Organization of the Petroleum Exporting Countries

OPEC Monthly Oil Market Report

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Feature article:
Winter oil market outlook

Organization of the Petroleum Exporting Countries

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Oil Market Highlights

Crude Oil Price Movements

The OPEC Reference Basket (ORB) declined m-o-m by $6.58 in September, or 6.5%, to average $95.32/b. Pressure from equity market selling, central bank interest rate hikes, and economic outlook concerns weighed on crude futures prices. The ICE Brent front-month declined $7.17, or 7.3%, to average $90.57/b in September while NYMEX WTI fell by $7.68, or 8.4%, to average $83.80/b. The Brent/WTI futures spread widened again m-o-m, expanding 51¢ to average $6.77/b. The market structure of all three major crude benchmarks remained in backwardation. Hedge funds and other money managers resumed selling in both major futures contracts — ICE Brent and NYMEX WTI — especially during the last week of September.

World Economy

Global economic growth has entered into a period of significant uncertainty and deteriorating macroeconomic conditions, amid intensifying challenges including high inflation levels, tightening monetary policies by major central banks, rising interest rates and persisting supply chain issues. Moreover, geopolitical risks, extensions of COVID-19 related lockdowns and flare ups of the pandemic in the Northern Hemisphere during winter season remain uncertain. By taking these factors into account, the global economic growth forecast for both 2022 and 2023 are revised down to stand at 2.7% and 2.5%, respectively. For the US, GDP growth for 2022 is revised down to 1.5% and for 2023 it is lowered to 0.8%. In the Euro-zone, the 2022 GDP forecast is lowered to 3.0%, and for 2023 it is lowered to 0.3%. Japan's economic growth forecast for 2022 is revised up to 1.5% while for 2023 it is revised down to 1.0%. China's 2022 forecast is revised down to 3.1 % while for 2023 it stands at 4.8%. India's 2022 forecast is revised down for both 2022 and 2023 to 6.5% and 5.6%, respectively. Brazil's growth forecast for 2022 is unchanged at 1.5% while for 2023 it is revised down to 1.0%. Russia's 2022 forecast is revised up to show a contraction of 5.7%, with growth of 0.2% expected in 2023. Downside risks to this forecast includes continued inflationary trends, further monetary actions by major central banks, aggravated geopolitical tensions, worsening of the pandemic in the northern hemisphere during winter months, tightening labour markets and further supply chain constraints. These ongoing risks and challenges, especially the economic dynamics in 4Q22 and 1Q23 will require close monitoring.

World Oil Demand

Global oil demand growth in 2022 is revised down by 0.5 mb/d to reflect the recent macroeconomic trends and oil demand developments in various regions. These developments include the extension of China's zero-COVID-19 restrictions in some regions, economic challenges in OECD Europe, and inflationary pressures in other key economies, which have weighed on oil demand, especially in 2H22. With this, global oil demand for 2022 is now expected to grow by about 2.6 mb/d. In the OECD, oil demand growth is estimated at about 1.4 mb/d with the non-OECD at about 1.3 mb/d. For 2023, world oil demand growth is revised down to stand at about 2.3 mb/d. The OECD is projected to grow by about 0.4 mb/d, and the non-OECD by about 2.0 mb/d.

World Oil Supply

Non-OPEC liquids supply growth in 2022 is forecast at 1.9 mb/d. Upward revisions in Latin America were 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, China, Guyana and Brazil, while production is expected to decline mainly in Norway and Thailand. For 2023, the non-OPEC liquids production growth forecast is adjusted down to 1.5 mb/d. The main drivers for 2023 growth are expected to be the US, Norway, Brazil, Canada, Kazakhstan and Guyana, with oil production declines mainly seen coming from Russia and Mexico. Uncertainty about the geopolitical situation remains high, and there is potential for further US shale liquid production. OPEC NGLs and non-conventional liquids in 2022 are forecast to grow by 0.1 mb/d and then by 50 tb/d in 2023 to average 5.4 mb/d. OPEC-13 crude oil production in September increased by 146 tb/d m-o-m to average 29.77 mb/d, according to available secondary sources.

Product Markets and Refining Operations

Refinery margins showed diverging trends in September. In the Atlantic Basin, margins increased as the start of peak refinery maintenance season led to a reduction in product output, exerting pressure on product balances,

particularly gasoil. This provided solid support to products markets in both the US Gulf Coast and Northwest Europe, mainly for middle distillates. Meanwhile, refinery margins suffered losses in Asia, pressured by the recent release of China's fourth batch of export quotas as it set the stage for stronger product exports in the near term. In addition, expectations of a fifth batch of export quotas exacerbated bearish product market sentiment within the region, leading ultimately to a downturn in Asian product performance all across the barrel, with the exception of naphtha, which continued to gain favour as the preferred petrochemical feedstock given high natural gas prices. In September, global refinery processing rates declined in line with historical trends, down by 1.2 mb/d in response to a rise in offline capacity amid the start of autumn maintenance season. Preliminary data points to refinery intakes declining further in the coming months by nearly 900 tb/d.

Tanker Market

Very Large Crude Carrier (VLCC) rates continued to gather strength in September, with gains seen on all major routes, supported increased demand on longer haul routes. Spot VLCCs rates on the Middle East-to-East route rose 26%, while on the West Africa-to-East route they gained 23%. Suezmax and Aframax rates fell from the elevated levels seen since March, as the refinery maintenance season kicked off. Suezmax rates on the US Gulf Coast-to-Europe route declined by 7%, while Aframax spot rates on the Mediterranean routes lossed 13%. Clean rates saw diverging trends, with gains East of Suez and declines West of Suez.

Crude and Refined Products Trade

Preliminary data showed that the US crude imports to average 6.3 mb/d in September, while exports reached a record high of 4.0 mb/d. China's crude imports averaged 9.5 mb/d. The increase came amid expectations for a pickup in domestic product demand in 4Q22 and as the potential for product exports increased. India's crude imports fell to 4.1 mb/d in August, following strong performance seen over the last four months, but remained broadly in line with seasonal levels. India's product exports increased, driven primarily by higher outflows of jet fuel and gasoil, despite the government imposing higher export duties. Japan's crude imports showed strong performance in August, averaging just under 3.0 mb/d, the strongest figure since March 2020, supported by summer demand for gasoline and heathy fuel oil consumption for power generation. Preliminary figures show crude imports into the OECD Europe region remaining high compared with last year, despite steady m-o-m declines in seaborne Russian imports.

Commercial Stock Movements

Preliminary August data shows total OECD commercial oil stocks up 7.8 mb, m-o-m. At 2,712 mb, inventories were 111 mb less than the same month a year ago, 267 mb lower than the latest five-year average, and 273 mb below the 2015–2019 average. Within components, crude and product stocks rose 6.8 mb and 1.0 mb, respectively, compared with the previous month. At 1,315 mb, OECD crude stocks were 0.7 mb lower than the same month last year, 105 mb below the latest five-year average and 133 mb lower than the 2015–2019 average. OECD product stocks stood at 1,398 mb, representing a m-o-m deficit of 110 mb, 162 mb lower than the latest five-year average and 140 mb below the 2015–2019 average. In terms of days of forward cover, OECD commercial stocks rose by 0.2 days m-o-m in August to stand at 59.3 days. This is 1.3 days below August 2021 levels, 5.0 days less than the latest five-year average and 3.8 days lower than the 2015–2019 average.

Balance of Supply and Demand

Demand for OPEC crude in 2022 is revised down by 0.2 mb/d from the last month's assessment to stand at 28.7 mb/d. This is around 0.6 mb/d higher than in 2021. Demand for OPEC crude in 2023 is revised down by 0.3 mb/d from the last month's assessment to stand at 29.4 mb/d. This is around 0.8 mb/d higher than in 2022.

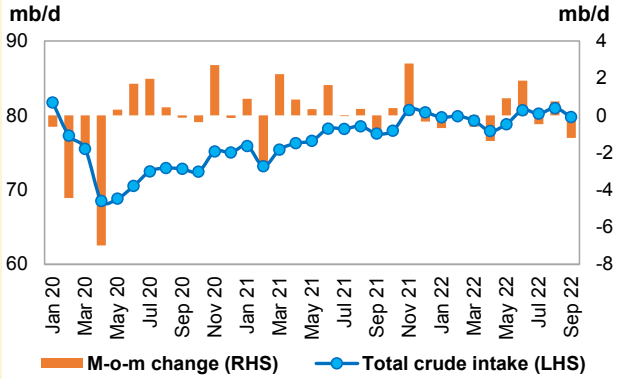
Feature Article

Winter oil market outlook

In August 2022, global refinery intake level has reached 81 mb/d, the highest monthly level registered since the emergence of the COVID-19 pandemic **(Graph 1)**. The strong product consumption during the summer season, amid positive fuel requirements from the industrial and manufacturing sectors, led to an increase of 2.5mb/d, y-o-y. However, in September, refinery intake fell by nearly 1.2 mb/d m-o-m with the start of peak autumn refinery maintenance in the US and Europe.

Meanwhile, global oil demand is now expected to grow by about 2.6 mb/d in 2022. However, risks are skewed to the downside, with slowing growth in the global economy, if continued, likely leading to lower oil demand in the months to come. While the first half of the year saw good levels of mobility, industrial activity and petrochemical feedstock requirements, the momentum has seen a slowdown due to reduced economic activity in recent months. A decrease in product output since last year due to refinery closures, pipeline and weather issues and other constraints, weighed heavily on total OECD product inventories, raising refinery margins to record-high levels.

Graph 1: Refinery intake

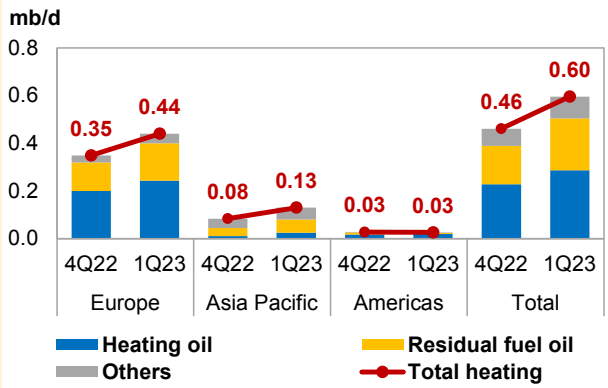


Source: OPEC.

On the US Gulf Coast, refinery margins soared to a record high of $49.92/b in June. Nevertheless, seasonal demand for gasoline throughout the driving season in the US was lower than expected, showing y-o-y declines from June to September 2022. In China, the government's zero-COVID policy restrictions led to a y-o-y decline in oil demand in 2Q22, followed by a brief recovery in 3Q22. The newly announced lockdowns are expected to add to the uncertainty going forward. Looking ahead, refinery runs are expected to slow going into 4Q22 as heavy maintenance work unfolds globally. However, ongoing tightness in product availability, particularly for gasoil, should remain supportive for refinery runs, along with expectations of a slight pick-up in diesel consumption for heating demand amid some additional potential for gas-to-oil switching. This will also depend on the severity of the winter in the Northern Hemisphere. Nevertheless, current signs of economic slowdown may further soften oil market fundamentals beyond the seasonal refinery turnaround period.

Looking to the coming winter season, a seasonal pick-up in heating oil demand due to rising requirements in the Northern Hemisphere is projected. In 4Q22, OECD Europe and Americas, as well as OECD Asia Pacific, are expected to see an increase in demand for fuel oil and distillates required for heating **(Graph 2)**. In addition, rising natural gas prices will potentially lead to some degree of gas-to-oil switching in power generation in both Europe and Asia, supporting demand for residual fuels, heating oil and other fuels, which are forecast to grow by 0.5 mb/d y-o-y in 4Q22. In OECD Europe and the US, heating oil will be the main driver, followed by residual fuels, while in OECD Asia Pacific, residual fuels and other fuels are expected to drive heating fuel demand. In 1Q23, global demand for heating fuel is expected to grow by 0.6 mb/d, y-o-y. OECD Europe is expected to account for the largest increase by 0.4 mb/d, mostly heating oil. Heating fuel demand in OECD Asia Pacific is also expected to grow by 0.1 mb/d, y-o-y, while the US is forecast to show only marginal y-o-y growth.

Graph 2: Heating fuels demand in OECD, y-o-y change



Note: 4Q22-1Q23 = Forecast. Source: OPEC.

Looking ahead, and despite the usual seasonal hike in oil demand for heating, the challenges presented by the heightened levels of uncertainty, the slowing economic growth and a possible resurgence of COVID restrictions in China and elsewhere are expected to impact oil demand in 2022 and 2023. With this in mind, the participating countries of the Declaration of Cooperation (DoC), in their 5th October 2022 meeting have pre-emptively and proactively decided to adjust their overall production, starting November 2022, downward by 2 mb/d (from the August 2022 required production levels), in an ongoing and relentless effort to provide a sustainable stability to the market.

Table of Contents

Crude Oil Price Movements

In September spot prices were under pressure from softer demand in the spot market with major benchmarks dropping to their lowest monthly average prices since January 2022, amid continuing selloffs in futures and equity markets alongside persistent market volatility.

The ORB fell by $6.58, or 6.5%, to settle at $95.32/b, its lowest monthly value since February 2022. On a yearly average, the ORB rose y-o-y by $37.33, or 55.9%, in 2022 to $104.16/b.

Selloffs extended in futures and equity markets last month, driving oil futures prices to their lowest levels since January 2022 amid growing concerns about slowing global economic growth and energy demand. Furthermore, central banks worldwide continued to raise their benchmark interest rates in an attempt to contain high inflation, and global manufacturing activity weakened. Volatility remained elevated in September, with a further market liquidity decline.

The ICE Brent front-month averaged $7.17, or 7.3%, lower m-o-m in September to stand at $90.57/b, and the NYMEX WTI fell by $7.68, or 8.4%, to average $83.80/b. DME Oman crude oil futures prices fell m-o-m in September by $7.25, or 7.5%, to settle at $89.99/b.

Hedge funds and other money managers resumed selling in both major futures contracts, ICE Brent and NYMEX WTI, specifically in the last week of September, liquidating an equivalent of about 17 mb compared to late August. The selloff was mainly related to futures and options contracts related to ICE Brent. Speculators cut bullish positions in September on a further deterioration of market sentiment regarding the economic and demand outlooks.

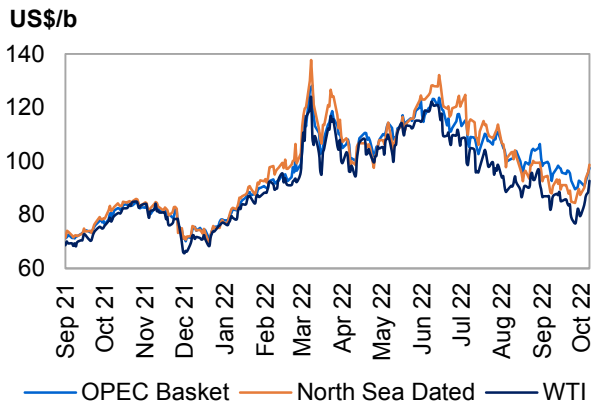
The structure of oil futures prices remained in strong backwardation in September, while the forward curve of Brent futures and Dubai strengthened further compared to the previous month. The nearest months' time spreads moved into larger backwardation despite a sharp decline in oil prices over the last three months.

Sweet/sour crude differentials narrowed in all major regions, specifically in Asia, as the value of light sweet crude declined more than medium and heavy sour crude. A drop in margins of light distillate products, specifically gasoline cracks and low naphtha cracks, along with softening demand for sweet crude in the Atlantic Basin and the return of light sweet supply, put downward pressure on the value of sweet crude. The release of large volumes of light sweet crude from Strategic Petroleum Reserves (SPRs) and the opening of west-to-east arbitrage weighed on the value of light sweet crude in the United States Gulf Coast (USGC) and East of Suez markets.

Crude spot prices

Crude spot prices declined in September to reach their lowest monthly average prices since January 2022, mainly driven by continued selloffs in futures and equity markets and persistent market volatility.
Spot prices were also under pressure from softer demand in the spot market, specifically in the Atlantic Basin, due to the refinery maintenance season that should peak in October-November, and sustained crude supply from the US, including from SPRs. US crude oil exports stood at about 3.8 mb/d in August and September, according to EIA weekly data. Earlier in September, spot prices also came under pressure as COVID-19-related restrictions in a major Chinese city were extended.

Graph 1 - 1: Crude oil price movement



Sources: Argus, OPEC and Platts.

The decline in spot prices was more pronounced with the North Sea dated benchmark, which declined by nearly $10/b m-o-m in September. This came amidst softer demand from European refiners and higher crude flows into Europe from the USGC. Additionally, the accumulation of unsold cargoes in the Atlantic Basin, including some of the North Sea and West African grades, put downward pressure on the prices of prompt loading cargoes. Moreover, the supply of Brent, Forties, Oseberg, Ekofisk and Troll crudes (BFOET) – the crude basket

of North Sea Dated benchmarks – is expected to rise to about 0.8 mb/d in November 2022, slightly higher compared to expected loadings in October.

Spot prices continued to decline more than futures prices in a sign that the crude market was better supplied than previously anticipated. After pricing at a premium to ICE Brent's first-month contract since May, on a monthly basis, North Sea Dated fell to a discount against ICE Brent's first-month contract in September. On a monthly average, the North Sea Dated-ICE Brent spread decreased by $2.63 in September to stand at a discount of 75¢/b compared to a premium of $7.51/b in July and a premium of $1.88/b in August.

However, in the East of Suez, the spot market remained robust amid firm demand from Asian refiners, including from China, which contributed to strengthening the backwardation structure of the Dubai price.

Refinery margins remained strong in almost all major regions and strengthened further in Northwest Europe and the USGC in September compared to the previous month. Middle distillate margins were the main drivers.

In September, North Sea Dated declined the most m-o-m, by $9.80, or 9.8%, to an average of $89.82/b, while WTI and Dubai's first months fell respectively m-o-m by $7.57 and $5.35, or 8.3% and 5.6%, to settle at $84.00/b and $90.98/b.

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

			Change		Year-to-date	
OPEC Reference Basket (ORB)	Aug 22	Sep 22	Sep 22/Aug 22	%	2021	2022
ORB	**101.90**	**95.32**	**-6.58**	**-6.5**	**66.83**	**104.16**
Arab Light	104.89	99.33	-5.56	-5.3	67.59	105.45
Basrah Medium	97.66	91.16	-6.50	-6.7	65.88	101.81
Bonny Light	106.08	95.73	-10.35	-9.8	67.69	108.27
Djeno	92.17	82.37	-9.80	-10.6	60.37	97.90
Es Sider	101.17	90.47	-10.70	-10.6	66.03	105.78
Girassol	105.99	92.26	-13.73	-13.0	68.17	108.47
Iran Heavy	102.24	97.18	-5.06	-4.9	66.65	104.16
Kuwait Export	103.82	98.69	-5.13	-4.9	67.37	105.39
Merey	80.03	73.70	-6.33	-7.9	48.70	80.71
Murban	98.04	92.45	-5.59	-5.7	66.82	102.41
Rabi Light	99.16	89.36	-9.80	-9.9	67.36	104.89
Sahara Blend	104.22	92.72	-11.50	-11.0	67.70	108.68
Zafiro	103.50	90.72	-12.78	-12.3	68.01	107.55
Other Crudes						
North Sea Dated	99.62	89.82	-9.80	-9.8	67.82	105.35
Dubai	96.33	90.98	-5.35	-5.6	66.36	100.13
Isthmus	89.09	81.44	-7.65	-8.6	63.56	96.81
LLS	94.21	86.35	-7.86	-8.3	66.68	100.55
Mars	89.93	82.94	-6.99	-7.8	64.64	96.03
Minas	95.39	88.91	-6.48	-6.8	65.73	100.38
Urals	77.34	68.63	-8.71	-11.3	66.43	83.36
WTI	91.57	84.00	-7.57	-8.3	65.04	98.47
Differentials						
North Sea Dated/WTI	8.05	5.82	-2.23	-	2.78	6.87
North Sea Dated/LLS	5.41	3.47	-1.94	-	1.14	4.80
North Sea Dated/Dubai	3.29	-1.16	-4.45	-	1.46	5.22

Sources: Argus, Direct Communication, OPEC and Platts.

Crude differentials weakened again during September in the West of Suez markets, reflecting soft fundamentals, including in the North Sea, the Mediterranean and West Africa. Despite strong refining margins, North Sea crude differentials fell in September. Forties dropped to a discount against North Sea Dated due to low demand for crude amid the heavy refinery maintenance season and higher supply in Northwest Europe, including WTI crude from the USGC and crudes from West Africa. Refinery outages in France during the second half of September probably contributed to alleviating upward pressure on crude differentials. Forties and Ekofisk crude differentials fell on a monthly average in September by $2.19 and $2.40, respectively, to settle at a discount of 33¢/b and a premium of $3.26/b.

The value of crude differentials also fell sharply in the **West African market** despite the low volume of loading programmes. Subdued demand from Asian and European refiners, ample availability of similar crude quality in Europe, including from the US, and lower gasoline margins weighed on the value of most West African crudes. However, opening the west-to-east arbitrage and the return of China's demand limited declines in crude differentials. On a monthly average, Bonny Light, Forcados and Qua Iboe crude differentials to North Sea Dated fell in September by $2.19, $3.72 and $2.96, respectively, to stand at premiums of $1.80/b, $2.00/b and $2.83/b. The crude differential of Cabinda fell sharply m-o-m by $3.10 to a premium of $1.73/b.

However, in the **Mediterranean and Caspian**, crude differentials were supported in September by supply outages in the Caspian amid maintenance in Kazakhstan and uncertainty about loading operations in some ports. Azeri Light and CPC Blend differentials rose strongly m-o-m, increasing by $3.08 and $1.55 to average at a premium of $6.53/b and a discount of 67¢/b to North Sea Dated. However, Saharan Blend crude differential averages fell slightly by 60¢ m-o-m to stand at a premium of $1.31/b.

In the **USGC**, crude differentials were mixed amid lower refinery intakes and sustained crude supply from SPRs, which were partly offset by higher exports and a wider spread between Brent and WTI futures that reached nearly $7/b on a monthly average in September. Light Louisiana Sweet (LLS) weakened slightly by 29¢ last month on a monthly basis to stand at a premium of $2.35/b to the WTI benchmark, while Mars sour crude differentials increased by 58¢ to an average discount of $1.06/b.

In the **Middle East**, firm demand from Asian refiners and higher sour crude flows to Europe kept the value of spot prices well supported. The value of the Oman crude differential to Dubai fell slightly by 16¢ m-o-m in September to a premium of $5.30/b.

OPEC Reference Basket (ORB)

The **ORB** averaged lower in September m-o-m, falling amid declines in related crude benchmarks. However, higher official selling prices of some components, mainly to Asia and the Americas, led to smaller declines compared with other major crude benchmarks, especially North Sea Dated. In September, the ORB fell by $6.58, or 6.5%, to settle at $95.32/b, its lowest monthly value since February 2022. However, on a yearly average, the ORB rose y-o-y by $37.33, or 55.9%, in 2022 to $104.16/b.

All ORB component values declined in September, with West and North African Basket components – Bonny Light, Djeno, Es Sider, Girassol, Rabi Light, Sahara Blend and Zafiro – falling by $11.24, or 11.0% m-o-m on average to $90.52/b. Multiple region destination grades – Arab Light, Basrah Light, Iran Heavy and Kuwait Export – decreased by $5.56, or 5.4% m-o-m on average, to settle at $96.59/b. Murban crude fell by $5.59, or 5.7% m-o-m on average, to settle at $92.45/b. Merey crude also fell by $6.33, or 7.9% m-o-m on average, to settle at $73.70/b.

The oil futures market

Selloffs extended in futures and equity markets in September, driving **oil futures prices** to their lowest levels since January 2022. Major US equity indexes dropped to new yearly lows in September. Volatility remained elevated in September, along with a further decline in market liquidity, reflected in continuing declines of open interest in major futures contracts ICE Brent and NYMEX WTI. In the first week of September, the total open interest of combined futures and options in ICE Brent and NYMEX WTI dropped to the lowest level since December 2014. Trading volume in both contracts also declined in September.

The drop in oil futures was driven by growing concerns about slowing global economic growth and energy demand as central banks around the world consistently raised their benchmark interest rates in an attempt to contain high inflation. Global manufacturing activity also weakened, especially in the OECD region. Worries about economic and demand outlooks superseded oil supply concerns due to trade dislocations. Investors in the futures markets reacted strongly to macroeconomic indicators after several central banks raised interest rates following the US Federal Reserve's benchmark rate increase of 75 basis points in September. The value

of the US dollar rose to levels not seen in more than two decades, adding downward pressure on commodities priced in US dollars, including oil. In September, the US dollar index rose to 114.106, its highest level since May 2002, making commodities priced in the currency more expensive for investors holding other currencies.

In the first half of September, oil futures came under further pressure on renewed COVID-19-related lockdown measures in China, including in the megacity of Chengdu. However, authorities in Chengdu gradually eased the lockdown in the second half of September. Oil prices also declined on softening gasoline demand in the US and higher US commercial crude oil stocks in the first half of September. US commercial crude stocks rose by 12.4 mb between the weeks of 26 August and 16 September. Moreover, the announcement from the US Department of Energy (DoE) of an additional SPR release of 10 mb in November of 2022 added downward pressure on prices.

However, oil price declines were limited by expectations of rising gas-to-oil switching during the upcoming winter season amid soaring gas prices, especially in Europe. Investors also weighed a potentially lower oil supply amid persistent geopolitical tensions in Eastern Europe, while European Union member countries were expected to ban seaborne imports of crude oil from Russia by the end of 2022.

The **ICE Brent** front-month averaged $7.17, or 7.3%, lower in September to stand at $90.57/b, and the **NYMEX WTI** fell by $7.68, or 8.4%, to average $83.80/b. Y-t-d, ICE Brent was $34.51, or 50.8%, higher at $102.48/b, while NYMEX WTI was higher by $33.20, or 51.0%, at $98.25/b, compared with the same period a year earlier. **DME Oman** crude oil futures prices fell m-o-m in September by $7.25, or 7.5%, to settle at $89.99/b. Y-t-d, DME Oman was higher by $33.66, or 50.6%, at $100.19/b.

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

			Change		Year-to-date	
Crude oil futures	Aug 22	Sep 22	Sep 22/Aug 22	%	2021	2022
NYMEX WTI	91.48	83.80	-7.68	-8.4	65.04	98.25
ICE Brent	97.74	90.57	-7.17	-7.3	67.97	102.48
DME Oman	97.24	89.99	-7.25	-7.5	66.52	100.19
Spread						
ICE Brent-NYMEX WTI	6.26	6.77	0.51	8.1	2.92	4.23

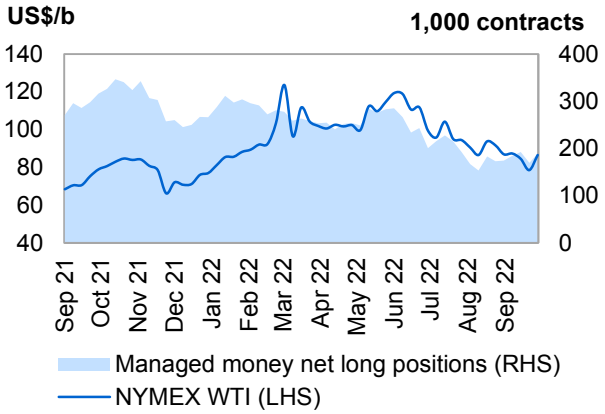
Note: Totals may not add up due to independent rounding. Sources: CME, DME, ICE and OPEC.

The price of the WTI futures contract at Cushing continued to drop more than Brent futures, resulting in further widening of the front-month ICE Brent/NYMEX WTI spread in September. NYMEX WTI stayed under pressure from the selloffs in US equity markets amid growing concerns about the US economic outlook, softer US gasoline demand and continuing supply from the US SPRs. A build in US crude stocks in the first half of September, including in Cushing, also weighed on WTI futures prices. Meanwhile, a geopolitical risk premium lent more support to Brent compared to WTI. The ICE Brent/NYMEX WTI spread widened m-o-m by an average of 51¢ in September to stand at $6.77/b.

However, the **North Sea Dated premium to WTI Houston** continued to narrow in September, contracting by $2.67 on a monthly average to stand at a premium of $3.34/b. This is due to a sharp decline in the value of North Sea crudes in Northwest Europe amid signs of a well-supplied crude market and refinery outages in Europe, as well as fading worries about supply tightness in Europe. Rising volumes of unsold cargoes for October loading in the Atlantic Basin, including the North Sea, put downward pressure on the value of North Sea Dated. At the same time, firm exports of WTI crude in August and September contributed to narrowing the North Sea Dated-WTI Houston spread.

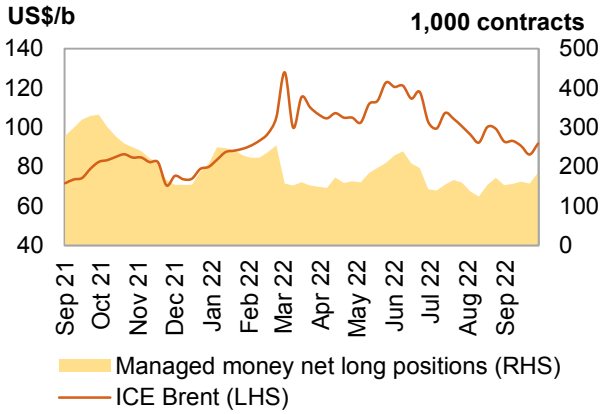
Hedge funds and other money managers resumed selling in both major futures contracts, ICE Brent and NYMEX WTI, specifically in the last week of September, liquidating an equivalent of about 17 mb compared to late August. The selloffs were mainly related to futures and options contracts related to ICE Brent. Speculators cut bullish positions in September on further weakening of market sentiment regarding the economic outlook and selling pressure in equity markets amid rising interest rates from major central banks. Persistent volatility in futures markets, ongoing COVID-19-related lockdown measures in China during September and softening gasoline demand in the US appear to have contributed to speculators' selloffs. Combined futures and options net long positions in ICE Brent and NYMEX WTI dropped 4.9% between the week of 30 August and 27 September.

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 reduction of **net long positions** was more pronounced in futures and options related to ICE Brent, which were cut by 8.1%. Money managers reduced their futures and options net long positions in ICE Brent by 13,946 lots between the weeks of 30 August and 27 September to 157,873 contracts, according to the ICE Exchange. During the same period, gross long positions declined by 25,964 lots, or 11.4%, to 202,350 contracts, while gross short positions declined by 12,018 lots, or 21.3%, to 44,477 contracts.

Meanwhile, speculators were sellers of a net of about 3 mb in the NYMEX WTI contract in September, and combined futures and options net long positions fell by 3,050 contracts, or 1.8%, to reach 169,662 lots in the week to 27 September, according to the US Commodity Futures Trading Commission (CFTC). This is a combination of a cut in long positions and a rise in short positions. In the week ending 27 September, gross short positions rose by 768 lots, or 1.9%, to stand at 42,146 contracts, while gross long positions declined by 2,282 lots, or 1.1%, to 211,808 contracts during the same period.

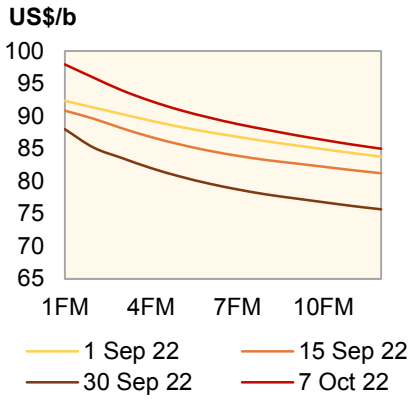
The long-to-short ratio of speculative positions in the NYMEX WTI contract remained the same at 5:1 in the week to 27 September to 30 August. However, the ICE Brent long-to-short ratio rose to 5:1 in the week to 27 September, slightly higher compared to 4:1 in the week to 30 August. Total futures and options open interest volumes on the two exchanges continued to decline in September, falling by 0.3%, or 11,327 contracts, to stand at 4.4 million contracts in the week ending 27 September.

The futures market structure

The **structure of oil futures prices** remained in strong backwardation in September, while the forward curve of Brent futures and Dubai strengthened further compared to the previous month. Meanwhile, the nearest months' time-spreads moved into a larger backwardation despite a sharp decline in oil prices during the last three months.

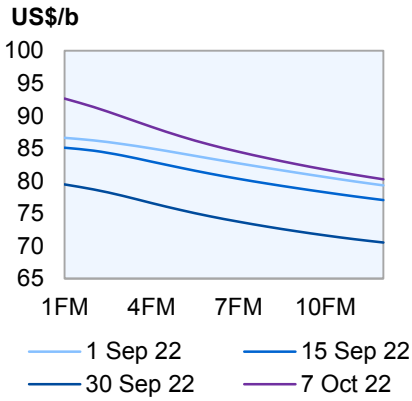
The forward curve for **Brent futures** steepened in September compared to the previous month. Concerns about the short-term supply outlook in Europe and the risk premium related to geopolitical developments amid the tight European gas market contributed to supporting the value of front-month prices compared with forward-month contracts. This is despite signs of a well-supplied crude market in the Atlantic Basin as several cargoes for October loadings struggled to find buyers. Meanwhile, data showed a build in OECD commercial oil stocks in July. The ICE Brent first-month premium to the third month rose m-o-m by 14¢ to a backwardation of $2.60/b, and the ICE Brent M1-M6 also moved into deeper backwardation last month to settle at $5.93/b on average, compared to a backwardation of $5.47/b in August.

Graph 1 - 4: ICE Brent forward curves



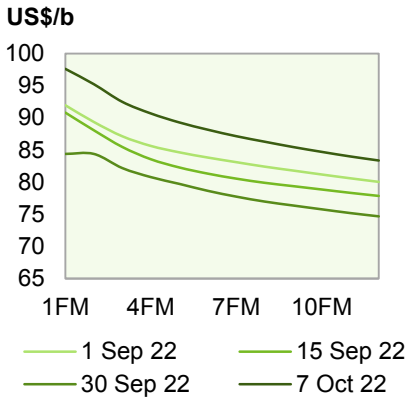
Sources: ICE and OPEC.

Graph 1 - 5: NYMEX WTI forward curves



Sources: CME and OPEC.

Graph 1 - 6: DME Oman forward curves



Sources: DME and OPEC.

However, in the US, the **NYMEX WTI** backwardation structure narrowed slightly in September compared to August. The change was driven by an ample oil supply of light sweet crude from the SPR, a build in US crude stocks in the first half of September, including in Cushing, and signs of softening gasoline demand weighed on the value of the NYMEX WTI first-month contract. Moreover, the NYMEX WTI M1-M3 backwardation stood on a monthly average at $1.20/b in September, narrowing by 14¢ from $1.34/b in August.

DME Oman remained in strong backwardation during September, although the first-to-third month spread narrowed slightly m-o-m. On a monthly average, the **DME Oman** M1-M3 backwardation narrowed m-o-m by 39¢ in September to $4.59/b on average from a backwardation of $4.98/b in August.

The backwardation structure of the spot crude market weakened last month in Europe and the US on high supply availability for prompt loading barrels while demand softened. However, in Asia, Dubai's structure strengthened on healthy demand in the spot market. Regarding the M1/M3 structure, the North Sea Brent M1/M3 backwardation narrowed in September on a monthly average by $1.30 to $1.84/b, while the WTI M1/M3 backwardation narrowed 19¢ to $1.15/b, compared with a backwardation of $1.34/b in August. However, the Dubai M1/M3 monthly average spread was in a backwardation of $5.48/b in September, widening from a backwardation of $4.84/b in August.

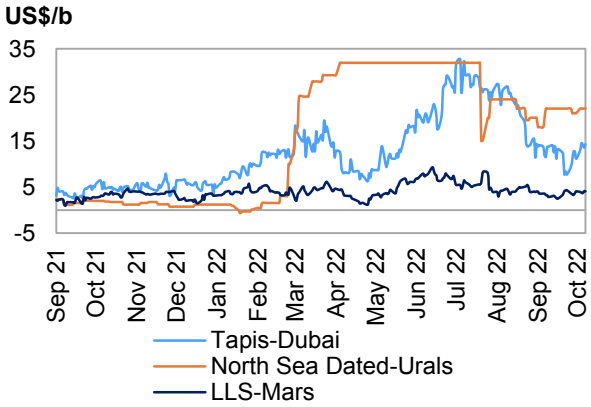
Crude spreads

Sweet/sour crude differentials narrowed in all major regions, specifically in Asia, as the value of light sweet crude declined more than medium and heavy sour crude. A drop in margins of light distillate products, specifically gasoline cracks and low naphtha cracks, along with softening demand for sweet crude in the Atlantic Basin and the return of light sweet supply, put downward pressure on the value of sweet crude. The release of large volumes of light sweet crude from the SPR and the opening of west-to-east arbitrage weighed on the value of light sweet crude in the USGC and East of Suez markets. However, a drop in high sulfur fuel oil margins and high desulfurization costs due to high gas prices lent more support to light sweet crude compared to sour crude.

In **Europe**, some recovery in the value of Urals crude differentials resulted in a narrowed spread between the value of North Sea Dated and Urals by $1.10/b to stand significantly wide at a premium of $21.18/b. However, despite the high supply availability of light sweet crude in Northwest Europe from the USGC and West African markets, the spread between the value of light sweet Ekofisk crude against Johan Sverdrup widened by $2.74/b to stand at $4.89/b on average in September due to a sharp decline in the value of Johan Sverdrup. The value of sour crude Forties against North Sea Dated also fell sharply in September, losing $2.19 on a monthly average, to stand at a discount of 33¢. High desulfurization costs due to high gas prices in Europe and refinery outages in Europe also weighed on the value of sour crude.

In **Asia**, the Tapis premium over Dubai declined significantly last month on lower values of light sweet crude as narrower Brent-Dubai differentials fell sharply, flipping to a discount, which made west-to-east arbitrage more favourable and alleviated upward pressure on the value of sweet crude in the East of Suez market. The Brent-Dubai differential fell by $4.45 on a monthly average in September to stand at a discount of $1.16/b, compared to a premium of $3.29/b in August. The Brent-Dubai exchange of futures for swaps contract (EFS) also narrowed in September by 58¢ m-o-m to stand at a $5.55/b premium. A large decline in gasoline margins in Singapore and very low levels of naphtha margins also weighed on the value of light sweet crude. The Tapis-Dubai spread narrowed by $9.11 m-o-m in September to an average of $11.91/b.

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



Sources: Argus, OPEC and Platts.

In the **USGC**, the Light Louisiana Sweet (LLS) premium over medium sour Mars narrowed in September by 87¢/b m-o-m to $3.41/b. Supply of light sweet crude from the SPR and a sharp drop in gasoline margins, which declined by nearly $20/b in September m-o-m, weighed heavily on the value of light sweet crude in the USGC, while sour crude exports likely supported the value of Mars

Commodity Markets

Selected commodity price indices declined m-o-m across the board. Movement within the energy price index continues to be mixed but was heavily skewed towards the downside. Meanwhile, uncertainties around the global economy and a new wave of monetary policy tightening weighted heavily on the non-energy indices.

In the paper market, both open interest and net length positions continued their downward trajectory across selected commodities, falling for the sixth consecutive month. Despite the m-o-m decline in prices, liquidity continued to decline amid high volatility, strong backwardations and rising interest rates, which are shifting investors towards safe-haven investments, most notably the US Dollar.

On the one hand, increasing uncertainty on the outlook of the global economy remained a drag on commodity prices. The geopolitical risk premium endures given developments in Eastern Europe, while uncertainty around commodity supplies is still lingering. On the other hand, these factors have contributed significantly to the divergence of both energy and non-energy prices that started in 2Q22 and worsened in 3Q22. As we enter 4Q22, it is unlikely that these factors will moderate enough to narrow the divergence, which is expected to persist at least until year-end.

Trends in selected commodity markets

The **energy price index** erased the previous month's gains, declining by 8.1% m-o-m. Movement within the index remained mixed for the sixth consecutive month, shifting towards the downside. Prices for all of the index components fell, except for coal prices. Y-o-y, the index is up by 48.6% but trending downwards for the third consecutive month.

The **non-energy index** also experienced losses, declining by 1.7% m-o-m. Strong seasonal crop output in South Asia offset fears of supply disruptions from the Black Sea safe corridor. Additionally, concerns over droughts in the US have eased as improvements in weather conditions have lent support to the seasonal harvest. The index is up by 3.1% y-o-y but trending downwards for the third consecutive month.

Table 2 - 1: Commodity prices

Commodity	Unit	*Monthly averages*			*% Change*	*Year-to-date*	
		Jul 22	Aug 22	Sep 22	Sep 22/Aug 22	2021	2022
Energy*	Index	**168.8**	**171.1**	**157.3**	**-8.1**	**88.2**	**155.3**
Coal, Australia	US$/mt	383.7	380.4	412.9	8.5	122.8	327.4
Crude oil, average	US$/b	105.1	96.0	88.2	-8.1	66.0	101.0
Natural gas, US	US$/mbtu	7.3	8.8	7.8	-11.6	3.6	6.7
Natural gas, Europe	US$/mbtu	51.3	70.0	59.1	-15.6	10.7	41.5
Non-energy*	Index	**116.7**	**116.9**	**114.8**	**-1.7**	**110.2**	**126.8**
Base metal*	Index	**106.1**	**110.6**	**104.7**	**-5.3**	**114.7**	**126.8**
Precious metals*	Index	**129.8**	**132.5**	**126.4**	**-4.6**	**140.9**	**138.5**

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

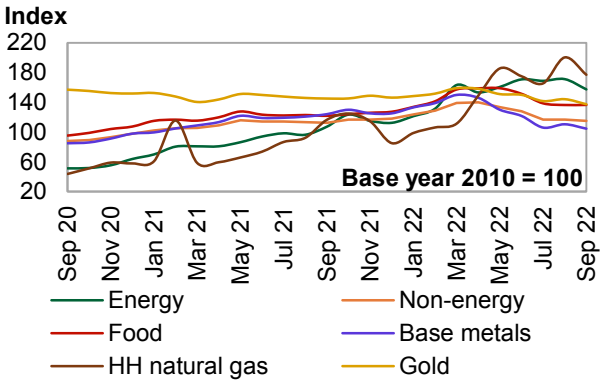
Average crude oil prices fell for the third consecutive month, declining by 8.1% m-o-m. Increased concerns over the global economic outlook continued to weigh on prices, exacerbated by a stronger US dollar and seasonal demand decline in the US. Y-o-y, prices are up by 21.2%, a lower rate compared with the previous month.

Henry Hub's natural gas prices fell by 11.6% m-o-m after the historical increase from the previous month. Prices fell sharply following data from the US Energy Information Administration (as of 23 September) showing that total average storage rose from 2,560 bcf in August to 2,829 bcf in September, a 10.5% increase m-o-m. Additionally, another outage in a US LNG plant, this time at the US Cove Point LNG plant, is expected to last for at least a month, thus increasing supply availability for local consumption and putting downward pressure on prices. Prices are up by 51.9% y-o-y.

Natural gas prices in Europe declined after three consecutive months of gains. The **average Title Transfer Facility (TTF) price** went from $70.0/mmbtu in August to $59.1/mmbtu in September, a 15.6% decline m-o-m. Increased storage level helped ease supply uncertainty, thus putting downward pressure on prices. The latest data from Gas Infrastructure Europe shows EU gas storage at 89.6% capacity. However, significant upside risks remain because prices are very sensitive to geopolitical developments in the region, which have deteriorated further, exacerbated by disruptions at the Nord Stream 1 pipeline. Y-o-y, prices are up by 158.8%, a lower trend compared with last month.

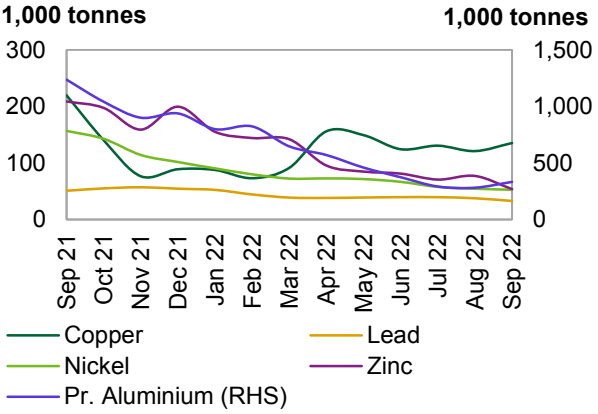
Australian thermal coal prices rose by 8.5% m-o-m following a marginal decline in the previous month. As stated last month, the previous month's decline was more related to a timing issue on the data rather than market fundamentals. Coal holds an energy cost advantage relative to natural gas; thus, competition for Asia-Pacific coal remains elevated amid a ban on Russian coal imports by the EU. Additionally, Europe and Asia are set to expand their coal power generation capacity amid high natural gas prices. This rising demand continued to sustain upward pressure on coal prices. Y-o-y, prices are up by 122.3%.

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** fell by 5.3% m-o-m, erasing the previous month's gains. Prices of all of the index components fell m-o-m except nickel. Weak manufacturing data from China and Europe remained a drag on the index (Purchasing Managers' Index below 50 in both regions). High-energy prices continued to weigh on smelters in Europe, while the recent wave of monetary and fiscal support from the government of China has had a limited impact. Despite an increase in the production of metals, demand remains subdued amid ongoing property and construction challenges. Y-o-y, the index is down by 15.6%.

Aluminium prices declined by 8.3% m-o-m. According to data from the London Metal Exchange (LME), aluminium inventories rose by 18.4% m-o-m, driven mainly by increased exports from China. The decline is more reflective of the declining demand in China (hence increased exports) amid limited upside impact on demand from the recent fiscal and monetary economic stimulus. Y-o-y, prices are down by 18.2%.

Average monthly **copper prices** also fell, declining by 2.9% m-o-m. Weak demand data outweighed the recent news that China was considering improving its electrical infrastructure. Meanwhile, at the LME, inventories improved m-o-m by 11.8%, owing to increased exports from China. Prices are down by 16.9% y-o-y.

Lead prices also receded, declining by 12.7% m-o-m. Contrary to the other two metals, inventories declined m-o-m by 12.7% at LME. Despite this decline, prices fell amid weak manufacturing data from China. Prices are down by 19.9% y-o-y.

Prices for both **nickel and zinc** were mixed m-o-m. Nickel prices rose for the second consecutive month, increasing by 3.6% m-o-m; meanwhile, zinc prices fell by 12.7% in the same period. The surge in nickel prices was supported by the recent surge in electric vehicle production, particularly from Indonesia, while the decline in steel prices continued to weigh on zinc prices. In terms of inventories, nickel inventories declined by 3.3% 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 30.3% in the same period. Y-o-y, nickel and zinc are up by 18.0% and 3.1%, respectively.

The **precious metals index** also declined by 4.6% m-o-m. The index was under pressure from a strong US dollar, in addition to the recent increase in interest rates by the US Federal Reserve. Gold prices fell by 4.7% m-o-m, while silver and platinum declined by 4.0% and 3.0%, respectively, in the same period. Weak industrial activity from China also weighed on silver and platinum prices. Y-o-y, the index continued to trend downwards, down by 7.4%. Gold is down by 5.3%, silver by 18.3% and platinum by 9.4% y-o-y.

Investment flows into commodities

Total money managers' net length positions continued their downward trajectory for the sixth consecutive month, declining by 49.0% m-o-m. The net length decline was driven by gold and copper, which were partially offset by net length increases in natural gas and crude oil. Total open interest also declined for the seventh consecutive month, falling by 3.6% m-o-m. Open interest declined across the board, with copper leading the decline, followed by crude oil, natural gas and gold.

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

Selected commodity	*Open interest*		*Net length*			
	Aug 22	Sep 22	Aug 22	%OI	Sep 22	%OI
Crude oil	2,176	2,072	174	8	180	9
Natural gas	997	978	-57	-6	-81	-8
Gold	601	598	36	6	-21	-3
Copper	195	178	-13	-7	-8	-4

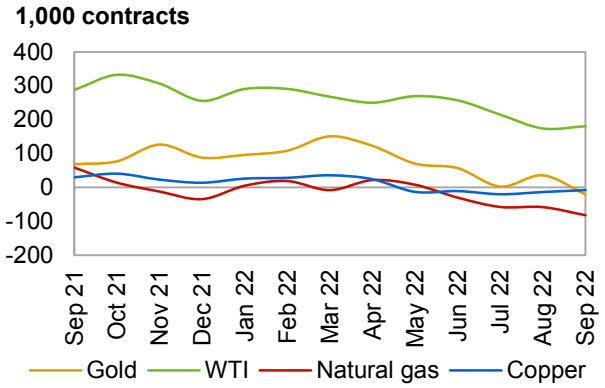
Note: Data on this table is based on monthly average.

Sources: CFTC and OPEC.

Total crude oil (WTI) open interest (OI) fell for the seventh consecutive month, decreasing m-o-m by 4.8%; however, money managers' net length rose by 3.8% over the same period. Money managers increased their net length positions by reducing their shorts positions in order to minimize losses as weak macroeconomic indicators exacerbated by high trading costs continued to weigh on market sentiment.

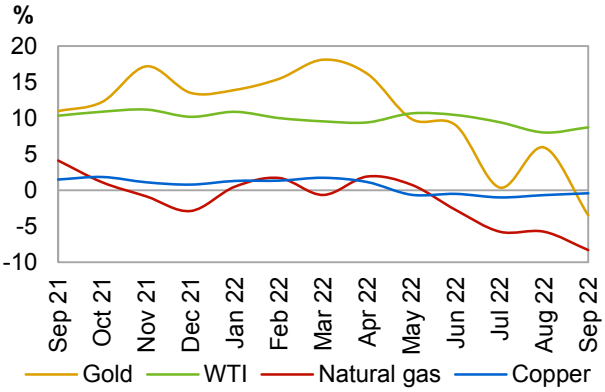
The **total Henry Hub natural gas OI** decreased by 1.9% m-o-m, while money managers increased the net length by 41.5% in the same period. Net length also rose on declining short positions. Market sentiment remained bearish following the outage at the US Cove Point LNG plant.

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



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

Gold's OI declined for the second consecutive month, falling by 0.5% m-o-m, while net length declined by 158.4% in the same period. As stated in the previous report, sentiment towards gold remains subdued by a stronger US dollar and expectations of rising interest.

Copper's OI declined for the third consecutive month, falling by 8.9% m-o-m. Money managers' net length also fell by 42.9% over the same period. Concerns about the global manufacturing activity remained a drag on market sentiment towards copper.

World Economy

The world economy has entered into a time of heightened uncertainty and rising challenges, amid ongoing high inflation levels, monetary tightening by major central banks, high sovereign debt levels in many regions as well as ongoing supply issues. Moreover, geopolitical risks remain, and the course of the pandemic in the northern hemisphere during the winter season remains to be seen. By taking these factors into account, the global economic growth forecast for both 2022 and 2023 are revised down to stand at 2.7% and 2.5%, respectively.

Although limited, an upside potential for the global economic growth forecast may come from a variety of sources. Fiscal measures in the EU and China could support growth towards the end of the year and lead to more stability in 2023. Moreover, any resolution of the geopolitical situation in Eastern Europe could have a positive impact on inflation, allowing for less hawkish monetary policies, which, in turn, could lift consumer and business sentiment and trigger a wide range of other positive effects. These factors could potentially lift global economic growth beyond the current base case.

Nonetheless, major downside risks still exist. Among them are a continued inflationary trend, aggressive monetary actions by major central banks, aggravated geopolitical tensions, a worsening of the pandemic in winter months, tightening labour markets and further supply chain constraints. Moreover, any further impactful energy supply disruptions in the EU may 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. These ongoing challenges, especially the economic dynamics in 4Q22 and 1Q23, will require close monitoring.

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	-0.4	-0.2	-0.3	-0.1	-0.4	0.1	-1.1	-0.6	0.0	0.3
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	-0.6	-1.0	-0.9	-1.4	-1.2	-0.6	-0.2	-0.4	-0.6	-1.0

*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 in the world's regions during the first three quarters. The Euro-zone enjoyed an unexpectedly strong 1H22 GDP growth trend, with some positive carry-over into 3Q22. This was in contrast to general business and consumer sentiment and inflationary trends. However, in the meantime, monetary tightening by the ECB to counter the inflationary trend has gained traction.

The economies in the US and China have faced challenges in 1H22, and the growth is not expected to reach its full potential in 2H22. The Euro-zone enjoyed an unexpectedly strong 1H22, despite weak sentiment and inflationary trends. Although the Euro-zone is expected to experience a slowdown in 2H22, the latest fiscal support measures that were announced by key Euro-zone countries continue to counterbalance the challenges associated with rising inflation. However, 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 declining Euro-zone economy in 4Q22.

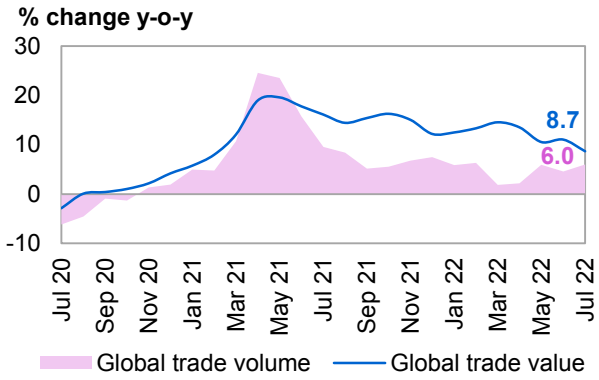
In the **emerging economies**, India has seen a good recovery in 1H22, while economic growth in Brazil rebounded somewhat as well. In contrast, China's growth momentum was dampened by COVID-19 lockdowns. Inflation is still impacting the global economy, although the trend in some key economies seems to be gradually turning, including in the US. However it remains too early to ascertain whether peak-inflation has been reached. While rising prices in the US were still being observed in August, the latest available monthly data show US inflation dropped to a level of 8.3% y-o-y during the month, compared to 8.5% y-o-y in July and 9% y-o-y in June. However, core inflation of the personal consumption expenditure index, which is a general guideline for the Fed, remained persistently high at around 5% for the past three months, indicating that inflation may result in further monetary policy action by the US central bank. Both the Fed and the ECB have indicated they will continue to carry out their monetary tightening efforts. Both major central banks increased their key interest rates by 75 basis-points (bp) in September. Central banks in emerging market economies

have also ratcheted up their monetary tightening efforts, with India's central bank having lifted interest rates in September by a further 50 bp.

World trade in value terms increased by 8.7% y-o-y in July, after growth of 11% y-o-y in June and 10.5% y-o-y in May, based on the CPB World Trade Monitor Index provided by the CPB Netherlands Bureau for Economic Policy Analysis.

Trade in volume terms rose by 6% y-o-y in July, compared with 4.6% y-o-y in June and 5.9% y-o-y in May. However, the World Trade Organisation (WTO) recently highlighted challenges that may come in 2023, citing high inflation, rising borrowing costs and supply disruptions as downside risks to trade in the near term.

Graph 3 - 1: Global trade



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

Near-term global expectations

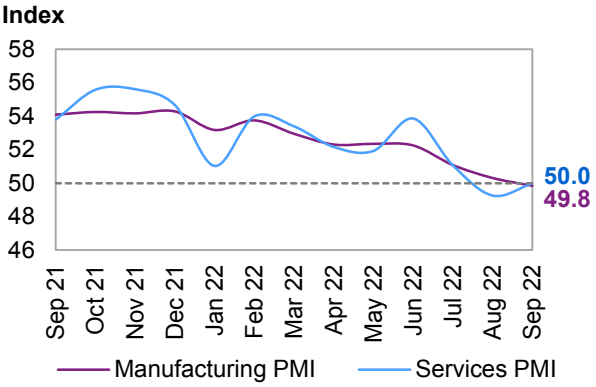
Downside risks to near-term growth have risen most recently as core inflation in major advanced economies remains persistently high and the respective major central banks have indicated that they will continue to lift key policy rates. The US and China are forecast to rebound somewhat from their poor economic performances in 1H22, while the Euro-zone is forecast to decelerate in 3Q22 and to decline in 4Q22 due to the ECB's monetary tightening as well as the ongoing geopolitical situation in Eastern Europe. The possibility of the pandemic re-emerging during the winter months in the Northern Hemisphere could also contribute to dampening growth in 2H22.

While momentum in 3Q22 has been fuelled by pent-up demand, especially in the contact-intensive services sector (i.e. travel and transportation, as well as leisure and hospitality), the dynamic is forecast to slow down again in 4Q22. Even 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.

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 49.8, which is just below the growth-indicating level of 50. This is compared with 50.3 in August and 51.1 in July. The global services sector PMI rebounded to stand at 50 in September, compared with 49.3 in August and 51.1 in July.

Graph 3 - 2: Global PMI



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

By taking into consideration the current challenges and anticipated slowdown in 4Q22 and 1Q23, **global economic growth for both 2022 and 2023 was revised down**. The growth forecast for 2022 stands at 2.7%, compared with 3.1% in the previous month. The growth forecast for 2023 was revised down to 2.5%, compared with 3.1% in the previous month. The risk to these forecasts is 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	-0.4
2023	**2.5**
Change from previous month	-0.6

*Note: * 2022 and 2023 = Forecast.*

Source: OPEC.

OECD

OECD Americas

US

Update on the latest developments

After the 1H22 decline in US growth, the **US economy** is estimated to have recovered in 3Q22, albeit the level of the rebound is assumed to be low as the growth trend in the US is increasingly dampened by rising inflation and monetary tightening with both dynamics negatively impacting consumption and investments. These concerns were also reflected in the latest decline in US equity markets in combination with an inverted yield-curve, signalling some probability of a near-term decline in the US economy. The final US 2Q22 GDP growth numbers confirmed these consecutive quarterly declines in US GDP growth. After a 1Q22 decline of 1.6% q-o-q SAAR, 2Q22 GDP growth was reported at a negative 0.6% q-o-q SAAR, according to the US Bureau of Economic Analysis (BEA). Personal consumption rose by 2% q-o-q SAAR, better than the previous estimate of 1.5% q-o-q SAAR and increasing from a rise of 1.3% in 1Q22.

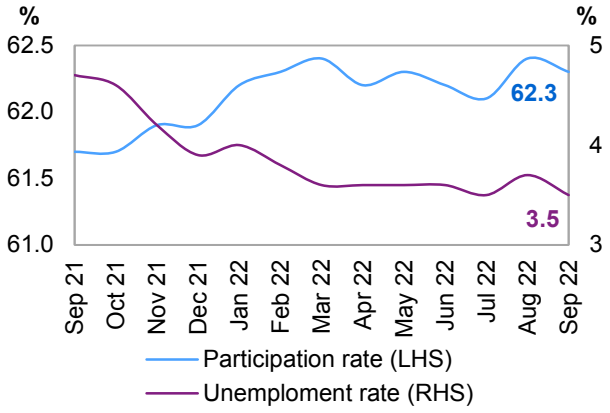
Fuelled by ongoing inflation and a tight labour market, the Fed increased its monetary tightening efforts and lifted its key policy rate again by 75 basis points in September, pushing it up to 3.25%. This trend is likely to continue. The Fed's guiding inflation measure, the core inflation level of the personal consumption expenditures index, remained persistently high at around 5% y-o-y. This compares to a targeted level of around 2%. However, inflation based on the broader consumer price index retracted somewhat in August to stand at 8.3% y-o-y, after it reached 8.5% y-o-y in July and stood at 9.1% y-o-y in June. Some uptick in consumer confidence is also reflected in the index provided by the Conference Board, which rose to 108 in September, compared with103.6 in August and 95.3 in July.

The labour market remains tight with the **unemployment rate** falling back to 3.5% in September, compared with 3.7% in August.

The **participation rate** fell slightly to 62.3% in September, compared with 62.4% in August.

Non-farm payrolls continued to rise firmly in September, but were slightly less than in the previous month. There were 263,000 new jobs recorded in September, after an increase of 315,000 in August and 537,000 in July. The corresponding hourly wage growth remained strong, up by 5% in September, almost unchanged from the August level of 5.2%. With this trend, wage growth remains substantially above annual pre-COVID-19 growth levels of between 2% and 3%. Ongoing labour market tightness and corresponding wage developments need to be closely monitored, as these could materially lift inflation.

Graph 3 - 3: US monthly labour market



Sources: Bureau of Labor Statistics and Haver Analytics.

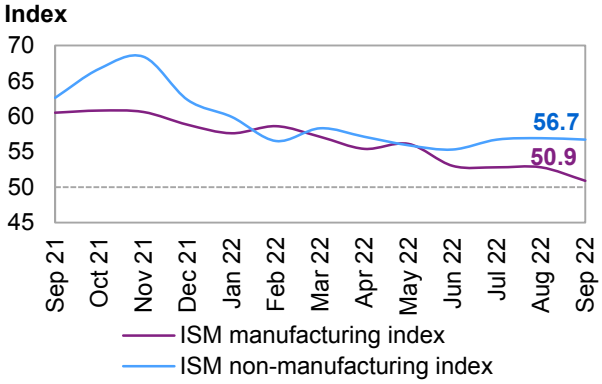
Near-term expectations

The US economy is forecast to see a recovery in 2H22, although the growth dynamic is forecast at a subpar level. Growth is forecast to remain supported by the continuation of consumption. The services sector is predicted to recover further in 3Q22 and beyond. An important dampening factor that is inhibiting a stronger recovery is the expected ongoing impactful monetary tightening efforts by the US Fed. As inflation has remained persistently high, especially core inflation, the Fed has indicated its intentions to continue lifting interest rates and tightening its monetary policy rates. While total inflation slowed in August for a second consecutive month, inflation is expected to remain elevated towards the end of the year. 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 a rate of around 4% in 2023. In 4Q23, there could potentially be a quarterly CPI level of below 3%. With these factors in mind, the Fed is likely to lift interest rates by up to 1 pp towards the end of the year, with a small increase of up to 50 bp in 1H23. By 4Q23, the Fed is anticipated to start lowering interest rates again.

In terms of **quarterly growth** developments, as already noted, a GDP decline of 1.6% q-o-q in 1Q22 is reported to be followed by a decline of 0.6% q-o-q SAAR in 2Q22. In 2H22, growth is forecast to rebound, reaching 0.5% q-o-q SAAR in 3Q22 and 0.2% q-o-q SAAR in 4Q22.

September **PMI** levels, as provided by the Institute for Supply Management (ISM), reflect the weakening situation in the manufacturing sector. The September manufacturing PMI fell by 1.9 points to stand at 50.9. Positively, the index level for the services sector, representing around 70% of the US economy, retracted only very slightly and remained almost unchanged to stand at 56.7 in September, compared with 56.9 in August and 56.7 in July. In this respect, further COVID-19-related developments, among other 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 a slightly less dynamic 2H22 rebound than previously assumed, **US GDP growth** in **2022** was lowered to stand at 1.5%, compared with 1.8% in the previous month.

GDP growth in **2023** is forecast to slow down and stand at 0.8% 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	-0.3
2023	**0.8**
Change from previous month	-0.9

*Note: * 2022 and 2023 = Forecast.*

Source: OPEC.

OECD Europe

Euro-zone

Update on the latest developments

So far in 2022, **growth in the Euro-zone** has been better-than-expected, particularly in 1H22. After strong 1Q22 GDP growth of 2.7% q-o-q SAAR, 2Q22 growth accelerated to stand at 3.1% q-o-q SAAR. This came amid COVID-19 restrictions, rising inflation and geopolitical tensions in Eastern Europe. Some of this solid dynamic is forecast to materialize in 3Q22, with the services sector and particularly travel and transportation, as well as leisure and hospitality providing support to overall economic growth, which has lost momentum on the manufacturing side. Consequently, on a per-country basis, 2Q22 GDP growth was very strong in those economies that benefited more from service sector spending. Italy, Spain and, to some extent, France were beneficiaries of this momentum, while Germany's economic growth, which is very much geared towards industrial output, was limited.

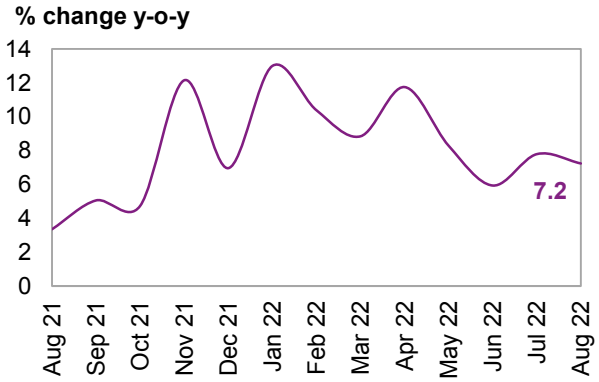
Moreover, ECB monetary policies remained relatively accommodative throughout 1H22, providing another factor to support growth and to counterbalance negative factors. Additional support came from fiscal spending following the outbreak of conflict in Eastern European at the end of February. Additionally, continued rising wages and tapping into the still-solid savings, in combination with an increase in consumer credit helped counterbalance a negative trend in consumer sentiment.

Inflation continued to rise strongly in August on a yearly basis to stand at 9.1% y-o-y, compared with 8.9% y-o-y in July and 8.6% y-o-y in June. When excluding volatile items such as food and energy, inflation stood at 5.5% y-o-y in August, after a rise of 5.1% y-o-y in July and 4.6% y-o-y in June. The flash estimate for September inflation, as provided by Eurostat stood at 10%. 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 continued to expand significantly until August, the latest available month, rising by 6.6% y-o-y, compared with 6.1% y-o-y in July and 5.9% y-o-y in June, all strong growth rates. However, with this strong support from the monetary side, the course may 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 September, and has indicated that it will continue to stay the course in monetary tightening, leading to higher rates than most market observers expected only a few months ago.

The **labour market** maintained its positive trajectory. According to the latest numbers from Eurostat, the unemployment rate remained at 6.6% in August, the same level as in July and down slightly from 6.7% in June.

Retail sales in value terms increased considerably again in August, reaching a level of 7.2% y-o-y, compared with 7.8% y-o-y in July and following growth of 5.9% y-o-y in June. While these levels were certainly supported by the strong price increases, consumers have not scaled back their spending.

Graph 3 - 5: Euro-zone retail sales



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

Industrial production turned negative in July, declining by 2.2% y-o-y, signalling that the industrial side of the Euro-zone will likely face a challenging 2H22. This decline follows a stronger development in 1H22 with the months of June and May showing growth of 2.1% y-o-y in June and 2.6% y-o-y in May. The yearly decline in July translates into a monthly fall of 2.3% m-o-m, compared with a rise of 1.1% m-o-m in both June and May.

Near-term expectations

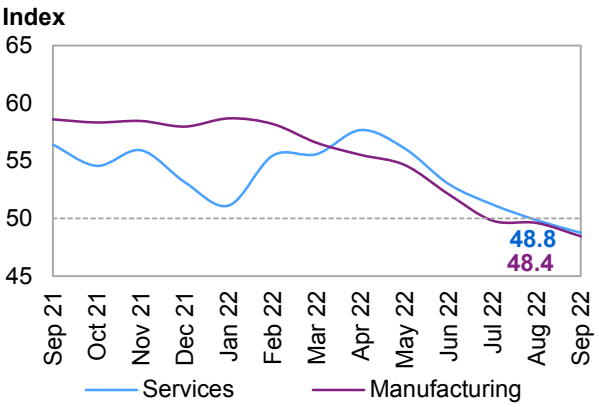
Although the **Euro-zone has** experienced higher growth than its advanced economies' counterparts thus far in 2022 due mainly to the ongoing monetary and fiscal support, this momentum is forecast to slow down significantly in 4Q22 with a likely slowing effect in 1Q23. High inflation, energy supply-related challenges and the ECB's envisaged aggressive monetary tightening efforts are expected to significantly dampen growth in the near term. As the ECB has started to gradually tighten its monetary policies and is forecast to lift its key policy rate further this year, strong lending activity was recorded up to 3Q22, but it is forecast to slow in 4Q22 and beyond. The ECB's tightening measures are, however, forecast to have a positive impact on the Euro exchange rate and import prices; hence, it may also have a dampening effect on inflation. Fiscal stimulus measures are expected to face limitations in several key economies of the Euro-zone amid rising debt levels. In addition to the current issues related to energy supply, inflation, monetary tightening and tight labour markets, COVID-19 case numbers have risen in some parts of the Euro-zone again, a factor that will require further monitoring.

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

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

The manufacturing PMI retracted further as well, dropping to 48.4 in September, compared with 49.6 in August and 49.8 in July.

Graph 3 - 6: Euro-zone PMIs



Sources: IHS Markit and Haver Analytics.

In terms of **quarterly growth** developments, GDP growth of 2.7% q-o-q in 1Q22 was reported to be followed by a growth of 3.1% q-o-q SAAR in 2Q22. In 2H22, growth is forecast to slow down to 0.4% q-o-q SAAR in 3Q22 and to decline severely by 3.9% q-o-q SAAR in 4Q22.

Despite the growth momentum in the first three quarters, recent developments advocate to revise slightly down the **GDP growth forecast for 2022** at 3.0% with expectations for a severe decline in 4Q22. This forecast is followed by a further anticipated slowdown into 2023.

Considering the ongoing inflation and monetary tightening, in addition to expected energy supply constraints, among other dampening factors, **2023** GDP growth was revised down to 0.3%, compared with 1.7% in the previous month.

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

	Euro-zone
2022	**3.0**
Change from previous month	-0.1
2023	**0.3**
Change from previous month	-1.4

*Note: * 2022 and 2023 = Forecast.*

Source: OPEC.

OECD Asia Pacific

Japan

Update on latest developments

Japan's growth dynamic has surprised to the upside in 1H22, albeit it was impacted by the lock-down measures in 1Q22, but less so than expected as reported by the Cabinet Office, providing the latest GDP growth numbers. 1Q22 GDP growth was reported at 0.2% q-o-q SAAR, contrary to the previous assumption by the Cabinet Office of a decline.

Japan's 2Q22 GDP growth stood at a sound level of 2% q-o-q SAAR and 3Q22 seems to have also been well supported. The strong momentum in 2Q22 has been significantly supported by pent-up demand after 1Q22 lockdown measures. Private household consumption rose by 4.5% q-o-q SAAR and investments saw a strong rebound as 2Q22 growth was at 4.9% q-o-q SAAR. However, it should be noted that Japan saw a renewed rise in COVID-19 infections in 3Q22 that led to a drop off in mobility and may have dampened some of the activity in the services sector. However, with consumption having recovered over the past months and the export business continuing to expand, growth seems to have held up well in 3Q22. However, the weakening yen, a supportive factor for exports, has led to rising import prices, especially for vital commodities, which are broadly traded in US-dollar terms.

Consumer **inflation** stood at 3% in August, continuing a clear upward trend and comparing with 2.6% y-o-y in July and 2.3% y-o-y in June. Hence, the Bank of Japan is forecast to gradually tighten its still considerably accommodative monetary policy, albeit at a slow pace. So far the only limited monetary policy tightening has significantly contributed to the continuous weakening of the yen, especially compared to the US dollar. The exchange rate is now more than 145 yen against one US dollar, reflecting the rising gap in interest rate levels and associated growth differentials between the US and Japanese economies.

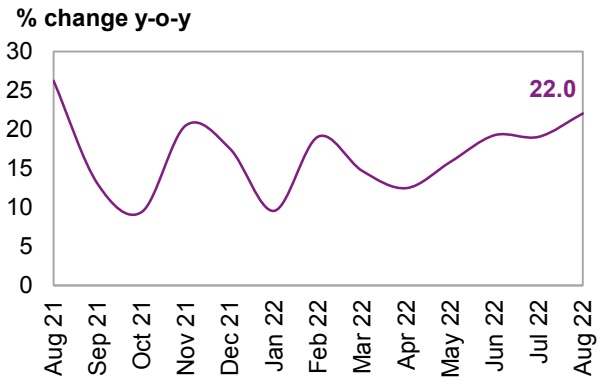
Industrial production (IP) bounced back strongly in August, rising by 3.6% y-o-y, after it had declined in all months since the beginning of the year, except February.

On another positive note, and after a weakening 1Q22 dynamic**, export growth** accelerated strongly in August, rising by 22% y-o-y, compared with 19% y-o-y in July and 19.3% y-o-y in June.

Retail sales rose by 4.1% y-o-y in August, compared with 2.4% y-o-y in July and 1.5% y-o-y in June.

Consumer confidence has, however, retraced somewhat, standing at an index level of 31 in September, compared with 31.9 in August and 30 in July, indicating a slowdown in consumption towards the end of the year.

Graph 3 - 7: Japan's exports



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

Near-term expectations

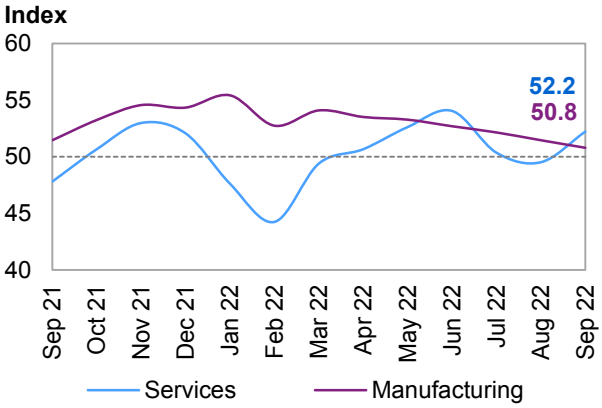
After Japan's economy experienced low growth in 1Q22, impacted by COVID-19-related lockdowns, and a strong rebound in 2Q22, the growth dynamic is forecast to continue at a solid pace in 2H22, at around the growth level seen in 2Q22. 2H22 growth is forecast to be supported by domestic demand and external trade, supported by expectations for some 2H22 economic rebound in both the US and China. However, the 2H22 dynamic is forecast to be slightly lower than expected in the previous month.

Some downside risks to the 2H22 recovery may come from a resurgence in COVID-19 infection rates and subsequent containment measures. Moreover, rising inflation is pointing to further, albeit gradual, monetary tightening by the Bank of Japan.

On a quarterly basis, 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. At the end of the year, growth is forecast to slow slightly again to settle at 0.5% q-o-q SAAR in 4Q22.

September PMI numbers point to an ongoing gradual slowdown in manufacturing and an improved performance in the services sector. After August numbers for the services sector index signalled that rising COVID-19 infections have dampened the recovery in the contact-intensive services sector, the dynamic recovered again. The services sector PMI, which constitutes around two-thirds of the Japanese economy, rose to 52.2 in September, after it had retracted to an index level of 49.5 in August from 50.3 in July. The manufacturing PMI fell slightly to 50.8 in September, after an index level of 51.5 in August and 52.1 in July.

Graph 3 - 8: Japan's PMIs



Sources: IHS Markit, Nikkei and Haver Analytics.

After better-than-expected GDP growth was reported for 1H22, **the 2022 GDP growth forecast** was revised up to stand at 1.5%, compared with 1.4% in the previous month. However, challenges may lay ahead, including a potential resurgence in COVID-19 infections, rising commodity import prices and a continued weak Japanese yen, among others.

GDP growth in **2023** is forecast at 1.0%, compared with 1.6% in the previous month.

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

	Japan
2022	**1.5**
Change from previous month	0.1
2023	**1.0**
Change from previous month	-0.6

*Note: * 2022 and 2023 = Forecast.*

Source: OPEC.

Non-OECD

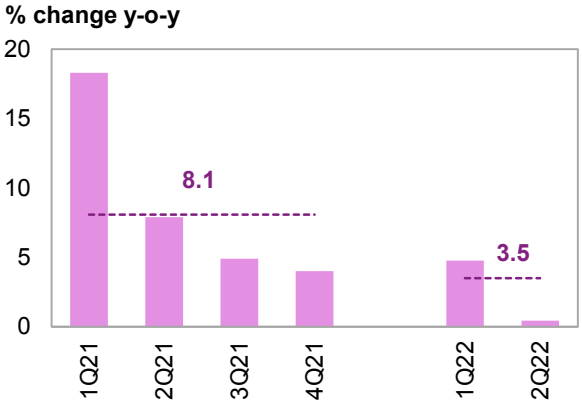
China

Update on the latest developments

China's economic growth appears to still be on fragile footing due to sustained shocks from China's zero-COVID policy, adverse weather and property sector strains. Recent industrial production data suggested a pickup in industrial sector output, which grew at 4.2% y-o-y in August compared with 3.8% y-o-y in the previous month. Yet, manufacturing activities continue to be impacted by COVID-19 restrictions as new infection outbreaks have been recorded in the far-southern region of the country.

Fixed asset investment growth picked up by 5.8% y-o-y in August amid accelerated growth in infrastructure projects fuelled by stimulus measures and manufacturing investments.

Graph 3 - 9: China's GDP growth



Sources: National Bureau of Statistics and Haver Analytics.

Retail sales growth accelerated to 5.4% y-o-y in August from 3.1% y-o-y in July. This suggests there has been a positive response to the lifting of lockdowns in some areas. Nevertheless, over the first eight months of 2022, retail sales grew by only 0.5% y-o-y, reflecting the impact of tough mobility restrictions in several major cities from March to May.

August trade data suggests that China's **trade surplus** dropped to $79.4 billion following a record surplus of $101.3 billion in July 2022 (and compared to $59.3 billion in August 2021). The combination of COVID-19 disruptions in manufacturing, historic heatwaves and easing foreign demand caused China's export growth to ease to 7.1% y-o-y following growth of 18% y-o-y in July. Meanwhile, imports expanded by only 0.3% y-o-y, reflecting weak domestic demand. Nevertheless, considering the January to August period, the trade surplus stood at $560.52 billion with exports rising by 13.5% y-o-y, while imports grew by 4.6% y-o-y.

The **annual inflation rate** declined to 2.5% in August from 2.7% y-o-y in July. The People's Bank of China (PBoC) has set a CPI target of around 3% for 2022, the same as in 2021. Moreover, on the policy side, in August 2022, PBoC lowered the loan prime rate (LPR), which is used for corporate and household loans, by 5 bps to a record low of 3.65%, while the five-year LPR, which influences the pricing of home mortgages, was slashed for the second time this year by 15 bps to 4.30%. On the fiscal policy side, China's State Council rolled out a $203 billion stimulus package to support economic growth amid COVID-19 lockdowns and a deep property slump. The stimulus measures target infrastructure, property and private businesses. Yet the measures might not fully materialize in the short term, which reflects a continued loss of momentum in the recovery trend.

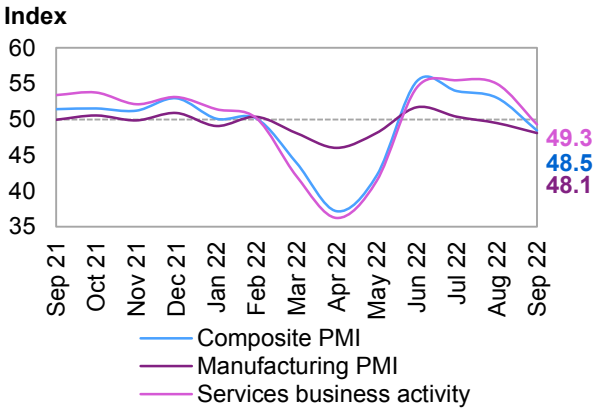
Near-term expectations

China's economy is still struggling under the government's zero-COVID policy, which continues to challenge the short-term economic outlook. Recent monetary and fiscal measures might aid the economic recovery; however, this recovery is still restricted by low business and consumer confidence as well as external economic conditions. Indeed the latest growth in the infection rates might haunt China's economic recovery for at least another year, considering the low level of immunity among the population. Additional downside risks may also emanate from the dim outlook for consumption, as well as the pressing threat of technological fragmentation. Moreover, persistent pressure on the property sector might lead to financial repercussions as well as concerns about new virus outbreaks and relatively subdued customer demand.

The infrastructure investments boosted by the stimulus measures as well as the normalization of economic activity might provide some support to the recovery. Nevertheless, as long as the zero-COVID stance persists, the recovery might be uneven amid a strong government sector but a weak private sector associated with stagnant real estate growth.

Recent **Caixin China General PMI** readings for both manufacturing and services activities decreased, reflecting the impacts of the COVID-19 lockdowns. The manufacturing PMI declined to 48.1 in September from 49.5 in August, while the services PMI dropped to 49.3 in September from 55.0 in August 2022.

Graph 3 - 10: China's PMI



Sources: Caixin, IHS Markit and Haver Analytics.

The recent wave of COVID-19 lockdowns and the major macroeconomic indicators point to a sluggish economic outlook in the short term. China's **2022 GDP forecast** was thus revised down to 3.1% following the downward revised rate of 4.2% last month.

Similarly, the **2023** GDP growth forecast was revised down to 4.8% from 5.0% in the previous monthly assessment.

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

	China
2022	**3.1**
Change from previous month	-1.1
2023	**4.8**
Change from previous month	-0.2

*Note: * 2022 and 2023 = Forecast.*

Source: OPEC.

The current forecast takes into account governmental support as well as the most recent lockdowns in major cities like Xinjiang. More downside pressure may emerge, including potential risks related to new COVID-19 variants in the winter, which could hinder the economic recovery in 4Q22 and 1Q23. Growth potential, on the other hand, might be boosted by further governmental fiscal measures, higher domestic demand and increasing external demand as well as easing COVID-19 impacts.

Other Asia

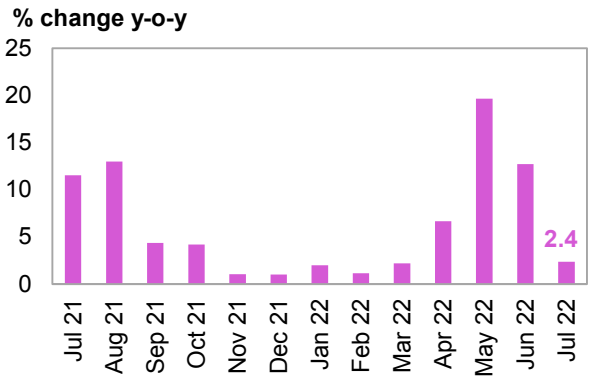
India

Update on the latest developments

India's recovery continued to gain momentum, but was accompanied by elevated inflation. The economy grew by 13.5% y-o-y in 2Q22, reflecting an upturn in recovery momentum. Private consumption is firm and poised to expand further as the festival season sets in. Private consumption accelerated by 25.9% y-o-y in 2Q22, following growth of almost 2.0% y-o-y in 1Q22. Moreover, in September 2022, India's vehicle sales, a private consumption segment, expanded by 10.9% y-o-y compared with 8.3% y-o-y in August.

On the contrary, data suggests that **industrial output** expansion kept deteriorating, growing by only 2.4% y-o-y in July 2022 amid global supply chain disruptions. Nevertheless, the pick-up in capital infrastructure and consumer durables output continued to build momentum.

Graph 3 - 11: India's industrial production



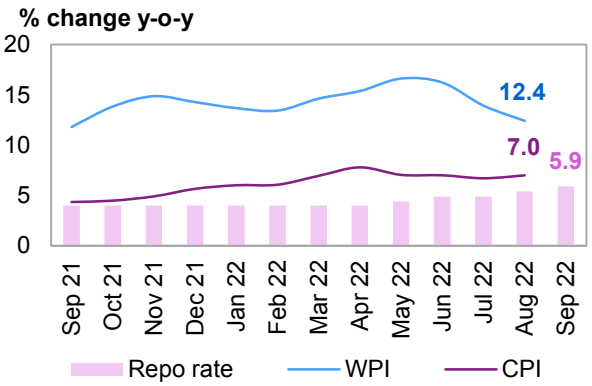
Sources: Ministry of Statistics and Program Implementation of India and Haver Analytics.

Positively, the jobless rate of September dropped to 6.4% from 8.3% in August. Rural unemployment went down to 5.8% from 7.7% in August, while urban unemployment declined to 7.7% from almost 10% in August.

The **annual inflation rate** in August picked up to 7.0% from 6.7% in July. Prices increased faster for food, recording a food inflation rate of 7.6% compared with 6.6% in July. Compared to the previous month, consumer prices were up by 0.52%.

To help shift the inflation rate towards the central bank's short- and medium-term target of 2%-6%, the RBI hiked **the repo rate** for the fourth time this year during its September meeting. It increased the level by 50 bps 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 bps to 5.65% and 6.15%, respectively.

Graph 3 - 12: Repo rate and inflation in India

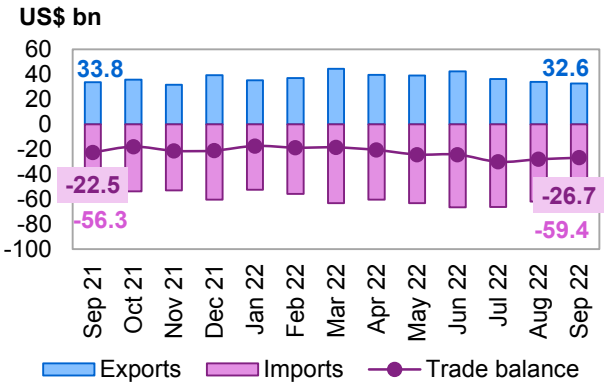


Sources: Ministry of Commerce and Industry, Reserve Bank of India and Haver Analytics.

India's September **trade balance** posted a deficit of more than $26.7 billion.

Imports grew by 5.4% y-o-y, while **exports** dropped 3.5% y-o-y, affected by weaker global growth prospects that weighed on global demand.

Graph 3 - 13: India's trade balance



Sources: Ministry of Commerce and Industry and Haver Analytics.

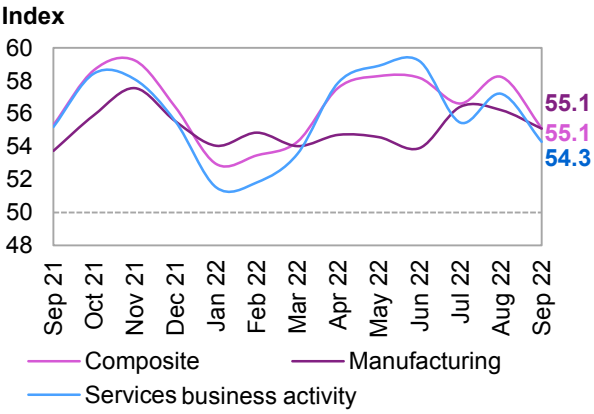
Near-term expectations

India's upward recovery momentum is expected to continue being underpinned by growth in both private consumption and investment. Yet, elevated inflationary pressures might keep challenging the recovery. More risk factors might be associated with the less accommodative monetary conditions and a deteriorating external environment. The recent interest rate hikes may also weaken the country's growth prospects since they could prompt the deferral of investment plans in sectors without adequate capacity utilization.

Elsewhere, the September S&P Global **Manufacturing PMI** dropped to 55.1 in September 2022 from 56.2 in August. Still, September's reading was the 15th straight month of increases in factory activity, despite global headwinds and growing recession risks.

Likewise, the **Services PMI** declined to 54.3 in September from August's rate of 57.2.

Graph 3 - 14: India's PMIs



Sources: IHS Markit and Haver Analytics.

Nevertheless, India's **GDP growth** is most likely to benefit from slight improvements in domestic demand due to receding concerns over COVID-19.

For this month, India's **2022 and 2023 GDP growth** forecasts have been revised down to 6.5% and 5.6%, respectively considering the impact of higher inflationary pressures. Potential growth factors might materialize in the form of more fiscal support, while downward pressures could arise from COVID-19 or a further elevation in inflation rates.

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

	India
2022	**6.5**
Change from previous month	-0.6
2023	**5.6**
Change from previous month	-0.4

*Note: * 2022 and 2023 = Forecast.*

Source: OPEC.

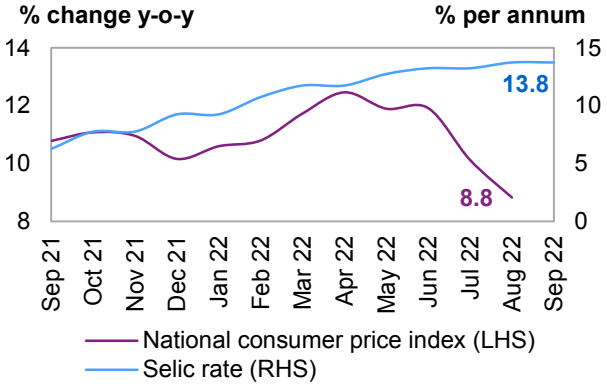
Latin America

Brazil

Update on latest developments

Recent national statistical institute (IBGE) data indicated more robust disinflation progress as the August **consumer price index** declined to 8.8% from 10.1% in the prior month. The price-declining trend was concentrated in sectors that highly benefited from the recent tax cuts on fuels and communications. As a result, the overall price declines are probably temporary and price pressures might persist on other sectors keeping inflation above target. The monetary tightening cycle might have effectively tamed inflation, allowing the BCB in its September meeting to hold the Selic benchmark rate at 13.75%, unchanged from August. Furthermore, the recent data might indicate a gradual monetary easing, however it would mostly kick-off later in 2Q23.

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



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

Meanwhile, for the first time in nine years, the central government might post a small fiscal surplus as the elevated inflation and higher commodity prices have upheld public revenues. Despite the heavier year-end spending, considering the July 2021-July 2022 period, the primary fiscal performance of the consolidated public sector registered a surplus of about $44 bn, or 2.5% of GDP. Nevertheless, considering October's general election, the government budget might be met with recently approved temporary additional social spending, as well as tax cuts on fuels that were supposed to be phased out by year-end.

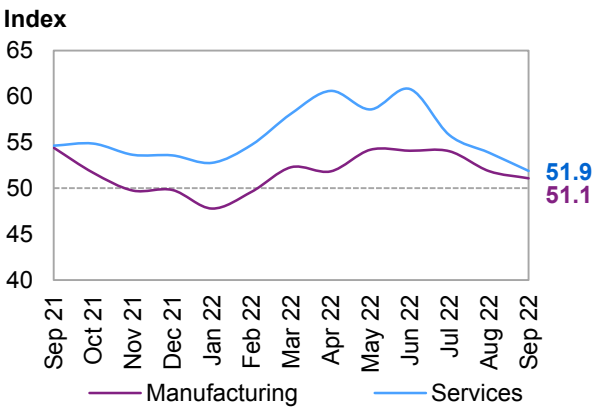
The leading institute for official labour market statistics suggested a further decline in the jobless rate. Based on a three-month moving average, Brazil's unemployment rate dropped to 8.9% in August from 9.1% in July amid the overall improving business and consumer confidence driven by the impact of the government's stimulus measures. The easing of pandemic-related restrictions and several stimulus measures approved by the government to support the re-election have been the main drivers of the strengthening job market. Nevertheless, the ongoing slowdown in global and US economic growth combined with high domestic interest rates alongside the still-elevated inflation might increasingly weigh on the near-term labour market outlook.

Near-term expectations

Considering the upward trend in economic activities over the past months of 2022, Brazil's economic picture appears to be much brighter in the near term. Thus far, scepticism over uncertainty associated with the October election results might rebuff the economic optimism. Indeed, Brazilian voters will return to the polls for a presidential runoff after neither of the leading candidates managed to secure enough support to win the election earlier this month.

Mirroring this uncertainty, **September's S&P Global PMI** readings for both the manufacturing and services sectors came down. The manufacturing PMI declined slightly to 51.1 in September from 51.9 in August, while the services PMI dropped sharper to 51.9 from 53.9 in the prior month. Both readings remained within the expansion zone, supported by the immense consumer and business confidence.

Graph 3 - 16: Brazil's PMIs



Sources: IHS Markit and Haver Analytics.

Overall, despite the moderate deceleration expected for global growth, Brazil sees more jobs in the formal sector and increased services with greater productivity. Accordingly, **Brazil's 2022 GDP forecasts** kept unchanged from last month's report at 1.5%. While 2023 GDP forecast lowered down by 0.6 (pp) compare to last month to stand at 1.0% addressing the uncertainties surrounding public consumption and budget deficit as well as elevated inflationary rates

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	-0.6

*Note: * 2022 and 2023 = Forecast.*

Source: OPEC.

Africa

South Africa

Update on the latest developments

Recent inflation figures indicated a significant moderation in inflationary pressures since the inflation rate eased to 7.6% in August of 2022, from an over 13-year high of 7.8% in July. Yet, the country is facing a serious energy crisis as the state power utility Eskom has on mid-September set a load shedding to stage (scheduled power outages means consumers experience power outages lasting 4.5 hours at a time with the lights going off more than once a day). Such an event elevated concerns over the possible collapse of the electricity grid.

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, which contracted by 0.7% on a quarter-on-quarter seasonally adjusted basis, and grew by just 0.2% y-o-y in 2Q22. Moreover, on a seasonally adjusted monthly basis, the manufacturing sector edged down by 0.2% in July, after an upwardly revised 2% slump in June. The RMB/BER business confidence index (BCI) fell to 39 in 3Q22 from 42 in 2Q22, reaching its lowest point since 1Q21. This was due to deteriorating sentiment, mostly among construction firms, resulting from shortages of some materials, power load-shedding and planning delays.

The country's surplus trade shrank down to ZAR 7.2 billion in August of 2022 from an upwardly revised ZAR 24.8 billion in July, pointing to the smallest trade surplus in seven months. Exports fell by 1% month-over-month to ZAR 175.4 billion. Meanwhile, imports jumped by 10.4% to ZAR 168.2 billion, mainly driven by purchases of precious metals and stones. However, higher international energy costs might push up the import bill.

Near-term expectations

Recent GDP growth data pointed to a probable contraction in 3Q22 as the economic outlook remains gloomy amid the impact of natural disaster shocks such as the flooding that has occurred this year. To worsen the outlook, elevated concerns over the energy crisis are adversely impacting consumer and business confidence. On a positive note, the moderation in transport inflation is anticipated to continue towards the end of the year.

Reflecting a worrisome trend, the seasonally adjusted Absa Purchasing Managers' Index fell to 48.2 points in September of 2022 from 52.1 in August, suggesting a renewed contraction in the country's industrial activities. Moreover, ongoing concerns over the global economy due to higher borrowing costs are underpinning the negative outlook.

South Africa's real **GDP 2022** was revised down to 1.8% from 2.2% in the previous month, while the **2023** forecast revised down to 1.1% from the previous month assessment of 1.5%. 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	-0.4
2023	**1.1**
Change from previous month	-0.4

*Note: * 2022 and 2023 = Forecast.*

Source: OPEC.

Russia and Central Asia

Russia

Update on the latest developments

Despite the ongoing geopolitical tension in Eastern Europe, recent economic data indicate that domestic demand has started recovering, and fixed investments have not contracted as much as expected.

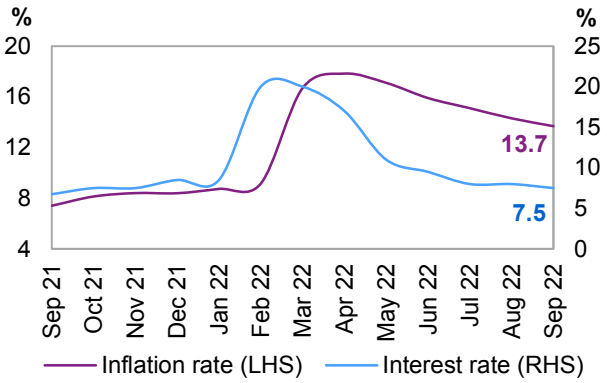
Retail trade contracted, settling at 8.8% y-o-y in August, almost unchanged from 8.7% y-o-y in July. The slower pace of contraction has been the trend for the last three months, indicating a recovery in domestic demand. Moreover, m-o-m retail sales increased by 3.3%. Similarly, the contraction in industrial production eased to 0.1% y-o-y in August from a 0.5% y-o-y drop in July 2022. Industrial output rose by 1.8% on a seasonally and calendar adjusted monthly basis.

Consumer inflationary pressures eased as the CPI fell to 13.7% y-o-y in September from 14.3% y-o-y in July. 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 the meantime, Russia's central bank is maintaining a loose monetary policy by cutting the rate by 50 bps to 7.5%, aimed at stimulating economic growth while boosting credit growth and preventing a further drop in consumption. Russia's **jobless rate** dropped slightly to 3.8% in August 2022 from 3.9% in July 2022. Meanwhile, the **employment rate** rose to 60.4% from 59.9%.

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



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

On the policy front, since February 2022, the government has introduced several economic measures to support the economy, facing the effect of sanctions and trade shocks. The fiscal support measures that account for more than Rb5 trn (US$ 76bn) in 2022 have combined with increased social spending. Nevertheless, the support measures mostly remain short-term and pro-inflationary in principle.

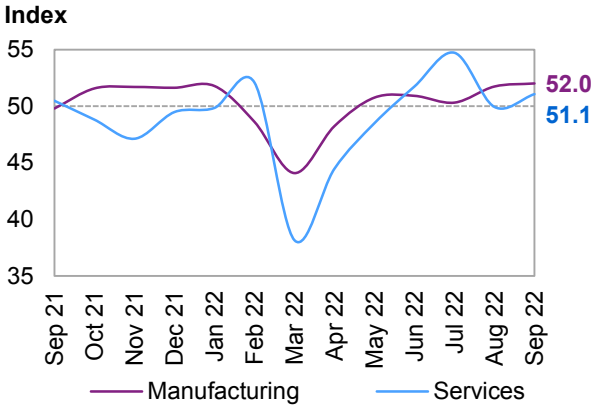
Near-term expectations

The latest official data suggest that, if the geopolitical tension does not escalate, a deterioration of economic activity might have bottomed out in 2Q22. Industrial production might grow further with increased military demand. Indeed, public spending might be the main growth engine. Nevertheless, private consumption growth might slow amid the anticipated labour market tightness. Moreover, the economy might continue to face significant uncertainty in light of sanctions to be implemented in 4Q22 as well as the cut of the Nord Stream 1 gas flows and the four gas leaks related to sabotage of the Nord Stream pipelines. Still, the large domestic market and production, along with strong energy export revenue and robust commodity prices might turn the contraction to growth in the coming year, assuming that geopolitical tensions do not worsen in 2H22. However,

the contraction that started in 2Q22 might carry over to 3Q22 at a slower pace, but it might deepen again in 4Q22 when the European ban on Russian crude exports is scheduled to begin.

PMI indices reflected the recent trends in both the manufacturing and services sectors. September's S&P Global Manufacturing PMI increased to 52.0 from 51.7 in August, marking the fifth straight month of expansion in factory activity, as new orders returned to growth, boosted by higher domestic demand. The services PMI picked up to 51.1 in September from August's reading of 49.9, pointing to a return to expansion territory amid strong domestic services demand.

Graph 3 - 18: Russia's PMI



Sources: IHS Markit and Haver Analytics.

Considering the uptick in major economic activities, **Russia's real economic** contraction is anticipated at 5.7%, revised up from 6.0% in **2022**.

Considering the headwinds of the conflict with Ukraine, growth in **2023** was revised down to 0.2% from 1.2% last month. These forecasts are still surrounded by high levels of uncertainty amid the ongoing geopolitical tensions and COVID-19-related developments as well as the future path of the global economic recovery.

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

	Russia
2022	**-5.7**
Change from previous month	0.3
2023	**0.2**
Change from previous month	-1.0

*Note: * 2022 and 2023 = Forecast.*

Source: OPEC.

OPEC Member Countries

Saudi Arabia

Recent expenditure data reflect the strength of consumer spending as well as private investment. Indeed, in 2Q22 private consumption grew 5.5% y-o-y, which suggested that household spending has fully bounced back from the impact of COVID-19 restrictions. However, reflecting the increasingly challenging global economic conditions, the S&P Global Saudi Arabia PMI dropped to 56.6 from 57.7 in August. Yet the recent reading is the straight month of expansion, pointing to the continued recovery in the non-oil private sector. Moreover, the recent liberalization of visa rules for regional and international travellers and a new tourism law might intensify growth in the non-oil private sector considering that tourism is a major source of jobs and GDP growth.

Nigeria

The latest data suggested that inflation accelerated to 20.5% y-o-y in August from 19.6% y-oy in July. The recent rate has been fuelled by domestic and international constraints on supply chains, a weakening naira as well as higher energy and transportation prices. Moreover, floods in the northern part of the country, which have weighed significantly on the grain harvest, could lead to even higher prices. However, considering the broad money-supply growth of 21% y-o-y in August, there is a significant monetary component behind the inflationary spiral. In response, the Central Bank of Nigeria (CBN) recently hiked the policy rate for the third time this year by 150 basis points, to 15.5%, adding up to a cumulative 400 bps. The central bank also increased the minimum cash reserve ratio (CRR) by 500 bps, to 32.5%, from 27.5% previously, but kept the liquidity ratio unchanged at 30%. For the time being, the Stanbic IBTC Bank Nigeria PMI increased to 53.7 in September 2022 from 52.3 in the previous month, reflecting a stable improvement in overall business conditions as sentiment remained positive, supported by the outlook for the fossil fuel market.

The United Arab Emirates (UAE)

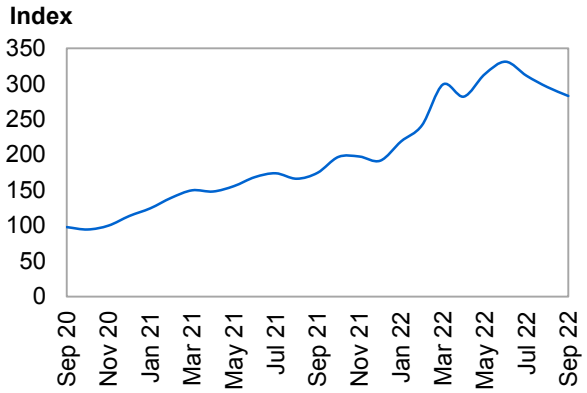
The recent "Advanced Visa System" added fresh momentum to the UAE's ongoing reform of its business environment as it establish longer-stay visas for visitors and long-term residency for key professionals.

Following the increase in the US federal funds rate, the UAE Central Bank increased the base rate of its overnight deposit facility by 75 bps to 4.50% on 22 September. Meanwhile, the S&P Global UAE declined to 56.1 in September 2022 from 56.7 in August, impacted by the ongoing risks of a global recession. However, overall business confidence strengthened for the first time since June, reflecting hopes of stronger demand and an optimistic outlook in the non-oil private sector.

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

The **US dollar (USD) index** advanced for the eighth consecutive month, increasing by 3.3% m-o-m. The macroeconomic headwinds that weighed on the USD the previous month faded owing to a stronger US economy relative to its peers. Additionally, the increase in interest rates by US Federal Reserve (Fed) earlier in the month helped offset pressure on the USD from other currencies following a wave of tighter monetary policies by other major central banks. The USD rose against the euro by 2.3% m-o-m; it also increased m-o-m by 6.0% against the yen as the Bank of Japan continued with its accommodative policy rate. Meanwhile, the USD rose by 6.1% m-o-m against the sterling as inflationary pressures continued to erode the purchasing power of the currency.

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



Sources: IMF and OPEC.

In terms of **emerging market (EM)** currencies, the USD advanced by 3.4% m-o-m against the rupee and by 6.6% against the real in the same period. Meanwhile, the USD remained strong against the yuan, increasing by 3.6% m-o-m. China's central bank maintained an accommodative monetary policy in favour of currency stability and did not react to the latest Fed interest rate increase.

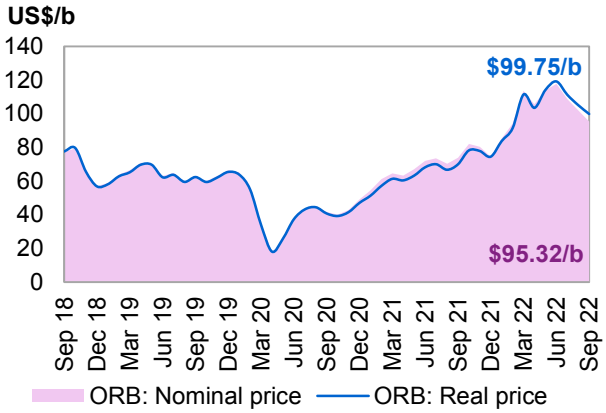
The decline in the **ORB** was accompanied by a decline in crude oil prices for the second consecutive month. However, the gap between nominal and real prices widened further, supported by the strengthening of the USD.

Inflation (nominal price minus real price) rose from $3.11/b in August to $4.43/b in September, a 42.4% increase m-o-m.

In **nominal terms**, accounting for inflation, the ORB price declined for the third consecutive month, going from $101.90/b in August to $95.32/b in September, a 6.5% decline m-o-m.

In **real terms** (excluding inflation), the ORB went from $105.01/b in August to $99.75/b in September, a 5.0% 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 is revised down by 0.5 mb/d to reflect recently observed trends and developments in various regions. These include the extension of China's zero-COVID-19 restrictions in some regions, economic challenges in OECD Europe, and inflationary pressures in other key economies which could taper overall demand. Accordingly, demand is projected to grow by 2.6 mb/d.

Total oil demand is projected to average 99.7 mb/d in 2022. In the OECD region, oil demand is anticipated to rise by 1.4 mb/d to 46.2 mb/d y-o-y. OECD America's demand is expected to rise the most in 2022, led by the US on the back of recovering 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 1.3 mb/d to 53.5 mb/d. A steady increase in industrial and transportation fuel demand, supported by a recovery in economic activity is projected to support the region's demand in 2022.

For 2023, world oil demand growth is also revised down to stand at 2.3 mb/d, subject to headwinds given the uncertainty that surrounds the global economic outlook and factors related to the pandemic.

The OECD is projected to grow by 0.4 mb/d, to reach 46.6mb/d. OECD Americas is expected to climb, with US oil demand above 2019 levels mainly due to the recovery in transportation fuels and light distillate demand.

In the non-OECD, oil demand is projected to rise by 2.0 mb/d to 55.4 mb/d, with the largest growth seen in China and India, supported by a recovery in transportation fuels and 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 the region. 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

							Change 2022/21	
World oil demand	**2021**	**1Q22**	**2Q22**	**3Q22**	**4Q22**	**2022**	**Growth**	**%**
Americas	24.33	24.79	24.98	25.10	25.27	25.04	0.70	2.89
of which US	*20.03*	*20.38*	*20.41*	*20.58*	*20.83*	*20.55*	*0.52*	*2.58*
Europe	13.13	13.15	13.42	14.09	14.00	13.67	0.54	4.07
Asia Pacific	7.38	7.85	6.99	7.31	7.84	7.50	0.11	1.55
Total OECD	**44.85**	**45.79**	**45.39**	**46.50**	**47.12**	**46.20**	**1.35**	**3.02**
China	14.97	14.74	14.56	14.69	15.64	14.91	-0.06	-0.40
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	8.73	8.85	8.98	0.35	4.11
Latin America	6.23	6.32	6.36	6.55	6.40	6.41	0.18	2.92
Middle East	7.79	8.06	8.13	8.47	8.17	8.21	0.41	5.32
Africa	4.22	4.51	4.15	4.25	4.53	4.36	0.14	3.27
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	1.03	1.21	1.15	-0.06	-4.61
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**	**52.83**	**54.53**	**53.47**	**1.29**	**2.47**
Total World	**97.03**	**99.36**	**98.34**	**99.33**	**101.64**	**99.67**	**2.64**	**2.72**
Previous Estimate	96.92	99.36	98.63	99.67	102.42	100.03	3.10	3.20
Revision	0.11	0.00	-0.29	-0.33	-0.78	-0.35	-0.46	-0.48

*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	Change 2023/22 %
Americas	25.04	25.05	25.29	25.44	25.55	25.33	0.30	1.19
of which US	*20.55*	*20.53*	*20.55*	*20.84*	*20.98*	*20.72*	*0.17*	*0.85*
Europe	13.67	13.19	13.48	14.17	14.08	13.73	0.06	0.46
Asia Pacific	7.50	7.88	7.04	7.35	7.86	7.53	0.04	0.48
Total OECD	**46.20**	**46.12**	**45.81**	**46.96**	**47.49**	**46.60**	**0.40**	**0.86**
China	14.91	15.07	15.44	15.28	16.07	15.47	0.56	3.76
India	5.16	5.41	5.44	5.21	5.59	5.41	0.25	4.94
Other Asia	8.98	9.42	9.61	9.09	9.20	9.33	0.35	3.85
Latin America	6.41	6.48	6.48	6.71	6.54	6.55	0.15	2.29
Middle East	8.21	8.45	8.46	8.80	8.46	8.54	0.33	4.06
Africa	4.36	4.71	4.34	4.44	4.72	4.55	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	1.04	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	**53.47**	**55.21**	**55.13**	**54.94**	**56.39**	**55.42**	**1.95**	**3.64**
Total World	**99.67**	**101.33**	**100.94**	**101.91**	**103.88**	**102.02**	**2.34**	**2.35**
Previous Estimate	100.03	101.80	101.50	102.60	104.99	102.73	2.70	2.70
Revision	-0.35	-0.48	-0.56	-0.69	-1.11	-0.71	-0.36	-0.35

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

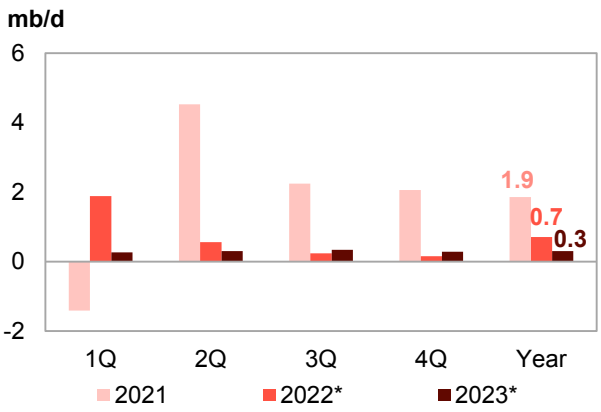
OECD

OECD Americas

Update on the latest developments

Oil demand in the US remained weak at 0.2 mb/d y-o-y growth in July, partly attributed to the strong baseline of comparison. Demand was mostly affected by continued high inflation and the decline in real wages eating into consumers' purchasing power. The US inflation rate slipped to 8.5% in July, with real wages falling by 3% in 2022. Despite the decline in gasoline prices in July, travel demand continued to weaken. Vehicle miles travelled in millions of miles improved by only 1% in July compared with June. July's demand growth was led by LPG, which posted growth of 0.4 mb/d y-o-y as compared to 0.1 mb/d y-o-y in June. Other products also grew by 0.3 mb/d y-o-y in July compared with 0.1 mb/d y-o-y growth in June. However, gasoline has experienced an unusual seasonal decline, falling by 0.6 mb/d y-o-y compared with a decline of 0.2 mb/d y-o-y in June. Finally, naphtha and residuals fuels remained sluggish in July.

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



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

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

By product	Jul 21	Jul 22	Change Jul 22/Jul 21 Growth	Change Jul 22/Jul 21 %
LPG	3.32	3.67	0.36	10.7
Naphtha	0.22	0.14	-0.08	-34.7
Gasoline	9.30	8.75	-0.55	-5.9
Jet/kerosene	1.50	1.60	0.10	6.8
Diesel	3.68	3.72	0.04	1.2
Fuel oil	0.35	0.33	-0.02	-6.8
Other products	2.11	2.42	0.32	15.0
Total	**20.46**	**20.63**	**0.17**	**0.8**

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 by 0.4% y-o-y. The recent interest rate hikes to contain persistently elevated inflation and declining household spending will likely weigh on consumers' purchasing power, potentially affecting oil demand. In 4Q22, oil demand is expected to grow by 0.1 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 the 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 the downside.

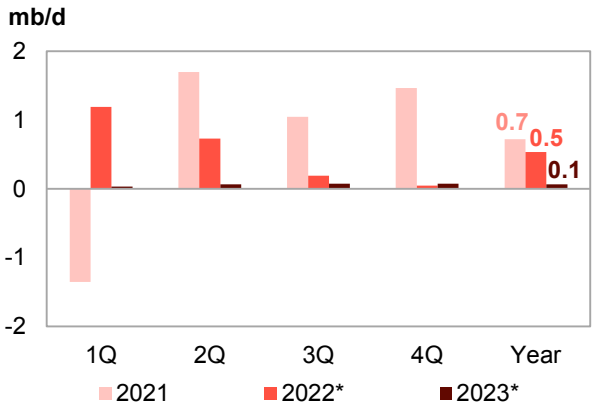
In 1Q23, the US GDP growth is forecast at 0.2% y-o-y. Accordingly, economic activity is not expected to improve significantly due to the factors mentioned for 4Q22. In addition, industrial output is on a downward trend. Oil demand is projected to grow by 0.15 mb/d y-o-y, in 1Q23, mostly supported by 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 weakened further to 80 tb/d y-o-y growth in July from 0.4 mb/d in June as inflation and geopolitical tensions continued to impact the region's economic activity. However, the level of consumption in July is higher than in the same period in 2021. The Euro-zone's annual inflation rate was 8.9% in July 2022, up from 8.6% in June. Similarly, the manufacturing PMI fell five points in July compared to June. Oil demand growth in July was driven mostly by jet/kerosene. The International Air Transport Association (IATA) Air Passenger Market Analysis for July indicates that airlines based in Europe achieved growth of 115.6% in international revenue passenger kilometres (RPKs) in the year to July and reached 79.7% of pre-pandemic levels. On the back of this healthy development, OECD Europe jet/kerosene grew by 0.4 mb/d y-o-y, in July.

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



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

Residual fuels also remained in positive territory by posting growth of 0.1 mb/d y-o-y, and other fuels recorded 70 tb/d y-o-y growth. However, the inflation-induced rise in production costs, geopolitical developments and trade-related bottlenecks weighed heavily on distillates, with demand declining by 0.2 mb/d y-o-y in July. Furthermore, geopolitical-related factors affected the demand for light distillates in the region's petrochemical sector, with demand for naphtha and LPG slowing by 0.2 mb/d y-o-y and 30 tb/d y-o-y, respectively. Finally, rising inflation and high fuel taxes in the region weighed on mobility. Gasoline demand recorded a decline of 70 tb/d y-o-y in July.

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

			Change	Jul 22/Jul 21
By product	Jul 21	Jul 22	Growth	%
LPG	0.42	0.38	-0.04	-8.4
Naphtha	0.49	0.41	-0.07	-15.3
Gasoline	1.23	1.21	-0.02	-1.5
Jet/kerosene	0.46	0.78	0.33	71.3
Diesel	3.19	3.03	-0.15	-4.8
Fuel oil	0.17	0.24	0.06	35.8
Other products	0.49	0.48	-0.01	-2.6
Total	**6.44**	**6.54**	**0.09**	**1.5**

*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 GDP of the Euro-zone is forecast to slow from a growth rate of 2.0% in 3Q22 to 0.5% in 4Q22. Slowing economic growth, geopolitical tension and trade-related bottlenecks are expected to continue affecting economic activity in the region, particularly manufacturing. These factors may affect the region's oil demand, is expected to remain flat at zero level in 4Q22.

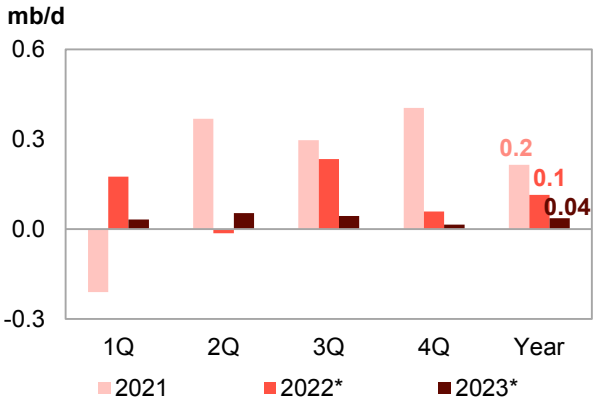
The outlook for European oil demand in 1Q23 is expected to be muted as the GDP growth is projected to decline from 0.5% in 4Q22 to a decline by 0.8%. Rising energy prices, geopolitical tension and supply-chain bottlenecks will likely keep input costs high in the manufacturing sector. This will potentially lead to slackening oil demand in the region's manufacturing in 1Q23. Nevertheless, the expected high heating demand amidst the natural gas crisis will continue favouring gas-to-oil switching, increasing the demand for distillate and fuel oil in the region. In addition, healthy air travel will aid jet/kerosene demand. Accordingly, oil demand in OECD Europe is projected to rise slightly by 30 tb/d annually in 1Q23.

OECD Asia Pacific

Update on the latest developments

Oil demand in OECD Asia Pacific sharply overshot expectations, rebounding in July by 0.2 mb/d y-o-y from a decline of 0.2 mb/d y-o-y in June. July demand was driven by petrochemical feedstock requirements for naphtha, including demand from South Korea's giant petrochemical producer LG Chemical. Naphtha posted growth of 0.1 mb/d y-o-y, compared to a decline of 60 tb/d y-o-y in June. Gradual improvements in the region's mobility also helped gasoline to recover by 90 tb/d y-o-y from a decline of 60 tb/d y-o-y in June. As airlines in the Asia Pacific recorded the strongest y-o-y growth rates for international RPKs, the fifth month of consecutive growth for this region, jet/kerosene posted 80 tb/d y-o-y growth from 40 tb/d in June. Similarly, diesel began to recover and posted growth of 70 tb/d y-o-y from a decline of 40 tb/d y-o-y in June. However, LPG softened by 0.2 mb/d y-o-y.

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



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

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

By product	Aug 21	Aug 22	Change Aug 22/Aug 21 Growth	%
LPG	0.32	0.21	-0.11	-34.1
Naphtha	0.66	0.69	0.03	3.8
Gasoline	0.77	0.78	0.01	1.5
Jet/kerosene	0.22	0.22	0.00	2.1
Diesel	0.68	0.73	0.05	7.7
Fuel oil	0.24	0.28	0.04	17.8
Other products	0.22	0.37	0.14	64.5
Total	**3.10**	**3.27**	**0.17**	**5.6**

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

Near-term expectations

The impact of COVID-19 has become more localised as the year has progressed. Therefore, mobility and other economic activity have started improving, 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 2022, the region is projected to grow by 2.0%. Furthermore, improvements in the region's aviation operations could boost transportation fuels and petrochemical feedstock demand in the region. The growth in air travel will boost jet/kerosene demand in the region. Accordingly, oil demand is projected to grow by 0.1 mb/d y-o-y in 4Q22.

In 1Q23, the outlook for the region is still tepid due to the expected slow pace of the economic recovery. The region’s economy is expected to grow by 1.2% in 2023. Similarly, geopolitical-induced tailbacks render

additional strains for the region's economy, weighing on oil demand in 2023. On average, oil demand is expected to remain at about 30 tb/d in 1Q23.

Nevertheless, regional governments will likely increase fiscal support to mitigate the effects of the elevated inflation, thus boosting consumers' purchasing power. Additionally, the South Korean government's subsidy rate hike and current Japanese subsidies on gasoline will likely bolster oil demand in the region in the short term.

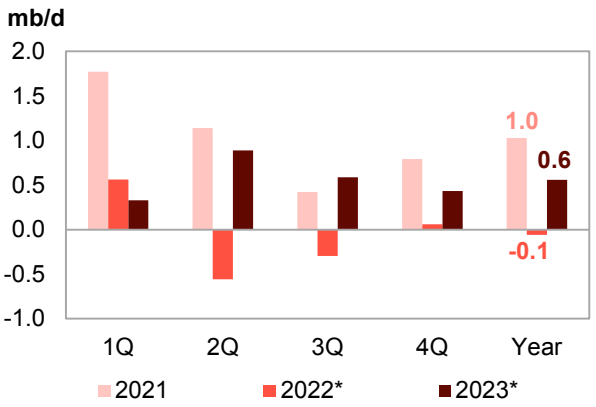
Non-OECD

China

Update on the latest developments

Extended zero-COVID-19 restrictions continue to sap business and consumer confidence and weaken economic and social activity, weighing heavily on oil demand in **China**. August data shows a decline of 0.45 mb/d y-o-y in China. Despite the softening of oil demand, demand for distillates remains positive and posted 20 tb/d y-o-y growth in August. Distillates were aided by a gradual uptick in construction activity and trucking in some regions. China eased movement restrictions in Chengdu, a south western city with more than 21 million population, after authorities stated that the COVID-19 outbreak was effectively controlled. On the back of residential and petrochemical industry requirements, naphtha posted a growth of 0.2 mb/d y-o-y.

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



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

One major Chinese petrochemical maker – Wanhua Chemical – was reported to have recently started importing LPG from Algeria. However, LPG posted a decline of 80 tb/d y-o-y.

Nevertheless, mobility restrictions primarily affected gasoline demand, declining by 0.3 mb/d y-o-y. The COVID-19 restrictions have also negatively impacted airline activity in China. Jet/kerosene demand declined by 20 tb/d y-o-y on the back of softening domestic airline activity. Finally, other fuels and residuals declined by 0.2 mb/d and 80 tb/d, y-o-y growth respectively.

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

By product	Aug 21	Aug 22	Change Aug 22/Aug 21 Growth	%
LPG	2.16	2.09	-0.08	-3.6
Naphtha	1.95	2.13	0.18	9.0
Gasoline	2.99	2.70	-0.29	-9.7
Jet/kerosene	0.50	0.53	0.02	4.3
Diesel	3.06	3.08	0.02	0.6
Fuel oil	0.75	0.67	-0.08	-10.1
Other products	1.68	1.46	-0.22	-13.1
Total	**13.10**	**12.65**	**-0.45**	**-3.4**

*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

Looking ahead, an expected gradual loosening of the lockdowns combined with GDP growth of 3.1% could result in a sharp rebound in oil consumption from 4Q22 onwards. Accordingly, a seasonal uptick in construction activity in September and October will drive diesel demand higher. Petrochemical feedstock demand has also shown signs of improvement. For example, petrochemical refiner Shenghong resumed crude buying ahead of the start of its 320,000 b/d refinery at Lianyungang in October. Along with a week-long public holiday, these factors are expected to support oil consumption in 4Q22, with demand rising by 0.1 mb/d y-o-y.

By 2023, China's GDP is expected to expand by 4.8%. Additionally, China's zero-COVID-19 policy could be significantly relaxed should the pandemic wane. Improving economic activity and government support is

expected to boost oil demand. In June, Beijing ordered local governments to sell a record 1 trillion yuan ($157 billion) in bonds for infrastructure projects, likely stimulating fuel, and raw materials demand. Meanwhile, by Q3 2023, the improvement in the property market will likely renew the construction material demand, boosting the demand for petrochemical feedstock.

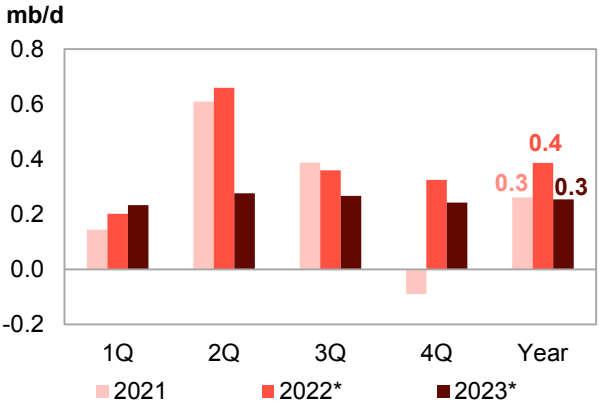
Furthermore, China unveiled an ambitious long-term highway expansion and development plan, which is likely to boost demand for bitumen as the construction season kicks into high gear. Finally, a swift recovery can be expected in air travel in response to easing travel restrictions. The combined effects of these factors should help oil demand to grow by 0.3 mb/d y-o-y in 1Q23. However, the demand prospects largely depend on the development of the COVID-19 situation and concomitant government response.

India

Update on the latest developments

Oil demand in India rebounded in August to reach 0.6 mb/d y-o-y growth, up from 0.3 mb/d y-o-y growth in July. Oil demand was strongly supported by the healthy economic growth of 7.1% in 2022, combined with a positive manufacturing PMI of 55.62, the highest in the last eight months. India's oil demand has been rising steadily since the easing of COVID-19 restrictions. In August, other products were the main driver of demand, which rose by 0.2 mb/d y-o-y, following a growth of 30 tb/d y-o-y in July. Road construction-driven demand for bitumen supported the demand for other products. About 97% of the bitumen was consumed by road construction activity; the demand for bitumen recorded a growth of 51% y-o-y, in August.

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



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

Similarly, diesel improved significantly from 0.1 mb/d y-o-y in July to 0.2 mb/d y-o-y in August. The two major diesel demand sources are high-speed diesel (HSD), aided by manufacturing activity and the sowing season for kharif crops, and light diesel oil (LDO), which was largely driven by small scale industries, power generation as well as iron and steel. Gasoline also improved from 50 tb/d y-o-y growth in July to 90 tb/d y-o-y growth. Gasoline demand was aided by rising consumer incomes and a heavy influx of travellers during the month, boosting economic activity. Naphtha recovered from a decline of 20 tb/d y-o-y in July to an increase of 60 tb/d y-o-y in August. Petrochemical industry requirements supported the domestic demand for naphtha to grow by 23% over 2021 y-o-y growth. Similarly, LPG registered 30 tb/d y-o-y growth (about 3%) in August, mostly driven by household cooking needs. Finally, jet/kerosene demand was 15.8% higher than a year earlier, posting y-o-y growth of 30 tb/d in August on the back of an air travel recovery stemming from the relaxation of lockdowns. India's overall air passenger traffic (domestic and international) inched closer to pre-COVID-19 levels.

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

			Change	*Aug 22/Aug 21*
By product	**Aug 21**	**Aug 22**	**Growth**	**%**
LPG	0.84	0.87	0.03	3.2
Naphtha	0.20	0.26	0.06	30.2
Gasoline	0.74	0.82	0.09	11.6
Jet/kerosene	0.19	0.22	0.03	15.8
Diesel	1.51	1.67	0.17	11.0
Fuel oil	0.24	0.26	0.02	7.4
Other products	0.59	0.79	0.20	34.6
Total	**4.30**	**4.89**	**0.59**	**13.7**

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 is expected to continue rising on the back of strong GDP growth of 6.5% and positive manufacturing activity. An expected rise in consumer confidence will likely support mobility and

industrial product demand. Furthermore, the post-monsoon Kharif harvesting season and construction activity are also expected to support demand growth. Accordingly, oil demand is expected to grow at 0.3 mb/d, in 4Q22 amidst economic and social activity recovery.

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

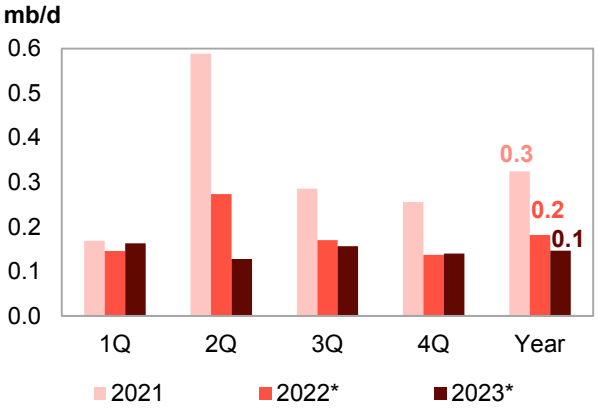
In 1Q23, India's oil demand is expected to remain on a positive trajectory, growing on average at 0.2 mb/d y-o-y. In 1Q23, gas-to-oil switching is expected to continue. Similarly, Zaid crops are sown and harvested between March and July. Given these factors combined with healthy GDP growth of 5.6%, oil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

Latin America

Update on the latest developments

Oil demand in Latin America improved from 0.1 mb/d y-o-y growth in June to 0.2 mb/d y-o-y growth in July. COVID-19 has remained contained in the region, and economic and social activity is gradually recovering. Evidence of improvements in industrial and overall economic activity in the region's largest economy is illustrated in the Brazilian PMI, which increased from 52.3 in June to 54.06 in July. Other products led the demand improvement to post growth of 80 tb/d y-o-y. On the back of the improved COVID-19 situation, air travel activity supported jet/kerosene demand to grow by 60 tb/d y-o-y. Similarly, diesel demand improved marginally from 30 tb/d y-o-y in June to 40 tb/d y-o-y in July. However, gasoline fell by 0.4 tb/d y-o-y in June to 10 tb/d y-o-y in July. Finally, both naphtha and LPG demand slowed in July.

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



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

Similarly, diesel demand has marginally improved from 30 tb/d y-o-y in June to 40 tb/d y-o-y in July. However, gasoline has softened by 0.1 tb/d y-o-y in June to a growth of 10 tb/d y-o-y in July. Finally, both naphtha and LPG deaccelerated in July.

Near-term expectations

Oil demand in the region is expected to continue to improve in 4Q22, supported by projected GDP growth of 2.7%. 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 in 4Q22.

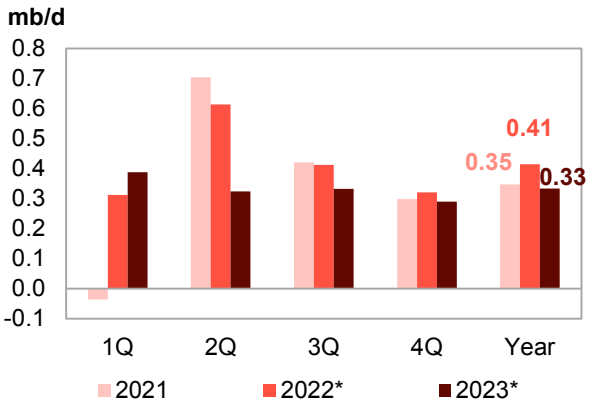
Oil demand growth is forecast to rise by 0.2 mb/d in 1Q23 amidst annual GDP growth of 1.0% in 2023 combined with continuous improvements in the COVID-19 situation in the region as vaccination programmes accelerate. The prospects for oil demand in the region still largely hinge on the strength of the region's economic recovery, containment of the pandemic and global economic environment.

Middle East

Update on the latest developments

Oil demand in the Middle East remained strong at 0.6 mb/d y-o-y in July. Requirements for power generation, other fuels and residuals supported demand in July, with other products posting growth of 0.2 mb/d y-o-y while residual fuels grew by 0.1 mb/d y-o-y. Demand in the Saudi Arabian and Iraqi power generation sectors due to hot weather are the main drivers of the region's demand growth for residual fuels and other products. Furthermore, mobility in the region remains very strong, with gasoline demand growing by 60 tb/d y-o-y. Gas diesel remains on a positive growth trajectory at 0.1 mb/d y-o-y, significantly improved from 70 tb/d annual growth in June.

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



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

The IATA Air Passenger Market Analysis for July suggests that airline activity continues on a strong positive trend in the Middle East, with jet/kerosene growing by 50 tb/d y-o-y. LPG has remained at 20 tb/d y-o-y, the same as in June. However, naphtha improved from a y-o-y decline of 20 tb/d in June to a 10 tb/d y-o-y decline in July.

Latest data on Saudi Arabia in August a strong growth of 0.2 mb/d, y-o-y. Diesel posted a growth of 0.14 mb/d, y-o-y. Similarly, fuels oil grew by 40 tb/d, y-o-y, as gasoline posted a growth of 30 tb/d, y-o-y.

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

By product	Aug 21	Aug 22	Change Aug 22/Aug 21 Growth	Change Aug 22/Aug 21 %
LPG	0.04	0.04	0.00	0.1
Gasoline	0.47	0.50	0.03	6.7
Jet/kerosene	0.04	0.04	0.00	-0.6
Diesel	0.53	0.67	0.14	26.6
Fuel oil	0.65	0.69	0.04	5.9
Other products	0.72	0.75	0.02	3.4
Total	**2.47**	**2.70**	**0.24**	**9.6**

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 grow by 9.0% in 2022. Similarly, the United Arab Emirates (UAE) is expected to grow robustly by 7.0% over 2022 as the country continues to recover from the pandemic. The anticipated strong economic growth in the region is expected to support consumer spending and accelerate mobility and industrial activity in the region. 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, increasing oil demand by 0.3 mb/d, y-o-y. Similarly, as the recovery in international air traffic persists, the jet/kerosene demand will further support oil demand growth in the region.

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 robust across the board. Gasoline, transportation diesel and jet/kerosene are expected to lead oil demand growth, with gasoil/diesel and fuel oil demand for power generation further supporting strong oil demand growth momentum.

World Oil Supply

Non-OPEC liquids supply (including processing gains) is forecast to grow by 1.9 mb/d in 2022 to average 65.6 mb/d, revised down by 0.2 mb/d compared with the previous assessment. An upward revision to oil production in Latin America was more than offset by downward revisions to Other Eurasia, OECD Europe and OECD Asia Pacific. In addition, there is considerable uncertainty regarding Russia's liquids output this year.

In the US, solid increases in oil and gas rig counts and high fracking activity are expected to support production going forward. However, severe inflationary pressure, coupled with logistical bottlenecks and shortages of material and labour, are posing additional challenges. So far, the hurricane season has not weighed materially on production, but remains a source of uncertainty. Lower-than-expected tight oil production in recent months necessitated a downward revision to the US liquids supply growth forecast for 2022 by 20 tb/d, with output now forecast to grow by 1.1 mb/d y-o-y. The production forecast for Other Eurasia was also revised down, due to lower-than-expected output in Azerbaijan and export terminal disruptions, as well as extended maintenance in Kazakhstan. The main drivers of liquids supply growth for the year are expected to be the US, Canada, China, Guyana and Brazil, while production is expected to decline, mainly in Norway and Thailand.

Non-OPEC liquids production growth in 2023 is revised down by 0.2 mb/d and is expected to grow by 1.5 mb/d to average 67.1 mb/d (including 70 tb/d in processing gains). Liquids supply in the OECD countries is forecast to grow by 1.6 mb/d, while the non-OECD region is forecast to decline by 0.1 mb/d. The main drivers of liquids supply growth are expected to be the US, Norway, Brazil, Canada, Kazakhstan and Guyana, whereas oil production is forecast to decline, mainly in Russia and Mexico. Nevertheless, uncertainty about the geopolitical situation in Eastern Europe and US shale production potential remains high.

OPEC NGLs and non-conventional liquids production in 2022 is forecast to grow by 0.1 mb/d to average 5.4 mb/d. For 2023, it is forecast to grow by 50 tb/d to average 5.4 mb/d. OPEC-13 crude oil production in September increased by 146 tb/d m-o-m to average 29.77 mb/d, according to available secondary sources.

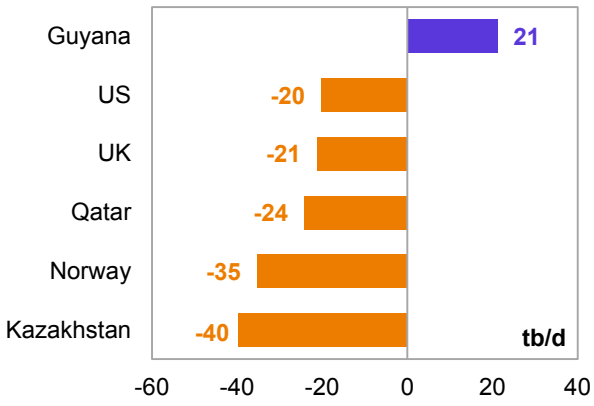
Preliminary non-OPEC liquids production in September, including OPEC NGLs, is estimated to have increased m-o-m by 0.8 mb/d to average 71.7 mb/d, up by 2.9 mb/d y-o-y. As a result, preliminary data indicates that the global oil supply in September increased by 0.93 mb/d m-o-m to average 101.5 mb/d, up by 5.43 mb/d y-o-y.

The **non-OPEC liquids supply forecast for 2022** was revised down by 0.2 mb/d to average 65.6 mb/d. Y-o-y growth averaged at 1.9 mb/d, lower by 0.2 mb/d compared to the previous month.

The **OECD** supply growth forecast for 2022 was revised down by 77 tb/d. The US and OECD Europe saw downward revisions to their growth forecasts. Growth for OECD Asia Pacific was also revised down from the previous month's assessment.

The **non-OECD** supply forecast for 2022 was revised down by 178 tb/d. An upward revision to Latin America was more than offset by downward changes in Other Eurasia, OECD Europe and Other Asia.

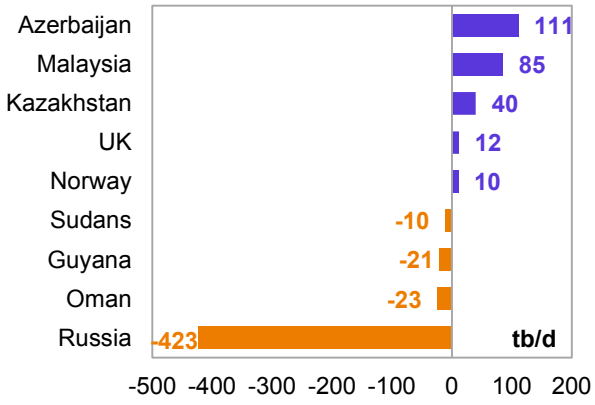
Graph 5 - 1: Major revisions to annual supply change forecast in 2022*, MOMR Oct 22/Sep 22



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

Non-OPEC liquids production growth in 2023 was revised down by 0.2 mb/d compared with the previous month's assessment, mainly due to a higher-than-expected decline for Russia.

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

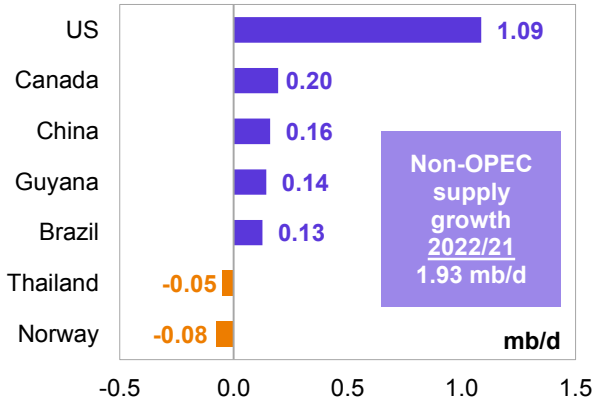


*Note: * 2023 = Forecast. Source: OPEC.*

Key drivers of growth and decline

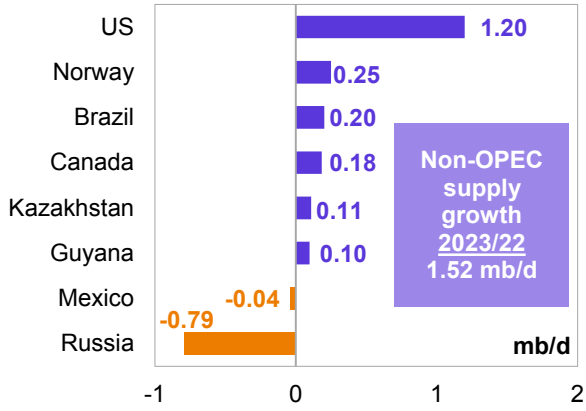
The **key drivers of non-OPEC liquids supply growth in 2022** are projected to be the US, Canada, China, Guyana and Brazil, while oil production is expected to decline mainly in Norway and Thailand.

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	Change 2022/21 %
Americas	25.25	25.86	26.27	26.91	27.26	26.58	1.33	5.26
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	3.62	3.91	3.67	-0.08	-2.18
Asia Pacific	0.51	0.49	0.51	0.50	0.53	0.51	0.00	-0.96
Total OECD	**29.52**	**30.08**	**30.22**	**31.03**	**31.69**	**30.76**	**1.24**	**4.21**
China	4.31	4.50	4.50	4.44	4.43	4.47	0.16	3.72
India	0.77	0.77	0.77	0.76	0.81	0.78	0.00	0.64
Other Asia	2.41	2.37	2.31	2.31	2.38	2.34	-0.06	-2.60
Latin America	5.95	6.11	6.15	6.37	6.53	6.29	0.34	5.68
Middle East	3.24	3.29	3.33	3.38	3.35	3.34	0.10	3.08
Africa	1.35	1.33	1.32	1.33	1.31	1.32	-0.03	-1.91
Russia	10.80	11.33	10.63	10.91	10.59	10.86	0.06	0.59
Other Eurasia	2.93	3.05	2.77	2.73	3.17	2.93	0.00	0.17
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**	**31.89**	**32.34**	**32.68**	**32.44**	**0.58**	**1.81**
Total Non-OPEC production	61.39	62.94	62.11	63.37	64.38	63.20	1.82	2.96
Processing gains	2.29	2.40	2.40	2.40	2.40	2.40	0.11	4.90
Total Non-OPEC liquids production	**63.67**	**65.34**	**64.51**	**65.77**	**66.78**	**65.60**	**1.93**	**3.03**
Previous estimate	63.67	65.33	64.48	66.17	67.12	65.78	2.11	3.31
Revision	0.00	0.00	0.03	-0.39	-0.34	-0.18	-0.18	-0.28

*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	Change 2023/22 %
Americas	26.58	27.57	27.67	28.04	28.41	27.92	1.34	5.05
of which US	*18.93*	*19.75*	*20.05*	*20.24*	*20.47*	*20.13*	*1.20*	*6.33*
Europe	3.67	4.00	3.94	3.86	3.98	3.94	0.27	7.30
Asia Pacific	0.51	0.52	0.48	0.51	0.47	0.50	-0.01	-2.26
Total OECD	**30.76**	**32.08**	**32.10**	**32.41**	**32.85**	**32.36**	**1.60**	**5.20**
China	4.47	4.52	4.51	4.48	4.48	4.50	0.03	0.64
India	0.78	0.80	0.79	0.78	0.77	0.79	0.01	1.12
Other Asia	2.34	2.40	2.40	2.37	2.39	2.39	0.05	1.97
Latin America	6.29	6.45	6.62	6.70	6.76	6.63	0.34	5.41
Middle East	3.34	3.35	3.36	3.39	3.38	3.37	0.03	0.99
Africa	1.32	1.32	1.34	1.35	1.37	1.35	0.03	1.89
Russia	10.86	9.92	10.06	10.13	10.19	10.08	-0.79	-7.26
Other Eurasia	2.93	3.14	3.08	3.04	3.12	3.09	0.16	5.56
Other Europe	0.11	0.10	0.10	0.10	0.10	0.10	0.00	-2.83
Total Non-OECD	**32.44**	**32.00**	**32.26**	**32.35**	**32.56**	**32.30**	**-0.15**	**-0.45**
Total Non-OPEC production	63.20	64.09	64.36	64.76	65.41	64.66	1.45	2.30
Processing gains	2.40	2.47	2.47	2.47	2.47	2.47	0.07	2.96
Total Non-OPEC liquids production	**65.60**	**66.56**	**66.83**	**67.23**	**67.88**	**67.13**	**1.52**	**2.32**
Previous estimate	65.78	67.16	67.19	67.55	68.12	67.51	1.73	2.63
Revision	-0.18	-0.60	-0.36	-0.32	-0.24	-0.38	-0.20	-0.30

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

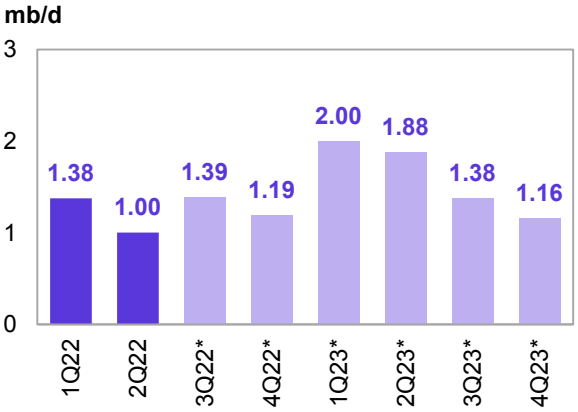
OECD

OECD liquids production in 2022 is forecast to increase by 1.2 mb/d y-o-y to average 30.8 mb/d. This has been revised down by 78 tb/d, compared with a month earlier, on the back of downward revisions for OECD Europe, the US and Australia.

OECD Americas was revised down slightly by 12 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. Oil production in OECD Europe is anticipated to decline y-o-y by 0.1 mb/d to average 3.7 mb/d, while OECD Asia Pacific is projected to remain broadly unchanged y-o-y to average 0.5 mb/d.

For **2023**, oil production in the OECD is forecast to grow by 1.6 mb/d to average 32.4 mb/d, with growth of 1.3 mb/d from OECD Americas to average 27.9 mb/d.

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



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

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 decline by a minor 11 tb/d y-o-y to average 0.5 mb/d.

OECD Americas

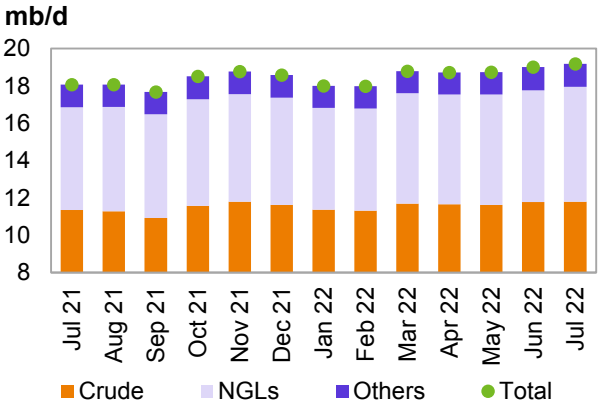
US

US liquids production increased by 166 tb/d m-o-m in **July 2022** to average 19.2 mb/d, up by 1.1 mb/d compared with July 2021.

Crude oil and condensate production rose in **July 2022** by a minor 12 tb/d m-o-m to average 11.8 mb/d, up by 0.5 mb/d y-o-y.

Regarding the **crude and condensate production breakdown by region (PADDs)**, production increased mainly in the US Gulf Coast (USGC), up by 90 tb/d, to average 8.5 mb/d. While the West Coast and East Coast showed slight increases, the Midwest and the Rocky Mountains showed decreases of 76 tb/d and 13 tb/d, respectively. Production growth in the main regions was primarily driven by higher completion activities and recovery to normal production in the GoM after 2Q22 maintenance.

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



Source: OPEC.

NGLs production was up by 162 tb/d m-o-m to average 6.1 mb/d in July, up higher by 0.6 mb/d y-o-y. Production of **non-conventional liquids** (mainly ethanol) decreased by 8 tb/d m-o-m to average 1.2 mb/d in July, according to the US Department of Energy (DoE). Preliminary estimates see non-conventional liquids averaging 1.2 mb/d in August 2022, down by 46 tb/d compared with the previous month.

Production in the Gulf of Mexico (GoM) rose m-o-m by 10 tb/d in July to average 1.8 mb/d as maintenance wrapped up in the Gulf Coast offshore platforms, allowing volumes to return to normal. In the **onshore Lower 48**, July production decreased m-o-m by 11 tb/d to average 9.6 mb/d.

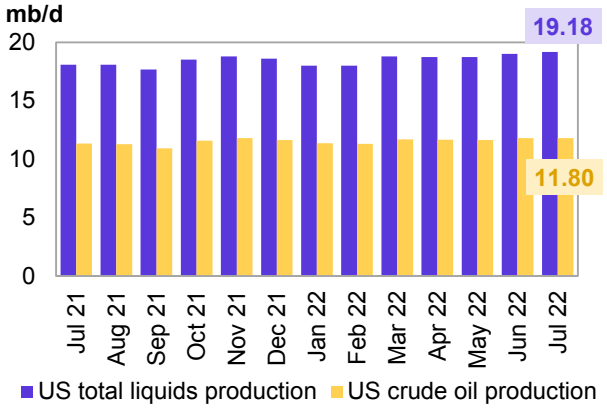
Looking at **individual states**, oil production in New Mexico increased by 38 tb/d m-o-m to average 1.6 mb/d, 296 tb/d higher than a year ago. Production in Texas was up by 43 tb/d to average 5.0 mb/d, 193 tb/d higher than a year ago. In the Midwest, production in North Dakota decreased by 54 tb/d m-o-m to average 1.0 mb/d, down by 36 tb/d y-o-y, and production in Oklahoma was down by 25 tb/d to average 0.4 mb/d. Oil output in Alaska was up by 13 tb/d, while in Colorado, it was down by 13 tb/d m-o-m.

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

State	Jul 21	Jun 22	Jul 22	Change m-o-m	Change y-o-y
Texas	4,812	4,962	5,005	*43*	*193*
Gulf of Mexico (GOM)	1,848	1,752	1,762	*10*	*-86*
New Mexico	1,272	1,530	1,568	*38*	*296*
North Dakota	1,070	1,088	1,034	*-54*	*-36*
Colorado	411	433	420	*-13*	*9*
Alaska	380	419	432	*13*	*52*
Oklahoma	381	425	400	*-25*	*19*
Total	**11,347**	**11,788**	**11,800**	***12***	***453***

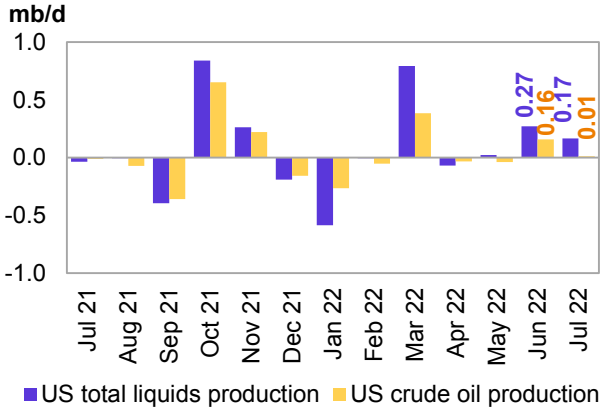
Sources: EIA and OPEC.

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



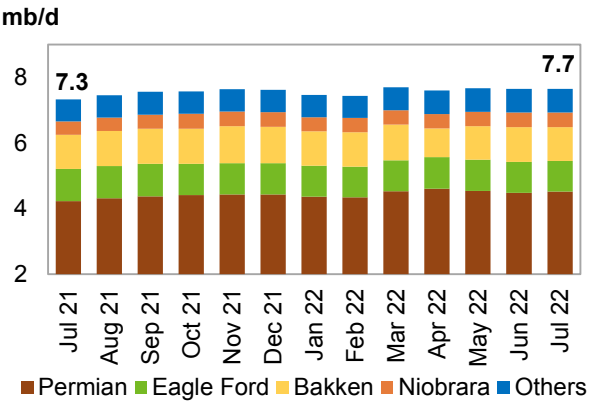
Sources: EIA and OPEC.

US tight crude output in **July 2022** is estimated to be broadly unchanged m-o-m to average 7.7 mb/d, according to data from the Energy Information Administration (EIA). This was 0.3 mb/d higher than the same month a year earlier.

The m-o-m increase from shale and tight formations through horizontal wells came from the Permian, which increased by 38 tb/d to average 4.5 mb/d. This was up by 0.3 mb/d, y-o-y.

In the Williston Basin, production in the Bakken shale decreased by 28 tb/d to average 1.0 mb/d, down by 10 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, down by 45 tb/d y-o-y, whereas production in Niobrara-Codell in Colorado and Wyoming was unchanged and averaged 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 grow y-o-y by 1.1 mb/d to average 18.9 mb/d, revised down by 20 tb/d compared with the previous assessment. The downward revision was due to lower-than-projected production in tight oil basins in recent months.

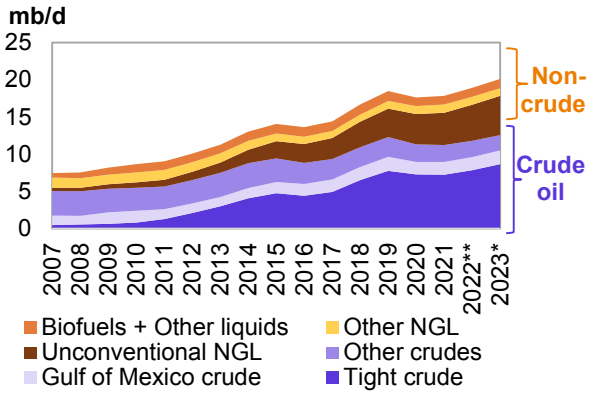
Tight crude is forecast to grow by 0.6 mb/d in 2022, to average 7.9 mb/d. In addition, NGLs (mainly from unconventional basins) are projected to grow by 0.5 mb/d to average 4.9 mb/d, and production in the GoM is anticipated to increase by 50 tb/d. Non-conventional liquids are projected to grow by 40 tb/d to average 1.2 mb/d. However, the expected growth will be partially offset by natural declines in onshore conventional fields of 0.1 mb/d y-o-y.

Given the current pace of drilling and well completions in oil fields, **production of crude oil and condensate** 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 section limitations (labour and equipment) in 2022. The hurricane season in the US Gulf Coast is still a source of uncertainty in the forecast.

US liquids production in 2023, excluding processing gains, is expected to grow by 1.2 mb/d y-o-y to average 20.1 mb/d, unchanged from the previous assessment. In addition, increased drilling activities and fewer supply chain issues in the prolific Permian Basin, 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.

At the same time, NGL production and non-conventional liquids, particularly ethanol, are projected to increase by 0.35 mb/d and 40 tb/d y-o-y, to average 6.3 mb/d and 1.3 mb/d, respectively. Average tight crude output in 2023 is expected at 8.7 mb/d, up by 0.8 mb/d y-o-y.

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	7.27	-0.05	7.86	0.59	8.66	0.80
Gulf of Mexico crude	1.71	0.04	1.76	0.05	1.86	0.10
Conventional crude oil	2.28	-0.06	2.17	-0.11	2.08	-0.09
Total crude	**11.25**	**-0.06**	**11.78**	**0.52**	**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**	**18.93**	**1.09**	**20.13**	**1.20**

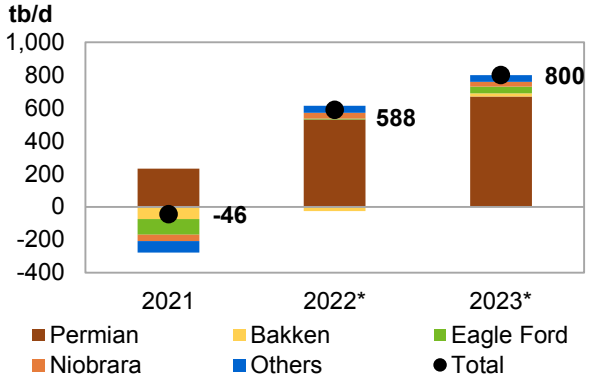
*Note: * 2022-2023 = Forecast. Sources: EIA, OPEC and Rystad Energy.*

US tight crude production in the **Permian** in 2022 is forecast to increase by 0.5 mb/d to 4.7 mb/d and is projected to grow by 0.7 mb/d y-o-y to average 5.3 mb/d in 2023.

The decline in **Bakken** shale production that occurred in 2020 and 2021 is expected to continue in 2022. Tight crude production in the Bakken is forecast to decline by 26 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 at 21 tb/d to average 1.1 mb/d.

The **Eagle Ford** in Texas saw an output of 1.2 mb/d in 2019, followed by a decline in 2020 and 2021, and is forecast to grow in 2022 by a minor 5 tb/d to average 1.0 mb/d. Growth of 40 tb/d is expected for 2023 to average 1.0 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.

Production in **Niobrara** is forecast to grow by 37 tb/d in 2022 and 30 tb/d in 2023 y-o-y to average 450 tb/d and 480 tb/d, respectively. Other shale plays are expected to show marginal increases totalling 42 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	4.14	0.23	4.67	0.53	5.34	0.67
Bakken shale	1.08	-0.07	1.05	-0.03	1.07	0.02
Eagle Ford shale	0.96	-0.09	0.97	0.01	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	**7.27**	**-0.05**	**7.86**	**0.59**	**8.66**	**0.80**

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

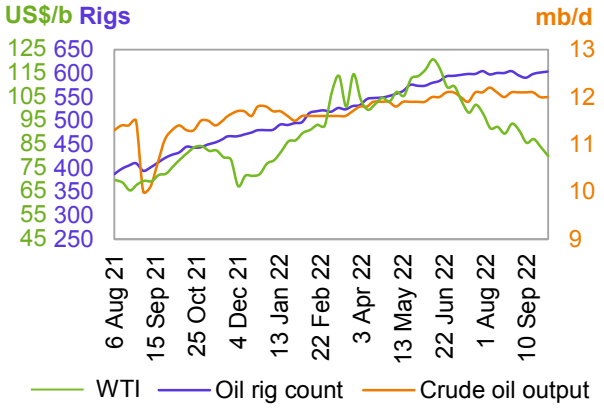
US rig count, spudded, completed, DUC wells and fracking activity

Total **US active drilling rigs** increased by one unit to 765 rigs in the week ending 30 September but were up by 237 rigs compared with a year ago. The number of active offshore rigs remained unchanged w-o-w at 16, up from 13 in the same month a year earlier. At the same time, onshore oil and gas rigs increased by one w-o-w to stand at 745 rigs, up by 232 rigs y-o-y, with four rigs in inland waters.

The **US horizontal rig count** rose by three w-o-w to 696, compared with 474 horizontal rigs a year ago. The number of drilling rigs for oil rose by two to 604 w-o-w, while gas-drilling rigs decreased by one to 159.

The rig count in the Permian remained unchanged w-o-w at 344 rigs. At the same time, operating rigs remained unchaged w-o-w in the Eagle Ford and Williston basins, at 72 and 39, respectively. However, the rig count increased by one in the Cana Woodford to 26 w-o-w. There were the same number of operating rigs w-o-w in the DJ-Niobrara and Barnett basins, 17 and 3, respectively.

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



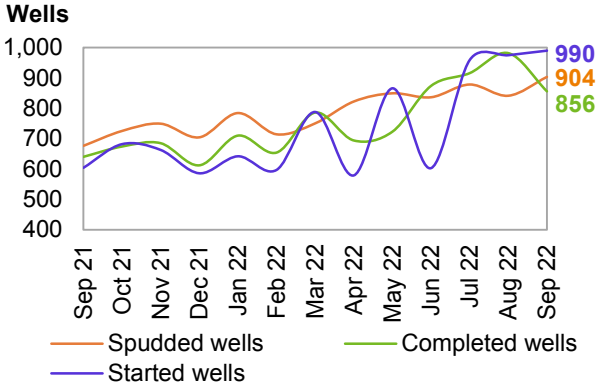
Sources: Baker Hughes, EIA and OPEC.

Drilling and completion (D&C) activities for spudded, completed and started wells in all US shale plays, based on the EIA-DPR regions, saw 842 horizontal wells spudded in August 2022 (as per preliminary data), down by 37 m-o-m, but 20% higher than in August 2021.

In August 2022, preliminary data indicates a higher number of completed wells at 982 m-o-m and up by 30% y-o-y. Moreover, the number of started wells was estimated at 975, which is 30% higher than in August 2021.

Preliminary data for September estimates 904 spudded, 856 completed and 990 started wells, according to Rystad Energy.

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

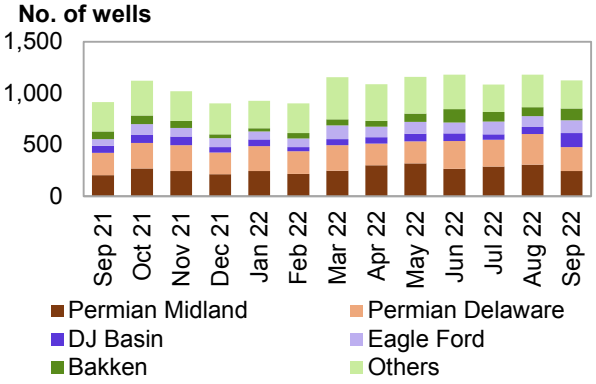


Note: Aug 22-Sep 22 = Preliminary data.
Sources: Rystad Energy and OPEC.

Regarding identified **US oil and gas fracking operations by region**, Rystad Energy reported that 1,083 wells were fracked in July 2022, and 1,181 and 1,124 wells started to frack in August and September, respectively. These preliminary numbers are based on an analysis of high-frequency satellite data.

Preliminary data on fracking in August showed that 308 and 297 wells were fracked in the Permian Midland Tight and Permian Delaware Tight, respectively. In comparison with July, there was a rise of 18 wells fracked in the Midland as well as an increase of 37 wells fracked in the Delaware tight, according to preliminary data. Data also indicated that 68 wells were fracked in the DJ Basin, 104 in the Eagle Ford and 86 in the Bakken during August.

Graph 5 - 14: Fracked wells count per month



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

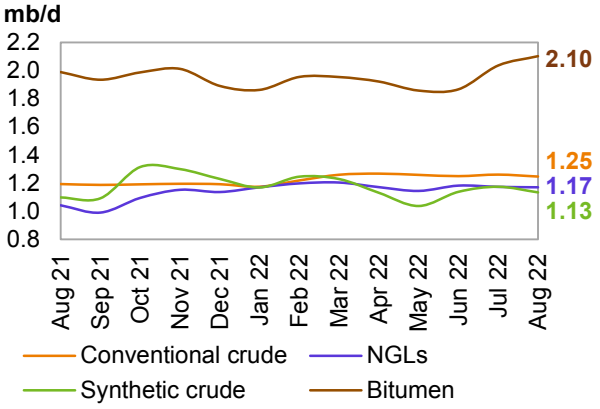
Canada

Canada's liquids production in August is estimated to have inched up by a minor 9 tb/d m-o-m to average 5.7 mb/d, as seasonal maintenance from 2Q22 was partially completed.

Crude bitumen production output decreased by 40 tb/d, while synthetic crude increased by 66 tb/d m-o-m in August. Taken together, crude bitumen and synthetic crude production rose by 26 tb/d to 3.2 mb/d. Production of conventional crude decreased by a slight 14 tb/d m-o-m to average 1.2 mb/d. NGL output remained broadly unchanged m-o-m to average 1.2 mb/d.

Canadian production is forecast to grow in 4Q22 as upgraders return from maintenance and oil sands ramp-ups/optimizations continue.

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

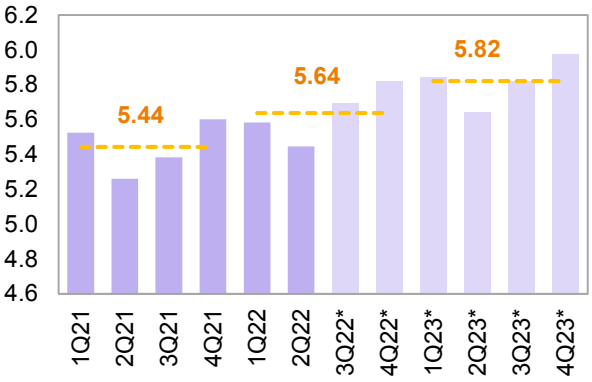


Sources: National Energy Board and OPEC.

Canadian liquids supply in **2022** is forecast to grow by 0.2 mb/d to average 5.6 mb/d, broadly unchanged from the previous assessment. Oil sands project expansion/optimizations and the return of upgraders from maintenance are expected to increase output up to December.

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 August 2022. New heavy oil pipelines are required for oil sands production to support growth, specifically the Trans Mountain Expansion (TMX). Delays to the pipeline would negatively affect oil sands growth.

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



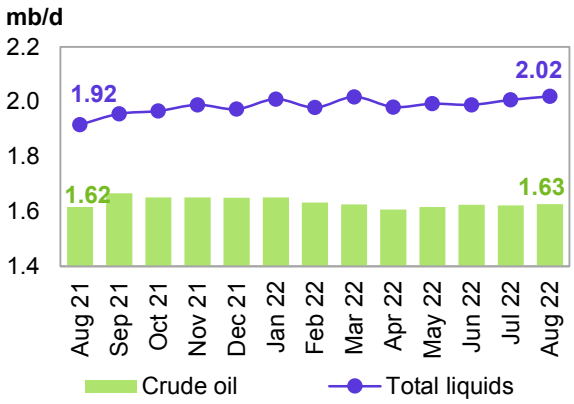
*Note: * 3Q22-4Q23 = Forecast. Source: OPEC.*

Mexico

Mexico's crude output remained largely unchanged m-o-m, in **August** to average 1.6 mb/d, while NGL output increased by a minor 9 tb/d, due to the extended ramp-up of condensate fields, leading to Mexico's total liquids output in August increasing by 13b 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 2022 increase is expected to be driven by foreign-operated fields, while minor growth is also expected in Pemex-operated fields. There is upside potential to the 4Q22 forecast due to assumed maintenance at the Ku-Maloob-Zaap asset, as Pemex has not confirmed the maintenance plan for this year, yet.

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



Sources: PEMEX and OPEC.

For **2023**, liquids production is forecast to decline by 39 tb/d to average 1.96 mb/d, unchanged from the previous assessment. Pemex' total crude production decline in mature fields is forecast to outweigh production ramp-ups in other fields.

OECD Europe

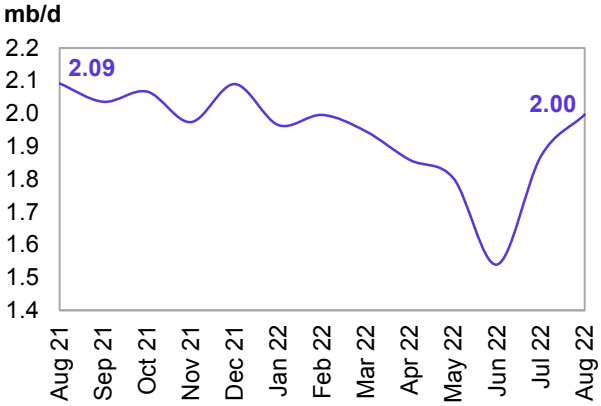
Norway

Norwegian liquids production in **August** rose by 127 tb/d m-o-m to average 2.0 mb/d. Some offshore fields returned from summer maintenance, pushing output to the highest level yet in 2022.

Norway's crude production increased by 132 tb/d m-o-m in August to average 1.8 mb/d, broadly unchanged y-o-y. Oil production in August was 3.1% lower than the Norwegian Petroleum Directorate's (NPD) forecast.

On the other hand, the production of NGLs and condensates decreased by a minor 5 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 35 tb/d y-o-y to average 2.0 mb/d, mainly due to the downward revision in 3Q22 output, on the back of maintenance activities at a number of key fields. In addition, the maintenance plan for some fields, including Oseberg and Troll, has been deferred to September. Growth is expected in 4Q22 from some small start-ups, in addition to the return from maintenance, and the start of production at the second phase of the Johan Sverdrup field development.

For **2023**, Norwegian liquids production is forecast to grow by 0.25 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. However, the Johan Sverdrup Phase 2 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. Equinor indicated it is currently exploring the possibility of a third phase, intended to enhance recovery from Johan Sverdrup, rather than expand the recoverable resources.

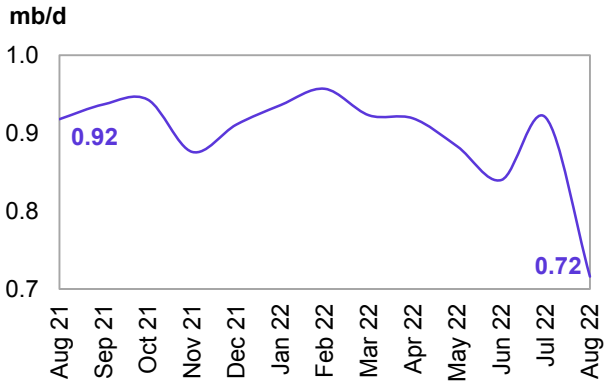
UK

UK liquids production decreased in **August** by 204 tb/d m-o-m to average 0.7 mb/d. Crude oil output decreased by 194 tb/d m-o-m to average 0.6 mb/d, according to official data, and was down by 213 tb/d y-o-y. NGL output also declined by 10 tb/d to average 77 tb/d. UK production was affected by scheduled work on the Forties fields in August.

For **2022**, UK liquids production is forecast to decline by a minor 8 tb/d to average 0.9 mb/d, revised down by 21 tb/d from the previous assessment, mainly due to lower-than-expected production in 2Q22 and maintenance in 3Q22. Lower production for 4Q22 is also projected.

For **2023**, UK liquids production is forecast to increase marginally by 13 tb/d to average 0.9 mb/d. Project sanctioning will be essential to maintain future oil and gas output as UK production has seen a steep natural decline rate, according to Offshore Energies UK. Therefore, a number of larger-sized projects would need to be implemented, just to maintain UK oil production levels.

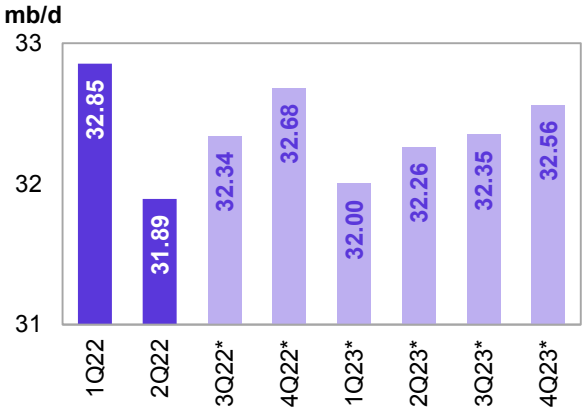
Graph 5 - 19: UK monthly liquids production development



Sources: Department of Energy & Climate Change and OPEC.

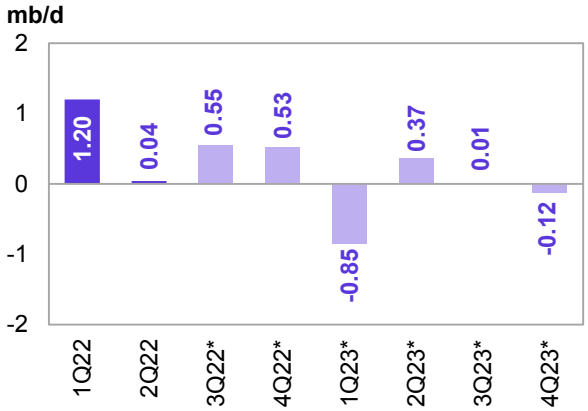
Non-OECD

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.*

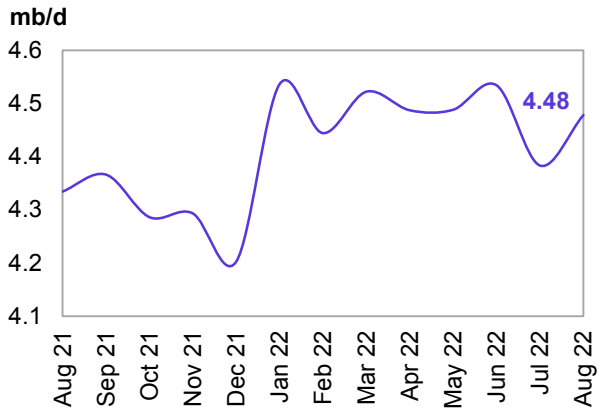
China

China's liquids production increased m-o-m in **August** by 95 tb/d to average 4.5 mb/d, which was up by 144 tb/d y-o-y, according to official data. Crude oil output in August averaged 4.1 mb/d, up by 91 tb/d compared with the previous month, and was higher by 115 tb/d y-o-y. Liquids production over the first seven months of the year averaged 4.5 mb/d, higher by 3.8% compared with the same period last year.

For **2022**, growth of 160 tb/d is forecast for an average of 4.5 mb/d, broadly unchanged from the previous assessment. Natural decline rates are expected to be offset by Chinese national oil companies' considerable investments. The Chinese companies expect additional growth through more in-fill wells and enhanced oil recovery projects.

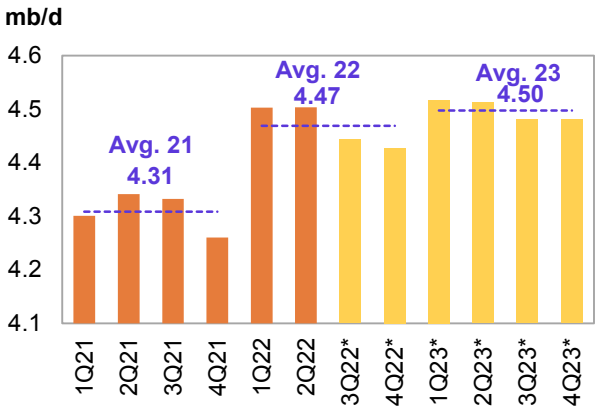
For **2023**, y-o-y growth of 30 tb/d is forecast for an average of 4.5 m/d. The new projects will slightly offset declines from the mature onshore production base. The country's crude output is expected to rise over the coming years because of strong growth in offshore production, as the China National Offshore Oil Company (CNOOC) expects its domestic crude production to reach 1.2 mb/d in 2025, growth of 8.6% during 2022–2025.

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



Sources: CNPC and OPEC.

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



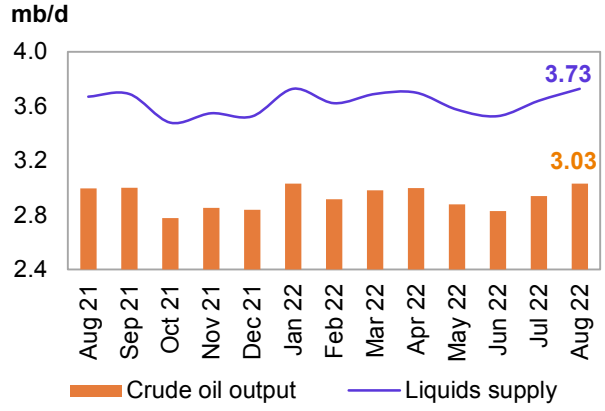
*Note: * 3Q22-4Q23 = Forecast. Sources: CNPC and OPEC.*

Latin America

Brazil

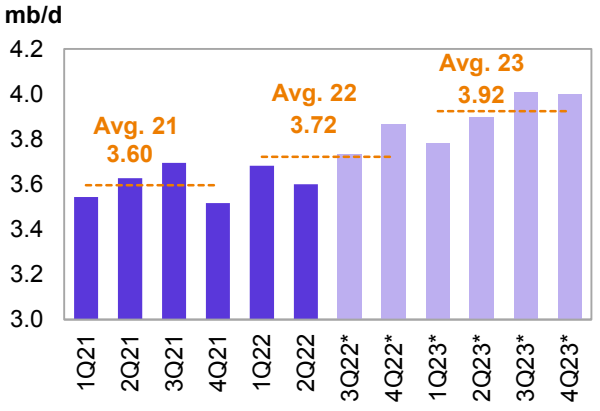
Brazil's crude output in **August** increased by 91 tb/d m-o-m to average 3.0 mb/d. NGL production was largely unchanged at an average of 85 tb/d and is expected to remain flat in September. Biofuel output (mainly ethanol) also remained unchanged in August to average 612 tb/d, with preliminary data showing a flat trend in September. Therefore, total liquids production increased by 88 tb/d in August to average 3.7 mb/d, up by 58 tb/d y-o-y. Brazil recorded six consecutive months of record-setting crude oil output from production-sharing fields in August, whereas Petrobras carried out maintenance on the four floating production, storage and offloading vessels installed at the Buzios field in recent months.

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.*

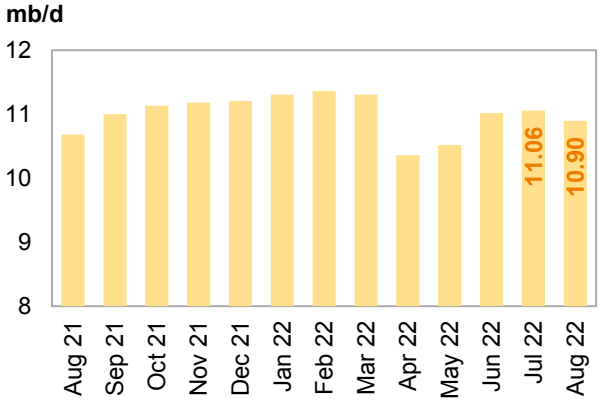
For **2022,** Brazil's liquids supply, including biofuels, is forecast to increase by 0.1 mb/d y-o-y to average 3.7 mb/d, unchanged from the previous month's assessment. Growth in 2022 will be driven by the continued ramp-up of the Sepia field and the start-up of Mero 1 in the pre-salt Santos basin and Peregrino (Phases 1 and 2).

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. Crude oil output is expected to increase through production ramp-ups in the Mero (Libra NW), Buzios (Franco), Tupi (Lula), Peregrino, Sepia and Itapu (Florim) fields. However, offshore maintenance is expected to cause interruptions in major fields. First oil from the 150 tb/d Almirante Barroso FPSO is forecast for the middle of next year. Equinor also announced that it expects to take delivery of its Bacalhau FPSO in 2024 (the first phase of the Bacalhau field in Brazil's pre-salt Santos Basin).

Russia

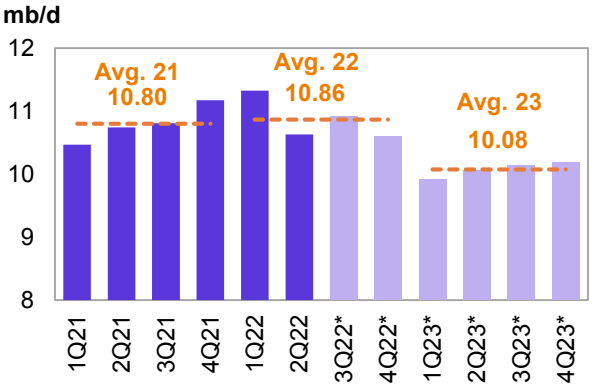
Russia's liquids production in August decreased m-o-m by 160 tb/d to average 10.9 mb/d. This includes 9.8 mb/d of crude oil and condensate and 1.1 mb/d of NGLs. A preliminary estimate for Russia's crude and condensate production in September 2022 shows a further decrease of 0.1 mb/d m-o-m to average 9.7 mb/d, while around a 10 tb/d decline is expected for NGLs.

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 by 64 tb/d y-o-y to average 10.9 mb/d, revised down by 19 tb/d from the previous month's assessment, mainly due to lower expected output during 4Q22.

For **2023**, Russian liquids production is forecast to decrease by 0.8 mb/d to average 10.1 mb/d, revised down by 0.4 mb/d from the previous assessment. It should be noted that the Russian oil forecast remains subject to high uncertainty.

Caspian

Kazakhstan & Azerbaijan

Liquids output in Kazakhstan decreased by 187 tb/d to average 1.6 mb/d in **August**. Crude production was down by 152 tb/d m-o-m to average 1.2 mb/d. Production of NGLs also declined by 35 tb/d m-o-m to average 0.3 mb/d. This was due to an observed sour gas leakage in the Kashagan oilfield and emergency repairs at the Caspian Pipeline Consortium (CPC) terminal on Russia's Black Sea coast.

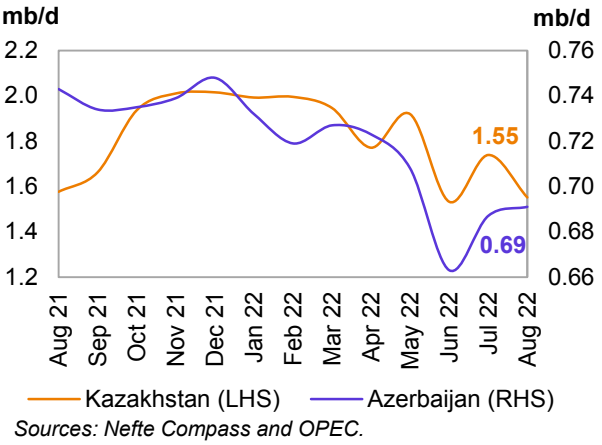
Kazakhstan's liquids supply for **2022** is now forecast to grow by 16 tb/d to average 1.9 mb/d, down by 40 tb/d compared with the previous month's assessment, due to downward revisions applied to 3Q22 and 4Q22. According to preliminary estimates by the Kazakh Energy Ministery, output could be fully restored by 20 October.

For **2023**, liquids supply is forecast to increase by 0.1 mb/d, due to production ramp-ups in the Kashagan oil field. 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 August remained broadly unchanged m-o-m to average 0.7 mb/d, but was down by 52 tb/d y-o-y. Crude production averaged 554 tb/d, while NGL output averaged 137 tb/d, according to official sources.

For **2022**, liquids supply in Azerbaijan is forecast to grow marginally y-o-y to average 0.7 mb/d, down by 19 tb/d because of lower-than-expected production in the major oil fields in August. No new projects are expected to come online in the country in 2022, and the main declines in the legacy fields are expected to be offset by ramp-ups in other fields.

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



Sources: Nefte Compass and OPEC.

Azerbaijan's liquids supply for **2023** is forecast to rise by 49 tb/d for an average of 0.8 mb/d, according to the voluntary production levels agreed upon at the 33rd OPEC and non-OPEC Ministerial Meeting.

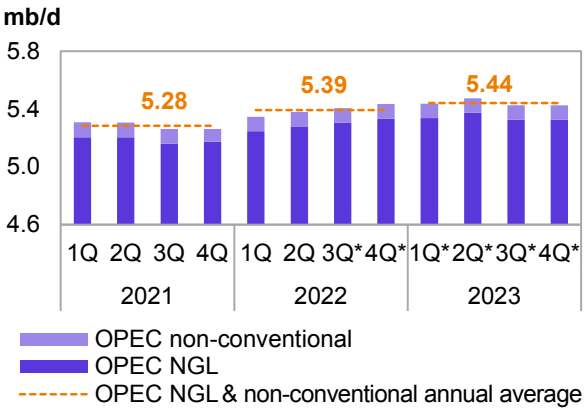
OPEC NGLs and non-conventional oils

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

The output of NGLs in 2Q22 is estimated to have averaged 5.3 mb/d, while OPEC non-conventional output remained steady at 0.1 mb/d. Taken together, 5.4 mb/d is expected for August, according to preliminary data.

The preliminary **OPEC NGLs and non-conventional liquids in 2023** forecast indicates growth of around 50 tb/d for an average of 5.4 mb/d. NGL 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 29.77 mb/d in September 2022, higher by 146 tb/d m-o-m. Crude oil output increased mainly in Saudi Arabia, Nigeria, Libya and the UAE, while production in Iraq, Venezuela and IR Iran declined.

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

Secondary sources	2020	2021	1Q22	2Q22	3Q22	Jul 22	Aug 22	Sep 22	*Change* Sep/Aug
Algeria	904	913	984	1,015	1,036	1,031	1,039	1,040	*1*
Angola	1,245	1,117	1,152	1,171	1,173	1,164	1,171	1,184	*13*
Congo	289	266	265	269	265	259	264	272	*8*
Equatorial Guinea	114	98	92	90	92	99	88	89	*0*
Gabon	191	182	199	190	199	200	197	201	*4*
IR Iran	1,991	2,392	2,529	2,555	2,564	2,564	2,571	2,557	*-14*
Iraq	4,076	4,049	4,286	4,440	4,528	4,521	4,546	4,518	*-28*
Kuwait	2,439	2,419	2,614	2,692	2,803	2,774	2,811	2,823	*12*
Libya	367	1,143	1,063	750	988	694	1,123	1,152	*29*
Nigeria	1,578	1,372	1,376	1,211	1,092	1,131	1,057	1,087	*31*
Saudi Arabia	9,204	9,114	10,165	10,450	10,878	10,738	10,909	10,991	*82*
UAE	2,804	2,727	2,954	3,045	3,163	3,131	3,168	3,193	*25*
Venezuela	512	555	684	714	666	660	678	659	*-19*
Total OPEC	**25,714**	**26,348**	**28,362**	**28,591**	**29,447**	**28,964**	**29,621**	**29,767**	***146***

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	Jul 22	Aug 22	Sep 22	*Change* Sep/Aug
Algeria	899	911	984	1,016	1,050	1,040	1,053	1,058	*5*
Angola	1,271	1,124	1,161	1,173	1,151	1,180	1,179	1,091	*-88*
Congo	300	267	267	258	261	250	262	271	*8*
Equatorial Guinea	114	93	95	91	83	89	85	75	*-10*
Gabon	207	181	197	184	198	191	212	191	*-21*
IR Iran	..	..	..	..	..	..	..	..	..
Iraq	3,997	3,971	4,188	4,472	4,632	4,584	4,651	4,662	*11*
Kuwait	2,438	2,415	2,612	2,694	2,799	2,768	2,811	2,818	*7*
Libya	389	1,207	1,151	..	..	746	..	..	..
Nigeria	1,493	1,323	1,299	1,133	999	1,084	972	938	*-35*
Saudi Arabia	9,213	9,125	10,224	10,542	10,968	10,815	11,051	11,041	*-10*
UAE	2,779	2,718	2,949	3,042	3,170	3,133	3,184	3,193	*9*
Venezuela	569	636	756	745	673	629	723	666	*-57*
Total OPEC	..	..	..	..	..	..	..	..	..

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

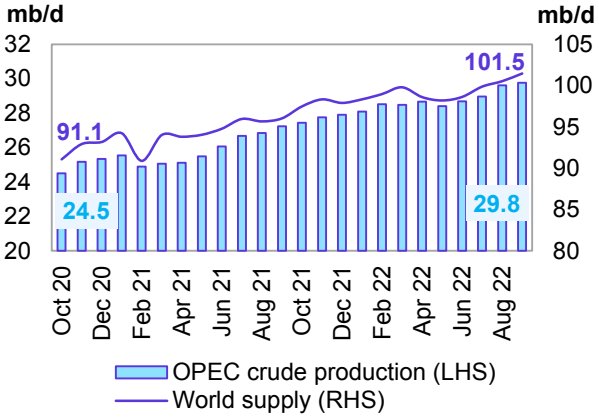
World oil supply

Preliminary data indicates that **global liquids production in September** increased by 0.93 mb/d to average 101.48 mb/d compared with the previous month.

Non-OPEC liquids production (including OPEC NGLs) is estimated to have increased in September by 0.8 mb/d m-o-m to average 71.7 mb/d and was higher by 2.9 mb/d y-o-y. Preliminary estimated increases in production during September were mainly driven by Other Eurasia, OECD Europe and OECD Americas by 0.6 mb/d, offset by declines seen in Russia and other countries.

The **share of OPEC crude oil in total global production** decreased by 0.1 pp to 29.3% in September 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 September, refinery margins showed diverging trends. In the Atlantic Basin, margins increased as the start of peak refinery maintenance season led to a reduction in product output, which exerted pressure on product balances, especially for gasoil, which was already below the five-year average. In addition, declining feedstock prices further contributed to solid support on product markets, mainly for middle distillates both in the US Gulf Coast (USGC) and Northwest Europe (NWE).

Meanwhile, in Asia, refinery margins suffered losses, pressured by the recent release of China's fourth batch of export quotas as it set the stage for stronger product exports in the near term. In addition, expectations of the fifth batch of export quotas exacerbated bearish product market sentiment within the region and ultimately led to a downturn in Asian product performance across the barrel. The only exception was naphtha, which continued to gain favour as the preferred petrochemical feedstock, given high gas prices.

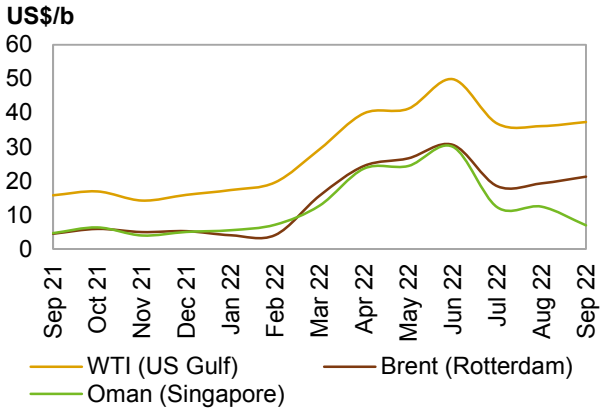
Over the month, global refinery processing rates declined, in line with historical trends, dropping by 1.2 mb/d in response to a rise in offline capacity amid the start of the peak autumn maintenance season.

In the coming month, refinery intake is expected to decline further by nearly 900 tb/d, according to preliminary data.

Refinery margins

USGC refining margins against WTI recovered from the previous month's losses in September, but remained below the high levels seen in June. Product output levels were strong in the first half of the month, but declined thereafter, affected by planned and unplanned shut-downs. A prolonged shutdown due to a reported fire at the 160 tb/d BP Toledo refinery in Ohio, amid the start of heavy maintenance work in the country, weighed on utilization rates towards the end of the month. Across the barrel, jet fuel was the top performer, as inventories for the same product declined over three consecutive weeks of the month. This resulted in significant strength across the barrel in September, particularly regarding middle distillates, as the jet fuel crack spread rose by $4.34/b, the greatest monthly rise compared with other key products in the USGC.

Graph 6 - 1: Refining margins



Sources: Argus and OPEC.

Gasoil contributed to this strength, albeit by a limited amount, with a decline in refinery output levels. On the other hand, gasoline inventories showed significant declines over the month, driven by strong exports. However, as domestic consumption came under pressure with the end of the summer driving season, seasonal weakness overshadowed gasoline export-related support, leading to negative m-o-m performance.

According to preliminary estimates, refinery intake in the US reversed the trend and dropped by around 380 tb/d m-o-m to average 16.36 mb/d in September, reflecting the start of heavy turnarounds. This could exert considerable upward pressure on product prices in the coming months. USGC margins against WTI averaged $37.32/b in September, up by $1.20 m-o-m and $21.56 y-o-y.

Refinery margins in Rotterdam against Brent increased for the second consecutive month, showing the greatest gain compared with other key regions. The most support emerged from the gasoil and naphtha markets, while low sulphur fuel oil and jet fuel added to positive performance. The start of the maintenance season in Europe led to a considerable reduction in processing rates and product output. Moreover, in France, a strike in the refining sector led to a 40% loss in capacity towards the end of the month. Despite firm gains, margins were lower for refiners using natural gas as a burning fuel and power source due to elevated operational costs. Refinery throughput in Europe declined by 240 tb/d due to planned and unplanned outages, to average 9.86 mb/d according to preliminary data. Refinery margins against Brent in Europe averaged $21.22/b in September, up by $1.96/b compared with a month earlier and higher by $16.74 y-o-y.

Singapore refining margins against Oman lost solid ground in September, with negative performance registered all across the barrel, with the exception of naphtha. Most of the weakness in regional refining economics was attributed to excess gasoline, as ample availability led to high inventories, particularly in China. Jet fuel markets also experienced heavy pressure, still affected by COVID-19-related restrictions. Nonetheless, the largest blow to the Asian product market was the release of a fifth batch of product export quotas in late September. The batch was 15 million tonnes the largest single batch released this year. It included 13.25 million tonnes of clean products, such as gasoline, diesel and jet fuel, and 1.75 million tonnes of low-sulphur fuel oil. In addition, China is reportedly considering the release of another batch, given the currently strong middle distillate export margins and poor domestic demand. The projected surge in product exports from China led to concerns over product balance in the near term, which weighed heavily on regional product markets.

Regional refinery run rates remained high, increasing by a further 400 tb/d in September relative to the previous month to average 24.62 mb/d, according to preliminary data. Refinery margins against Oman in Asia lost $5.49/b m-o-m to average $6.96/b, higher by $2.30 y-o-y.

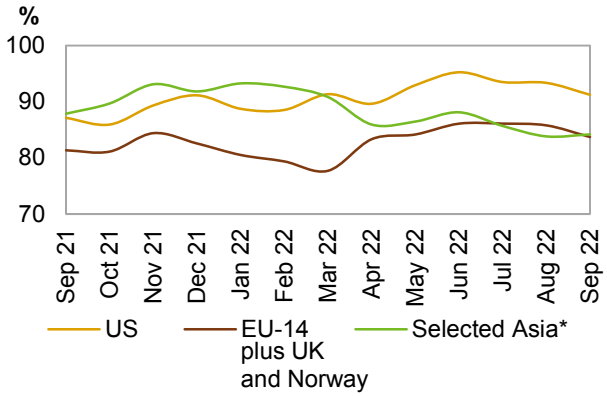
Refinery operations

US refinery utilization rates fell in September to average 91.20%, which corresponds to a throughput of 16.36 mb/d. This represented a drop of 2.1 pp and 380 tb/d, respectively, compared with August. Y-o-y, the September refinery utilization rate was up by 4.1 pp, with throughput showing a rise of 565 tb/d.

European refinery utilization averaged 83.70% in September, corresponding to a throughput of 9.86 mb/d. This is a m-o-m drop of 2.1 pp or 240 tb/d. On a y-o-y basis, utilization rates were up by 2.4 pp, while throughput was higher by 279 tb/d.

In **Selected Asia** – comprising Japan, China, India, Singapore and South Korea – refinery utilization rates increased to average 84.18% in September, corresponding to a throughput of 24.62 mb/d. Compared with the previous month, utilization rates were up by 0.4 pp, and throughput was higher by 440 tb/d. However, y-o-y utilization rates were lower by 3.7 pp and throughput was down by 516 tb/d.

Graph 6 - 2: Refinery utilization rates



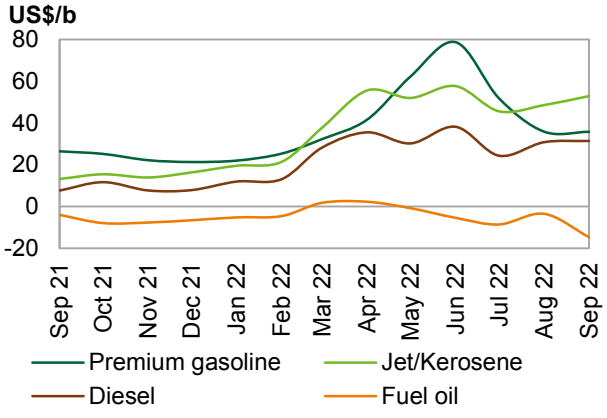
*Note: * China, India, Japan, Singapore and South Korea.*
Sources: Argus, EIA, Euroilstock, PAJ and OPEC.

Product markets

US market

The **USGC gasoline crack spread** extended its downward trend for the third consecutive month in September, as weaker domestic consumption weighed on gasoline markets. Total US gasoline inventory levels also continued to trend downward over the month on firm exports and a drop in refinery output. The supportive impact of this contraction in gasoline availability over the month was, however, outweighed by bearish gasoline market sentiment linked to the end of the driving season. In September, wholesale gasoline 93 prices continued to trend downward, shedding an additional $7.66 m-o-m to average $119.75/b. This was $30.45/b higher y-o-y. The USGC gasoline crack spread lost 9¢ m-o-m to average $35.75/b in September, up by $9.35 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 the previous month and kept its position as the strongest margin contributor in the USGC product market. This strength reflected healthy aviation sector requirements as air travel activities remained strong in the summer season. Jet fuel

wholesale prices dropped by $3.23/b over the month, the greatest drop across the barrel in the USGC in September, to average $136.98/b. Jet fuel retained its position as the highest-priced product in the USGC market in September. The US jet/kerosene crack spread against WTI averaged $52.98/b, up by $4.34 m-o-m and higher by $39.86 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 is expected to continue to support gasoil markets in the near term. Gasoil prices averaged $115.38/b in September, down by $6.96 relative to August. The US gasoil crack spread against WTI averaged $31.38/b, up by 61¢ m-o-m and $23.80 y-o-y.

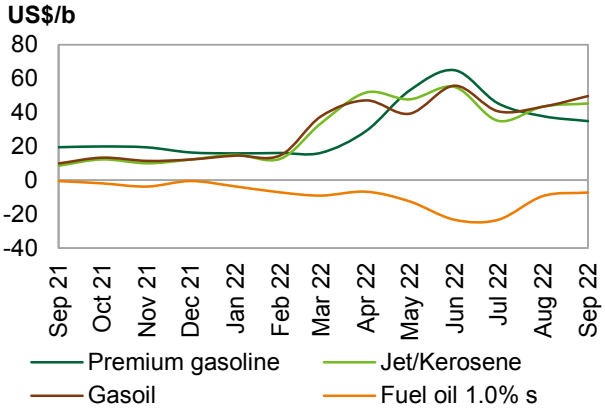
The USGC **fuel oil crack spread** against WTI reversed the trend again, losing the previous months' gains. This poor performance was attributed to a downturn in demand. In September, the US fuel oil crack spread against WTI averaged minus $14.61/b, lower by $11.16/b m-o-m and $10.65 y-o-y.

European market

Gasoline crack spreads lost some ground, pressured by weaker demand. Supply-side support linked to a decline in regional refinery processing rates was completely overshadowed by softening demand signals. The gasoline crack spread against Brent averaged $34.91/b in September, down by $2.92 m-o-m, but higher by $15.42 y-o-y.

In September, **jet/kerosene crack spreads** increased slightly, in line with supportive supply-side dynamics. The Rotterdam jet/kerosene crack spread against Brent averaged $45.20/b, up by $1.78 m-o-m and $36.73 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 $49.60/b, up by $6.22 m-o-m and $39.65 y-o-y.

At the bottom of the barrel, **fuel oil** 1.0% crack spreads added to the sizeable gains witnessed the previous month, inching closer to positive territory. A reduction in Russian fuel oil supplies contributed to a contraction in availability and provided strength to the market. Gas-to-fuel oil switching due to high natural gas prices likely unlocked additional demand, further supporting fuel exports and ultimately crack spreads for the same product. In terms of prices, fuel oil 1.0% averaged $82.58/b, and was $7.73 lower relative to the previous month. In Europe, fuel oil cracks averaged minus $7.24/b in September, having gained $2.07 m-o-m, and were down by $6.77 y-o-y.

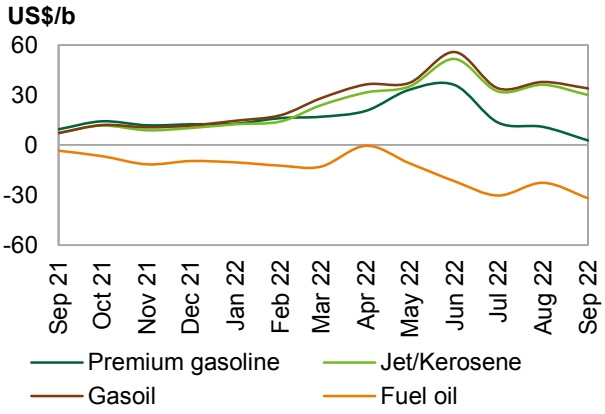
Asian market

The **Asian gasoline 92 crack spread** fell over the month, mainly impacted by supply-side dynamics and growing gasoline availability in the region.

The Singapore **gasoline crack spread** against Oman in September averaged $2.81/b, down by $8.11 m-o-m and $6.67 y-o-y.

Asian **naphtha crack spreads** were the sole positive performer across the barrel in September. This positive performance was attributed to firm demand for petrochemical feedstock, while high gas prices continued to lend support to naphtha requirements. The Singapore naphtha crack spread against Oman averaged minus $22.89/b. It increased by 80¢ m-o-m and was down by $25.47 y-o-y.

Graph 6 - 5: Singapore crack spreads vs. Dubai



Sources: Argus and OPEC.

In the middle of the barrel, **jet/kerosene** crack spreads trended downward, pressured by growing availability as exports from China are expected to increase further. Nonetheless, the ongoing refinery maintenance works in the Atlantic basin, with the subsequent need for higher trade flows, as well as positive industrial demand within the region, should dampen the downturn in the near term. The Singapore jet/kerosene crack spread against Oman averaged $29.94/b, down by $6.12 m-o-m but higher by $22.63 y-o-y.

The Singapore **gasoil** crack spread declined, but remained at healthy levels. This was reflective of supply-side dynamics, which triggered concerns over gasoil oversupply within the region in the near term. The Singapore gasoil crack spread against Oman averaged $33.89/b, down by $3.87 m-o-m but up by $26.80 y-o-y.

The Singapore **fuel oil 3.5%** crack spread reversed the trend to show a decline, as Singapore onshore fuel oil inventories rose to reach the highest levels seen since February. Moreover, higher very low sulphur fuel oil production levels in China, amid concerns over the release of an additional product export batch, led to expectations of a lengthening balance within the region going forward, which weighed on residual fuel markets. Singapore fuel oil cracks against Oman averaged minus $31.78/b, down by $9.23 m-o-m and lower by $28.39 y-o-y.

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

Event	Time frame	Asia	Europe	US	Observations
Autumn heavy refinery turnaround season	Oct 22–Nov 22	↑ Upward pressure on product prices	↑ Upward pressure on product prices	↑ Upward pressure on product prices	The decline in product supplies could lead to renewed product tightness in the near term, more pronouncedly of diesel. This will likely exert upward pressure on prices and crack spreads.
Winter season	Nov 22–Apr 23	↓ Negative impact on product markets	↓ Negative impact on product markets	↓ Negative impact on product markets	Transport fuels are expected to come under pressure as the summer season approaches the end.

Source: OPEC.

Table 6 - 2: Refinery operations in selected OECD countries

	Refinery throughput, mb/d				*Refinery utilization, %*			
	Jul 22	Aug 22	Sep 22	*Change* Sep/Aug	Jul 22	Aug 22	Sep 22	*Change* Sep/Aug
US	**16.77**	**16.74**	**16.36**	**-0.38**	**93.46**	**93.32**	**91.20**	**-2.1 pp**
Euro-14, plus UK and Norway	**10.14**	**10.10**	**9.86**	**-0.24**	**86.08**	**85.77**	**83.70**	**-2.1 pp**
France	0.98	0.97	0.93	-0.04	84.89	83.85	80.57	-3.3 pp
Germany	1.86	1.80	1.77	-0.03	90.71	87.84	86.34	-1.5 pp
Italy	1.44	1.38	1.34	-0.04	75.58	72.63	70.57	-2.1 pp
UK	0.96	1.02	1.01	-0.02	82.18	87.30	85.97	-1.3 pp
Selected Asia*	**24.72**	**24.18**	**24.62**	**0.44**	**85.69**	**83.83**	**84.18**	**0.4 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	3Q21	4Q21	1Q22	2Q22	3Q22
OECD Americas	**19.04**	**16.59**	**17.79**	**18.42**	**18.20**	**18.37**	**18.75**	**18.79**
of which US	*16.99*	*14.72*	*15.65*	*16.22*	*16.02*	*16.06*	*16.61*	*16.62*
OECD Europe	**12.13**	**10.65**	**10.91**	**11.35**	**11.50**	**11.00**	**11.43**	**11.55**
of which:								
France	*1.00*	*0.67*	*0.69*	*0.79*	*0.76*	*0.79*	*0.84*	*0.96*
Germany	*1.78*	*1.72*	*1.72*	*1.75*	*1.90*	*1.75*	*1.87*	*1.81*
Italy	*1.35*	*1.11*	*1.23*	*1.27*	*1.34*	*1.16*	*1.42*	*1.39*
UK	*1.08*	*0.92*	*0.92*	*0.99*	*0.99*	*1.04*	*1.06*	*1.01*
OECD Asia Pacific	**6.79**	**5.87**	**5.76**	**5.77**	**6.00**	**6.21**	**5.87**	**6.01**
of which Japan	*3.02*	*2.48*	*2.49*	*2.51*	*2.69*	*2.80*	*2.60*	*2.59*
Total OECD	**37.96**	**33.12**	**34.46**	**35.53**	**35.70**	**35.58**	**36.05**	**36.36**
Latin America	**3.83**	**3.12**	**3.41**	**3.44**	**3.51**	**3.30**	**3.35**	**3.31**
Middle East	**6.97**	**6.09**	**6.78**	**6.80**	**7.27**	**7.23**	**7.36**	**7.67**
Africa	**1.97**	**1.79**	**1.97**	**1.99**	**1.98**	**1.98**	**1.98**	**2.03**
India	**5.04**	**4.42**	**4.73**	**4.40**	**5.02**	**5.18**	**5.22**	**4.66**
China	**13.02**	**13.48**	**14.07**	**13.76**	**14.03**	**13.96**	**12.89**	**12.73**
Other Asia	**5.13**	**4.74**	**4.80**	**4.84**	**4.90**	**5.07**	**5.17**	**5.18**
Russia	**5.70**	**5.39**	**5.61**	**5.63**	**5.75**	**5.71**	**5.04**	**5.50**
Other Eurasia	**1.21**	**1.03**	**1.18**	**1.28**	**1.20**	**1.22**	**1.10**	**1.18**
Other Europe	**0.55**	**0.43**	**0.41**	**0.43**	**0.33**	**0.42**	**0.47**	**0.56**
Total Non-OECD	**43.40**	**40.49**	**42.96**	**42.57**	**44.01**	**44.07**	**42.59**	**42.83**
Total world	**81.36**	**73.61**	**77.42**	**78.10**	**79.71**	**79.65**	**78.64**	**79.19**

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

		Aug 22	Sep 22	Change Sep/Aug	Annual avg. 2021	Year-to-date 2022-to-date
US Gulf (Cargoes FOB)						
Naphtha*		84.82	73.94	-10.88	70.70	94.10
Premium gasoline	(unleaded 93)	127.41	119.75	-7.66	91.41	141.17
Regular gasoline	(unleaded 87)	116.02	107.32	-8.70	86.72	129.95
Jet/Kerosene		140.21	136.98	-3.23	78.32	141.84
Gasoil	(0.2% S)	122.34	115.38	-6.96	73.94	125.39
Fuel oil	(3.0% S)	81.74	62.00	-19.74	59.84	83.99
Rotterdam (Barges FoB)						
Naphtha		72.98	69.03	-3.95	70.15	89.69
Premium gasoline	(unleaded 98)	137.45	124.73	-12.72	85.89	139.98
Jet/Kerosene		143.04	135.02	-8.02	77.17	142.84
Gasoil/Diesel	(10 ppm)	143.00	139.42	-3.58	78.31	143.25
Fuel oil	(1.0% S)	90.31	82.58	-7.73	69.12	93.79
Fuel oil	(3.5% S)	78.87	66.29	-12.58	61.38	85.27
Mediterranean (Cargoes FOB)						
Naphtha		70.39	67.00	-3.39	69.40	87.21
Premium gasoline**		112.59	99.31	-13.28	80.46	125.47
Jet/Kerosene		138.83	131.39	-7.44	75.06	138.68
Diesel		133.39	131.93	-1.46	77.73	137.82
Fuel oil	(1.0% S)	96.88	89.44	-7.44	70.51	99.18
Fuel oil	(3.5% S)	71.03	51.18	-19.85	58.98	77.81
Singapore (Cargoes FOB)						
Naphtha		72.64	68.09	-4.55	70.83	88.27
Premium gasoline	(unleaded 95)	110.57	97.45	-13.12	80.28	122.01
Regular gasoline	(unleaded 92)	107.25	93.79	-13.46	78.28	118.07
Jet/Kerosene		132.39	120.92	-11.47	75.10	129.57
Gasoil/Diesel	(50 ppm)	139.23	128.58	-10.65	77.36	137.98
Fuel oil	(180 cst)	133.62	124.55	-9.07	75.71	131.89
Fuel oil	(380 cst 3.5% S)	73.78	59.20	-14.58	62.07	82.96

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

Sources: Argus and OPEC.

Tanker Market

Very Large Crude Carrier (VLCC) rates continued to gather strength in September, with gains seen on all major routes. Spot VLCC rates on the Middle East-to-East route rose 26%, while on the West Africa-to-East route, they gained 23%.

Suezmax and Aframax rates came down from the elevated levels seen since March. Suezmax rates on the US Gulf Coast (USGC)-to-Europe route declined by 7%, while Aframax spot rates on the Cross-Med route declined by around 13%. All monitored routes were well above the levels seen in the same month last year.

Clean rates saw diverging trends, with gains East of Suez and declines West of Suez. On the Middle East-to-East route, clean spot rates rose by 13% m-o-m in September.

Spot fixtures

The latest estimates show **global spot fixtures** declined in September to average 14.3 mb/d. Fixtures fell by 1.1 mb/d, or around 7% m-o-m. Compared with the previous year, spot fixtures were down by 1.9 mb/d or almost 12%.

Table 7 - 1: Spot fixtures, mb/d

Spot fixtures	Jul 22	Aug 22	Sep 22	*Change* Sep 22/Aug 22
All areas	15.93	15.40	14.29	-1.11
OPEC	11.37	10.44	10.52	0.08
Middle East/East	6.79	5.95	6.51	0.56
Middle East/West	2.28	1.68	1.37	-0.31
Outside Middle East	2.30	2.81	2.64	-0.17

Sources: Oil Movements and OPEC.

OPEC spot fixtures were marginally higher in September, averaging 10.5 mb/d. This represents a gain of less than 1%. In comparison with the same month in 2021, fixtures were about 0.6 mb/d, or over 5% higher.

Middle East-to-East fixtures rose 0.6 mb/d, or over 9%, to average 6.5 mb/d. Compared with the same month last year, eastward flows from the Middle East were about 0.5 mb/d, or almost 7%, higher.

Spot fixtures from the **Middle East-to-West** fell further in September, down by around 0.3 mb/d, or about 19% m-o-m, to average 1.4 mb/d. Y-o-y, rates were 0.5 mb/d, or about 58% higher.

Outside the Middle East, fixtures averaged 2.6 mb/d. This represents a loss of 6%, or about 0.2 mb/d, m-o-m and a decline of 0.6 mb/d, or 19%, y-o-y.

Sailings and arrivals

OPEC sailings fell by 0.4 mb/d, or less than 2%, m-o-m in September to average 23.9 mb/d, and were 1.8 mb/d, or about 8%, higher compared with the same month a year ago.

Middle East sailings increased by just over 0.1 mb/d in September to average 18.8 mb/d. Y-o-y, sailings from the region rose by about 2.2 mb/d, or around 13%, compared with September 2021.

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

Sailings	Jul 22	Aug 22	Sep 22	*Change* Sep 22/Aug 22
OPEC	22.14	24.36	23.94	-0.42
Middle East	16.75	18.64	18.75	0.11
Arrivals				
North America	8.65	9.25	8.90	-0.35
Europe	13.42	12.63	12.30	-0.33
Far East	13.31	15.21	15.07	-0.14
West Asia	8.03	8.37	7.53	-0.84

Sources: Oil Movements and OPEC.

Crude arrivals in September declined m-o-m across all regions. West Asia led losses, falling 0.8 mb/d, or 10%, to average 7.5 mb/d. Y-o-y, arrivals in the region were 0.5 mb/d, or about 7% higher. Arrivals in the Far East decreased 0.1 mb/d or just under 1% to average 15.1 mb/d, while y-o-y, they were about 2.1 mb/d, or almost 16% higher.

In North America, arrivals declined by around 0.4 mb/d or about 4% m-o-m, averaging 8.9 mb/d and were 0.2 mb/d, or about 2%, lower y-o-y. Arrivals in Europe fell 0.3 mb/d, or less than 3%, to average 12.3 mb/d. This was 0.3 mb/d, or about 3%, lower than in the same month last year.

Dirty tanker freight rates

Very large crude carriers (VLCCs)

VLCC spot rates continued to pick up in September, gaining 25% 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 139% on average.

On the **Middle East-to-East** route, rates gained 26% m-o-m to average WS86 points and were 139% higher y-o-y. Rates on the **Middle East-to-West** route rose 22% m-o-m to average WS50 points. Y-o-y, rates on the route increased 127%.

West Africa-to-East spot rates gained 23% m-o-m to average WS86 points in September. Compared with the same month last year, rates were 132% higher.

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

VLCC	Size *1,000 DWT*	Jul 22	Aug 22	Sep 22	*Change* Sep 22/Aug 22
Middle East/East	230-280	58	68	86	18
Middle East/West	270-285	35	41	50	9
West Africa/East	260	60	70	86	16

Sources: Argus and OPEC.

Suezmax

Suezmax rates edged lower in September, down 2% m-o-m but still well above the levels seen in the same month over the last five years. Rates remained supported by ongoing trade dislocations, which boosted demand for longer-haul voyages in the Suezmax class.

Spot freight rates on the **USGC-to-Europe** route declined 7% compared with the previous month to average WS113 points. Y-o-y, rates were 131% higher.

In contrast, rates on the **West Africa-to-US Gulf Coast (USGC)** gained 2% to average WS127 points. Compared with the same month last year, they were 165% higher.

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

Suezmax	Size *1,000 DWT*	Jul 22	Aug 22	Sep 22	*Change* Sep 22/Aug 22
West Africa/US Gulf Coast	130-135	124	124	127	3
US Gulf Coast/ Europe	150	112	122	113	-9

Sources: Argus and OPEC.

Aframax

Aframax spot freight rates weakened on all monitored routes, although remaining at exceptionally high levels compared with the same month over the last five years. On average, spot Aframax rates fell 11% m-o-m in September. Compared with the same month last year, rates were 123% higher.

Rates on the **Indonesia-to-East** route declined marginally to average WS227 points in September. Y-o-y, rates on the route were up 155%.

Spot rates on the **Caribbean-to-US East Coast (USEC)** route declined 18% m-o-m to average WS246 points. Y-o-y, rates were 134% higher.

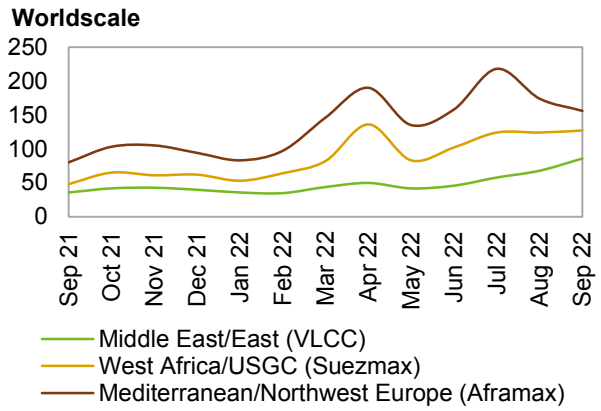
Table 7 - 5: Dirty Aframax spot tanker freight rates, WS

Aframax	Size 1,000 DWT	Jul 22	Aug 22	Sep 22	Change Sep 22/Aug 22
Indonesia/East	80-85	183	228	227	-1
Caribbean/US East Coast	80-85	248	299	246	-53
Mediterranean/Mediterranean	80-85	209	201	175	-26
Mediterranean/Northwest Europe	80-85	218	174	156	-18

Sources: Argus and OPEC.

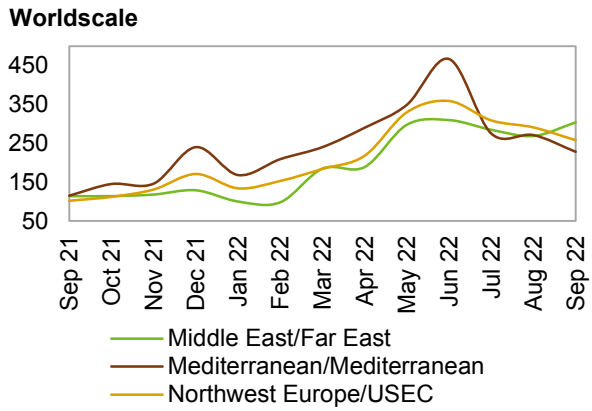
Mediterranean spot freight rates fell back in September. **Cross-Med** spot freight rates declined by 13% m-o-m last month, to average WS175 points. Y-o-y, rates were still 97% higher. On the **Mediterranean-to-NWE** route, rates dropped by 10% m-o-m to average WS156 points. Compared with the same month last year, rates were around 95% 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 experienced mixed performance, with East of Suez rates recovering some of the losses seen in the previous month, while West of Suez rates fell with the end of the driving season. On average, rates declined 1% m-o-m in September but were still up 138% compared with the levels seen in the same month last year.

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

East of Suez	Size 1,000 DWT	Jul 22	Aug 22	Sep 22	Change Sep 22/Aug 22
Middle East/East	30-35	285	269	304	35
Singapore/East	30-35	396	342	415	73
West of Suez					
Northwest Europe/US East Coast	33-37	309	291	258	-33
Mediterranean/Mediterranean	30-35	275	271	228	-43
Mediterranean/Northwest Europe	30-35	285	282	238	-44

Sources: Argus and OPEC.

Rates on the **Middle East-to-East** route rose 13% m-o-m in September to average WS304. Y-o-y, rates were up 167%. Freight rates on the **Singapore-to-East** route also improved m-o-m, up 21% to average WS415; that is 168% higher compared with the same month last year.

In contrast, the West-of-Suez market continued to fall from robust levels seen since April. Spot freight rates on **Northwest Europe (NWE)-to-US East Coast (USEC)** route fell 11% m-o-m to average WS258 points. They were 153% higher y-o-y. Rates in the **Cross-Med** and **Med-to-NWE** edged down 16% each to average WS228 and WS238 points, respectively. Compared with the same month last year, rates were around 98% higher on both routes.

Crude and Refined Products Trade

Preliminary data show US crude imports recovered some of the losses seen in the previous month to average 6.3 mb/d in September, while crude exports reached a record high of 4.0 mb/d. US product imports experienced a seasonal decline, dropping 15% m-o-m. Product exports edged slightly higher to 6.3 mb/d.

China's crude imports recovered partly from a two-month slump in August, averaging 9.5 mb/d. Compared with the previous month, crude imports for the month rose 8%, or 0.7 mb/d. However, compared to the last year, crude inflows were still down by almost 1.0 mb/d or over 9%. The m-o-m increase came amid expectations for a pickup in domestic product demand in 4Q22 and as the potential for product exports increases. Product exports surged to a 14-month high in August, with higher outflows seen across the board, led by gasoil, with support from jet fuel and gasoline.

India's crude imports fell to a 10-month low of 4.1 mb/d in August, following the strong performance seen over the last four months, but were broadly in line with seasonal levels. Kpler data shows Russia remained the top crude supplier for the third month in a row, but volumes declined from the peak levels seen in June. India's product exports increased, driven primarily by higher outflows of jet fuel and gasoil, despite increased export duties.

Japan's crude imports showed a strong performance in August, averaging just under 3.0 mb/d, the highest since March 2020. Inflows rose 0.4 mb/d or 14% m-o-m, supported by summer demand for gasoline and healthy fuel oil demand for power generation. Product imports, including LPG, rose by 9%, driven primarily by healthy seasonal demand for gasoline, fuel oil and naphtha, while product exports jumped 20% m-o-m, led by higher outflows of gasoil, as well as gasoline, jet fuel and kerosene, which outpaced a decline in fuel oil.

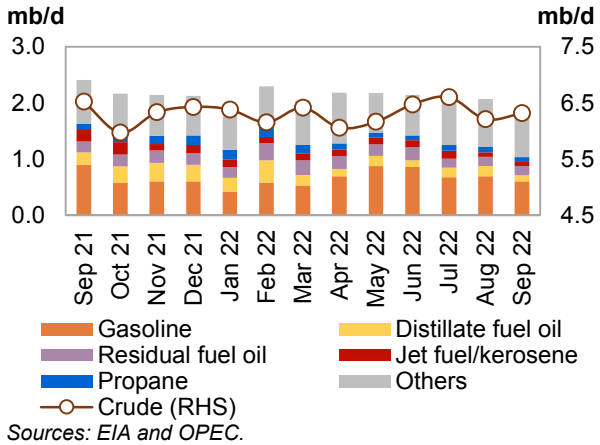
Preliminary figures show crude imports into the OECD Europe region remaining high compared with last year's levels, despite steady m-o-m declines in Russian imports. Product imports are seen stepping up from June levels, supported by increasing inflows of jet fuel, while product exports are seen trending lower up to September, amid a seasonal decline in gasoline outflows.

US

Preliminary data show **US crude imports** recovered some of the losses seen in the previous month to average 6.3 mb/d in **September**. Crude imports rose 0.1 mb/d or about 2% m-o-m. Compared with the same month in 2021, inflows declined by 0.2 mb/d, or more than 3%.

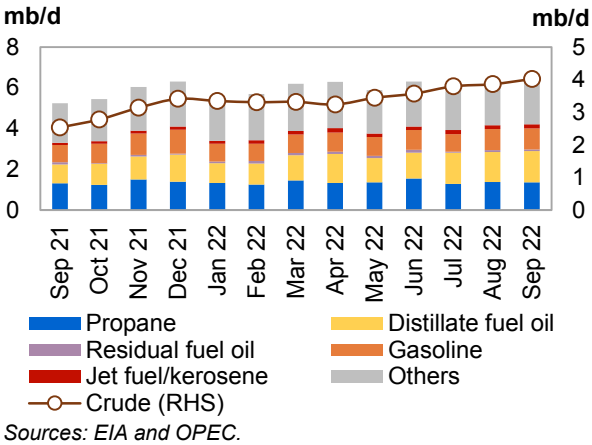
The **top three suppliers of crude** to the US remained unchanged in **September**, according to the latest monthly US Energy Information Administration (EIA) data. Canada held the top spot with a share of just under 56%, followed by Mexico with 11%. Saudi Arabia was third with a share of 7%.

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 reached a new record high of 4.0 mb/d based on preliminary weekly data, as trade dislocations boosted demand for US crude. Outflows rose by 0.2 mb/d or around 4% m-o-m. Compared with the same month last year, crude exports were almost 1.5 mb/d, or 59% higher.

According to the latest EIA monthly data, the Netherlands remained the top **destination** for **US crude exports** in **July**, with a share of 11%, followed closely by Canada, also with 11%. South Korea came next with 10% followed by the UK and Italy.

Based on weekly data, **US net crude imports** averaged 2.3 mb/d in **September**, compared with 2.4 mb/d in August and just under 4.0 mb/d in the same month last year.

On the **product** side, **imports** fell by 15%, or 0.3 mb/d, to average 1.8 mb/d, in line with seasonal trends at the end of the driving season. Gasoline and fuel oil led declines. Compared with the same month last year, product imports declined by 0.7 mb/d, or 27%.

Product exports are estimated to have remained at a healthy level in September, averaging 6.3 mb/d. Gains were supported by robust flows to all regions. Compared with September 2021, product exports were 1.1 mb/d, or about 21% higher.

As a result, preliminary data show that **US net product exports** averaged 4.6 mb/d in September, compared with 4.2 mb/d in August and 2.8 mb/d in the same month of 2021.

Preliminary data indicates that US **net crude and product exports** averaged 2.3 mb/d in September, compared with 1.8 mb/d the month before and 1.1 mb/d in September 2021.

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

US	Jul 22	Aug 22	Sep 22	*Change* Sep 22/Aug 22
Crude oil	2.81	2.35	2.30	-0.05
Total products	-3.71	-4.19	-4.58	-0.39
Total crude and products	**-0.90**	**-1.84**	**-2.29**	**-0.44**

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

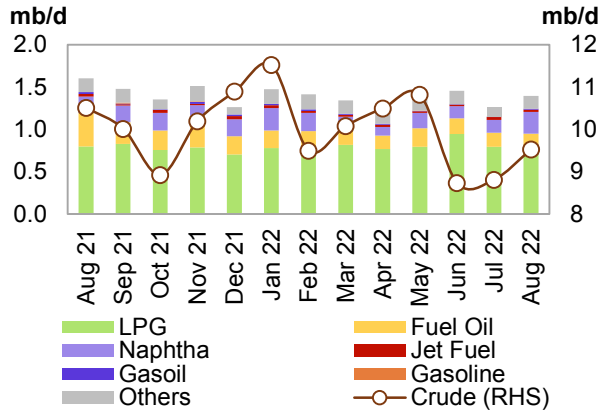
Sources: EIA and OPEC.

Looking ahead, US crude imports are seen remaining steady in the coming months, amid strong demand for US products. US crude exports are likely to continue to be supported by European and Asian demand.

China

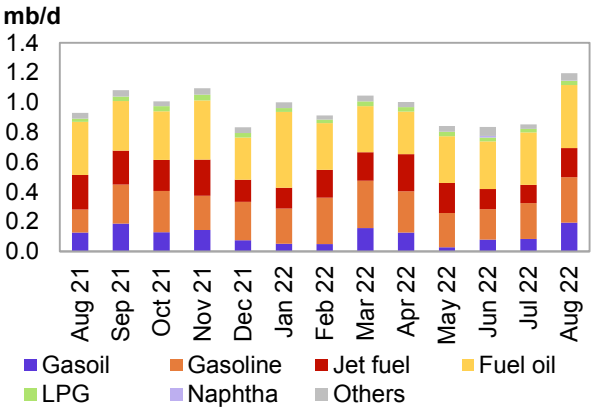
China's crude imports recovered partly from a two-month slump in **August**, averaging 9.5 mb/d. Compared with the previous month, crude imports for the month rose 8%, or 0.7 mb/d. However, crude inflows y-o-y were still down by almost 1.0 mb/d or over 9%. The m-o-m increase came amid expectations for a pickup in domestic product demand in 4Q22 and as the potential for product exports increases.

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



Sources: China, Oil and Gas Petrochemicals and OPEC.

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



Sources: China, Oil and Gas Petrochemicals and OPEC.

In terms of **crude imports by source**, Saudi Arabia recovered the top spot in **August**. Crude inflows from the Kingdom surged to a 21% share as volumes reached 2.0 mb/d. Russia fell to a close second place with just under 21%, as volumes approached 2.0 mb/d. Iraq came in third with a share of over 10%, as volumes averaged 1.0 mb/d.

Product imports rose by close to 11%, or 0.1 mb/d, to average 1.4 mb/d, as inflows of naphtha were sharply higher while gasoil and LPG also saw gains. Compared with the same month last year, product imports decreased by 0.2 mb/d or close to 13%.

Product exports surged to a fourteen-month high in August, increasing by over 40% to average 1.2 mb/d. Higher outflows were seen across the board, led by gasoil, with support from jet fuel and gasoline. Y-o-y, product outflows rose by almost 29%, or 0.3 mb/d, after being constrained for most of the year.

As a result, China's **net product imports** averaged 199 tb/d in August, compared with net imports of 409 tb/d the month before and net exports of 672 tb/d in the same month of 2021.

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

China	Jun 22	Jul 22	Aug 22	Change Aug 22/Jul 22
Crude oil	8.69	8.80	9.41	0.61
Total products	0.62	0.41	0.20	-0.21
Total crude and products	**9.31**	**9.21**	**9.61**	**0.40**

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

Sources: China, Oil and Gas Petrochemicals and OPEC.

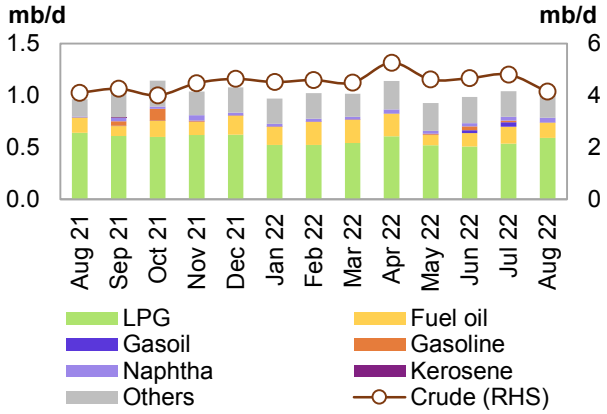
Looking ahead, the near-term prospects have finally improved after the sluggish performance seen over the previous two months. State-owned refiners received a fourth round of product export quotas in early September and are hoping for a fifth before the end of the year. Diesel markets remain tight globally, and China is one of few countries where refiners have the potential to boost output. Thus, if the higher quotas materialize, this would lift product exports and support crude imports.

India

India's crude imports fell to a 10-month low of 4.1 mb/d in **August**, following the strong performances seen over the last four months. M-o-m, crude inflows were down by 14%, or 0.7 mb/d, but were broadly in line with the levels seen in the same month last year, up by just under 1%.

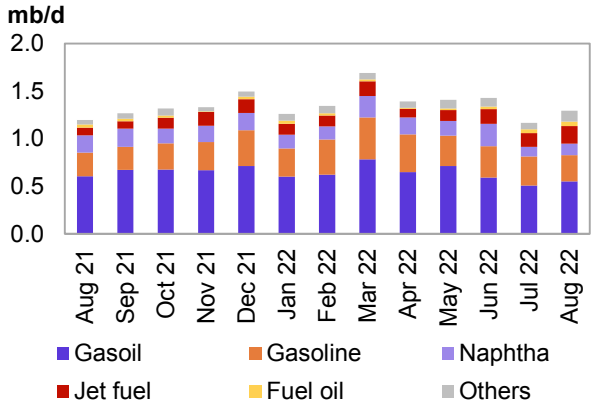
In terms of **crude imports by source**, Kpler data show Russia as the top supplier of crude to India in August for the third month in a row, with a 24% share, as the country takes advantage of the heavily discounted barrels. However, volumes were some 0.2 mb/d below the peak levels seen two months earlier. Iraq was second with a share of 23%, followed by Saudi Arabia with 20%.

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 August averaged 1.0 mb/d, representing a negligible gain of less than 1%. Gains in LPG were broadly counterbalanced by declines in gasoil, fuel oil and gasoline. Compared with the same month in 2021, inflows rose by 9%, or about 83 tb/d.

Product exports increased by 11%, or 0.1 mb/d, to average just under 1.3 mb/d. Higher outflows were driven primarily by jet fuel and gasoil, although fuel oil and naphtha were also higher. The gains came despite higher export taxes on diesel and jet fuel but were supported by a decline in domestic diesel demand.

Compared with the same month last year, product exports were up by 8%, or about 0.1 mb/d, with jet fuel and fuel oil registering substantial y-o-y gains.

As a result, **net product exports** averaged 245 tb/d in August, compared with 124 tb/d in July and 231 tb/d in the same month of 2021.

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

India	Jun 22	Jul 22	Aug 22	Change Aug 22/Jul 22
Crude oil	4.66	4.80	4.14	-0.66
Total products	-0.44	-0.12	-0.25	-0.12
Total crude and products	**4.22**	**4.68**	**3.90**	**-0.78**

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.

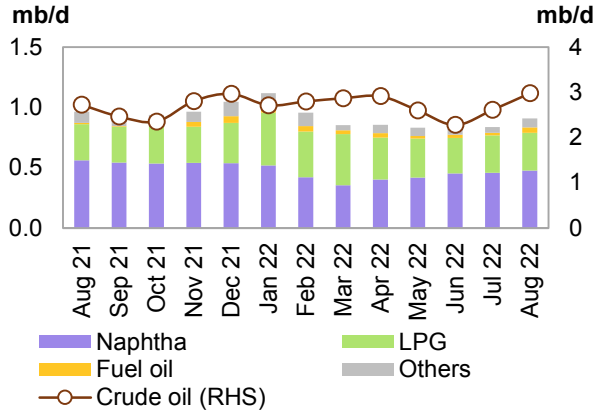
Looking ahead, crude imports are expected to increase in September, with Russian inflows of around 1 mb/d. Meanwhile, product imports are also seen higher amid increased inflows of gasoline and fuel oil. Meanwhile, product exports are expected to be supported by increased outflows amid product trade dislocations.

Japan

Japan's crude imports showed a strong performance in **August**, averaging just under 3.0 mb/d, the highest since March 2020. Inflows rose by 0.4 mb/d, or 14% m-o-m, supported by summer demand for gasoline and healthy fuel oil demand for power generation. Compared with the same month last year, imports were 9%, or 0.3 mb/d, higher.

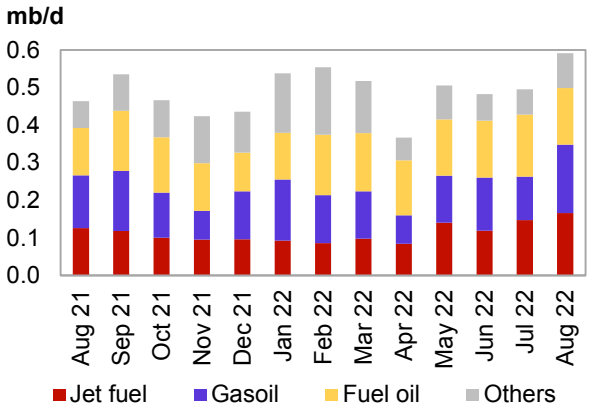
In terms of **crude imports by source**, Saudi Arabia claimed the top spot in August with a share of almost 40%, on higher volumes compared to the previous month. The United Arab Emirates was second with 35%, followed by Kuwait with just over 10%. Flows from Russia remained at zero for the third month in a row during August, according to data released by the Ministry of Economy, Trade and Industry (METI). However, Platts reported that Ministry of Finance data showed about 22 tb/d of crude from Russia, with Taiyo Oil confirming the volumes as Sakhalin Blend crude taken from bonded storage.

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 9% to average 908 tb/d in August. Gains were primarily driven by healthy seasonal demand for gasoline, fuel oil and naphtha. Y-o-y imports declined by 6%, or 58 tb/d.

Product exports jumped 20% m-o-m to average 592 tb/d, led by higher outflows of gasoil, as well as gasoline, jet fuel and kerosene, which outpaced the decline in fuel oil. Y-o-y, product outflows were 128 tb/d, or around 28%, higher than in the same month of 2021.

As a consequence, Japan's **net product imports** averaged 316 tb/d in August. This compares with 341 tb/d the month before and 502 tb/d in August 2021.

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

Japan	Jun 22	Jul 22	Aug 22	Change Aug 22/Jul 22
Crude oil	2.28	2.61	2.98	0.37
Total products	0.34	0.34	0.32	-0.02
Total crude and products	**2.62**	**2.96**	**3.30**	**0.34**

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

Sources: METI and OPEC.

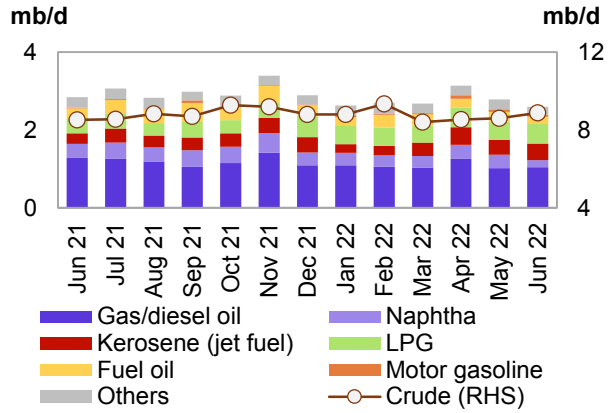
Looking ahead, Japan's crude imports are seen moving higher in September amid healthy domestic and regional demand for Japanese-produced refined products, particularly gasoline and gasoil.

OECD Europe

The latest regional data shows **OECD Europe** crude imports averaged 8.9 mb/d in June, the highest since February 2022. Compared to the previous month, crude inflows were up 3% or 0.3 mb/d. Y-o-y, crude imports were 4% or more than 0.3 mb/d higher.

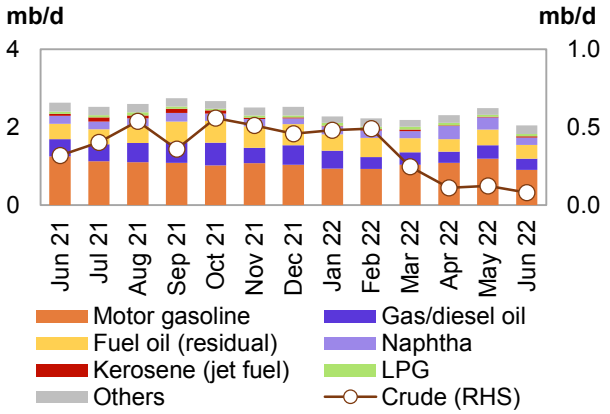
In terms of **import sources** from outside the region, Russia remained the top supplier in June, with flows at around 2.0 mb/d, despite lower volumes m-o-m. The US came in second with 1.2 mb/d, although volumes also fell. Imports from Brazil jumped by 250 tb/d, while Angola, Iraq and Nigeria saw gains of more than 100 tb/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 declined further in June as trade dislocations caused more volumes to remain in the region. Outflows reached the lowest since December 2014, averaging 80 tb/d, representing a 35% or 43 tb/d decline m-o-m and a y-o-y decrease of 75% or 239 tb/d.

In terms of **destination**, Canada took the top spot in June, followed by South Korea, the United States and then Indonesia.

Net crude imports averaged 8.8 mb/d in June, compared with 8.5 mb/d in May and 8.2 mb/d in the same month last year.

On the **product** side, **imports** declined further in June, averaging 2.6 mb/d, with m-o-m declines mostly concentrated in naphtha. This represents a m-o-m drop of 7% or 187 tb/d and a y-o-y decline of 9% or 241 tb/d.

Product exports retreated 18% or 0.5 mb/d m-o-m to average 2.0 mb/d, with losses across all major products except jet fuel. Y-o-y, exports were 22% or 0.6 mb/d lower.

Net product imports averaged 554 tb/d in June, compared with net imports of 292 tb/d in May and 214 tb/d in June 2021.

Combined, **net crude and product imports** averaged 9.4 mb/d in June. This compares with 8.8 mb/d the month before and 8.4 mb/d in June 2021.

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

OECD Europe	Apr 22	May 22	Jun 22	Change Jun 22/May 22
Crude oil	8.42	8.47	8.79	0.32
Total products	0.83	0.29	0.55	0.26
Total crude and products	**9.25**	**8.76**	**9.35**	**0.59**

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

Sources: IEA and OPEC.

Looking ahead, preliminary figures show crude imports into the OECD Europe region remaining high compared with last year's levels, despite steady m-o-m declines in Russian imports. Vortexa data shows product imports stepping up from June levels, supported by increasing inflows of jet fuel. Product exports are seen trending lower up to September, amid a seasonal decline in gasoline outflows.

Eurasia

Total crude oil exports from Russia and Central Asia declined 4% or 0.3 mb/d m-o-m in **August** to average 6.3 mb/d. Declines were concentrated in the CPC terminal and on the BTC and Druzhba pipelines. Compared with the same month in 2021, total crude exports from the Eurasian region were still 9%, or 0.5 mb/d, higher.

Crude exports through the **Transneft system** were negligibly lower m-o-m in August. Outflows edged down 38 tb/d, or less than 1%, to remain at 4.3 mb/d. However, compared with the same month last year, exports were 0.8 mb/d, or 24% higher. Exports fell from the **Baltic Sea** by 35 tb/d m-o-m, or about 2%, to average 1.5 mb/d. All of the losses were in Primorsk, which averaged 811 tb/d, as flows from Ust-Luga were unchanged at 644 tb/d. Shipments from the **Black Sea** port of Novorossiysk rose by 40 tb/d, or around 7%, to average 621 tb/d.

Shipments via the **Druzhba** pipeline lost most of the previous month's gains, falling back 72 tb/d, or about 9% m-o-m, to average 748 tb/d. Exports to China via the **ESPO pipeline** declined by 36 tb/d, or about 6%, to average 597 tb/d in August. Flows to the Pacific port of **Kozmino** rose 8% m-o-m to average 883 tb/d.

In the **Lukoil system**, exports via the Varandey offshore platform in the Barents Sea averaged 127 tb/d in August, up by 88% m-o-m. Exports from the Kaliningrad terminal remained at zero.

On other routes, **Russia's Far East** exports declined 36% to average 48 tb/d on average in August. This was still 84%, or 0.3 mb/d, lower than volumes shipped in August 2021.

Central Asian exports averaged 225 tb/d in August, representing an increase of around 1% compared with the month before and a similar gain y-o-y.

Black Sea total exports from the CPC terminal have been volatile in recent months, falling by 0.2 mb/d m-o-m, or about 15%, to average 1.0 mb/d in August. This was a decline of 3%, or 35 tb/d, compared with the same month in 2021. There were no exports via the Supsa pipeline in August. Exports via the **Baku-Tbilisi-Ceyhan (BTC) pipeline** fell back to 568 tb/d, down by 90 tb/d in August, or about 14%, m-o-m, but still secured a y-o-y increase of 13%.

Total product exports from Russia and Central Asia increased by 5% m-o-m to average 2.6 mb/d in August. M-o-m gains were led by VGO, fuel oil and jet fuel. Y-o-y, total product exports were 14%, or 431 tb/d, lower in August, with fuel oil, naphtha and gasoline leading the losses.

Commercial Stock Movements

Preliminary August data sees total OECD commercial oil stocks up m-o-m by 7.8 mb. At 2,712 mb, they were 111 mb less than the same time one year ago, 267 mb lower than the latest five-year average and 273 mb below the 2015-2019 average. Within the components, crude and product stocks rose m-o-m by 6.8 mb and 1.0 mb, respectively.

At 1,315 mb, OECD crude stocks were 0.7 mb lower than the same time a year ago, 105 mb below the latest five-year average and 133 mb lower than the 2015-2019 average. OECD product stocks stood at 1,398 mb, representing a deficit of 110 mb from the same time a year ago, 162 mb lower than the latest five-year average and 140 mb below the 2015-2019 average.

In terms of days of forward cover, OECD commercial stocks rose by 0.2 days m-o-m in August to stand at 59.3 days. This is 1.3 days below August 2021 levels, 5.0 days less than the latest five-year average and 3.8 days lower than the 2015-2019 average.

Preliminary data for September showed that total US commercial oil stocks fell by 4.2 mb m-o-m to stand at 1,221 mb. This is 30.0 mb, lower than the same month in 2021 and 88.0 mb, below the latest five-year average. Crude stocks rose by 2.0 mb, while product stocks fell by 6.2 mb.

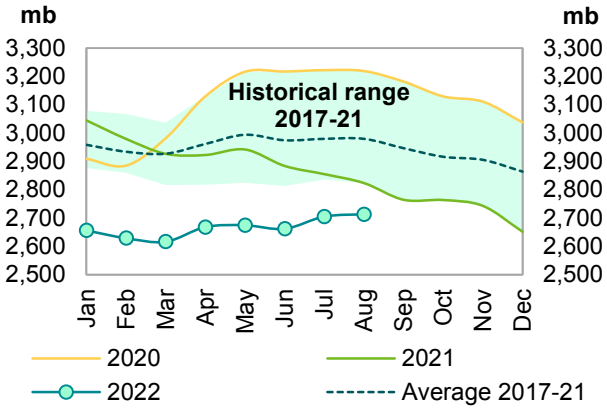
OECD

Preliminary **August** data sees **total OECD commercial oil stocks** up m-o-m by 7.8 mb. At 2,712 mb, they were 111 mb less than the same time one year ago, 267 mb lower than the latest five-year average and 273 mb below the 2015-2019 average.

Within the components, crude and product stocks rose m-o-m by 6.8 mb and 1.0 mb, respectively. Total commercial oil stocks in August rose in OECD Americas and OECD Asia Pacific, while OECD Europe saw a stock draw.

OECD commercial **crude stocks** stood at 1,315 mb in August. This is 0.7 mb lower than the same time a year ago, 105 mb below the latest five-year average and 133 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 0.3 mb, OECD Americas stocks rose by 3.0 mb, and stocks in OECD Asia Pacific increased by 4.1 mb.

Total product inventories stood at 1,398 mb in August. This is 110 mb below the same time a year ago, 162 mb lower than the latest five-year average and 140 mb below the 2015-2019 average. Product stocks in OECD Americas and OECD Asia Pacific rose by 7.8 mb and 2.2 mb, respectively, while they fell m-o-m by 8.9 mb in OECD Europe.

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

OECD stocks	Aug 21	Jun 22	Jul 22	Aug 22	*Change* Aug 22/Jul 22
Crude oil	1,315	1,294	1,308	1,315	*6.8*
Products	1,508	1,367	1,397	1,398	*1.0*
Total	**2,823**	**2,661**	**2,705**	**2,712**	***7.8***
Days of forward cover	**60.6**	**58.3**	**59.1**	**59.3**	***0.2***

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 rose by 0.2 days m-o-m in August to stand at 59.3 days. This is 1.3 days below August 2021 levels, 5.0 days less than the latest five-year average and 3.8 days lower than the 2015-2019 average.

All three OECD regions were below the latest five-year average: the Americas by 3.8 days at 59.9 days; the Asia Pacific by 7.3 days at 46.5 days; and Europe by 6.0 days at 64.8 days.

OECD Americas

OECD Americas total commercial stocks rose by 10.8 mb m-o-m in August to settle at 1,472 mb. This is 54 mb less than the same month in 2021 and 102 mb lower than the latest five-year average.

Commercial **crude oil stocks** in OECD Americas rose m-o-m by 3.0 mb in August to stand at 734 mb, which is 15 mb lower than in August 2021 and 34 mb less than the latest five-year average. The monthly build in crude oil stocks can be attributed to lower crude imports, as well as additional barrels released from strategic petroleum reserves (SPRs).

Total product stocks in OECD Americas also rose m-o-m by 7.8 mb in August to stand at 738 mb. This was 39 mb lower than the same month in 2021 and 68 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 9.2 mb in August to settle at 905 mb. This is 29 mb less than the same month in 2021 and 91 mb below the latest five-year average.

OECD Europe's **commercial crude stocks** fell by 0.3 mb m-o-m to end the month of August at 415 mb, which is 25 mb higher than one year ago and 13 mb below the latest five-year average. The drop in crude oil inventories came despite slightly 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 8.9 mb to end August at 490 mb. This is 54 mb lower than a year ago and 78 mb below the latest five-year average.

OECD Asia Pacific

OECD Asia Pacific's total commercial oil stocks rose m-o-m by 6.3 mb in August to stand at 335 mb. This is 28 mb lower than a year ago and 74 mb below the latest five-year average.

OECD Asia Pacific's **crude inventories** rose by 4.1 mb m-o-m to end July at 166 mb, which is 11 mb lower than one year ago and 58 mb below the latest five-year average.

OECD Asia Pacific's **total product inventories** also rose m-o-m by 2.2 mb to end August at 170 mb. This is 17 mb lower than the same time a year ago and 16 mb below the latest five-year average.

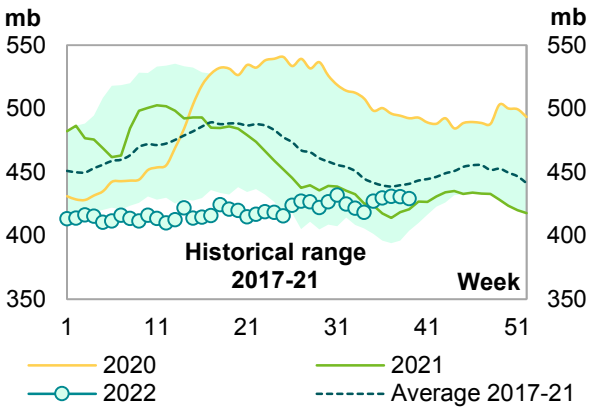
US

Preliminary data for September showed that **total US commercial oil stocks** fell by 4.2 mb m-o-m to stand at 1,221 mb. This is 30.0 mb, or 2.4%, lower than the same month in 2021 and 88.0 mb, or 6.7%, below the latest five-year average. Crude stocks rose by 2.0 mb, while product stocks fell by 6.2 mb.

US **commercial crude stocks** in September stood at 429.2 mb. This is 8.9 mb, or 2.1%, higher than the same month of the previous year, but 16.8 mb, or 3.8%, below the latest five-year average. The monthly build in crude oil stocks can be attributed to higher imports, which increased by 0.1 mb/d to 6.3 mb/d.

By contrast, **total product stocks** fell in September to stand at 791.8 mb. This is 38.8 mb, or 2.7%, below September 2021 levels and 71.2 mb, or 8.2%, 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.

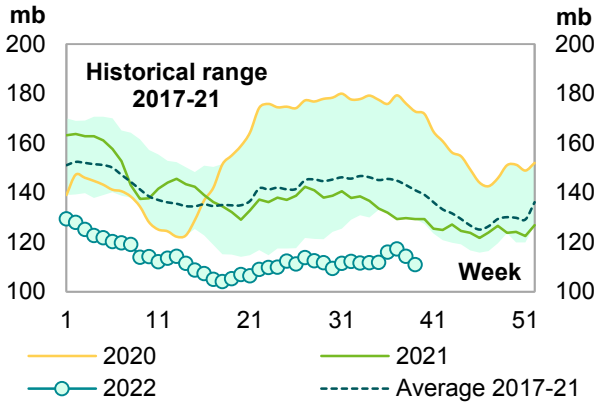
Gasoline stocks fell m-o-m by 7.3 mb to settle at 207.5mb. This is 19.6 mb, or 8.6% lower than in the same month in 2021 and 22.5 mb, or 9.8%, lower than the latest five-year average.

Distillate stocks also decreased m-o-m in September by 0.9 mb to stand at 110.9 mb. This is 21.2 mb, or 16.0%, lower than the same month of the previous year and 31.3 mb, or 22.0%, below the latest five-year average.

Jet fuel stocks also dropped m-o-m by 2.5 mb, ending September at 36.2 mb. This is 5.8 mb, or 13.8%, lower than the same month in 2021 and 7.2 mb, or 16.5%, below the latest five-year average.

By contrast, residual **fuel oil stocks** rose by 1.5 mb m-o-m in September. At 28.7 mb, this was 1.0 mb, or 3.6%, higher than a year earlier, but 1.7 mb, or 5.6%, below 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	Sep 21	Jul 22	Aug 22	Sep 22	Change Sep 22/Aug 22
Crude oil	**420.3**	**424.2**	**427.2**	**429.2**	***2.0***
Gasoline	227.0	225.6	214.8	207.5	*-7.3*
Distillate fuel	132.1	112.5	111.8	110.9	*-0.9*
Residual fuel oil	27.8	29.1	27.3	28.7	*1.5*
Jet fuel	42.0	41.2	38.7	36.2	*-2.5*
Total products	**830.6**	**791.3**	**798.0**	**791.8**	***-6.2***
Total	**1,250.9**	**1,215.5**	**1,225.1**	**1,221.0**	***-4.2***
SPR	**617.8**	**468.0**	**442.5**	**416.4**	***-26.1***

Sources: EIA and OPEC.

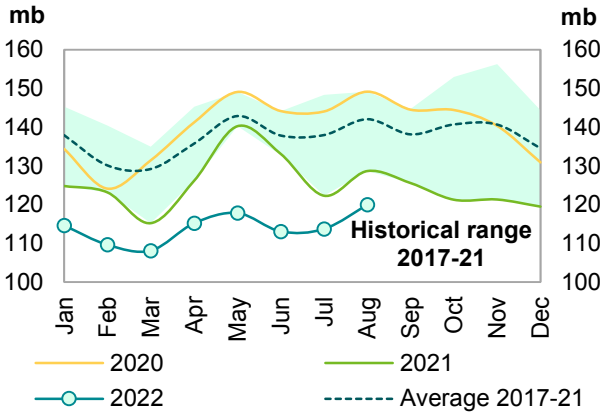
Japan

In **Japan**, **total commercial oil stocks** in August rose m-o-m by 6.3 mb to settle at 120.0 mb. This is 8.7 mb, or 6.7%, lower than the same month in 2021 and 22.0 mb, or 15.5%, below the latest five-year average. Crude and product stocks rose m-o-m by 4.1 mb and 2.2 mb, respectively.

Japanese **commercial crude oil stocks** rose in August to stand at 64.2 mb. This is 2.9 mb, or 4.3% lower than the same month of the previous year, and 14.2 mb, or 18.1%, lower than the latest five-year average. The build came of the back of higher crude imports.

Japan's **total product inventories** also rose m-o-m by 2.2 mb to end August at 55.8 mb. This is 5.8 mb, or 9.4%, lower than the same month in 2021 and 7.9 mb, or 12.3%, below the latest five-year average.

Graph 9 - 4: Japan's commercial oil stocks



Sources: METI and OPEC.

Gasoline stocks rose by 0.7 mb m-o-m to stand at 9.7 mb in August. This was 0.4 mb, or 3.7% lower than a year earlier and 0.9 mb, or 8.6%, lower than the latest five-year average. The build came on higher gasoline production by 9.4% m-o-m.

Distillate stocks rose m-o-m by 1.9 mb to end August at 26.6 mb. This is 3.2 mb, or 10.8%, lower than the same month in 2021 and 4.0 mb, or 13.2%, below the latest five-year average. Within distillate components, jet fuel, kerosene and gasoil stocks went up by 6.6%, 14.5% and 0.8%, respectively.

Total residual fuel oil stocks also rose m-o-m by 0.7 mb to end August at 11.4 mb. This is 0.9 mb, or 7.5%, lower than in the same month of the previous year and 1.4 mb, or 10.6%, below the latest five-year average. Within the components, fuel oil A and fuel oil BC stocks fell by 2.3% and 9.1%, m-o-m, respectively.

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

Japan's stocks	Aug 21	Jun 22	Jul 22	Aug 22	Change Aug 22/Jul 22
Crude oil	**67.1**	**59.8**	**60.1**	**64.2**	***4.1***
Gasoline	10.0	10.0	8.9	9.7	*0.7*
Naphtha	9.4	9.6	9.3	8.1	*-1.2*
Middle distillates	29.8	22.3	24.7	26.6	*1.9*
Residual fuel oil	12.4	11.3	10.8	11.4	*0.7*
Total products	**61.6**	**53.3**	**53.6**	**55.8**	***2.2***
Total**	**128.7**	**113.1**	**113.7**	**120.0**	***6.3***

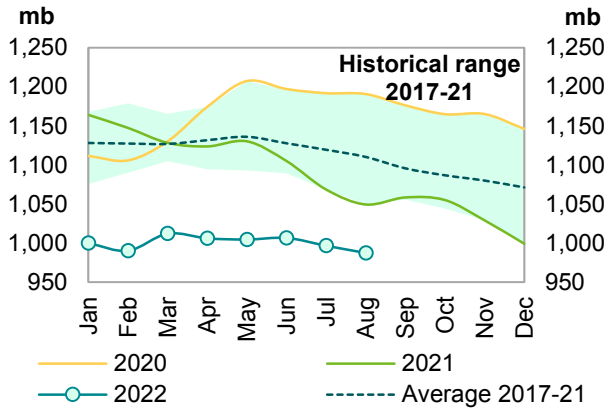
*Note: * At the end of the month. ** Includes crude oil and main products only.*
Sources: METI and OPEC.

EU-14 plus UK and Norway

Preliminary data for August showed that **total European commercial oil stocks** fell m-o-m by 9.2 mb to stand at 987.4 mb. At this level, they were 62.2 mb, or 5.9%, below the same month a year earlier and 122.9 mb, or 11.1% lower than the latest five-year average. Crude and product stocks fell m-o-m by 0.3 mb and 8.9 mb, respectively.

European **crude inventories** fell in August to stand at 432.5 mb. This is 1.2 mb, or 0.3%, lower than the same month in 2021 and 41.1 mb, or 8.7%, below the latest five-year average. The drop in crude oil inventories came despite slightly lower m-o-m refinery throughput in the EU-14, plus the UK and Norway, which declined by 40 tb/d to stand at 10.10 mb/d.

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 8.9 mb to end August at 554.8 mb. This is 61.0 mb, or 9.9%, lower than the same month of the previous year and 81.8 mb, or 12.8%, below the latest five-year average.

Gasoline stocks fell m-o-m by 1.8 mb in August to stand at 106.9 mb. At this level, they were 6.1 mb, or 6.0%, higher than the same time a year earlier, but 0.9 mb/d, or 0.9%, below the latest five-year average.

Distillate stocks also fell m-o-m by 5.9 mb in August to stand at 359.6 mb. This is 68.7 mb, or 16%, below the same month in 2021 and 77.6 mb, or 17.8%, less than the latest five-year average.

Residual fuel stocks also fell m-o-m by 0.3 mb in August to stand at 59.4 mb. This is 3.0 mb, or 4.9%, lower than the same month in 2021 and 5.5 mb, or 8.5%, below the latest five-year average.

Naphtha stocks dropped by 1.0 mb in August, ending the month at 29.0 mb. This is 4.7 mb, or 19.3%, higher than August 2021 levels and 2.3 mb, or 8.7%, higher than the latest five-year average.

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

EU stocks	Aug 21	Jun 22	Jul 22	Aug 22	Change Aug 22/Jul 22
Crude oil	**433.7**	**434.4**	**432.8**	**432.5**	***-0.3***
Gasoline	100.8	111.5	108.7	106.9	*-1.8*
Naphtha	24.3	30.3	29.9	29.0	*-1.0*
Middle distillates	428.3	370.0	365.5	359.6	*-5.9*
Fuel oils	62.5	60.5	59.7	59.4	*-0.3*
Total products	**615.8**	**572.3**	**563.8**	**554.8**	***-8.9***
Total	**1,049.5**	**1,006.6**	**996.6**	**987.4**	***-9.2***

Sources: Argus, Euroilstock and OPEC.

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

Singapore

In August, **total product stocks in Singapore** rose m-o-m by 3.1 mb to 46.7 mb. This is 1.4 mb, or 3.1%, higher than the same month in 2021.

Light distillate stocks fell m-o-m by 1.3 mb in August to stand at 16.3 mb. This is 3.1 mb, or 23.8%, higher than the same month of the previous year.

Middle distillate stocks also fell m-o-m by 0.1 mb in August to stand at 7.7 mb. This is 3.6 mb, or 31.9%, lower than a year earlier.

By contrast, **residual fuel oil stocks** rose m-o-m by 4.6 mb, ending August at 22.7 mb. This is 1.9 mb, or 9.1%, higher than August 2021.

ARA

Total product stocks in ARA rose m-o-m for the third consecutive month in August by 0.9 mb. At 41.1 mb, they were 1.5 mb, or 3.7%, higher than the same month in 2021.

Gasoline stocks in August fell by 0.2 mb m-o-m to stand at 11.5 mb, which is 5.8 mb, or 100.9%, higher than the same month of the previous year.

Jet oil stocks fell by 0.7 mb m-o-m to stand at 5.8 mb. This is 2.2 mb, or 27.4%, lower than levels seen in August 2021.

By contrast, **gasoil stocks** rose by 1.6 mb m-o-m, ending August at 12.7 mb. This is 2.7 mb, or 17.4%, lower than levels seen in August 2021.

Meanwhile, **fuel oil stocks** remained almost unchanged m-o-m in August to stand at 7.5 mb, which is 0.2 mb, or 2.5%, lower than in August 2021.

Fujairah

During the week ending 29 September 2022, **total oil product stocks in Fujairah** rose w-o-w by 2.55 mb to stand at 24.56 mb, according to data from Fed Com and S&P Global Platts. At this level, total oil stocks were 9.03 mb higher than at the same time a year ago.

Light distillate stocks rose by 0.93 mb w-o-w to stand at 7.40 mb in the week to 29 September 2022, which is 2.29 mb higher than the same period a year ago. **Middle distillate stocks** also rose by 1.72 mb to stand at 4.71 mb, which is 1.01 mb higher than a year ago. By contrast, **heavy distillate stocks** fell w-o-w by 0.10 mb to stand at 12.45 mb, which is 5.73 mb higher than the same time last year.

Balance of Supply and Demand

Demand for OPEC crude in 2022 was revised down by 0.2 mb/d from the previous MOMR to stand at 28.7 mb/d, which is around 0.6 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 0.1 mb/d higher than demand for OPEC crude. In 3Q22, OPEC crude oil production averaged 29.5 mb/d, which is 1.3 mb/d higher than demand for OPEC crude.

Demand for OPEC crude in 2023 was revised down by 0.3 mb/d from the previous MOMR to stand at 29.4 mb/d, which is around 0.8 mb/d higher than in 2022.

Balance of supply and demand in 2022

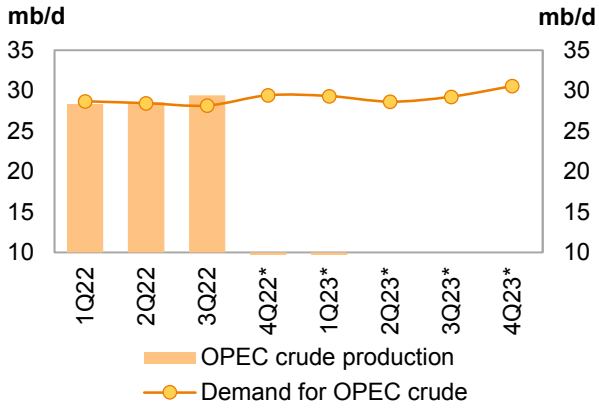
Demand for OPEC crude in 2022 was revised down by 0.2 mb/d from the previous MOMR to stand at 28.7 mb/d, which is around 0.6 mb/d higher than in 2021.

Compared with the previous assessment, both 2Q22 and 4Q22 were revised down by 0.3 mb/d and 0.4 mb/d, respectively, while 3Q22 was revised up by 0.1 mb/d, Meanwhile, 1Q22 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 2.5 mb/d and 1.4 mb/d, respectively, while both 3Q22 and 4Q22 are expected to be lower by 0.6 mb/d and 0.8 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 0.1 mb/d higher than demand for OPEC crude. In 3Q22, OPEC crude oil production averaged 29.5 mb/d, which is 1.3 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**	**98.34**	**99.33**	**101.64**	**99.67**	***2.64***
Non-OPEC liquids production	63.67	65.34	64.51	65.77	66.78	65.60	*1.93*
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**	**69.89**	**71.18**	**72.21**	**71.00**	***2.04***
Difference (a-b)	**28.07**	**28.68**	**28.45**	**28.15**	**29.43**	**28.68**	***0.60***
OPEC crude oil production	**26.35**	**28.36**	**28.59**	**29.45**			
Balance	**-1.73**	**-0.32**	**0.14**	**1.29**			

*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 was revised down by 0.3 mb/d from the previous MOMR to stand at 29.4 mb/d, which is around 0.8 mb/d higher than in 2022.

Compared with the previous assessment, 1Q22 was revised up by 0.1 mb/d. Meanwhile, 2Q23, 3Q23 and 4Q23 were revised down by 0.2 mb/d, 0.4 mb/d and 0.9 mb/d, respectively, compared with the previous month.

Compared with the same quarters in 2022, demand for OPEC crude in 1Q23 and 2Q22 is forecast to be 0.7 mb/d and 0.2 mb higher, respectively, while 3Q23 and 4Q23 are expected to be higher by 1.1 mb/d each.

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

	2022	1Q23	2Q23	3Q23	4Q23	2023	*Change* 2023/22
(a) World oil demand	**99.67**	**101.33**	**100.94**	**101.91**	**103.88**	**102.02**	***2.34***
Non-OPEC liquids production	65.60	66.56	66.83	67.23	67.88	67.13	*1.52*
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	**71.00**	**72.00**	**72.30**	**72.66**	**73.31**	**72.57**	***1.57***
Difference (a-b)	**28.68**	**29.33**	**28.63**	**29.25**	**30.57**	**29.45**	***0.77***

*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	24.79	24.98	25.10	25.27	25.04	25.05	25.29	25.44	25.55	25.33
of which US	*20.58*	*18.35*	*20.03*	*20.38*	*20.41*	*20.58*	*20.83*	*20.55*	*20.53*	*20.55*	*20.84*	*20.98*	*20.72*
Europe	14.31	12.41	13.13	13.15	13.42	14.09	14.00	13.67	13.19	13.48	14.17	14.08	13.73
Asia Pacific	7.95	7.17	7.38	7.85	6.99	7.31	7.84	7.50	7.88	7.04	7.35	7.86	7.53
Total OECD	**47.68**	**42.05**	**44.85**	**45.79**	**45.39**	**46.50**	**47.12**	**46.20**	**46.12**	**45.81**	**46.96**	**47.49**	**46.60**
China	13.81	13.94	14.97	14.74	14.56	14.69	15.64	14.91	15.07	15.44	15.28	16.07	15.47
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	8.73	8.85	8.98	9.42	9.61	9.09	9.20	9.33
Latin America	6.59	5.90	6.23	6.32	6.36	6.55	6.40	6.41	6.48	6.48	6.71	6.54	6.55
Middle East	8.20	7.45	7.79	8.06	8.13	8.47	8.17	8.21	8.45	8.46	8.80	8.46	8.54
Africa	4.34	4.05	4.22	4.51	4.15	4.25	4.53	4.36	4.71	4.34	4.44	4.72	4.55
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	1.03	1.21	1.15	1.22	1.16	1.04	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**	**52.83**	**54.53**	**53.47**	**55.21**	**55.13**	**54.94**	**56.39**	**55.42**
(a) Total world demand	**100.20**	**91.19**	**97.03**	**99.36**	**98.34**	**99.33**	**101.64**	**99.67**	**101.33**	**100.94**	**101.91**	**103.88**	**102.02**
Y-o-y change	***1.00***	***-9.01***	***5.85***	***5.18***	***2.64***	***1.59***	***1.21***	***2.64***	***1.97***	***2.60***	***2.57***	***2.23***	***2.34***
Non-OPEC liquids production													
Americas	25.84	24.75	25.25	25.86	26.27	26.91	27.26	26.58	27.57	27.67	28.04	28.41	27.92
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	3.62	3.91	3.67	4.00	3.94	3.86	3.98	3.94
Asia Pacific	0.52	0.52	0.51	0.49	0.51	0.50	0.53	0.51	0.52	0.48	0.51	0.47	0.50
Total OECD	**30.07**	**29.16**	**29.52**	**30.08**	**30.22**	**31.03**	**31.69**	**30.76**	**32.08**	**32.10**	**32.41**	**32.85**	**32.36**
China	4.05	4.15	4.31	4.50	4.50	4.44	4.43	4.47	4.52	4.51	4.48	4.48	4.50
India	0.82	0.78	0.77	0.77	0.77	0.76	0.81	0.78	0.80	0.79	0.78	0.77	0.79
Other Asia	2.72	2.51	2.41	2.37	2.31	2.31	2.38	2.34	2.40	2.40	2.37	2.39	2.39
Latin America	6.08	6.03	5.95	6.11	6.15	6.37	6.53	6.29	6.45	6.62	6.70	6.76	6.63
Middle East	3.19	3.19	3.24	3.29	3.33	3.38	3.35	3.34	3.35	3.36	3.39	3.38	3.37
Africa	1.51	1.41	1.35	1.33	1.32	1.33	1.31	1.32	1.32	1.34	1.35	1.37	1.35
Russia	11.51	10.54	10.80	11.33	10.63	10.91	10.59	10.86	9.92	10.06	10.13	10.19	10.08
Other Eurasia	3.07	2.91	2.93	3.05	2.77	2.73	3.17	2.93	3.14	3.08	3.04	3.12	3.09
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	**33.08**	**31.66**	**31.87**	**32.85**	**31.89**	**32.34**	**32.68**	**32.44**	**32.00**	**32.26**	**32.35**	**32.56**	**32.30**
Total Non-OPEC production	63.15	60.82	61.39	62.94	62.11	63.37	64.38	63.20	64.09	64.36	64.76	65.41	64.66
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	**65.52**	**62.97**	**63.67**	**65.34**	**64.51**	**65.77**	**66.78**	**65.60**	**66.56**	**66.83**	**67.23**	**67.88**	**67.13**
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	**70.73**	**68.14**	**68.96**	**70.68**	**69.89**	**71.18**	**72.21**	**71.00**	**72.00**	**72.30**	**72.66**	**73.31**	**72.57**
Y-o-y change	***2.18***	***-2.59***	***0.82***	***2.73***	***1.23***	***2.20***	***2.00***	***2.04***	***1.31***	***2.41***	***1.48***	***1.10***	***1.57***
OPEC crude oil production (secondary sources)	29.36	25.71	26.35	28.36	28.59	29.45							
Total liquids production	100.09	93.85	95.31	99.04	98.48	100.63							
Balance (stock change and miscellaneous)	-0.10	2.67	-1.73	-0.32	0.14	1.29							
OECD closing stock levels, *mb*													
Commercial	2,894	3,038	2,648	2,618	2,681								
SPR	1,535	1,541	1,484	1,442	1,348								
Total	**4,429**	**4,579**	**4,131**	**4,060**	**4,028**								
Oil-on-water	1,033	1,148	1,202	1,222	1,290								
Days of forward consumption in OECD, *days*													
Commercial onland stocks	69	68	57	58	58								
SPR	37	34	32	32	29								
Total	**105**	**102**	**89**	**89**	**87**								
Memo items													
(a) - (b)	**29.47**	**23.05**	**28.07**	**28.68**	**28.45**	**28.15**	**29.43**	**28.68**	**29.33**	**28.63**	**29.25**	**30.57**	**29.45**

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	-	-	0.11	-	0.10	-0.06	-0.13	-0.02	-0.08	-0.07	-0.26	-0.33	-0.19
of which US	-	-	*0.11*	-	*0.10*	*0.05*	*-0.08*	*0.02*	*0.11*	*0.05*	*0.05*	*-0.08*	*0.03*
Europe	-	-	-	-	-0.10	-0.15	-0.35	-0.15	-	-0.10	-0.21	-0.38	-0.17
Asia Pacific	-	-	-	-	0.01	0.12	-0.10	0.01	-	0.01	0.12	-0.10	0.01
Total OECD	**-**	**-**	**0.11**	**-**	**0.01**	**-0.09**	**-0.58**	**-0.17**	**-0.08**	**-0.16**	**-0.35**	**-0.81**	**-0.35**
China	-	-	-	-	-0.20	-0.40	-0.10	-0.18	-0.28	-0.30	-0.50	-0.20	-0.32
India	-	-	-	-	-	0.06	-	0.02	-	-	0.06	-	0.02
Other Asia	-	-	-	-	-	-	-0.05	-0.01	-0.07	-	-	-0.05	-0.03
Latin America	-	-	-	-	-	-	-	-	-	-	-	-	-
Middle East	-	-	-	-	-	0.07	-0.05	0.01	-	-	0.07	-0.05	0.01
Africa	-	-	-	-	-0.10	0.03	-	-0.02	-	-0.10	0.03	-	-0.02
Russia	-	-	-	-	-	-	-	-	-0.04	-	-	-	-0.01
Other Eurasia	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Europe	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Non-OECD	**-**	**-**	**-**	**-**	**-0.30**	**-0.24**	**-0.20**	**-0.19**	**-0.39**	**-0.40**	**-0.34**	**-0.30**	**-0.36**
(a) Total world demand	**-**	**-**	**0.11**	**-**	**-0.29**	**-0.33**	**-0.78**	**-0.35**	**-0.48**	**-0.56**	**-0.69**	**-1.11**	**-0.71**
Y-o-y change	***-***	***-***	***0.11***	***-0.13***	***-0.39***	***-0.42***	***-0.90***	***-0.46***	***-0.47***	***-0.27***	***-0.36***	***-0.33***	***-0.36***
Non-OPEC liquids production													
Americas	-	-	-	-	0.02	0.02	-0.08	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01
of which US	-	-	-	-	-	-	*-0.08*	*-0.02*	*-0.02*	*-0.02*	*-0.02*	*-0.02*	*-0.02*
Europe	-	-	-	-	0.01	-0.13	-0.08	-0.05	-0.06	-0.03	-0.02	-	-0.03
Asia Pacific	-	-	-	-	-	-0.05	-0.01	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02
Total OECD	**-**	**-**	**-**	**-**	**0.02**	**-0.16**	**-0.17**	**-0.08**	**-0.09**	**-0.06**	**-0.05**	**-0.03**	**-0.06**
China	-	-	-	-	-	0.02	-	0.01	-	-	-	-	-
India	-	-	-	-	-	-0.04	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01
Other Asia	-	-	-	-	-0.01	-0.05	-0.01	-0.02	0.04	0.07	0.07	0.12	0.07
Latin America	-	-	-	-	0.01	0.04	0.04	0.02	-	-	-	-	-
Middle East	-	-	-	-	-	-0.01	-0.05	-0.01	-0.03	-0.04	-0.03	-0.03	-0.03
Africa	-	-	-	-	-	-0.01	-0.01	-0.01	-0.02	-0.02	-0.02	-0.02	-0.02
Russia	-0.10	-0.05	-	-	0.01	0.02	-0.10	-0.02	-0.57	-0.41	-0.40	-0.38	-0.44
Other Eurasia	-	-	-	-	-	-0.20	-0.04	-0.06	0.07	0.10	0.10	0.10	0.09
Other Europe	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Non-OECD	**-0.10**	**-0.05**	**-**	**-**	**0.01**	**-0.23**	**-0.17**	**-0.10**	**-0.52**	**-0.30**	**-0.27**	**-0.22**	**-0.33**
Total Non-OPEC production	-0.10	-0.05	-	-	0.03	-0.39	-0.34	-0.18	-0.60	-0.36	-0.32	-0.24	-0.38
Processing gains	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Non-OPEC liquids production	**-0.10**	**-0.05**	**-**	**-**	**0.03**	**-0.39**	**-0.34**	**-0.18**	**-0.60**	**-0.36**	**-0.32**	**-0.24**	**-0.38**
OPEC NGL + non-conventional oils	-	-	-	-	-	-	-	-	-	-	-	-	-
(b) Total non-OPEC liquids production and OPEC NGLs	**-0.10**	**-0.05**	**-**	**-**	**0.03**	**-0.39**	**-0.34**	**-0.18**	**-0.60**	**-0.36**	**-0.32**	**-0.24**	**-0.38**
Y-o-y change	***0.06***	***0.05***	***0.05***	***-***	***0.03***	***-0.39***	***-0.35***	***-0.18***	***-0.60***	***-0.39***	***0.07***	***0.10***	***-0.20***
OPEC crude oil production (secondary sources)	-	-	-	-	-								
Total liquids production	-0.10	-0.05	-	-	0.03								
Balance (stock change and miscellaneous)	-0.10	-0.05	-0.11	-	0.32								
mb													
Commercial	-	-	-	-	-								
SPR	-	-	-	-	-								
Total	**-**	**-**	**-**	**-**	**-**								
Oil-on-water	-	-	-	-	-								
Days of forward consumption in OECD, *days*													
Commercial onland stocks	-	-	-	-	-								
SPR	-	-	-	-	-								
Total	**-**	**-**	**-**	**-**	**-**								
Memo items													
(a) - (b)	**0.10**	**0.05**	**0.11**	**0.00**	**-0.32**	**0.06**	**-0.44**	**-0.18**	**0.13**	**-0.20**	**-0.37**	**-0.87**	**-0.33**

*Note: * This compares Table 11 - 1 in this issue of the MOMR with Table 11 - 1 in the September 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	1Q20	2Q20	3Q20	4Q20	1Q21	2Q21	3Q21	4Q21	1Q22	2Q22
Closing stock levels, mb												
OECD onland commercial	**3,037**	**2,651**	**2,981**	**3,217**	**3,181**	**3,037**	**2,927**	**2,884**	**2,764**	**2,651**	**2,616**	**2,661**
Americas	1,614	1,471	1,583	1,719	1,691	1,614	1,579	1,553	1,518	1,471	1,410	1,433
Europe	1,043	857	1,032	1,098	1,079	1,043	1,002	973	891	857	890	911
Asia Pacific	380	324	366	400	411	380	346	357	355	324	316	317
OECD SPR	**1,541**	**1,484**	**1,537**	**1,561**	**1,551**	**1,541**	**1,546**	**1,524**	**1,513**	**1,484**	**1,442**	**1,343**
Americas	640	596	637	658	644	640	640	623	620	596	568	495
Europe	487	479	484	487	490	487	493	487	485	479	468	452
Asia Pacific	414	409	416	416	417	414	413	413	408	409	406	395
OECD total	**4,578**	**4,135**	**4,518**	**4,778**	**4,732**	**4,578**	**4,472**	**4,407**	**4,277**	**4,135**	**4,058**	**4,005**
Oil-on-water	**1,148**	**1,202**	**1,187**	**1,329**	**1,174**	**1,148**	**1,138**	**1,131**	**1,169**	**1,202**	**1,222**	**1,290**
Days of forward consumption in OECD, days												
OECD onland commercial	**68**	**57**	**79**	**76**	**74**	**71**	**66**	**63**	**59**	**58**	**57**	**57**
Americas	66	58	80	76	73	70	65	62	60	59	56	57
Europe	79	62	94	85	86	87	79	70	64	65	66	65
Asia Pacific	51	43	55	59	56	50	49	51	46	41	45	43
OECD SPR	**35**	**34**	**41**	**37**	**36**	**36**	**35**	**33**	**32**	**32**	**32**	**29**
Americas	26	24	32	29	28	28	26	25	25	24	23	20
Europe	37	35	44	38	39	41	39	35	35	36	35	32
Asia Pacific	56	54	63	61	57	54	59	58	52	52	58	54
OECD total	**103**	**91**	**120**	**113**	**110**	**108**	**101**	**96**	**91**	**90**	**89**	**86**

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	5.8	5.6	5.8	6.0	5.8	0.2
Mexico	1.9	1.9	2.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0	1.9	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**	**28.0**	**28.4**	**27.9**	**1.3**
Norway	1.7	2.0	2.0	2.0	2.2	2.0	-0.1	2.2	2.2	2.2	2.2	2.2	0.2
UK	1.1	1.1	0.9	0.8	0.9	0.9	0.0	0.9	0.9	0.9	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**	**3.6**	**3.9**	**3.7**	**-0.1**	**4.0**	**3.9**	**3.9**	**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**	**0.5**	**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**	**31.0**	**31.7**	**30.8**	**1.2**	**32.1**	**32.1**	**32.4**	**32.9**	**32.4**	**1.6**
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**	**2.4**	**2.4**	**2.4**	**0.0**
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	3.7	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	0.3	0.3	0.3	0.1	0.4	0.3	0.4	0.4	0.3	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**	**6.5**	**6.3**	**0.3**	**6.4**	**6.6**	**6.7**	**6.8**	**6.6**	**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**	**3.4**	**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**	**10.9**	**10.6**	**10.9**	**0.1**	**9.9**	**10.1**	**10.1**	**10.2**	**10.1**	**-0.8**
Kazakhstan	1.9	1.8	1.8	1.7	2.0	1.9	0.0	2.0	1.9	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**	**2.7**	**3.2**	**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**	**32.7**	**32.4**	**0.6**	**32.0**	**32.3**	**32.4**	**32.6**	**32.3**	**-0.1**
Non-OPEC	63.1	60.8	61.4	63.4	64.4	63.2	1.8	64.1	64.4	64.8	65.4	64.7	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**	**65.8**	**66.8**	**65.6**	**1.9**	**66.6**	**66.8**	**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**	**71.2**	**72.2**	**71.0**	**2.0**	**72.0**	**72.3**	**72.7**	**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	Aug 22	Sep 22	Change Sep/Aug
US	944	436	475	39	634	718	761	763	763	0
Canada	134	90	133	43	195	114	202	203	211	8
Mexico	37	41	45	4	44	44	48	48	51	3
OECD Americas	**1,116**	**567**	**654**	**87**	**874**	**878**	**1,013**	**1,016**	**1,027**	**11**
Norway	17	16	17	1	16	18	18	19	18	-1
UK	15	6	8	2	7	10	13	14	12	-2
OECD Europe	**74**	**59**	**58**	**-1**	**57**	**65**	**70**	**72**	**70**	**-2**
OECD Asia Pacific	**29**	**22**	**23**	**1**	**22**	**22**	**26**	**25**	**28**	**3**
Total OECD	**1,219**	**648**	**735**	**87**	**954**	**966**	**1,109**	**1,113**	**1,125**	**12**
Other Asia*	221	187	174	-13	185	184	185	186	184	-2
Latin America	128	58	91	33	111	113	122	122	127	5
Middle East	68	57	57	0	60	62	61	61	62	1
Africa	55	43	42	-1	57	55	58	59	58	-1
Other Europe	14	12	9	-3	9	9	10	10	10	0
Total Non-OECD	**486**	**357**	**373**	**16**	**423**	**423**	**436**	**438**	**441**	**3**
Non-OPEC rig count	**1,705**	**1,005**	**1,108**	**103**	**1,376**	**1,389**	**1,545**	**1,551**	**1,566**	**15**
Algeria	45	31	26	-5	30	32	33	33	34	1
Angola	4	3	4	1	6	6	6	6	7	1
Congo	3	1	0	-1	1	0	1	1	1	0
Equatorial Guinea**	1	0	0	0	1	0	0	0	0	0
Gabon	7	3	2	-1	2	3	2	1	3	2
Iran**	117	117	117	0	117	117	117	117	117	0
Iraq	74	47	39	-8	46	50	54	54	55	1
Kuwait	46	45	25	-20	27	27	27	27	27	0
Libya	14	12	13	1	15	4	3	2	4	2
Nigeria	16	11	7	-4	8	11	9	10	7	-3
Saudi Arabia	115	93	62	-31	70	71	71	68	72	4
UAE	62	54	42	-12	38	48	49	50	50	0
Venezuela	25	15	6	-9	3	3	3	3	3	0
OPEC rig count	**529**	**432**	**343**	**-89**	**364**	**371**	**376**	**372**	**380**	**8**
World rig count* **	**2,234**	**1,437**	**1,451**	**14**	**1,740**	**1,760**	**1,921**	**1,923**	**1,946**	**23**
of which:										
Oil	1,788	1,116	1,143	27	1,383	1,392	1,522	1,519	1,548	29
Gas	415	275	275	0	329	337	365	368	370	2
Others	31	46	33	-13	28	31	33	36	29	-7

*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 6.58 in September

September 2022	95.32
August 2022	101.90
Year-to-date	**104.16**

September OPEC crude production

mb/d, according to secondary sources

up 0.15 in September

September 2022	29.77
August 2022	29.62

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	99.7	2.6	World demand	102.0	2.3
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	**28.7**	**0.6**	**Difference**	**29.4**	**0.8**

OECD commercial stocks

mb

	Jun 22	Jul 22	Aug 22	Aug 22/Jul 22
Crude oil	1,294	1,308	1,315	6.8
Products	1,367	1,397	1,398	1.0
Total	**2,661**	**2,705**	**2,712**	**7.8**
Days of forward cover	58.3	59.1	59.3	0.2

Next report to be issued on 14 November 2022.