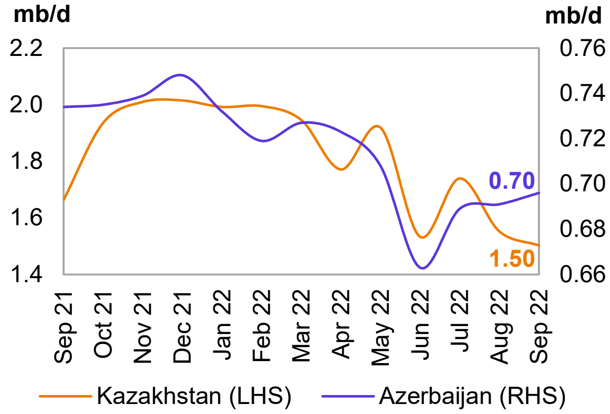
For **2023**, liquids supply is forecast to increase by 146 tb/d, up by 28 tb/d compared to the previous forecast, due to production ramp-ups at Kashagan. Oil production in the Tengiz field and gas condensate output in the Karachaganak field are also expected to rise marginally.

Azerbaijan's liquids production in September increased m-o-m by a minor 5 tb/d to average 0.7 mb/d, but this was down by 38 tb/d y-o-y. Crude production averaged 558 tb/d, while NGLs output averaged 138 tb/d, according to official sources.

For **2022**, liquids supply in Azerbaijan is estimated to decline marginally by 6 tb/d y-o-y to average 0.7 mb/d. This has been revised down by 10 tb/d because of lower-than-expected production in major oil fields in 3Q22. No new projects are expected to come online in the country in 2022, and the main declines in legacy fields are expected to be offset by ramp-ups in other fields.

Azerbaijan's liquids supply for **2023** is forecast to rise by 49 tb/d to average 0.8 mb/d, according to the voluntary production adjustments agreed on at the 33rd OPEC and non-OPEC Ministerial Meeting. Growth is forecast to come from the Shah Deniz and Absheron condensate projects and the Azeri Central East project.

Graph 5 - 28: Caspian monthly liquids production development by selected country



Sources: Nefte Compass and OPEC.

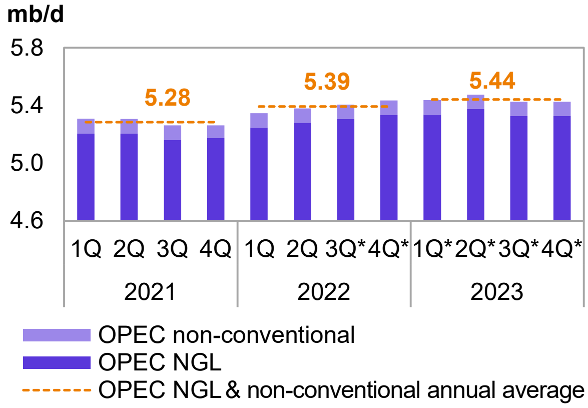
OPEC NGLs and non-conventional oils

OPEC NGLs and non-conventional liquids in 2022 are estimated to grow by 0.1 mb/d to average 5.4 mb/d, unchanged from the previous assessment.

NGLs output in 3Q22 is estimated to have averaged 5.31 mb/d, while OPEC non-conventional output remained steady at 0.1 mb/d. Taken together, 5.4 mb/d is expected for September, according to preliminary data.

In 2023, **OPEC NGLs and non-conventional liquids 2023** are forecast to grow by around 50 tb/d for an average of 5.4 mb/d. NGLs production is projected to grow by 50 tb/d to average 5.3 mb/d, while non-conventional liquids are projected to remain unchanged at 0.1 mb/d.

Graph 5 - 29: OPEC NGLs and non-conventional liquids quarterly production and forecast



*Note: * 3Q22-4Q23 = Forecast. Source: OPEC.*

Table 5 - 6: OPEC NGL + non-conventional oils, mb/d

OPEC NGL and non-coventional oils	2021	Change 21/20	2022	Change 22/21	1Q23	2Q23	3Q23	4Q23	2023	Change 23/22
OPEC NGL	**5.18**	*0.12*	**5.29**	*0.11*	5.34	5.37	5.33	5.33	**5.34**	*0.05*
OPEC non-conventional	**0.10**	*0.00*	**0.10**	*0.00*	0.10	0.10	0.10	0.10	**0.10**	*0.00*
Total	**5.28**	***0.12***	**5.39**	***0.11***	**5.44**	**5.47**	**5.43**	**5.43**	**5.44**	***0.05***

Note: 2022-2023 = Forecast. Source: OPEC.

OPEC crude oil production

According to secondary sources, total **OPEC-13 crude oil production** averaged 29.49 mb/d in October 2022, lower by 210 tb/d m-o-m. Crude oil output increased mainly in Nigeria and Iraq, while production in Saudi Arabia and Angola declined.

Table 5 - 7: OPEC crude oil production based on *secondary sources*, tb/d

Secondary sources	2020	2021	1Q22	2Q22	3Q22	Aug 22	Sep 22	Oct 22	*Change Oct/Sep*
Algeria	904	912	984	1,015	1,038	1,042	1,040	1,036	*-4*
Angola	1,245	1,117	1,152	1,171	1,160	1,170	1,145	1,067	*-78*
Congo	289	265	263	268	266	264	276	257	*-19*
Equatorial Guinea	114	96	90	89	90	85	88	74	*-14*
Gabon	191	182	199	190	199	197	202	214	*12*
IR Iran	1,991	2,392	2,529	2,555	2,562	2,571	2,549	2,548	*-1*
Iraq	4,076	4,049	4,286	4,440	4,540	4,543	4,551	4,572	*20*
Kuwait	2,439	2,419	2,612	2,690	2,801	2,810	2,822	2,804	*-18*
Libya	367	1,143	1,063	751	992	1,135	1,157	1,163	*6*
Nigeria	1,578	1,372	1,376	1,211	1,067	1,043	1,025	1,057	*33*
Saudi Arabia	9,204	9,114	10,165	10,450	10,885	10,930	10,987	10,838	*-149*
UAE	2,804	2,727	2,954	3,045	3,168	3,182	3,192	3,186	*-7*
Venezuela	512	555	684	714	670	681	669	679	*9*
Total OPEC	**25,713**	**26,344**	**28,357**	**28,588**	**29,438**	**29,653**	**29,704**	**29,494**	***-210***

Notes: Totals may not add up due to independent rounding, given available secondary sources to date. Source: OPEC.

Table 5 - 8: OPEC crude oil production based on *direct communication*, tb/d

Direct communication	2020	2021	1Q22	2Q22	3Q22	Aug 22	Sep 22	Oct 22	*Change Oct/Sep*
Algeria	899	911	984	1,016	1,050	1,053	1,058	1,060	*2*
Angola	1,271	1,124	1,161	1,173	1,151	1,179	1,091	1,051	*-40*
Congo	300	267	267	258	261	262	271	267	*-3*
Equatorial Guinea	114	93	95	91	83	85	75	57	*-18*
Gabon	207	181	197	184	198	212	191	..	*..*
IR Iran	..	..	..	..	..	..	..	..	*..*
Iraq	3,997	3,971	4,188	4,472	4,632	4,651	4,662	4,651	*-11*
Kuwait	2,438	2,415	2,612	2,694	2,799	2,811	2,818	2,811	*-7*
Libya	389	1,207	1,151	..	..	..	..	..	*..*
Nigeria	1,493	1,323	1,299	1,133	999	972	938	1,014	*77*
Saudi Arabia	9,213	9,125	10,224	10,542	10,968	11,051	11,041	10,957	*-84*
UAE	2,779	2,718	2,949	3,042	3,170	3,184	3,193	3,188	*-5*
Venezuela	569	636	756	745	673	723	666	717	*51*
Total OPEC	**..**	**..**	**..**	**..**	**..**	**..**	**..**	**..**	***..***

Notes: .. Not available. Totals may not add up due to independent rounding. Source: OPEC.

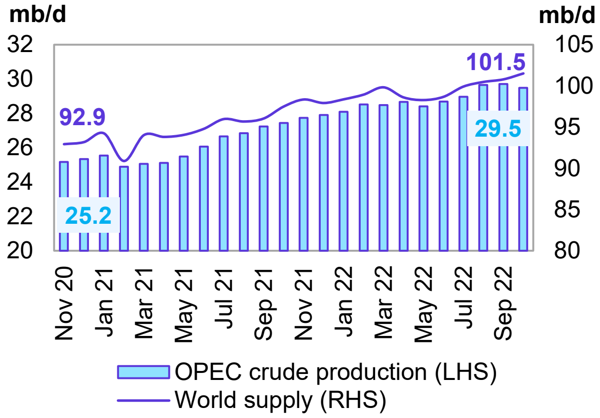
World oil supply

Preliminary data indicates that **global liquids production in October** increased by 0.7 mb/d to average 101.5 mb/d compared with the previous month.

Non-OPEC liquids production (including OPEC NGLs) is estimated to have increased in October by 0.9 mb/d m-o-m to average 72.0 mb/d. This was higher by 2.0 mb/d y-o-y. Preliminary estimated production increases in October were mainly driven by Other Eurasia, OECD Europe and Other Asia, which was partially offset by declines seen in Latin America.

The **share of OPEC crude oil in total global production** decreased by 0.4 pp to 29.1% in October compared with the previous month. Estimates are based on preliminary data from direct communication for non-OPEC supply, OPEC NGLs and non-conventional oil, while estimates for OPEC crude production are based on secondary sources.

Graph 5 - 30: OPEC crude production and world oil supply development



Source: OPEC.

Product Markets and Refinery Operations

In October, refinery margins increased globally to show solid gains in line with market expectations and historical seasonal trends. This was a result of significant reductions in refinery product output as refinery maintenance interventions further intensified in the West and maintenance volumes reached a peak in October. The resulting contraction of product balances in the Atlantic Basin provided a profitable environment for Asia to capitalize on product exports, which ultimately supported their refining economics as well, although Asian gains were much more limited.

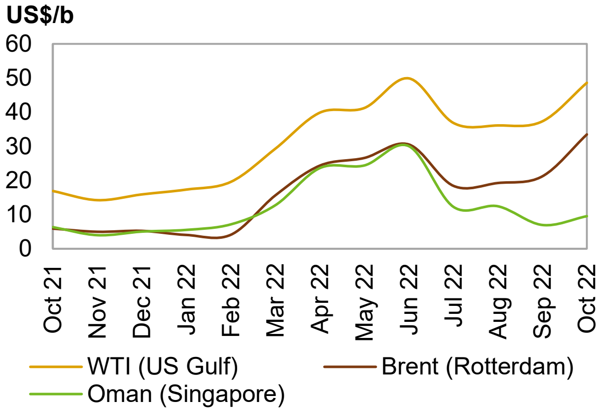
Over the month, global refinery processing rates declined further, in line with historical trends, and dropped by 960 tb/d m-o-m, according to preliminary data, in response to a rise in offline capacity amid peak Autumn maintenance works.

In the coming month, refinery intakes are expected to reverse course and start to recover, adding nearly 1.5 mb/d m-o-m, according to preliminary data, as major turnarounds come to an end. Moreover, the need to restock middle distillates, particularly diesel inventories, mainly in the West, is expected to lend further support.

Refinery margins

USGC refining margins against WTI jumped to settle at just $1.30 below the record-breaking high level registered in June. This represented the second-highest mark, y-t-d. The notable improvement in US refining economics is attributed to a significant decline in product output levels as refineries in the country dropped due to heavy maintenance works. As a result, product balances contracted further and strengthened product prices, with the exception of fuel oil. According to preliminary estimates, refinery intake in the US extended its downward trend in October and lost 380 tb/d m-o-m to average 15.98 mb/d in October. However, going forward, intakes are expected to reverse course and begin to recover, which should help limit the product balance contraction in the coming months.

Graph 6 - 1: Refining margins



Sources: Argus and OPEC.

In addition, refinery issues and maintenance works in Brazil and Mexico amid relatively suppressed fuel prices due to government subsidies led to robust US product exports to Latin America. This contributed further to the positive performance of US refinery margins. USGC margins against WTI averaged $48.61/b in October, up by $11.30 m-o-m and $31.72 y-o-y.

Refinery margins in Rotterdam against Brent rallied in October to show the largest monthly gain compared with other main trading hubs. The onset of the maintenance season in Europe and the subsequent reduction in processing rates and product output further weighed on regional product availability. Furthermore, the impact of the strike in France's refining sector, which started on September 20, had a more pronounced effect on European throughputs in October compared with the previous month. With the loss of nearly 45% of the country's refining capacity due to the strike, France's refinery intakes declined in October by nearly 300 tb/d m-o-m and contributed to product shortages at refuelling stations in parts of the country. Although the strike ended at three refineries as of the end of October and runs are gradually being restored, a considerable amount of capacity remained offline. Consequently, product imports into Europe, particularly that of diesel and gasoil, soared in October to a multi-year record high on a wide arbitrage window with flows from East of Suez. This led to a reflection of the strength in European product markets on to product markets in other regions as well.

Refinery throughput in Europe declined by 450 tb/d due to planned and unplanned outages, to average 9.42 mb/d according to preliminary data. Refinery margins against Brent in Europe averaged $33.50/b in Octoberber, up by $12.28/b compared with a month earlier and higher by $27.60 y-o-y.

Singapore refining margins against Oman rose, albeit by a much more limited extent compared to the other regions, with positive performances registered in the naphtha and middle distillate markets. In China, product exports were reported to have declined in October from the 14-month high registered in the previous month.

This was attributed to a pick-up in domestic gasoil requirements amid the peak harvesting season and healthy fishing and construction activities, which likely led to a renewed focus on supplying the domestic market and contributed to lower exports. However, recent statements that emphasized the need to continue the zero-COVID policy indicated that domestic road transportation fuel demand could remain suppressed in China. In addition, historical trends have shown that domestic gasoil consumption levels tend to weaken during the winter months. This will likely support Chinese product exports in the near term.

Moreover, in India, product export taxes were set to increase in response to rising crude oil prices. The tax rise represents the second revision carried out in the month of October and will affect jet fuel and gasoil exports effective November 1st. With considerable refining capacity set to return online in the coming month following maintenance works, exports from India are likely to remain subdued in the immediate near term. This will further support regional product crack spreads and, consequently, refining margins in Asia in the coming month.

Regional refinery run rates increased by 200 tb/d in October relative to the previous month for an average of 25.96 mb/d, according to preliminary data. Refinery margins against Oman in Asia lost $2.58/b m-o-m to average $9.54/b, higher by $3.20 y-o-y.

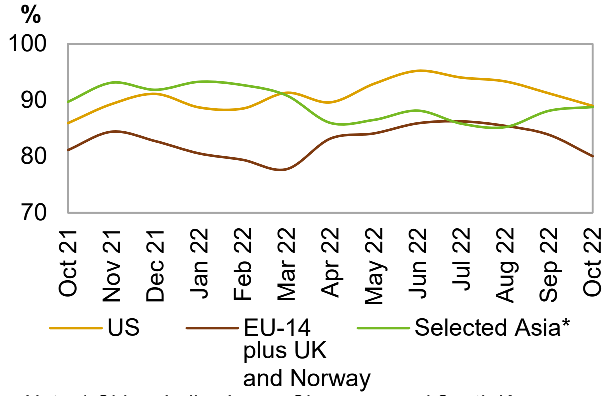
Refinery operations

US refinery utilization rates continued to fall in October to average 88.97%, which corresponds to a throughput of 15.98 mb/d. This represented a drop of 2.2 pp and 380 tb/d, respectively, compared with September. Y-o-y, the October refinery utilization rate was up by 3.1 pp, with throughput showing a rise of 375 tb/d.

European refinery utilization averaged 80.01% in October, corresponding to a throughput of 9.42 mb/d. This is an m-o-m drop of 3.8 pp or 450 tb/d. On a y-o-y basis, utilization rates were down by 1.1 pp, while throughput was lower by 129 tb/d.

In **Selected Asia** – comprising Japan, China, India, Singapore and South Korea – refinery utilization rates increased to average 88.76% in October, corresponding to a throughput of 25.96 mb/d. Compared with the previous month, utilization rates were up by 0.7 pp, and throughput was higher by 200 tb/d. However, y-o-y utilization rates were lower by 0.9 pp, and throughput was up by 301 tb/d.

Graph 6 - 2: Refinery utilization rates



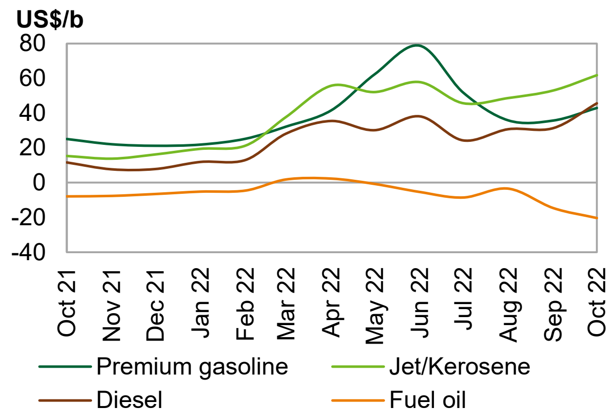
*Note: * China, India, Japan, Singapore and South Korea.*
Sources: Argus, EIA, Euroilstock, PAJ and OPEC.

Product markets

US market

The **USGC gasoline crack spread** halted its downward trend to show significant gains following three consecutive months of losses. Total US gasoline inventory levels continued to decline and further extended the downward trend witnessed in the previous months, as refinery output dropped in October. The supportive impact of this contraction in gasoline availability over the month outweighed the bearish gasoline market sentiment linked to the winter season. In October, wholesale gasoline 93 prices reversed trends and increased by $10.46 m-o-m to average $130.21/b. This was $23.70/b higher y-o-y. The USGC gasoline crack spread gained $7.20 m-o-m to average $42.95/b in October, up by $17.79 y-o-y.

Graph 6 - 3: US Gulf crack spread vs. WTI



Sources: Argus and OPEC.

The **USGC jet/kerosene crack spread** extended the positive performance registered in the previous month and kept its position as the strongest margin contributor in the USGC product market. This strength was mainly a result of supply constraints as refiners intensified maintenance works and reduced jet/kerosene production levels. Jet fuel wholesale prices rose by $4.33/b over the month to average $139.35/b and retained its position as the highest-priced product in the USGC market in October. The US jet/kerosene crack spread against WTI averaged $61.74/b, up by $8.76 m-o-m and higher by $46.34 y-o-y.

The **USGC gasoil crack spread** increased slightly following a solid recovery the previous month. US gasoil inventories remained well below the five-year average and were lower than levels witnessed a year earlier. Concerns over a pick-up in consumption levels from heating requirements and sanctions on product supplies from Russia are expected to continue supporting gasoil markets in the near term. Gasoil prices averaged $132.93/b in September, up by $17.55 relative to October. The US gasoil crack spread against WTI averaged $45.67/b, up by $14.29 m-o-m and $34.06 y-o-y.

The **USGC fuel oil crack spread against WTI** reversed course again, losing the previous month's gains. This poor performance was attributed to a downturn in demand. In October, the US fuel oil crack spread against WTI averaged minus $20.33/b, lower by $5.72/b m-o-m and $12.43 y-o-y.

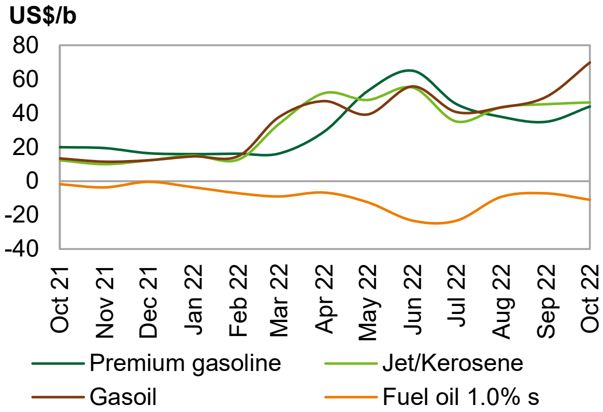
European market

Gasoline crack spreads strengthened with the contraction in gasoline availability as refinery output levels for the same product declined. This supply-side support overshadowed weakness attributed to a reported decline in export volumes to the US and West Africa.

The gasoline crack spread against Brent averaged $43.91/b in October, up by $9.00 m-o-m and by $23.97 y-o-y.

In October, **jet/kerosene crack spreads** increased slightly, in line with supportive supply-side dynamics. The Rotterdam jet/kerosene crack spread against Brent averaged $46.24/b, up by $1.04 m-o-m and $34.05 y-o-y.

Graph 6 - 4: Rotterdam crack spreads vs. Brent



Sources: Argus and OPEC.

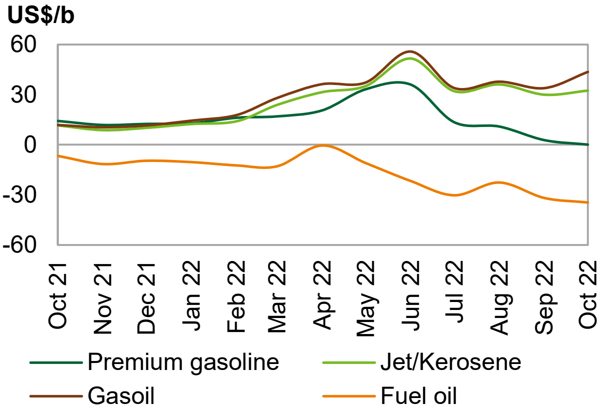
Gasoil 10 ppm crack spreads showed the strongest positive performance across the European barrel, while the European gasoil balance continued to contract and remained a matter of concern as it was on the low side compared with historical trends. The gasoil crack spread against Brent averaged $69.79/b, up by $20.19 m-o-m and $56.41 y-o-y.

At the bottom of the barrel, **fuel oil** 1.0% crack spreads reversed course and trended downwards, affected by weaker demand and healthy availability. In terms of prices, fuel oil 1.0% maintained most of its value m-o-m and averaged $82.06/b, which was 52¢ lower relative to the previous month. In Europe, fuel oil cracks averaged minus $11.05/b in October, having lost $3.81 m-o-m and $9.23 y-o-y.

Asian market

The **Asian gasoline 92 crack spread** fell over the month, mainly impacted by growing gasoline availability in the region. Although India's gasoline consumption experienced a slight rise as the country's festival season stimulated travel activity, this supportive effect was insufficient to offset the negative impact associated with strong refinery runs and subsequent ample supplies in the region. In addition, the ongoing zero-COVID measures in China further contributed to the suppressed gasoline consumption levels. The Singapore gasoline crack spread against Oman in October averaged $12¢/b, down by $2.69 m-o-m and $14.13 y-o-y.

Graph 6 - 5: Singapore crack spreads vs. Dubai



Sources: Argus and OPEC.

Asian **naphtha crack spreads** improved over the month as the reduction in output levels in the West provided a pull for Asian naphtha deliveries. Within the region, naphtha demand from India decreased in October. However, this downturn was offset by the supply constraints in the Atlantic Basin, which helped Asian naphtha values remain well-sustained. The Singapore naphtha crack spread against Oman averaged minus $19.18/b, increasing by $3.71 m-o-m but dropping by $22.17 y-o-y.

In the middle of the barrel, **jet/kerosene** crack spreads saw slight gains as overall jet/kerosene demand increased y-o-y in Asia, although levels remained below the five-year average affected by the travel restrictions in China. In addition, the strong gasoil margins witnessed on a global level resulting from the gasoil shortage in the West likely incentivized refiners to focus on maximum gasoil production. This likely weighed on jet/kerosene output and consequently supported jet/kerosene crack spreads. The Singapore jet/kerosene crack spread against Oman averaged $32.36/b, up by $2.42 m-o-m and by $20.73 y-o-y.

The Singapore **gasoil** crack spread reversed course from the losses seen in the previous month to show solid gains. India's diesel consumption in October rose by 6% m-o-m as the country's festival season stimulated economic and travel activity, according to Argus. Meanwhile, in China, gasoil markets benefitted from a pick-up in domestic gasoil requirements amid the peak harvesting season and healthy fishing and construction activities, which likely contributed to the positive performance in the regional gasoil market. The Singapore gasoil crack spread against Oman averaged $43.57/b, up by $9.68 m-o-m and by $31.65 y-o-y.

The Singapore **fuel oil 3.5%** crack spread extended its downward trend deeper into negative territory to reach a multi-year record low, affected by weak demand and ample supply as high sulphur sales remained slow and global desulphurization capacity remained limited. Firm flows of Russian high sulphur fuel oil supplies to East of Suez markets contributed to the excess availability in the region, while requirements from the South Asian utility sector for power generation remained weak. Singapore fuel oil cracks against Oman averaged minus $34.47/b, down by $2.69 m-o-m and by $27.82 y-o-y.

Table 6 - 1: Short-term prospects for product markets and refinery operations

Event	Time frame	Asia	Europe	US	Observations
End of Autumn heavy refinery turnaround season	Nov 22 – Dec 22	↓ Downward pressure on product crack spreads	↓ Downward pressure on product crack spreads	↓ Downward pressure on product crack spreads	The end of the peak turnaround season should lead to rising product availability exerting pressure on product prices. On the other hand, rising refinery intakes should provide support to oil markets.
Winter season	Nov 22 – Dec 22	↓ Negative impact on product markets	↓ Negative impact on product markets	↓ Negative impact on product markets	Transport fuels are expected to come under pressure during winter as driving activities tend to be low. The upcoming Thanksgiving holiday in the US should provide limited/temporary support in November and December.
Diesel Tightness	Nov 22 – Dec 22	↑ Upward pressure on product prices	↑ Upward pressure on product prices	↑ Upward pressure on product prices	The current low diesel inventory levels in the Atlantic Basin will most likely represent a driver for stronger oil demand to enable diesel re-stocking. This could partially offset some of the seasonal pressure on oil demand.

Source: OPEC.

Table 6 - 2: Refinery operations in selected OECD countries

	Refinery throughput, mb/d				*Refinery utilization, %*			
	Aug 22	Sep 22	Oct 22	Change Oct/Sep	Aug 22	Sep 22	Oct 22	Change Oct/Sep
US	**16.74**	**16.36**	**15.98**	**-0.38**	**93.32**	**91.20**	**88.97**	**-2.2 pp**
Euro-14, plus UK and Norway	**10.06**	**9.87**	**9.42**	**-0.45**	**85.43**	**83.84**	**80.01**	**-3.8 pp**
France	1.03	0.99	0.69	-0.30	89.84	86.11	59.84	-26.3 pp
Germany	1.76	1.86	1.84	-0.03	85.69	90.76	89.50	-1.3 pp
Italy	1.38	1.34	1.31	-0.02	72.63	70.42	69.15	-1.3 pp
UK	1.05	0.91	0.93	0.02	89.34	77.83	79.41	1.6 pp
Selected Asia*	**24.57**	**25.76**	**25.96**	**0.20**	**85.18**	**88.08**	**88.76**	**0.7 pp**

*Note: * Includes Japan, China, India, Singapore and South Korea.*

Sources: Argus Media, EIA, Euroilstock, NBS, PAJ and OPEC.

Table 6 - 3: Refinery crude throughput, mb/d

Refinery crude throughput	2019	2020	2021	4Q21	1Q22	2Q22	3Q22
OECD Americas	**19.04**	**16.59**	**17.79**	**18.21**	**18.35**	**18.74**	**18.92**
of which US	*16.99*	*14.72*	*15.66*	*16.02*	*16.06*	*16.61*	*16.66*
OECD Europe	**12.13**	**10.65**	**10.92**	**11.51**	**11.00**	**11.57**	**11.82**
of which:							
France	*1.00*	*0.67*	*0.69*	*0.76*	*0.79*	*0.84*	*1.00*
Germany	*1.78*	*1.72*	*1.72*	*1.91*	*1.75*	*1.87*	*1.83*
Italy	*1.35*	*1.11*	*1.23*	*1.34*	*1.16*	*1.42*	*1.38*
UK	*1.08*	*0.92*	*0.92*	*0.99*	*1.04*	*1.06*	*1.01*
OECD Asia Pacific	**6.79**	**5.87**	**5.76**	**6.00**	**6.21**	**5.83**	**6.07**
of which Japan	*3.02*	*2.48*	*2.49*	*2.69*	*2.80*	*2.60*	*2.79*
Total OECD	**37.96**	**33.12**	**34.47**	**35.72**	**35.56**	**36.14**	**36.82**
Latin America	**3.83**	**3.12**	**3.41**	**3.51**	**3.30**	**3.51**	**3.50**
Middle East	**6.97**	**6.09**	**6.78**	**7.27**	**7.23**	**7.33**	**7.66**
Africa	**2.01**	**1.79**	**1.80**	**1.83**	**1.83**	**1.83**	**1.92**
India	**5.04**	**4.42**	**4.73**	**5.02**	**5.18**	**5.22**	**4.69**
China	**13.02**	**13.48**	**14.07**	**14.03**	**13.96**	**12.89**	**13.00**
Other Asia	**5.13**	**4.74**	**4.80**	**4.90**	**5.04**	**5.32**	**5.33**
Russia	**5.70**	**5.39**	**5.61**	**5.75**	**5.71**	**5.04**	**5.50**
Other Eurasia	**1.21**	**1.03**	**1.18**	**1.20**	**1.22**	**1.20**	**1.30**
Other Europe	**0.55**	**0.43**	**0.41**	**0.33**	**0.42**	**0.51**	**0.60**
Total Non-OECD	**43.44**	**40.49**	**42.78**	**43.85**	**43.89**	**42.86**	**43.50**
Total world	**81.40**	**73.61**	**77.25**	**79.57**	**79.46**	**79.00**	**80.32**

Note: Totals may not add up due to independent rounding.

Sources: AFREC, APEC, EIA, IEA, Euroilstock, PAJ, Ministry data, including Ministry of Energy of the Russian Federation, Ministry of Petroleum and Natural Gas of India, OPEC and JODI.

Table 6 - 4: Refined product prices, US$/b

		Sep 22	Oct 22	Change Oct/Sep	Annual avg. 2021	Year-to-date 2022-to-date
US Gulf (Cargoes FOB)						
Naphtha*		73.94	79.62	5.68	70.70	92.65
Premium gasoline	(unleaded 93)	119.75	130.21	10.46	91.41	140.07
Regular gasoline	(unleaded 87)	107.32	116.65	9.33	86.72	128.62
Jet/Kerosene		136.98	149.00	12.02	78.32	142.55
Gasoil	(0.2% S)	115.38	132.93	17.55	73.94	126.15
Fuel oil	(3.0% S)	62.00	52.59	-9.41	59.84	80.85
Rotterdam (Barges FoB)						
Naphtha		69.03	74.30	5.27	70.15	88.15
Premium gasoline	(unleaded 98)	124.73	137.02	12.29	85.89	139.69
Jet/Kerosene		135.02	139.35	4.33	77.17	142.49
Gasoil/Diesel	(10 ppm)	139.42	162.90	23.48	78.31	145.22
Fuel oil	(1.0% S)	82.58	82.06	-0.52	69.12	92.62
Fuel oil	(3.5% S)	66.29	60.75	-5.54	61.38	82.82
Mediterranean (Cargoes FOB)						
Naphtha		67.00	71.14	4.14	69.40	85.61
Premium gasoline**		99.31	109.00	9.69	80.46	123.82
Jet/Kerosene		131.39	134.35	2.96	75.06	138.25
Diesel		131.93	148.51	16.58	77.73	138.89
Fuel oil	(1.0% S)	89.44	89.45	0.01	70.51	98.21
Fuel oil	(3.5% S)	51.18	56.62	5.44	58.98	75.69
Singapore (Cargoes FOB)						
Naphtha		68.09	71.86	3.77	70.83	86.63
Premium gasoline	(unleaded 95)	97.45	94.78	-2.67	80.28	119.29
Regular gasoline	(unleaded 92)	93.79	91.16	-2.63	78.28	115.38
Jet/Kerosene		120.92	123.40	2.48	75.10	128.95
Gasoil/Diesel	(50 ppm)	128.58	136.76	8.18	77.36	137.86
Fuel oil	(180 cst)	124.55	133.96	9.41	75.71	132.10
Fuel oil	(380 cst 3.5% S)	59.20	56.57	-2.63	62.07	80.32

*Note: * Barges. ** Cost, insurance and freight (CIF).*

Sources: Argus and OPEC.

Tanker Market

Very Large Crude Carrier (VLCC) rates continued moving higher in October, with gains seen on all major routes. Spot VLCC rates on the Middle East-to-East route rose 8%, while on the West Africa-to-East route, they gained 10%.

Rates for midsize Suezmax and Aframax routes were broadly higher. Suezmax rates on the US Gulf Coast (USGC)-to-Europe route rose 16%, while Aframax spot rates on the Cross-Med route increased by 30%. All monitored routes were well above levels seen in the same month last year.

Clean rates saw diverging trends, with losses East of Suez outweighing gains West of Suez. On the Middle East-to-East route, clean spot rates fell 38% m-o-m in October.

Spot fixtures

The latest estimates show **global spot fixtures** declined in October to average 13.6 mb/d. Fixtures fell by 1.4 mb/d, or almost 10% m-o-m. Compared with the previous year, spot fixtures were down by 2.2 mb/d or almost 14%.

Table 7 - 1: Spot fixtures, mb/d

Spot fixtures	Aug 22	Sep 22	Oct 22	*Change* Oct 22/Sep 22
All areas	15.30	15.00	13.57	-1.43
OPEC	10.40	10.77	9.52	-1.25
Middle East/East	5.95	6.64	5.93	-0.71
Middle East/West	1.68	1.49	1.26	-0.23
Outside Middle East	2.77	2.64	2.33	-0.31

Sources: Oil Movements and OPEC.

OPEC spot fixtures fell in October, averaging 9.5 mb/d. This represents a m-o-m loss of around 1.3 mb/d, or more than 11%. In comparison with the same month in 2021, fixtures decreased by around 0.4 mb/d, or more than 4%.

Middle East-to-East fixtures declined by 0.7 mb/d, or almost 11%, to average 5.9 mb/d. However, compared with the same month last year, eastward flows from the Middle East were still about 0.3 mb/d, or almost 4%, higher.

Spot fixtures from the **Middle East-to-West** fell further in October, down by around 0.2 mb/d, or 15% m-o-m, to average around 1.3 mb/d. Y-o-y, rates were about 5% lower.

Outside the Middle East, fixtures averaged 2.3 mb/d. This represents a loss of 12%, or about 0.3 mb/d, m-o-m and a decline of 0.6 mb/d, or almost 21%, y-o-y.

Sailings and arrivals

OPEC sailings fell by around 0.7 mb/d, or around 3%, m-o-m in October to average 23.5 mb/d, but were 1.1 mb/d, or about 5%, higher compared with the same month a year ago.

Middle East sailings decreased by around 0.6 mb/d, or more than 3%, in October to average 17.9 mb/d. However, y-o-y, sailings from the region rose by about 1.1 mb/d, or around 7%, compared with October 2021.

Table 7 - 2: Tanker sailings and arrivals, mb/d

Sailings	Aug 22	Sep 22	Oct 22	*Change* Oct 22/Sep 22
OPEC	24.33	24.14	23.49	-0.65
Middle East	18.59	18.48	17.86	-0.62
Arrivals				
North America	9.25	8.97	9.55	0.58
Europe	12.63	13.00	13.57	0.57
Far East	15.21	16.93	16.74	-0.19
West Asia	8.37	8.12	8.70	0.58

Sources: Oil Movements and OPEC.

Crude arrivals in October were generally higher on most routes, with only the Far East seeing a slight decline m-o-m. Arrivals in North America increased by around 0.6 mb/d, or almost 7% m-o-m, to average 9.6 mb/d and were 0.8 mb/d, or 9%, higher y-o-y. Arrivals in Europe increased by 0.6 mb/d, or over 4%, to average 13.6 mb/d. This was a gain of 1.0 mb/d, or about 8%, compared with the same month last year.

West Asia experienced a similar volume gain, up by about 0.6 mb/d, or 7%, to average 8.7 mb/d. Y-o-y, arrivals in the region were up 1.4 mb/d, or about 19%. Meanwhile, arrivals in the Far East fell 0.2 mb/d or about 1% to average 16.7 mb/d, while y-o-y, they were about 3.1 mb/d, or almost 23% higher.

Dirty tanker freight rates

Very large crude carriers (VLCCs)

VLCC spot rates continued to pick up in October, gaining 8% on average m-o-m. The sector saw support from a return of US crude flows to Asia. Y-o-y, VLCC rates were up 122% on average.

On the **Middle East-to-East** route, rates rose 8% m-o-m to average WS93 points and were 121% higher y-o-y. Rates on the **Middle East-to-West** route also rose 8% m-o-m to average WS54 points. Y-o-y, rates on the route increased by 125%.

West Africa-to-East spot rates gained 10% m-o-m to average WS95 points in October. Compared with the same month last year, rates were 116% higher.

Table 7 - 3: Dirty VLCC spot tanker freight rates, Worldscale (WS)

VLCC	Size *1,000 DWT*	Aug 22	Sep 22	Oct 22	*Change* Oct 22/Sep 22
Middle East/East	230-280	68	86	93	7
Middle East/West	270-285	41	50	54	4
West Africa/East	260	70	86	95	9

Sources: Argus and OPEC.

Suezmax

Suezmax rates recovered in October from the slight decline seen the previous month, gaining 17% m-o-m. Rates remained supported by ongoing trade dislocations, which boosted demand for longer-haul voyages in the Suezmax class. Compared with the same month last year, they were considerably higher, up 126%.

Rates on the **West Africa-to-US Gulf Coast (USGC)** gained 17% to average WS149 points. Compared with the same month last year, they were 129% higher.

Spot freight rates on the **USGC-to-Europe** route rose 16% compared with the previous month to average WS131 points. Y-o-y, rates were 122% higher.

Table 7 - 4: Dirty Suezmax spot tanker freight rates, WS

Suezmax	Size *1,000 DWT*	Aug 22	Sep 22	Oct 22	*Change* Oct 22/Sep 22
West Africa/US Gulf Coast	130-135	124	127	149	22
US Gulf Coast/ Europe	150	122	113	131	18

Sources: Argus and OPEC.

Aframax

Aframax spot freight rates also rebounded on most monitored routes and remained at exceptionally high levels compared with the same month over the last five years. On average, spot Aframax rates increased 15% m-o-m in October. Compared with the same month last year, rates were 111% higher.

The only exception to rate gains came from the **Indonesia-to-East** route, which declined further in October to average WS202 points. Y-o-y, however, rates on the route were up 111%.

Spot rates on the **Caribbean-to-US East Coast (USEC)** route increased by 17% m-o-m to average WS287 points. Y-o-y, they were 121% higher.

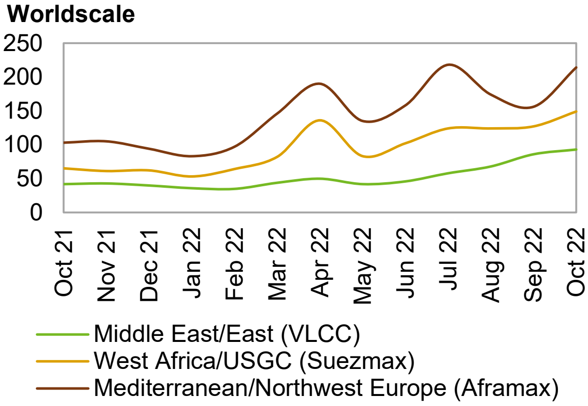
Table 7 - 5: Dirty Aframax spot tanker freight rates, WS

Aframax	Size *1,000 DWT*	Aug 22	Sep 22	Oct 22	*Change* Oct 22/Sep 22
Indonesia/East	80-85	228	227	202	-25
Caribbean/US East Coast	80-85	299	246	287	41
Mediterranean/Mediterranean	80-85	201	175	228	53
Mediterranean/Northwest Europe	80-85	174	156	214	58

Sources: Argus and OPEC.

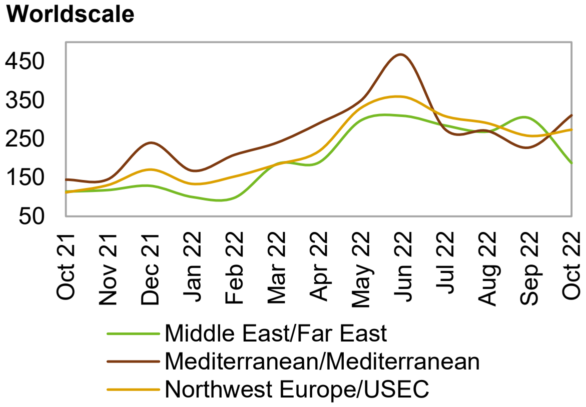
Mediterranean spot freight rates showed a strong recovery in October. **Cross-Med** spot freight rates rose 30% m-o-m to average WS228 points. They were 109% higher y-o-y. On the **Mediterranean-to-Northwest Europe (NWE)** route, rates increased by 37% m-o-m to average WS214 points. Compared with the same month last year, they were around 108% higher.

Graph 7 - 1: Crude oil spot tanker freight rates, monthly average



Sources: Argus and OPEC.

Graph 7 - 2: Products spot tanker freight rates, monthly average



Sources: Argus and OPEC.

Clean tanker freight rates

Clean spot freight rates continued to experience mixed performance, this time with East of Suez rates contributing to losses, while West of Suez rates saw gains. On average, rates declined by 2% m-o-m in October but were still up 114% compared with levels seen in the same month last year.

Table 7 - 6: Clean spot tanker freight rates, WS

East of Suez	Size *1,000 DWT*	Aug 22	Sep 22	Oct 22	*Change* Oct 22/Sep 22
Middle East/East	30-35	269	304	188	-116
Singapore/East	30-35	342	415	319	-96
West of Suez					
Northwest Europe/US East Coast	33-37	291	258	274	16
Mediterranean/Mediterranean	30-35	271	228	311	83
Mediterranean/Northwest Europe	30-35	282	238	325	87

Sources: Argus and OPEC.

Rates on the **Middle East-to-East** route saw the biggest m-o-m decline, falling 38% in October to average WS188. Y-o-y, rates were up 65%. Freight rates on the **Singapore-to-East** route also declined m-o-m, down 23% to average WS319; that is still 129% higher than the same month last year.

In contrast, the West-of-Suez market improved. Spot freight rates on the **NWE-to-USEC** route fell 6% m-o-m to average WS274 points. They were 145% higher y-o-y. Rates for the **Cross-Med** and **Med-to-NWE** routes rose about 36% each to average WS311 and WS325 points, respectively. Compared with the same month last year, they were 101% and 121% higher, respectively.

Crude and Refined Products Trade

Preliminary data show US crude imports fell to a six-month low in October, averaging 6.1 mb/d, while crude exports remained close to record high levels, averaging 4.0 mb/d. Product imports recovered from the previous month's decline, approaching 2.0 mb/d, while product exports fell back from the strong levels seen the month before, averaging 6.1 mb/d.

China's crude imports continued to recover in September, averaging 9.8 mb/d. Gains came as Chinese refiners began to boost product exports, particularly gasoil, amid tight regional demand and the release of a new round of product export quotas. Product imports jumped 26% on the back of higher inflows of LPG. Preliminary customs data shows imports increased further in October, averaging 10.2 mb/d, while product exports fell 21%, amid improving domestic consumption.

India's crude imports continued to decline, reaching an 11-month low of 4.0 mb/d in September, breaking a seven-month string of consecutive y-o-y gains. The drop was primarily due to weather-related disruptions. Product imports and exports were broadly stable m-o-m.

Japan's crude imports in September fell back from an over two-year high to average 2.8 mb/d, representing a still healthy level, while flows registered 14 months of consecutive y-o-y gains. Product exports increased further in September, reaching the highest monthly figure since February.

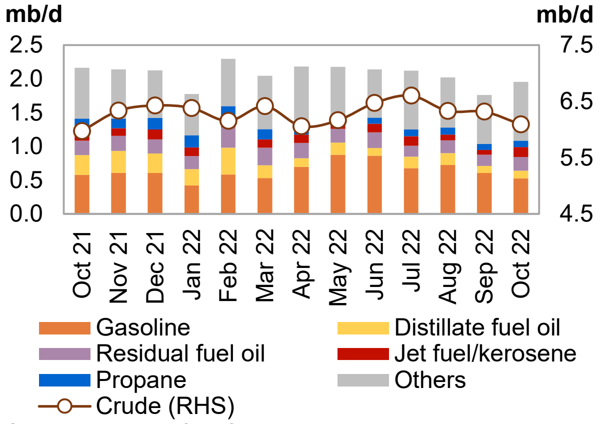
Preliminary estimates indicate OECD Europe crude imports averaging at around 9 mb/d over the last three months. Imports of Russian crude were seen falling in October, amid lower pipeline flows. Product imports are seen rising gradually from August, amid higher flows from the Middle East and India.

US

Preliminary data show **US crude imports** fell to a six-month low in **October**, averaging 6.1 mb/d. Crude imports declined by 0.2 mb/d or about 4% m-o-m. Compared with the same month in 2021, inflows rose by 0.1 mb/d, or 2%.

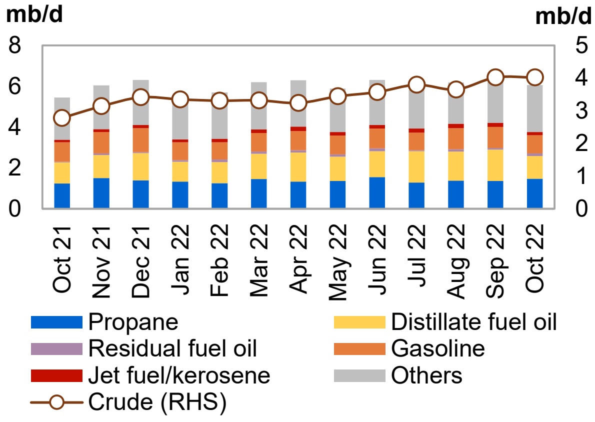
The **top three suppliers of crude** to the US remained unchanged in October, according to estimates based on preliminary weekly US Energy Information Administration (EIA) data. Canada held the top spot, with a share of just 56%, followed by Mexico with 11%. Saudi Arabia was third with a share of 6%.

Graph 8 - 1: US imports of crude and products



Sources: EIA and OPEC.

Graph 8 - 2: US exports of crude and products



Sources: EIA and OPEC.

US crude exports remained at close to record-high levels, averaging 4.0 mb/d, according to preliminary weekly data. Outflows were broadly in line with the previous month, as trade dislocations continued to provide a boost. Compared with the same month last year, crude exports were almost 1.5 mb/d, or 59%, higher.

According to the latest US Energy Information Administration (EIA) monthly data, the United Kingdom was the top **destination** for **US crude exports** in **August**, with a share of 12%, followed by South Korea with 11%. The Netherlands came in third with 9%, followed closely by Canada.

Based on weekly data, **US net crude imports** averaged 2.1 mb/d in **October**, compared with 2.3 mb/d in September and just under 3.2 mb/d in the same month last year.

On the **product** side, **imports** increased by 11%, or 0.2 mb/d, to average just under 2.0 mb/d. Gains were seen primarily in the Other category, along with jet and residual fuel. Compared with the same month last year, product imports declined by 0.2 mb/d, or almost 10%.

Product exports fell back from strong levels seen the month before, averaging 6.1 mb/d in October. Declines were seen in flows to all regions. Compared with October 2021, product exports were still 0.6 mb/d, or about 11%, higher.

As a result, preliminary data sees **US net product exports** averaging 4.1 mb/d in October, compared with 4.6 mb/d in September and 3.3 mb/d in the same month of 2021.

Preliminary data indicates that US **net crude and product exports** averaged 2.0 mb/d in October, compared with 2.3 mb/d the month before and just 90 tb/d in October 2021.

Table 8 - 1: US crude and product net imports, mb/d

US	Aug 22	Sep 22	Oct 22	*Change* Oct 22/Sep 22
Crude oil	2.68	2.30	2.07	-0.22
Total products	-4.15	-4.58	-4.10	0.48
Total crude and products	**-1.47**	**-2.29**	**-2.03**	**0.26**

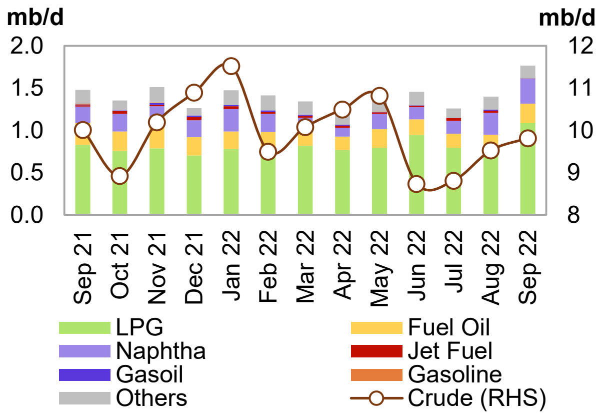
Note: Totals may not add up due to independent rounding.
Sources: EIA and OPEC.

Looking ahead, US crude imports are likely to be supported by increased refinery runs and trade dislocations. US crude exports are likely to continue to be supported by rising domestic production, along with European and Asian demand.

China

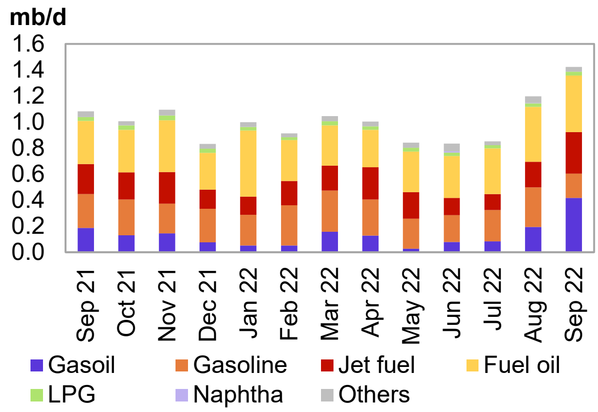
China's crude imports continued to recover in **September**, averaging 9.8 mb/d. Compared with the previous month, crude imports for the month rose 3%, or 0.3 mb/d. Compared with the same month last year, crude inflows were about 0.2 mb/d, or 2%, lower. The m-o-m increase came as Chinese refiners began to boost product exports amid tight regional demand and the release of a new round of product export quotas.

Graph 8 - 3: China's import of crude and total products



Sources: China OGP and OPEC.

Graph 8 - 4: China's export of total products



Sources: China OGP and OPEC.

In terms of **crude imports by source**, Saudi Arabia remained at the top spot in **September** for the second month in a row. However, crude inflows from the Kingdom fell to a 19% share, averaging 1.8 mb/d. Russia came in a close second, with a marginally lower share and volume. Iraq came in third with a share of 13%, as volumes increased by 0.2 mb/d m-o-m to average just under 1.0 mb/d.

Product imports jumped 26%, or 0.4 mb/d, to average almost 1.8 mb/d. Gains were driven primarily by LPG, with further support from fuel oil and naphtha. Compared with the same month last year, product imports increased by 0.3 mb/d, or around 19%.

After being constrained for most of the year, **product exports** continued to surge, marking a 15-month high in September. Product outflows averaged 1.4 mb/d, representing a 0.2 mb/d, or 19%, gain over the previous month. Gasoil led the increase, with further support from jet fuel offsetting a decline in gasoline outflows. Y-o-y, product exports rose by almost 32%, or 0.3 mb/d.

As a result, China's **net product imports** averaged 340 tb/d in September, compared with 199 tb/d the month before and 396 tb/d in the same month of 2021.

Table 8 - 2: China's crude and product net imports, mb/d

China	Jul 22	Aug 22	Sep 22	*Change* Sep 22/Aug 22
Crude oil	8.80	9.41	9.64	0.23
Total products	0.41	0.20	0.34	0.14
Total crude and products	**9.21**	**9.61**	**9.98**	**0.37**

Note: Totals may not add up due to independent rounding.
Sources: China OGP and OPEC.

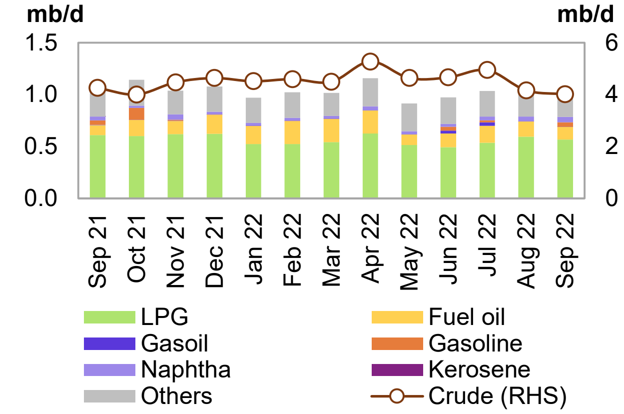
Looking ahead, China's crude imports are expected to be supported by increased opportunities for product exports, particularly for gasoil. Product imports could remain at moderate levels, as the government's zero-COVID policy weighs on mobility.

India

India's crude imports continued to decline, reaching an 11-month low of 4.0 mb/d in **September**. M-o-m, crude inflows were down by 4%, or over 0.1 mb/d, amid seasonal refinery maintenance. September figures broke a seven-month string of consecutive y-o-y gains, as crude inflows were 6%, or over 0.2 mb/d, lower.

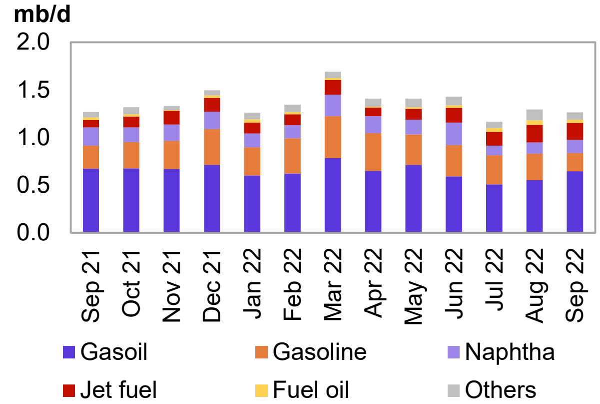
In terms of **crude imports by source**, Kpler data shows Russia as the top supplier of crude to India in September for the fourth month in a row, as refiners took advantage of heavily discounted barrels. Russia held a share of 24%. Iraq was second with 22%, followed by Saudi Arabia with 15%.

Graph 8 - 5: India's imports of crude and products



Sources: PPAC and OPEC.

Graph 8 - 6: India's exports of products



Sources: PPAC and OPEC.

In terms of **products**, **imports** in September averaged 1.0 mb/d, representing the second month of negligible gains. Higher gasoline flows were offset by declines in LPG and fuel oil. Compared with the same month in 2021, inflows slipped by about 3%, or 26 tb/d.

Product exports edged lower m-o-m, falling 2% to average just under 1.3 mb/d. Declines were seen in all major products, except naphtha. Product exports were also broadly flat compared with the same month last year.

As a result, **net product exports** averaged 226 tb/d in September, compared with 244 tb/d in August and 203 tb/d in the same month of 2021.

Table 8 - 3: India's crude and product net imports, mb/d

India	Jul 22	Aug 22	Sep 22	*Change* Sep 22/Aug 22
Crude oil	4.95	4.16	4.02	-0.15
Total products	-0.13	-0.24	-0.23	0.02
Total crude and products	**4.82**	**3.92**	**3.79**	**-0.13**

Note: Totals may not add up due to independent rounding.
India data table does not include information for crude import and product export by Reliance Industries.
Sources: PPAC and OPEC.

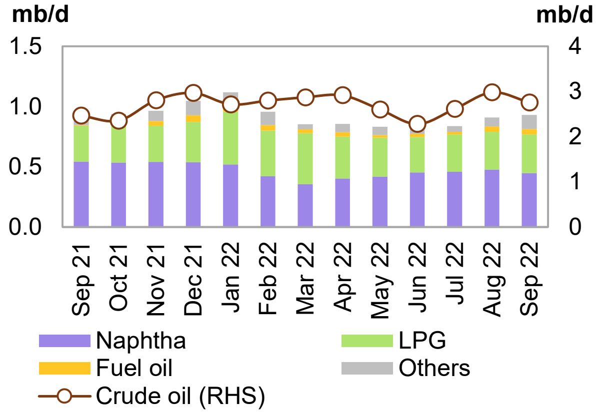
Looking ahead, crude imports are expected to remain close to current moderate levels in October, with higher inflows from Russia and Iraq. Product imports are seen edging higher in October, while product exports are seen to be slightly lower amid refinery maintenance.

Japan

Japan's crude imports in **September** fell back from an over two-year high to average 2.8 mb/d. This represented a still-healthy level, while flows registered the 14th month of consecutive y-o-y gains. Inflows declined by 0.2 mb/d, or 8%, m-o-m. Compared with the same month last year, imports were 0.3 mb/d, or 12%, higher.

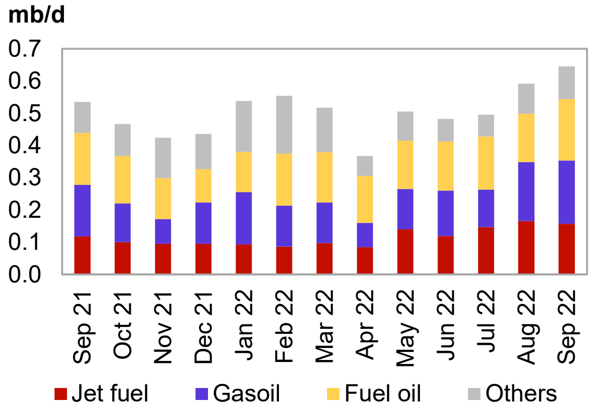
In terms of **crude imports by source**, the United Arab Emirates claimed the top spot in September, with a share of 45%, on higher volumes compared with the previous month. Saudi Arabia was second with 33%, followed by Qatar with around 9%.

Graph 8 - 7: Japan's imports of crude and products



Sources: METI and OPEC.

Graph 8 - 8: Japan's exports of products



Sources: METI and OPEC.

Product imports, including LPG, rose by over 2% to average 930 tb/d in September. Gasoil, kerosene, gasoline and LPG registered gains, which outpaced declines, primarily in naphtha. Y-o-y, imports were broadly stable.

Product exports increased further in September, averaging 646 tb/d, the greatest amount since February. Compared with the same month last year, product outflows were 9% higher, led by increased exports of fuel oil, as well as gasoil, which outpaced a decline in jet fuel. Y-o-y, product outflows were 110 tb/d, or around 21%, higher than in the same month of 2021.

As a consequence, Japan's **net product imports** averaged 284 tb/d in September. This compares with 316 tb/d the month before and 386 tb/d in September 2021.

Table 8 - 4: Japan's crude and product net imports, mb/d

Japan	Jul 22	Aug 22	Sep 22	*Change* Sep 22/Aug 22
Crude oil	2.61	2.98	2.76	-0.22
Total products	0.34	0.32	0.28	-0.03
Total crude and products	**2.96**	**3.30**	**3.04**	**-0.26**

Note: Totals may not add up due to independent rounding.
Sources: METI and OPEC.

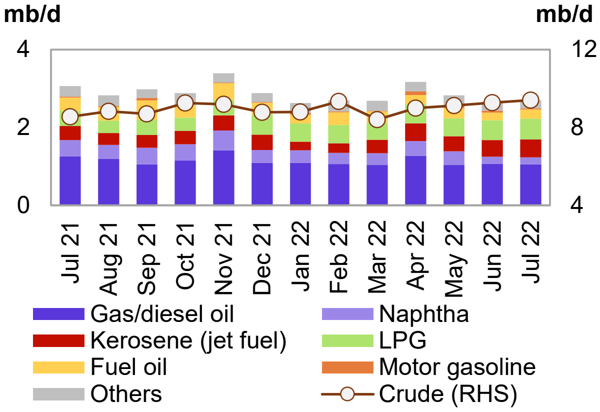
Looking ahead, Japan's crude imports are seen remaining moderate in October amid refinery maintenance ahead of the winter season, before picking up in November.

OECD Europe

The latest regional data shows **OECD Europe** crude imports averaged 9.3 mb/d in July, the highest since January 2020. Compared with the previous month, crude inflows were up 1% or 0.1 mb/d. Y-o-y, crude imports were close to 10%, or over 0.8 mb/d, higher.

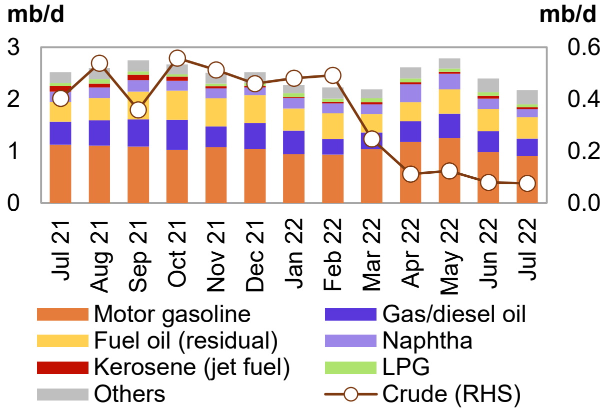
In terms of **import sources** from outside the region, Russia remained the top supplier in July, with flows of just under 2.0 mb/d, the first time they were below this level since November 2020. Norway came in second with 1.4 mb/d, followed by the United States with 1.3 mb/d.

Graph 8 - 9: OECD Europe imports of crude and products



Sources: IEA and OPEC.

Graph 8 - 10: OECD Europe exports of crude and products



Sources: IEA and OPEC.

Crude exports fell further in July, as trade dislocations caused more volumes to remain in the region. Outflows reached their lowest point since December 2014, averaging 75 tb/d, representing a marginal decline m-o-m but a large y-o-y decrease of 81%, or 328 tb/d.

In terms of **destination**, Korea was the top receiver outside the region in July, followed by Indonesia and then the United States.

Net crude imports averaged 9.3 mb/d in July, compared with 9.2 mb/d in June and over 8.1 mb/d in the same month last year.

On the **product** side, **imports** edged up in July by just over 1% to average 2.7 mb/d. M-o-m gains were seen in a range of products, including fuel oil, jet fuel and LPG, offsetting declines in motor gasoil and gasoil. Compared with the same month last year, imports were almost 12%, or 363 tb/d, lower.

Product exports retreated a further 9%, or more than 0.2 mb/d m-o-m, to average 2.2 mb/d, with losses across all major products. Y-o-y, exports were 14%, or 0.3 mb/d, lower.

Net product imports averaged 529 tb/d in July, compared with net imports of 265 tb/d in June and 544 tb/d in July 2021.

Combined, **net crude and product imports** averaged 9.9 mb/d in July. This compares with 9.5 mb/d the month before and 8.7 mb/d in July 2021.

Table 8 - 5: OECD Europe's crude and product net imports, mb/d

OECD Europe	May 22	Jun 22	Jul 22	*Change* Jul 22/Jun 22
Crude oil	9.00	9.19	9.32	0.13
Total products	0.04	0.26	0.53	0.26
Total crude and products	**9.04**	**9.46**	**9.85**	**0.39**

Note: Totals may not add up due to independent rounding.

Sources: IEA and OPEC.

Looking ahead, preliminary estimates indicate crude imports averaging around 9 mb/d over the last three months. Imports of Russian crude were seen falling in October amid lower pipeline flows. Meanwhile, product imports were seen rising gradually from August, amid higher flows from the Middle East and India.

Eurasia

Total crude oil exports from Russia and Central Asia were broadly flat in September, remaining at 6.3 mb/d, according to data, with declines at the Pacific port of Kozmino and at Ust-Luga terminal being offset by increased flows on the BTC and Druzhba pipelines. Compared with the same month in 2021, total crude exports from the Eurasian region were still 3%, or 0.2 mb/d, higher.

Crude exports through the **Transneft system** declined m-o-m in September. Outflows declined by 150 tb/d, or almost 4%, to average 4.2 mb/d. Compared with the same month last year, exports were 0.5 mb/d, or 13%, higher. Exports from the **Baltic Sea** fell by 16 tb/d m-o-m, or just over 1%, to average 1.4 mb/d. Flows from Ust-Luga declined by 6% to average 603 tb/d, while exports from Primorsk increased by around 10% to average 837 tb/d. Shipments from the **Black Sea** port of Novorossiysk declined by around 5% to average 591 tb/d.

Shipments via the **Druzhba** pipeline recovered the previous month's losses, increasing by 74 tb/d, or about 10% m-o-m, to average 822 tb/d. Exports to China via the **ESPO pipeline** declined by 19 tb/d, or about 3%, to average 577 tb/d in September. Flows to the Pacific port of **Kozmino** were down by 159 tb/d, or 18%, m-o-m to average 724 tb/d.

In the **Lukoil system**, exports via the Varandey offshore platform in the Barents Sea averaged 121 tb/d in September, down 5% m-o-m. Exports from the Kaliningrad terminal edged up marginally from zero the month before.

On other routes, **Russia's Far East** exports more than doubled to 98 tb/d on average in September. This was 71%, or 0.1 mb/d, higher than the volumes shipped in September 2021.

Central Asian exports averaged 213 tb/d in September, representing a decline of 6% compared with the month before and 3% y-o-y.

Black Sea total exports from the CPC terminal were broadly flat after having been relatively volatile in recent months, averaging 1.0 mb/d in September. This was a decline of 18%, or 137 tb/d, compared with the same month in 2021. There were no exports via the Supsa pipeline in September. Exports via the **Baku-Tbilisi-Ceyhan (BTC) pipeline** rose by 101 tb/d, or about 18% m-o-m, in September, to average 670 tb/d. This was a gain of 170 tb/d, or 34%, y-o-y.

Total product exports from Russia and Central Asia fell by 6% m-o-m to average 2.5 mb/d in September. M-o-m declines were led by fuel oil, gasoil and VGO to a lesser extent, while gasoline outflows increased. Y-o-y, total product exports were 4%, or 99 tb/d, lower in September, with fuel oil and naphtha leading losses.

Commercial Stock Movements

Preliminary September data sees total OECD commercial oil stocks up m-o-m by 13.4 mb. At 2,749 mb, they were 21 mb less than the same time one year ago, 198 mb lower than the latest five-year average and 218 mb below the 2015-2019 average. Within the components, crude and product stocks rose m-o-m by 6.5 mb and 6.8 mb, respectively.

At 1,335 mb, OECD crude stocks were 35.5 mb higher than the same time a year ago, 69.9 mb lower than the latest five-year average and 99.9 mb lower than the 2015-2019 average.

OECD product stocks stood at 1,414 mb, representing a deficit of 56.1 mb from the same time a year ago, 128.0 mb lower than the latest five-year average and 117.9 mb below the 2015-2019 average.

In terms of days of forward cover, OECD commercial stocks remained unchanged m-o-m in September to stand at 58.4 days. This is 0.8 days below September 2021 levels, 5.0 days less than the latest five-year average and 4.1 days lower than the 2015-2019 average.

Preliminary data for October showed that total US commercial oil stocks rose by 3.1 mb m-o-m to stand at 1,224 mb. This is 28.9 mb lower than the same month in 2021 and 66.8 mb below the latest five-year average. Crude stocks rose by 7.6 mb, while product stocks fell by 4.5 mb.

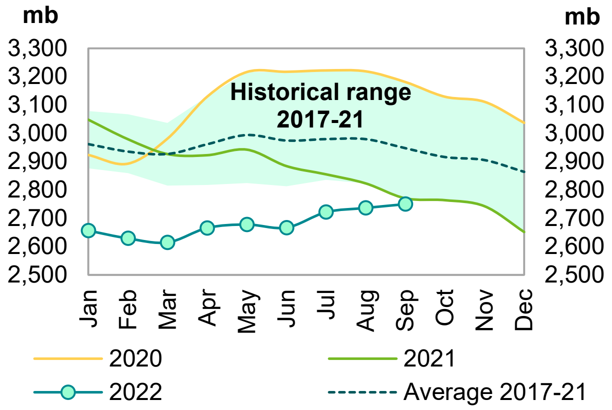
OECD

Preliminary **September** data sees **total OECD commercial oil stocks** up m-o-m by 13.4 mb. At 2,749 mb, they were 21 mb less than the same time one year ago, 198 mb lower than the latest five-year average and 218 mb below the 2015-2019 average.

Within the components, crude and product stocks rose m-o-m by 6.5 mb and 6.8 mb, respectively. Total commercial oil stocks in September rose in OECD Americas and OECD Asia Pacific, while OECD Europe saw a stock draw.

OECD commercial **crude stocks** stood at 1,335 mb in September. This is 35.5 mb higher than the same time a year ago, 69.9 mb lower than the latest five-year average and 99.9 mb lower than the 2015-2019 average.

Graph 9 - 1: OECD commercial oil stocks



Sources: Argus, EIA, Euroilstock, IEA, METI and OPEC.

Compared with the previous month, OECD Europe saw a stock draw of 6.1 mb, OECD Americas stocks rose by 9.5 mb, and stocks in OECD Asia Pacific increased by 3.2 mb.

Total product inventories stood at 1,414 mb in September. This is 56.1 mb below the same time a year ago, 128.0 mb lower than the latest five-year average and 117.9 mb below the 2015-2019 average. Product stocks in OECD Americas and OECD Asia Pacific rose by 6.8 mb and 2.0 mb, respectively, while they fell m-o-m by 2.0 mb in OECD Europe.

Table 9 - 1: OECD's commercial stocks, mb

OECD stocks	Sep 21	Jul 22	Aug 22	Sep 22	*Change* Sep 22/Aug 22
Crude oil	1,300	1,318	1,329	1,335	*6.5*
Products	1,470	1,402	1,407	1,414	*6.8*
Total	**2,770**	**2,721**	**2,736**	**2,749**	***13.4***
Days of forward cover	**59.1**	**58.1**	**58.3**	**58.4**	***0.0***

Note: Totals may not add up due to independent rounding.

Sources: Argus, EIA, Euroilstock, IEA, METI and OPEC.

In terms of **days of forward cover**, OECD commercial stocks remained unchanged m-o-m in September to stand at 58.4 days. This is 0.8 days below September 2021 levels, 5.0 days less than the latest five-year average and 4.1 days lower than the 2015-2019 average.

All three OECD regions were below the latest five-year average: the Americas by 4.6 days at 59.1 days; the Asia Pacific by 6.7 days at 43.5 days; and Europe by 5.2 days at 65.4 days.

OECD Americas

OECD Americas total commercial stocks rose by 16.3 mb m-o-m in September to settle at 1,493 mb. This is 30.5 mb less than the same month in 2021 and 83.3 mb lower than the latest five-year average.

Commercial **crude oil stocks** in OECD Americas rose m-o-m by 9.5 mb in September to stand at 744 mb, which is 6.7 mb lower than in September 2021 and 25.1 mb less than the latest five-year average. The monthly build in crude oil stocks can be attributed to higher imports, as well as additional barrels released from strategic petroleum reserves (SPRs).

Total product stocks in OECD Americas also rose m-o-m by 6.8 mb in September to stand at 749 mb. This was 23.8 mb lower than the same month in 2021 and 58.2 mb below the latest five-year average. Lower total consumption in the region was behind the product stock build.

OECD Europe

OECD Europe total commercial stocks fell m-o-m by 8.2 mb in September to settle at 915 mb. This is 24.1 mb higher than the same month in 2021, but 57.2 mb below the latest five-year average.

OECD Europe's **commercial crude stocks** fell by 6.1 mb m-o-m to end the month of September at 414 mb, which is 36.1 mb higher than one year ago but 7.6 mb below the latest five-year average. The drop in crude oil inventories came despite lower m-o-m refinery throughput in the EU-14, plus the UK and Norway.

Europe's **product stocks** also fell m-o-m by 2.0 mb to end September at 501 mb. This is 11.9 mb lower than a year ago and 49.5 mb below the latest five-year average.

OECD Asia Pacific

OECD Asia Pacific's total commercial oil stocks rose m-o-m by 5.3 mb in September to stand at 341 mb. This is 14.2 mb lower than a year ago and 57.4 mb below the latest five-year average.

OECD Asia Pacific's **crude inventories** rose by 3.2 mb m-o-m to end September at 177 mb, which is 6.1 mb higher than one year ago and 37.1 mb below the latest five-year average.

OECD Asia Pacific's **total product inventories** also rose m-o-m by 2.0 mb to end September at 164 mb. This is 20.3 mb lower than the same time a year ago and 20.3 mb below the latest five-year average.

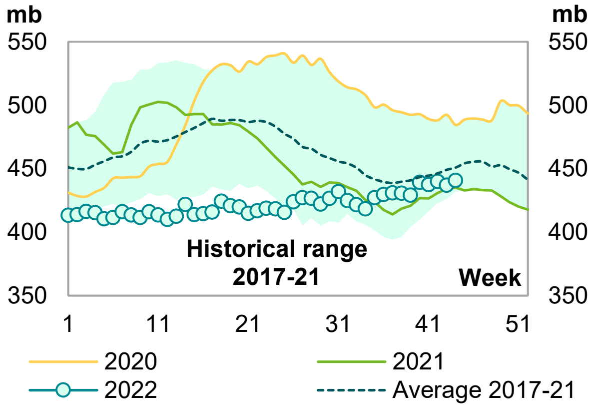
US

Preliminary data for October showed that **total US commercial oil stocks** rose by 3.1 mb m-o-m to stand at 1,224 mb. This is 28.9 mb, or 2.3%, lower than the same month in 2021 and 66.8 mb, or 5.2%, below the latest five-year average. Crude stocks rose by 7.6 mb, while product stocks fell by 4.5 mb.

US commercial crude stocks in October stood at 436.8 mb. This is 0.3 mb, or 0.1%, higher than the same month of the previous year, but 16.7 mb, or 3.7%, below the latest five-year average. The monthly build in crude oil stocks can be attributed to lower crude runs, which fell by 0.4 mb/d to 15.98 mb/d.

By contrast, **total product stocks** fell in October to stand at 787.3 mb. This is 29.1 mb, or 3.6%, below October 2021 levels and 50.2 mb, or 6.0%, lower than the latest five-year average. The stock draw was mainly driven by higher product consumption.

Graph 9 - 2: US weekly commercial crude oil inventories



Sources: EIA and OPEC.

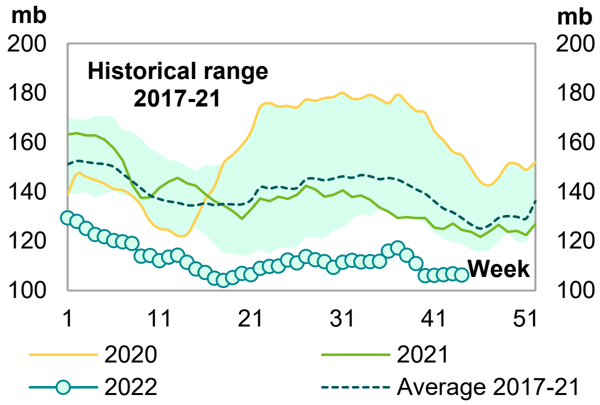
Gasoline stocks fell m-o-m by 0.8 mb to settle at 206.6 mb. This is 10.1 mb, or 4.6% lower than in the same month in 2021 and 16.8 mb, or 7.5%, lower than the latest five-year average.

Distillate stocks also decreased m-o-m in October by 4.1 mb to stand at 106.8 mb. This is 26.0 mb, or 19.6%, lower than the same month of the previous year and 26.0 mb, or 19.6%, below the latest five-year average.

By contrast, **jet fuel stocks** rose m-o-m by 0.2 mb, ending October at 36.4 mb. This is 4.0 mb, or 9.8%, lower than the same month in 2021 and 4.0 mb, or 9.9%, below the latest five-year average.

Residual fuel oil stocks also rose by 1.6 mb m-o-m in October. At 30.3 mb, this was 1.6 mb, or 5.5%, higher than a year earlier, and 0.5 mb, or 1.8%, above the latest five-year average.

Graph 9 - 3: US weekly distillate inventories



Sources: EIA and OPEC.

Table 9 - 2: US commercial petroleum stocks, mb

US stocks	Oct 21	Aug 22	Sep 22	Oct 22	*Change* Oct 22/Sep 22
Crude oil	**436.6**	**419.7**	**429.2**	**436.8**	***7.6***
Gasoline	216.7	215.6	207.5	206.6	*-0.8*
Distillate fuel	132.8	113.3	110.9	106.8	*-4.1*
Residual fuel oil	28.7	28.6	28.7	30.3	*1.6*
Jet fuel	40.4	38.4	36.2	36.4	*0.2*
Total products	**816.4**	**792.6**	**791.8**	**787.3**	***-4.5***
Total	**1,253.0**	**1,212.4**	**1,221.0**	**1,224.1**	***3.1***
SPR	**610.6**	**445.1**	**416.4**	**399.8**	***-16.6***

Sources: EIA and OPEC.

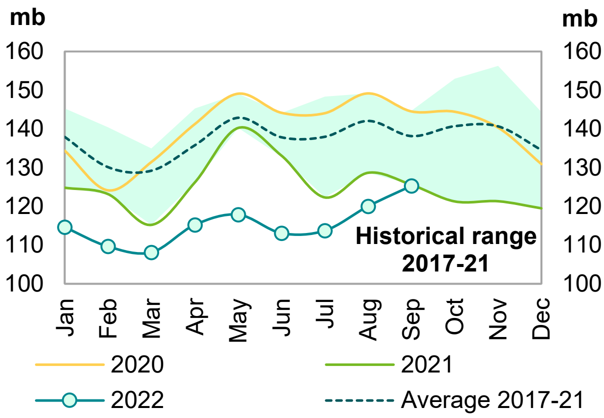
Japan

In **Japan**, **total commercial oil stocks** in September rose m-o-m by 5.3 mb to settle at 125.3 mb. This is 0.3 mb, or 0.3%, lower than the same month in 2021 and 12.8 mb, or 9.3%, below the latest five-year average. Crude and product stocks rose m-o-m by 3.2 mb and 2.0 mb, respectively.

Japanese **commercial crude oil stocks** rose in September to stand at 67.5 mb. This is 5.5 mb, or 8.8% higher than the same month of the previous year, but 6.8 mb, or 9.1%, lower than the latest five-year average. The build came of the back of lower crude runs.

Japan's **total product inventories** also rose m-o-m by 2.0 mb to end September at 57.8 mb. This is 5.8 mb, or 9.1%, lower than the same month in 2021 and 6.1 mb, or 9.5%, below the latest five-year average.

Graph 9 - 4: Japan's commercial oil stocks



Sources: METI and OPEC.

Gasoline stocks rose by 0.1 mb m-o-m to stand at 9.8 mb in September. This was 0.5 mb, or 4.5% lower than a year earlier and 0.8 mb, or 7.1%, lower than the latest five-year average. The build came on lower gasoline sales by 10.4% m-o-m.

Distillate stocks also rose m-o-m by 0.4 mb to end September at 27.0 mb. This is 4.4 mb, or 14.1%, lower than the same month in 2021 and 4.4 mb, or 14%, below the latest five-year average. Within distillate components, kerosene stocks went up by 15.7%, while jet fuel and kerosene fell by 9.8% and 10.7%, respectively.

Total residual fuel oil stocks rose m-o-m by 0.1 mb to end September at 11.5 mb. This is 1.0 mb, or 7.7%, lower than in the same month of the previous year and 1.1 mb, or 8.7%, below the latest five-year average. Within the components, fuel oil A and fuel oil BC stocks rose by 1.5% and 0.1%, m-o-m, respectively.

Table 9 - 3: Japan's commercial oil stocks*, mb

Japan's stocks	Sep 21	Jul 22	Aug 22	Sep 22	Change Sep 22/Aug 22
Crude oil	**62.0**	**60.1**	**64.2**	**67.5**	***3.2***
Gasoline	10.3	8.9	9.7	9.8	*0.1*
Naphtha	9.4	9.3	8.1	9.5	*1.4*
Middle distillates	31.4	24.7	26.6	27.0	*0.4*
Residual fuel oil	12.5	10.8	11.4	11.5	*0.1*
Total products	**63.6**	**53.6**	**55.8**	**57.8**	***2.0***
Total**	**125.6**	**113.7**	**120.0**	**125.3**	***5.3***

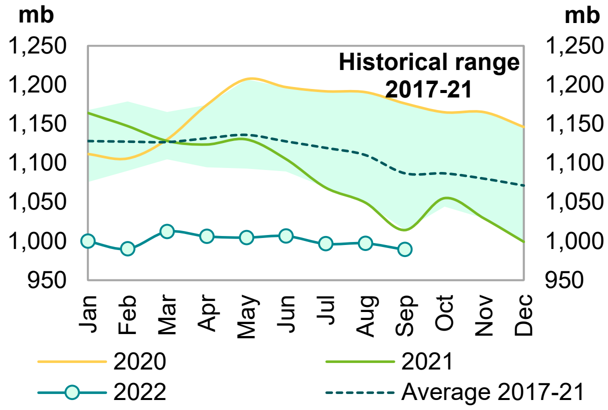
*Note: * At the end of the month. ** Includes crude oil and main products only.*
Sources: METI and OPEC.

EU-14 plus UK and Norway

Preliminary data for September showed that **total European commercial oil stocks** fell m-o-m by 8.2 mb to stand at 989.2 mb. At this level, they were 25.2 mb, or 2.5%, below the same month a year earlier and 97.5 mb, or 9.0% lower than the latest five-year average. Crude and product stocks fell m-o-m by 6.1 mb and 2.0 mb, respectively.

European **crude inventories** fell in September to stand at 430.7 mb. This is 5.1 mb, or 1.2%, higher than the same month in 2021 and 36.2 mb, or 7.8%, below the latest five-year average. The drop in crude oil inventories came despite lower m-o-m refinery throughput in the EU-14, plus the UK and Norway.

Graph 9 - 5: EU-14 plus UK and Norway's total oil stocks



Sources: Argus, Euroilstock and OPEC.

Total European product stocks also fell m-o-m by 2.0 mb to end September at 558.5 mb. This is 30.2 mb, or 5.1%, lower than the same month of the previous year and 61.3 mb, or 9.9%, below the latest five-year average.

Gasoline stocks fell m-o-m by 1.4 mb in September to stand at 108.9 mb. At this level, they were 10.5 mb, or 10.7%, higher than the same time a year earlier, and 2.8 mb/d, or 2.6%, above the latest five-year average.

Distillate stocks also fell m-o-m by 0.8 mb in September to stand at 360.5 mb. This is 46.4 mb, or 11.4%, below the same month in 2021 and 62.8 mb, or 14.8%, less than the latest five-year average.

Naphtha stocks dropped by 0.6 mb in September, ending the month at 29.9 mb. This is 7.7 mb, or 34.5%, higher than September 2021 levels and 2.9 mb, or 10.7%, higher than the latest five-year average.

In contrast, **residual fuel stocks** rose m-o-m by 0.8 mb in September to stand at 59.2 mb. This is 2.0 mb, or 3.3%, lower than the same month in 2021 and 4.2 mb, or 6.6%, below the latest five-year average.

Table 9 - 4: EU-14 plus UK and Norway's total oil stocks, mb

EU stocks	Sep 21	Jul 22	Aug 22	Sep 22	*Change* Sep 22/Aug 22
Crude oil	**425.6**	**432.8**	**436.8**	**430.7**	***-6.1***
Gasoline	98.4	108.7	110.3	108.9	*-1.4*
Naphtha	22.3	29.9	30.5	29.9	*-0.6*
Middle distillates	406.9	365.5	361.3	360.5	*-0.8*
Fuel oils	61.3	59.7	58.4	59.2	*0.8*
Total products	**588.7**	**563.8**	**560.5**	**558.5**	***-2.0***
Total	**1,014.3**	**996.6**	**997.3**	**989.2**	***-8.2***

Sources: Argus, Euroilstock and OPEC.

Singapore, Amsterdam-Rotterdam-Antwerp (ARA) and Fujairah

Singapore

In September, **total product stocks in Singapore** fell m-o-m by 0.9 mb to 45.8 mb. This is 4.5 mb, or 10.8%, higher than the same month in 2021.

Light distillate stocks fell m-o-m by 0.5 mb in September to stand at 15.8 mb. This is 4.0 mb, or 33.7%, higher than the same month of the previous year.

Middle distillate stocks fell m-o-m by 0.2 mb in September to stand at 7.5 mb. This is 3.0 mb, or 28.5%, lower than a year earlier.

Residual fuel oil stocks also dropped m-o-m by 0.2 mb, ending September at 22.5 mb. This is 3.5 mb, or 18.3%, higher than September 2021.

ARA

Total product stocks in ARA fell m-o-m in September by 1.2 mb. At 39.9 mb, they were 0.6 mb, or 1.4%, higher than the same month in 2021.

Gasoline stocks in September fell by 0.7 mb m-o-m to stand at 10.8 mb, which is 3.8 mb, or 55.2%, higher than the same month of the previous year.

Fuel oil stocks also fell by 0.7 mb m-o-m in September to stand at 6.8 mb, which is 0.7 mb, or 9.3%, lower than in September 2021.

By contrast, **gasoil stocks** rose by 0.9 mb m-o-m, ending September at 13.6 mb. This is 1.3 mb, or 9.0%, lower than levels seen in September 2021.

Jet oil stocks also rose by 0.4 mb m-o-m to stand at 6.2 mb. This is 1.3 mb, or 17.3%, lower than levels seen in September 2021.

Fujairah

During the week ending 31 October 2022, **total oil product stocks in Fujairah** fell w-o-w by 0.58 mb to stand at 21.95 mb, according to data from Fed Com and S&P Global Platts. At this level, total oil stocks were 6.37 mb higher than at the same time a year ago.

Heavy distillate stocks rose by 0.56 mb w-o-w to stand at 12.91 mb in the week to 31 October 2022, which is 5.52 mb higher than the same period a year ago. By contrast, **light distillate stocks** fell by 0.94 mb to stand at 6.35 mb, which is 1.44 mb higher than a year ago. **Middle distillate stocks** also fell w-o-w by 0.20 mb to stand at 2.69 mb, which is 0.59 mb lower than the same time last year.

Balance of Supply and Demand

Demand for OPEC crude in 2022 is revised down by 0.1 mb/d from the previous month's assessment to stand at 28.6 mb/d, which is around 0.5 mb/d higher than in 2021.

According to secondary sources, OPEC crude production averaged 28.4 mb/d in 1Q22, which is 0.3 mb/d lower than the demand for OPEC crude. In 2Q22, OPEC crude production averaged 28.6 mb/d, which is 0.2 mb/d higher than demand for OPEC crude. In 3Q22, OPEC crude oil production averaged 29.5 mb/d, which is 1.1 mb/d higher than demand for OPEC crude.

Demand for OPEC crude in 2023 is also revised down by 0.2 mb/d from the previous assessment to stand at 29.3 mb/d, which is around 0.7 mb/d higher than in 2022.

Balance of supply and demand in 2022

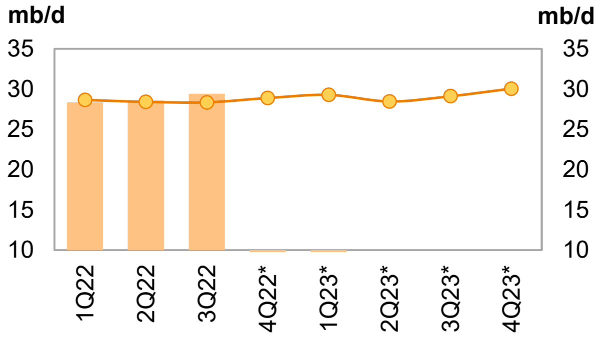
Demand for OPEC crude in 2022 is revised down by 0.1 mb/d from the previous MOMR to stand at 28.6 mb/d, which is around 0.5 mb/d higher than in 2021.

Compared with the previous, assessment 3Q22 was revised up by 0.2 mb/d, while 4Q22 was revised down by 0.5 mb/d. Meanwhile, both 1Q22 and 2Q22 remained unchanged compared with the previous month.

Compared with the same quarters in 2021, demand for OPEC crude in 1Q22 and 2Q22 is estimated to be higher by 2.4 mb/d and 1.4 mb/d, respectively, while both 3Q22 and 4Q22 are expected to be lower by 0.3 mb/d and 1.3 mb/d, respectively.

According to secondary sources, OPEC crude production averaged 28.4 mb/d in 1Q22, which is 0.3 mb/d lower than the demand for OPEC crude. In 2Q22, OPEC crude production averaged 28.6 mb/d, which is in 0.2 mb/d higher than demand for OPEC crude. In 3Q22, OPEC crude oil production averaged 29.5 mb/d, which is 1.1 mb/d higher than demand for OPEC crude.

Graph 10 - 1: Balance of supply and demand, 2022–2023*



*Note: * 4Q22-4Q23 = Forecast. Source: OPEC.*

Table 10 - 1: Supply/demand balance for 2022*, mb/d

	2021	1Q22	2Q22	3Q22	4Q22	2022	*Change 2022/21*
(a) World oil demand	**97.03**	**99.36**	**98.35**	**99.32**	**101.25**	**99.57**	***2.55***
Non-OPEC liquids production	63.68	65.33	64.54	65.53	66.90	65.58	*1.90*
OPEC NGL and non-conventionals	5.28	5.35	5.38	5.41	5.43	5.39	*0.11*
(b) Total non-OPEC liquids production and OPEC NGLs	**68.96**	**70.68**	**69.92**	**70.94**	**72.33**	**70.97**	***2.01***
Difference (a-b)	**28.06**	**28.68**	**28.43**	**28.38**	**28.92**	**28.60**	***0.54***
OPEC crude oil production	**26.34**	**28.36**	**28.59**	**29.44**			
Balance	**-1.72**	**-0.32**	**0.15**	**1.06**			

*Note: * 2022 = Forecast. Totals may not add up due to independent rounding. Source: OPEC.*

Balance of supply and demand in 2023

Demand for OPEC crude in 2023 is also revised down by 0.2 mb/d from the previous assessment to stand at 29.3 mb/d, which is around 0.7 mb/d higher than in 2022.

Compared with the previous assessment, 1Q23 remained unchanged, while 4Q23 was revised down by 0.5 mb/d. Meanwhile, both 2Q23 and 3Q23 were revised down by 0.1 mb/d compared with the previous month.

Compared with the same quarters in 2022, demand for OPEC crude in 1Q23 and 2Q22 is forecast to be 0.6 mb/d and 0.1 mb higher, respectively, while 3Q23 and 4Q23 are expected to be higher by 0.8 mb/d and 1.2 mb/d respectively.

Table 10 - 2: Supply/demand balance for 2023*, mb/d

	2022	1Q23	2Q23	3Q23	4Q23	2023	*Change 2023/22*
(a) World oil demand	**99.57**	**101.26**	**100.83**	**101.76**	**103.40**	**101.82**	***2.24***
Non-OPEC liquids production	65.58	66.51	66.86	67.20	67.89	67.12	*1.54*
OPEC NGL and non-conventionals	5.39	5.44	5.47	5.43	5.43	5.44	*0.05*
(b) Total non-OPEC liquids production and OPEC NGLs	**70.97**	**71.95**	**72.34**	**72.63**	**73.31**	**72.56**	***1.59***
Difference (a-b)	**28.60**	**29.31**	**28.49**	**29.14**	**30.08**	**29.26**	***0.65***

*Note: * 2022-2023 = Forecast. Totals may not add up due to independent rounding. Source: OPEC.*

Appendix

Table 11 - 1: World oil demand and supply balance, mb/d

World oil demand and supply balance	2019	2020	2021	1Q22	2Q22	3Q22	4Q22	2022	1Q23	2Q23	3Q23	4Q23	2023
World demand													
Americas	25.42	22.47	24.33	24.78	25.00	25.04	25.21	25.01	25.01	25.26	25.34	25.47	25.27
of which US	*20.58*	*18.35*	*20.03*	*20.38*	*20.41*	*20.58*	*20.74*	*20.53*	*20.51*	*20.52*	*20.82*	*20.87*	*20.68*
Europe	14.31	12.41	13.13	13.15	13.41	14.03	13.90	13.63	13.19	13.44	14.06	13.95	13.66
Asia Pacific	7.95	7.17	7.38	7.85	6.99	7.31	7.81	7.49	7.88	7.04	7.35	7.83	7.52
Total OECD	**47.68**	**42.05**	**44.84**	**45.78**	**45.40**	**46.37**	**46.92**	**46.12**	**46.08**	**45.73**	**46.75**	**47.24**	**46.46**
China	13.81	13.94	14.97	14.74	14.56	14.69	15.44	14.86	15.03	15.41	15.24	15.84	15.38
India	4.99	4.51	4.77	5.18	5.16	4.95	5.35	5.16	5.41	5.44	5.21	5.59	5.41
Other Asia	9.06	8.13	8.63	9.09	9.27	8.76	8.85	8.99	9.42	9.61	9.12	9.20	9.33
Latin America	6.59	5.90	6.23	6.32	6.36	6.58	6.40	6.41	6.48	6.48	6.74	6.54	6.56
Middle East	8.20	7.45	7.79	8.06	8.13	8.52	8.17	8.22	8.45	8.46	8.85	8.46	8.55
Africa	4.34	4.05	4.22	4.51	4.15	4.27	4.53	4.37	4.71	4.34	4.46	4.72	4.56
Russia	3.57	3.39	3.61	3.67	3.42	3.45	3.59	3.53	3.65	3.44	3.62	3.77	3.62
Other Eurasia	1.19	1.07	1.21	1.22	1.16	1.00	1.21	1.15	1.22	1.16	1.02	1.22	1.16
Other Europe	0.76	0.70	0.75	0.79	0.75	0.73	0.80	0.77	0.80	0.76	0.75	0.82	0.78
Total Non-OECD	**52.52**	**49.13**	**52.18**	**53.58**	**52.95**	**52.94**	**54.33**	**53.45**	**55.17**	**55.09**	**55.01**	**56.15**	**55.36**
(a) Total world demand	**100.20**	**91.19**	**97.03**	**99.36**	**98.35**	**99.32**	**101.25**	**99.57**	**101.26**	**100.83**	**101.76**	**103.40**	**101.82**
Y-o-y change	***1.00***	***-9.01***	***5.84***	***5.13***	***2.68***	***1.64***	***0.79***	***2.55***	***1.90***	***2.47***	***2.45***	***2.15***	***2.24***
Non-OPEC liquids production													
Americas	25.84	24.75	25.25	25.86	26.27	26.93	27.29	26.59	27.60	27.70	28.05	28.43	27.95
of which US	*18.49*	*17.64*	*17.85*	*18.27*	*18.83*	*19.19*	*19.44*	*18.93*	*19.75*	*20.05*	*20.24*	*20.47*	*20.13*
Europe	3.70	3.89	3.76	3.73	3.43	3.51	3.87	3.64	3.97	3.95	3.84	3.97	3.93
Asia Pacific	0.52	0.52	0.51	0.49	0.51	0.43	0.53	0.49	0.51	0.48	0.50	0.49	0.50
Total OECD	**30.07**	**29.16**	**29.52**	**30.08**	**30.22**	**30.88**	**31.69**	**30.72**	**32.08**	**32.13**	**32.40**	**32.89**	**32.38**
China	4.05	4.15	4.31	4.51	4.52	4.38	4.43	4.46	4.51	4.50	4.47	4.47	4.49
India	0.83	0.78	0.78	0.78	0.77	0.75	0.80	0.78	0.80	0.79	0.78	0.77	0.79
Other Asia	2.72	2.51	2.41	2.35	2.30	2.25	2.38	2.32	2.38	2.38	2.35	2.37	2.37
Latin America	6.08	6.03	5.95	6.11	6.18	6.44	6.56	6.32	6.47	6.65	6.71	6.78	6.66
Middle East	3.19	3.19	3.24	3.29	3.33	3.37	3.37	3.34	3.35	3.36	3.39	3.39	3.37
Africa	1.51	1.41	1.35	1.33	1.31	1.33	1.32	1.32	1.32	1.34	1.35	1.37	1.35
Russia	11.51	10.54	10.80	11.33	10.63	11.01	10.77	10.93	9.92	10.07	10.14	10.19	10.08
Other Eurasia	3.07	2.91	2.93	3.05	2.77	2.62	3.08	2.88	3.10	3.07	3.04	3.08	3.07
Other Europe	0.12	0.12	0.11	0.11	0.11	0.10	0.10	0.11	0.10	0.10	0.10	0.10	0.10
Total Non-OECD	**33.09**	**31.67**	**31.87**	**32.85**	**31.92**	**32.25**	**32.81**	**32.46**	**31.96**	**32.26**	**32.33**	**32.53**	**32.27**
Total Non-OPEC production	63.16	60.83	61.39	62.93	62.14	63.13	64.50	63.18	64.04	64.39	64.73	65.42	64.65
Processing gains	2.37	2.16	2.29	2.40	2.40	2.40	2.40	2.40	2.47	2.47	2.47	2.47	2.47
Total Non-OPEC liquids production	**65.53**	**62.98**	**63.68**	**65.33**	**64.54**	**65.53**	**66.90**	**65.58**	**66.51**	**66.86**	**67.20**	**67.89**	**67.12**
OPEC NGL + non-conventional oils	5.21	5.17	5.28	5.35	5.38	5.41	5.43	5.39	5.44	5.47	5.43	5.43	5.44
(b) Total non-OPEC liquids production and OPEC NGLs	**70.74**	**68.15**	**68.96**	**70.68**	**69.92**	**70.94**	**72.33**	**70.97**	**71.95**	**72.34**	**72.63**	**73.31**	**72.56**
Y-o-y change	***2.18***	***-2.60***	***0.82***	***2.72***	***1.25***	***1.95***	***2.12***	***2.01***	***1.27***	***2.42***	***1.69***	***0.98***	***1.59***
OPEC crude oil production (secondary sources)	29.36	25.71	26.34	28.36	28.59	29.44							
Total liquids production	100.11	93.86	95.31	99.04	98.51	100.38							
Balance (stock change and miscellaneous)	-0.09	2.68	-1.72	-0.32	0.15	1.06							
OECD closing stock levels, *mb*													
Commercial	2,894	3,036	2,651	2,614	2,666	2,749							
SPR	1,535	1,541	1,484	1,442	1,343	1,254							
Total	**4,429**	**4,578**	**4,134**	**4,056**	**4,010**	**4,003**							
Oil-on-water	1,033	1,148	1,202	1,222	1,290	1,386							
Days of forward consumption in OECD, *days*													
Commercial onland stocks	69	68	57	58	57	59							
SPR	37	34	32	32	29	27							
Total	**105**	**102**	**90**	**89**	**86**	**85**							
Memo items													
(a) - (b)	**29.46**	**23.04**	**28.06**	**28.68**	**28.43**	**28.38**	**28.92**	**28.60**	**29.31**	**28.49**	**29.14**	**30.08**	**29.26**

Note: Totals may not add up due to independent rounding.
Source: OPEC.

Table 11 - 2: World oil demand and supply balance: changes from last month's table*, mb/d

World oil demand and supply balance	2019	2020	2021	1Q22	2Q22	3Q22	4Q22	2022	1Q23	2Q23	3Q23	4Q23	2023
World demand													
Americas	-	-	-	-0.01	0.02	-0.06	-0.06	-0.03	-0.04	-0.03	-0.10	-0.08	-0.06
of which US	-	-	-	-	-	-	*-0.09*	*-0.02*	*-0.02*	*-0.03*	*-0.02*	*-0.11*	*-0.05*
Europe	-	-	-	-	-	-0.06	-0.10	-0.04	-	-0.04	-0.11	-0.13	-0.07
Asia Pacific	-	-	-	-	-	-	-0.03	-0.01	-	-	-	-0.03	-0.01
Total OECD	**-**	**-**	**-**	**-**	**0.02**	**-0.13**	**-0.19**	**-0.08**	**-0.03**	**-0.07**	**-0.22**	**-0.24**	**-0.14**
China	-	-	-	-	-	-	-0.20	-0.05	-0.04	-0.04	-0.04	-0.23	-0.09
India	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Asia	-	-	-	-	-	0.03	-	0.01	-	-	0.03	-	0.01
Latin America	-	-	-	-	-	0.03	-	0.01	-	-	0.03	-	0.01
Middle East	-	-	-	-	-	0.05	-	0.01	-	-	0.05	-	0.01
Africa	-	-	-	-	-	0.02	-	0.01	-	-	0.02	-	0.01
Russia	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Eurasia	-	-	-	-	-	-0.02	-	-0.01	-	-	-0.02	-	-0.01
Other Europe	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Non-OECD	**-**	**-**	**-**	**-**	**-**	**0.11**	**-0.20**	**-0.02**	**-0.04**	**-0.03**	**0.07**	**-0.23**	**-0.06**
(a) Total world demand	**-**	**-**	**-**	**-**	**0.02**	**-0.02**	**-0.39**	**-0.10**	**-0.07**	**-0.11**	**-0.14**	**-0.48**	**-0.20**
Y-o-y change	*-*	*-*	*-*	*-0.05*	*0.04*	*0.05*	*-0.42*	*-0.10*	*-0.07*	*-0.12*	*-0.12*	*-0.09*	*-0.10*
Non-OPEC liquids production													
Americas	-	-	-	-	-	0.02	0.03	0.01	0.03	0.02	0.01	0.02	0.02
of which US	-	-	-	-	-	-	-	-	-	-	-	-	-
Europe	-	-	-	-	-	-0.11	-0.03	-0.04	-0.03	0.01	-0.01	-	-0.01
Asia Pacific	-	-	-	-	-	-0.06	-	-0.02	-0.01	-	-0.01	0.02	-
Total OECD	**-**	**-**	**-**	**-**	**-**	**-0.15**	**-**	**-0.04**	**-**	**0.03**	**-0.01**	**0.04**	**0.01**
China	-	-	-	0.01	0.01	-0.06	-	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01
India	0.01	0.01	0.01	0.01	0.01	-0.01	-	-	-	-	-	-	-
Other Asia	-	-	-	-0.02	-0.01	-0.06	-	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02
Latin America	-	-	-	-	0.03	0.07	0.02	0.03	0.02	0.03	0.01	0.02	0.02
Middle East	-	-	-	-	-	-0.01	0.01	-	-	-	-	0.01	-
Africa	-	-	-	-	-	-	0.01	-	-	-	-	-	-
Russia	-	-	-	-	-	0.09	0.18	0.07	0.01	0.01	0.01	0.01	0.01
Other Eurasia	-	-	-	-	-	-0.11	-0.10	-0.05	-0.04	-	-0.01	-0.04	-0.02
Other Europe	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Non-OECD	**0.01**	**0.01**	**0.01**	**-**	**0.03**	**-0.09**	**0.12**	**0.01**	**-0.04**	**-**	**-0.02**	**-0.03**	**-0.02**
Total Non-OPEC production	0.01	0.01	0.01	-	0.03	-0.24	0.12	-0.02	-0.04	0.04	-0.03	0.01	-0.01
Processing gains	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Non-OPEC liquids production	**0.01**	**0.01**	**0.01**	**-**	**0.03**	**-0.24**	**0.12**	**-0.02**	**-0.04**	**0.04**	**-0.03**	**0.01**	**-0.01**
OPEC NGL + non-conventional oils	-	-	-	-	-	-	-	-	-	-	-	-	-
(b) Total non-OPEC liquids production and OPEC NGLs	**0.01**	**0.01**	**0.01**	**-**	**0.03**	**-0.24**	**0.12**	**-0.02**	**-0.04**	**0.04**	**-0.03**	**0.01**	**-0.01**
Y-o-y change	*-*	*-*	*-*	*-0.01*	*0.02*	*-0.25*	*0.12*	*-0.03*	*-0.04*	*0.01*	*0.21*	*-0.12*	*0.02*
OPEC crude oil production (secondary sources)	-	-	-	-	-	-0.01							
Total liquids production	0.01	0.01	-	-0.01	0.03	-0.25							
Balance (stock change and miscellaneous)	0.01	0.01	0.01	-	0.01	-0.23							
mb													
Commercial	-	-2	3	-3	-14								
SPR	-	-	-	-	-4								
Total	**-**	**-2**	**3**	**-4**	**-19**								
Oil-on-water	-	-	-	-	-								
Days of forward consumption in OECD, *days*													
Commercial onland stocks	-	-	-	-	-								
SPR	-	-	-	-	-								
Total	**-**	**-**	**-**	**-**	**-**								
Memo items													
(a) - (b)	**-0.01**	**-0.01**	**-0.01**	**0.00**	**-0.01**	**0.22**	**-0.52**	**-0.08**	**-0.03**	**-0.15**	**-0.11**	**-0.49**	**-0.19**

*Note: * This compares Table 11 - 1 in this issue of the MOMR with Table 11 - 1 in the October 2022 issue.*
This table shows only where changes have occurred.
Source: OPEC.

Table 11 - 3: OECD oil stocks and oil on water at the end of period

OECD oil stocks and oil on water	2020	2021	2Q20	3Q20	4Q20	1Q21	2Q21	3Q21	4Q21	1Q22	2Q22	3Q22
Closing stock levels, mb												
OECD onland commercial	**3,036**	**2,651**	**3,217**	**3,181**	**3,036**	**2,926**	**2,884**	**2,770**	**2,651**	**2,614**	**2,666**	**2,749**
Americas	1,613	1,470	1,719	1,690	1,613	1,578	1,553	1,523	1,470	1,407	1,436	1,493
Europe	1,043	857	1,098	1,079	1,043	1,002	973	891	857	891	913	915
Asia Pacific	380	324	400	411	380	346	357	355	324	316	318	341
OECD SPR	**1,541**	**1,484**	**1,561**	**1,551**	**1,541**	**1,546**	**1,524**	**1,513**	**1,484**	**1,442**	**1,343**	**1,254**
Americas	640	596	658	644	640	640	623	620	596	568	495	417
Europe	487	479	487	490	487	493	487	485	479	468	452	449
Asia Pacific	414	409	416	417	414	413	413	408	409	406	395	387
OECD total	**4,578**	**4,134**	**4,778**	**4,732**	**4,578**	**4,472**	**4,407**	**4,282**	**4,134**	**4,056**	**4,010**	**4,003**
Oil-on-water	**1,148**	**1,202**	**1,329**	**1,174**	**1,148**	**1,138**	**1,131**	**1,169**	**1,202**	**1,222**	**1,290**	**1,386**
Days of forward consumption in OECD, days												
OECD onland commercial	**68**	**57**	**76**	**74**	**71**	**66**	**63**	**59**	**58**	**58**	**57**	**58**
Americas	66	59	76	73	70	65	62	61	59	56	57	59
Europe	79	63	85	86	87	79	70	64	65	66	65	65
Asia Pacific	51	43	59	56	50	49	51	46	41	45	43	43
OECD SPR	**35**	**34**	**37**	**36**	**36**	**35**	**33**	**32**	**32**	**32**	**29**	**27**
Americas	26	24	29	28	28	26	25	25	24	23	20	17
Europe	37	35	38	39	41	39	35	35	36	35	32	32
Asia Pacific	56	55	61	57	54	59	58	52	52	58	54	49
OECD total	**103**	**92**	**113**	**110**	**108**	**101**	**96**	**91**	**90**	**89**	**86**	**85**

Sources: Argus, EIA, Euroilstock, IEA, JODI, METI and OPEC.

Table 11 - 4: Non-OPEC liquids production and OPEC natural gas liquids, mb/d*

Non-OPEC liquids production and OPEC NGLs	2019	2020	2021	3Q22	4Q22	2022	*Change* 22/21	1Q23	2Q23	3Q23	4Q23	2023	*Change* 23/22
US	18.5	17.6	17.8	19.2	19.4	18.9	1.1	19.7	20.1	20.2	20.5	20.1	1.2
Canada	5.4	5.2	5.4	5.7	5.8	5.6	0.2	5.9	5.7	5.8	6.0	5.8	0.2
Mexico	1.9	1.9	2.0	2.0	2.0	2.0	0.1	2.0	2.0	2.0	2.0	2.0	0.0
Chile	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OECD Americas	**25.8**	**24.7**	**25.3**	**26.9**	**27.3**	**26.6**	**1.3**	**27.6**	**27.7**	**28.1**	**28.4**	**27.9**	**1.4**
Norway	1.7	2.0	2.0	1.9	2.1	1.9	-0.1	2.2	2.2	2.2	2.2	2.2	0.3
UK	1.1	1.1	0.9	0.8	0.9	0.9	0.0	0.9	0.9	0.8	0.9	0.9	0.0
Denmark	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.0
Other OECD	0.7	0.7	0.7	0.8	0.7	0.8	0.0	0.8	0.8	0.8	0.8	0.8	0.0
OECD Europe	**3.7**	**3.9**	**3.8**	**3.5**	**3.9**	**3.6**	**-0.1**	**4.0**	**3.9**	**3.8**	**4.0**	**3.9**	**0.3**
Australia	0.5	0.5	0.4	0.4	0.5	0.4	0.0	0.4	0.4	0.4	0.4	0.4	0.0
Other Asia Pacific	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.0
OECD Asia Pacific	**0.5**	**0.5**	**0.5**	**0.4**	**0.5**	**0.5**	**0.0**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.0**
Total OECD	**30.1**	**29.2**	**29.5**	**30.9**	**31.7**	**30.7**	**1.2**	**32.1**	**32.1**	**32.4**	**32.9**	**32.4**	**1.7**
China	**4.1**	**4.2**	**4.3**	**4.4**	**4.4**	**4.5**	**0.2**	**4.5**	**4.5**	**4.5**	**4.5**	**4.5**	**0.0**
India	**0.8**	**0.8**	**0.8**	**0.8**	**0.8**	**0.8**	**0.0**	**0.8**	**0.8**	**0.8**	**0.8**	**0.8**	**0.0**
Brunei	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.0
Indonesia	0.9	0.9	0.8	0.8	0.8	0.8	0.0	0.8	0.8	0.8	0.8	0.8	0.0
Malaysia	0.7	0.6	0.6	0.6	0.7	0.6	0.0	0.7	0.7	0.7	0.7	0.7	0.1
Thailand	0.5	0.5	0.4	0.4	0.4	0.4	-0.1	0.4	0.4	0.4	0.4	0.4	0.0
Vietnam	0.3	0.2	0.2	0.2	0.2	0.2	0.0	0.2	0.2	0.2	0.2	0.2	0.0
Asia others	0.2	0.2	0.2	0.2	0.2	0.2	0.0	0.2	0.2	0.2	0.2	0.2	0.0
Other Asia	**2.7**	**2.5**	**2.4**	**2.3**	**2.4**	**2.3**	**-0.1**	**2.4**	**2.4**	**2.3**	**2.4**	**2.4**	**0.1**
Argentina	0.7	0.7	0.7	0.8	0.7	0.7	0.1	0.8	0.8	0.8	0.8	0.8	0.1
Brazil	3.6	3.7	3.6	3.8	3.9	3.7	0.1	3.8	3.9	4.0	4.0	3.9	0.2
Colombia	0.9	0.8	0.8	0.8	0.8	0.8	0.0	0.8	0.8	0.7	0.8	0.8	0.0
Ecuador	0.5	0.5	0.5	0.5	0.5	0.5	0.0	0.5	0.5	0.5	0.5	0.5	0.0
Guyana	0.0	0.1	0.1	0.4	0.4	0.3	0.2	0.4	0.4	0.4	0.4	0.4	0.1
Latin America	0.4	0.3	0.3	0.3	0.3	0.3	0.0	0.3	0.3	0.3	0.3	0.3	0.0
Latin America	**6.1**	**6.0**	**6.0**	**6.4**	**6.6**	**6.3**	**0.4**	**6.5**	**6.7**	**6.7**	**6.8**	**6.7**	**0.3**
Bahrain	0.2	0.2	0.2	0.2	0.2	0.2	0.0	0.2	0.2	0.2	0.2	0.2	0.0
Oman	1.0	1.0	1.0	1.1	1.1	1.1	0.1	1.1	1.1	1.1	1.1	1.1	0.0
Qatar	1.9	1.9	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0
Syria	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
Yemen	0.0	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.0
Middle East	**3.2**	**3.2**	**3.2**	**3.4**	**3.4**	**3.3**	**0.1**	**3.3**	**3.4**	**3.4**	**3.4**	**3.4**	**0.0**
Cameroon	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.0
Chad	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.0
Egypt	0.7	0.6	0.6	0.6	0.6	0.6	0.0	0.6	0.6	0.6	0.6	0.6	0.0
Ghana	0.2	0.2	0.2	0.2	0.2	0.2	0.0	0.2	0.1	0.1	0.2	0.1	0.0
South Africa	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.0
Sudans	0.2	0.2	0.2	0.2	0.2	0.2	0.0	0.2	0.2	0.2	0.2	0.2	0.0
Africa other	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.0
Africa	**1.5**	**1.4**	**1.3**	**1.3**	**1.3**	**1.3**	**0.0**	**1.3**	**1.3**	**1.4**	**1.4**	**1.3**	**0.0**
Russia	**11.5**	**10.5**	**10.8**	**11.0**	**10.8**	**10.9**	**0.1**	**9.9**	**10.1**	**10.1**	**10.2**	**10.1**	**-0.9**
Kazakhstan	1.9	1.8	1.8	1.6	1.9	1.8	0.0	2.0	2.0	1.9	2.0	2.0	0.1
Azerbaijan	0.8	0.7	0.7	0.7	0.8	0.7	0.0	0.8	0.8	0.8	0.8	0.8	0.0
Eurasia others	0.4	0.4	0.4	0.3	0.3	0.3	0.0	0.3	0.3	0.3	0.3	0.3	0.0
Other Eurasia	**3.1**	**2.9**	**2.9**	**2.6**	**3.1**	**2.9**	**0.0**	**3.1**	**3.1**	**3.0**	**3.1**	**3.1**	**0.2**
Other Europe	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.0**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.0**
Total Non-OECD	**33.1**	**31.7**	**31.9**	**32.3**	**32.8**	**32.5**	**0.6**	**32.0**	**32.3**	**32.3**	**32.5**	**32.3**	**-0.2**
Non-OPEC	63.2	60.8	61.4	63.1	64.5	63.2	1.8	64.0	64.4	64.7	65.4	64.6	1.5
Processing gains	2.4	2.2	2.3	2.4	2.4	2.4	0.1	2.5	2.5	2.5	2.5	2.5	0.1
Non-OPEC liquids production	**65.5**	**63.0**	**63.7**	**65.5**	**66.9**	**65.6**	**1.9**	**66.5**	**66.9**	**67.2**	**67.9**	**67.1**	**1.5**
OPEC NGL	5.1	5.1	5.2	5.3	5.3	5.3	0.1	5.3	5.4	5.3	5.3	5.3	0.0
OPEC Non-conventional	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.0
OPEC (NGL+NCF)	**5.2**	**5.2**	**5.3**	**5.4**	**5.4**	**5.4**	**0.1**	**5.4**	**5.5**	**5.4**	**5.4**	**5.4**	**0.0**
Non-OPEC & OPEC (NGL+NCF)	**70.7**	**68.1**	**69.0**	**70.9**	**72.3**	**71.0**	**2.0**	**72.0**	**72.3**	**72.6**	**73.3**	**72.6**	**1.6**

Note: Totals may not add up due to independent rounding. Source: OPEC.

Table 11 - 5: World rig count, units

World rig count	2019	2020	2021	*Change* 2021/20	1Q22	2Q22	3Q22	Sep 22	Oct 22	*Change* Oct/Sep
US	944	436	475	39	634	718	761	763	768	5
Canada	134	90	133	43	195	114	202	211	213	2
Mexico	37	41	45	4	44	44	48	51	54	3
OECD Americas	**1,116**	**567**	**654**	**87**	**874**	**878**	**1,013**	**1,027**	**1,037**	**10**
Norway	17	16	17	1	16	18	18	18	19	1
UK	15	6	8	2	7	10	13	12	11	-1
OECD Europe	**74**	**59**	**58**	**-1**	**57**	**65**	**70**	**70**	**69**	**-1**
OECD Asia Pacific	**29**	**22**	**23**	**1**	**22**	**22**	**26**	**28**	**26**	**-2**
Total OECD	**1,219**	**648**	**735**	**87**	**954**	**966**	**1,109**	**1,125**	**1,132**	**7**
Other Asia*	221	187	174	-13	185	184	185	184	191	7
Latin America	128	58	91	33	111	113	122	127	132	5
Middle East	68	57	57	0	60	62	61	62	65	3
Africa	55	43	42	-1	57	55	58	58	59	1
Other Europe	14	12	9	-3	9	9	10	10	12	2
Total Non-OECD	**486**	**357**	**373**	**16**	**423**	**423**	**436**	**441**	**459**	**18**
Non-OPEC rig count	**1,705**	**1,005**	**1,108**	**103**	**1,376**	**1,389**	**1,545**	**1,566**	**1,591**	**25**
Algeria	45	31	26	-5	30	32	33	34	32	-2
Angola	4	3	4	1	6	6	6	7	9	2
Congo	3	1	0	-1	1	0	1	1	0	-1
Equatorial Guinea**	1	0	0	0	1	0	0	0	0	0
Gabon	7	3	2	-1	2	3	2	3	4	1
Iran**	117	117	117	0	117	117	117	117	117	0
Iraq	74	47	39	-8	46	50	54	55	55	0
Kuwait	46	45	25	-20	27	27	27	27	29	2
Libya	14	12	13	1	15	4	3	4	6	2
Nigeria	16	11	7	-4	8	11	9	7	8	1
Saudi Arabia	115	93	62	-31	70	71	71	72	79	7
UAE	62	54	42	-12	38	48	49	50	52	2
Venezuela	25	15	6	-9	3	3	3	3	3	0
OPEC rig count	**529**	**432**	**343**	**-89**	**364**	**371**	**376**	**380**	**394**	**14**
World rig count***	**2,234**	**1,437**	**1,451**	**14**	**1,740**	**1,760**	**1,921**	**1,946**	**1,985**	**39**
of which:										
Oil	1,788	1,116	1,143	27	1,383	1,392	1,522	1,548	1,569	22
Gas	415	275	275	0	329	337	365	370	384	14
Others	31	46	33	-13	28	31	33	29	32	3

*Note: * Other Asia includes India and offshore rigs for China.*

*** Estimated data when Baker Hughes Incorporated did not reported the data.*

**** Data excludes onshore China as well as Russia and other Eurasia.*

Totals may not add up due to independent rounding.

Sources: Baker Hughes and OPEC.

Glossary of Terms

Abbreviations

b	barrels
b/d	barrels per day
bp	basis points
bb	billion barrels
bcf	billion cubic feet
cu m	cubic metres
mb	million barrels
mb/d	million barrels per day
mmbtu	million British thermal units
mn	million
m-o-m	month-on-month
mt	metric tonnes
q-o-q	quarter-on-quarter
pp	percentage points
tb/d	thousand barrels per day
tcf	trillion cubic feet
y-o-y	year-on-year
y-t-d	year-to-date

Acronyms

ARA	Amsterdam-Rotterdam-Antwerp
BoE	Bank of England
BoJ	Bank of Japan
BOP	Balance of payments
BRIC	Brazil, Russia, India and China
CAPEX	capital expenditures
CCI	Consumer Confidence Index
CFTC	Commodity Futures Trading Commission
CIF	cost, insurance and freight
CPI	consumer price index
DoC	Declaration of Cooperation
DCs	developing countries
DUC	drilled, but uncompleted (oil well)
ECB	European Central Bank
EIA	US Energy Information Administration
Emirates NBD	Emirates National Bank of Dubai
EMs	emerging markets
EV	electric vehicle

FAI	fixed asset investment
FCC	fluid catalytic cracking
FDI	foreign direct investment
Fed	US Federal Reserve
FID	final investment decision
FOB	free on board
FPSO	floating production storage and offloading
FSU	Former Soviet Union
FX	Foreign Exchange
FY	fiscal year
GDP	gross domestic product
GFCF	gross fixed capital formation
GoM	Gulf of Mexico
GTLs	gas-to-liquids
HH	Henry Hub
HSFO	high-sulphur fuel oil
ICE	Intercontinental Exchange
IEA	International Energy Agency
IMF	International Monetary Fund
IOCs	international oil companies
IP	industrial production
ISM	Institute of Supply Management
JODI	Joint Organisations Data Initiative
LIBOR	London inter-bank offered rate
LLS	Light Louisiana Sweet
LNG	liquefied natural gas
LPG	liquefied petroleum gas
LR	long-range (vessel)
LSFO	low-sulphur fuel oil
MCs	(OPEC) Member Countries
MED	Mediterranean
MENA	Middle East/North Africa
MOMR	(OPEC) Monthly Oil Market Report
MPV	multi-purpose vehicle
MR	medium-range or mid-range (vessel)
NBS	National Bureau of Statistics
NGLs	natural gas liquids
NPC	National People's Congress (China)
NWE	Northwest Europe
NYMEX	New York Mercantile Exchange
OECD	Organisation for Economic Co-operation and Development
OPEX	operational expenditures
OIV	total open interest volume
ORB	OPEC Reference Basket
OSP	Official Selling Price
PADD	Petroleum Administration for Defense Districts
PBoC	People's Bank of China
PMI	purchasing managers' index
PPI	producer price index

RBI	Reserve Bank of India
REER	real effective exchange rate
ROI	return on investment
SAAR	seasonally-adjusted annualized rate
SIAM	Society of Indian Automobile Manufacturers
SRFO	straight-run fuel oil
SUV	sports utility vehicle
ULCC	ultra-large crude carrier
ULSD	ultra-low sulphur diesel
USEC	US East Coast
USGC	US Gulf Coast
USWC	US West Coast
VGO	vacuum gasoil
VLCC	very large crude carriers
WPI	wholesale price index
WS	Worldscale
WTI	West Texas Intermediate
WTS	West Texas Sour

OPEC Basket average price

US$/b

▼ **down 1.70 in October**

October 2022	93.62
September 2022	95.32
Year-to-date	**103.13**

October OPEC crude production

mb/d, according to secondary sources

▼ **down 0.21 in October**

October 2022	29.49
September 2022	29.70

Economic growth rate

per cent

	World	OECD	US	Euro–zone	Japan	China	India
2022	2.7	2.3	1.5	3.0	1.5	3.1	6.5
2023	2.5	0.8	0.8	0.3	1.0	4.8	5.6

Supply and demand

mb/d

2022		**22/21**	**2023**		**23/22**
World demand	99.6	2.5	World demand	101.8	2.2
Non-OPEC liquids production	65.6	1.9	Non-OPEC liquids production	67.1	1.5
OPEC NGLs	5.4	0.1	OPEC NGLs	5.4	0.0
Difference	**28.6**	**0.5**	**Difference**	**29.3**	**0.7**

OECD commercial stocks

mb

	Jul 22	Aug 22	Sep 22	Sep 22/Aug 22
Crude oil	1,318	1,329	1,335	6.5
Products	1,402	1,407	1,414	6.8
Total	**2,721**	**2,736**	**2,749**	**13.4**
Days of forward cover	58.1	58.3	58.4	0.0

Next report to be issued on 13 December 2022.