



Organization of the Petroleum Exporting Countries

OPEC Monthly Oil Market Report

13 December 2022

Feature article:
Review of 2022 and outlook for 2023

| | |
|---|-----|
| Oil market highlights | v |
| Feature article | vii |
| Crude oil price movements | 1 |
| Commodity markets | 7 |
| World economy | 10 |
| World oil demand | 26 |
| World oil supply | 35 |
| Product markets and refinery operations | 50 |
| Tanker market | 56 |
| Crude and refined products trade | 60 |
| Commercial stock movements | 66 |
| Balance of supply and demand | 71 |



Organization of the Petroleum Exporting Countries

Helferstorferstrasse 17, A-1010 Vienna, Austria

E-mail: [prid\(at\)opec.org](mailto:prid@opec.org)

Website: www.opec.org

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Chairman of the Editorial Board

HE Haitham Al Ghais Secretary General

Editor-in-Chief

Dr. Ayed S. Al-Qahtani Director, Research Division *email: aalqahtani(at)opec.org*

Editor

Behrooz Baikalizadeh Head, Petroleum Studies Department *email: bbaikalizadeh(at)opec.org*

Contributors

Crude Oil Price Movements

Yacine Sariahmed Senior Oil Price Analyst, PSD *email: ysariahmed(at)opec.org*

Commodity Markets

Angel Edjang Memba Financial Analyst, PSD *email: aedjangmemba(at)opec.org*

World Economy

Dr. Asmaa Yaseen Senior Modelling & Forecasting Analyst, PSD *email: ayaseen(at)opec.org*
Dr. Joerg Spitzzy Senior Research Analyst, PSD *email: jspitzzy(at)opec.org*

World Oil Demand

Dr. Sulaiman Saad Oil Demand Analyst, PSD *email: ssaad(at)opec.org*

World Oil Supply

Dr. Ali Akbar Dehghan Oil Supply Analyst, PSD *email: adehghan(at)opec.org*

Product Markets and Refinery Operations

Tona Ndamba Chief Refinery & Products Analyst, PSD *email: tndamba(at)opec.org*

Tanker Markets

Douglas Linton Senior Research Specialist, PSD *email: dlinton(at)opec.org*

Crude and Refined Products Trade

Douglas Linton Senior Research Specialist, PSD *email: dlinton(at)opec.org*

Stock Movements

Dr. Aziz Yahyai Senior Research Analyst, PSD *email: ayahyai(at)opec.org*

Technical Team

Nadir Guerer Senior Research Analyst, DRDO *email: nguerer(at)opec.org*
Dr. Aziz Yahyai Senior Research Analyst, PSD *email: ayahyai(at)opec.org*
Douglas Linton Senior Research Specialist, PSD *email: dlinton(at)opec.org*
Viveca Hameder Research Specialist, PSD *email: vhameder(at)opec.org*
Masudbek Narzibekov Senior Research Analyst, DRDO *email: mnarzibekov(at)opec.org*

Statistical Services

Mhammed Mouraia, Statistical Systems Coordinator, In-Charge of Data Services Department; Pantelis Christodoulides (World Oil Demand, Stock Movements); Klaus Stoeger (World Oil Supply); Mohammad Sattar (Crude Oil Price Movements, Commodity Markets, Crude and Refined Products Trade); Mihni Mihnev (Product Markets and Refinery Operations); Justinas Pelenis (World Economy); Mansi Ghodsi (Tanker Market)

Editing and Design

Hasan AlHamadi, Head, Administration and IT Services Department, In-Charge of PR & Information Department; James Griffin; Maureen MacNeill; Scott Laury; Matthew Quinn; Timothy Spence; Carola Bayer; Andrea Birnbach; Hataichanok Leimlehner; Liane-Sophie Hamamciyan

Oil Market Highlights

Crude Oil Price Movements

The OPEC Reference Basket (ORB) averaged \$89.73/b in November, falling m-o-m by \$3.89, or 4.2%. The ICE Brent front-month fell \$2.74, or 2.9%, to average \$90.85/b, and NYMEX WTI decreased by \$2.64, or 3.0%, to average \$84.39/b. The Brent/WTI futures spread narrowed further m-o-m, contracting by 10¢ to average \$6.46/b. The market structure of ICE Brent and NYMEX WTI weakened significantly, and the first-to-third month spreads moved temporarily into contango in late November. The combined futures and options net long positions of hedge funds and other money managers fell significantly in both ICE Brent and NYMEX WTI.

World Economy

The world economic growth forecast is revised up marginally to 2.8% for 2022, after slightly better-than-expected 3Q22 GDP growth in a few economies. The 2023 global economic growth forecast remains unchanged at 2.5%. For the US, GDP growth in 2022 is revised up to 1.7%, while the forecast for next year remains unchanged at 0.8%. Euro-zone economic growth for 2022 remains at 3%, and is also unchanged for 2023 to stand at 0.3%. Japan's economic growth forecast remains at 1.5% for 2022 and 1% for 2023. China's 2022 growth forecast remains at 3.1% for 2022 and at 4.8% for 2023. The forecasts for India remain at 6.5% for 2022 and 5.6% for 2023. Brazil's economic growth forecast is revised up to 2.4% for 2022, but remains unchanged at 1% for 2023. The 2022 forecast for Russia is revised up to a contraction of 5% followed by growth of 0.2% in 2023. With this, risks to global economic growth remain skewed downward due to challenges including high inflation, monetary tightening by major central banks, high sovereign debt levels in many regions and some ongoing supply chain issues. Moreover, geopolitical risks and the pace of the COVID-19 pandemic during winter remain uncertain.

World Oil Demand

The world oil demand forecast for 2022 remains unchanged at 2.5 mb/d. The oil demand was adjusted higher in the 3Q22, amid better-than-anticipated transportation fuel consumption in OECD, offset by a downwardly-revised estimate for 4Q22 due to a slowdown in the non-OECD amid reduced mobility and sluggish industrial activity in China. For 2023, world oil demand growth also remains unchanged at 2.2 mb/d, with the OECD growing by 0.3 mb/d and non-OECD growth forecast at 1.9 mb/d. This forecast is subject to many uncertainties including global economic developments, COVID-19 containment measures mainly in China and ongoing geopolitical tensions.

World Oil Supply

Non-OPEC liquids supply is forecast to grow by 1.9 mb/d for 2022, broadly unchanged from last month's assessment. Upward revisions to liquids production in OECD Americas, Russia and Latin America were offset by downward revisions to OECD Europe, Other Eurasia and Other Asia. The main drivers of liquids supply growth for the year are expected to be the US, Canada, Guyana, Russia, China and Brazil, while production is expected to decline mainly in Norway and Thailand. For 2023, non-OPEC liquids production growth remains largely unchanged and is expected to grow by 1.5 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. Nonetheless, large uncertainties persist around geopolitical development in Eastern Europe, as well as the US shale output potential next year. OPEC NGLs and non-conventional liquids are forecast to grow by 0.1 mb/d in 2022 to average 5.39 mb/d and by 50 tb/d to average 5.44 mb/d in 2023. OPEC-13 crude oil production in November decreased by 744 tb/d m-o-m to average 28.83 mb/d, according to available secondary sources.

Product Markets and Refining Operations

Refinery margins in the Atlantic Basin underwent a downward correction in November. This was due to the increasing refinery intakes as heavy refinery repair works subsided. The recovery in product output levels exerted pressure on product crack spreads, particularly those of gasoil/diesel. In Asia, however, margins continued to improve, supported by lower Dubai prices. Strong regional product demand led to stronger markets for all products across the barrel with the exception of gasoil/diesel. Global refinery processing rates began to recover during the month of November and rose by 2.1 mb/d in response to a decline in offline capacity amid the end of peak refinery maintenance. Refinery intakes are expected to continue to recover in December, increasing by almost the same amount, according to preliminary data.

Tanker Market

Dirty freight rates continued to move higher in November, with strong gains on all monitored routes. Aframax rates saw the strongest gains as refiners loaded-up on Russian crude ahead of EU sanctions. An ongoing shift to longer-haul routes due to trade dislocations also weighed on tanker availability. Aframax rates on the intra-Mediterranean route rose 43% m-o-m in November and stood well above the levels seen in recent years. Suezmax rates saw similar support, with rates on the US Gulf to Europe route up 31% m-o-m. VLCCs showed continued steady gains, up around 21% on average. Clean spot freight rates on medium-range vessels were up 13% both East and West of Suez, amid tight tonnage availability.

Crude and Refined Products Trade

US crude imports recovered from a six-month low to average 6.3 mb/d in November, while US crude exports reached a fresh record high of 4.2 mb/d, according to estimates based on weekly data. China's crude imports continued to recover in October, averaging 10.2 mb/d. China's product exports fell back from a 15-month high with declines across most major products. India's crude imports recovered the previous month's losses, averaging 4.2 mb/d in October. Product exports from India declined by around 21%, with diesel outflows sharply lower. Japan's crude imports continued to slip from a two-year high to average 2.7 mb/d in October, in line with seasonal developments, but still showed 15 months of consecutive y-o-y gains. Tanker tracking data showed crude imports into the OECD Europe region remained steady in 3Q22 before dipping in November. Imports of Russian crude into OECD Europe were down by close to 1.0 mb/d y-o-y in November, ahead of the implementation of EU sanctions, although flows to Turkey increased sharply reaching as high as 400 tb/d, according to tanker tracking data, up from relatively minor levels last year.

Commercial Stock Movements

Preliminary October data sees total OECD commercial oil stocks up m-o-m by 22.5 mb. At 2,748 mb, they were 15 mb less than the same time one year ago, 167 mb lower than the latest five-year average and 197 mb below the 2015-2019 average. Within the components, crude and product stocks rose m-o-m by 12.9 mb and 9.5 mb, respectively. At 1,335 mb, OECD crude stocks were 8 mb higher than the same time a year ago, but 80 mb lower than the latest five-year average and 118 mb lower than the 2015-2019 average. OECD product stocks stood at 1,413 mb, representing a deficit of 23 mb from the same time a year ago, 87 mb lower than the latest five-year average and 79 mb below the 2015-2019 average. In terms of days of forward cover, OECD commercial stocks rose m-o-m by 1.0 day in October to stand at 59.1 days. This is 0.6 days below October 2021 levels, 4.0 days less than the latest five-year average and 3.3 days lower than the 2015-2019 average.

Balance of Supply and Demand

Demand for OPEC crude in 2022 remained unchanged from the previous month's assessment to stand at 28.6 mb/d, which is around 0.5 mb/d higher than in 2021. Demand for OPEC crude in 2023 also remained unchanged from the previous month's assessment to stand at 29.2 mb/d, which is 0.6 mb/d higher than in 2022.

Feature Article

Review of 2022 and outlook for 2023

The global economy continued its recovery path throughout much of 2022, albeit at varying levels among regions, and with a notable slowdown towards the end of the year.

The Eurozone saw unexpectedly strong growth in 1H22 before decelerating in 2H22, amid rising inflation that prompted European Central Bank monetary tightening and concerns about a possible energy crunch in the winter heating season. The US economy faced challenges in 1H22, but recovered somewhat in 2H22, supported by ongoing healthy consumption levels. In the non-OECD, China's strict zero-COVID policy has dampened GDP growth in 2022. India witnessed strong economic growth in 1H22, but decelerated slightly in 3Q22 amid high inflation levels. For 2022, world GDP growth is estimated at 2.8%.

Going forward, several challenges still lie ahead. For example, persistently high inflation may necessitate further monetary tightening measures by major central banks. Rising interest rates will be a cause for concern for countries with high sovereign debt levels. Tight labour markets, amid calls for higher wages, will add pressure, as will continued supply chain issues. However, a resolution of the geopolitical conflict in Eastern Europe and a relaxation of China's zero-COVID policy could provide some upside potential. Global GDP growth for 2023 is forecast at 2.5%.

Global oil demand growth is estimated at 2.5 mb/d y-o-y in 2022. In OECD Americas and Europe, lower-than-expected transportation fuel demand outpaced jet fuel demand recovery, leading to y-o-y growth of 1.4 mb/d for the OECD. In the non-OECD, y-o-y growth of 1.2 mb/d is expected. Renewed lockdowns in China weighed heavily on oil demand, with the country registering an oil demand contraction in 2022.

For 2023, world oil demand is expected to increase by 2.2 mb/d y-o-y. OECD oil demand is forecast to increase by 0.3 mb/d. This is mostly in OECD Americas, while other OECD regions are not expected to see noticeable growth. In the non-OECD, oil demand is forecast to increase by 1.9 mb/d, with China and India seeing the largest growth.

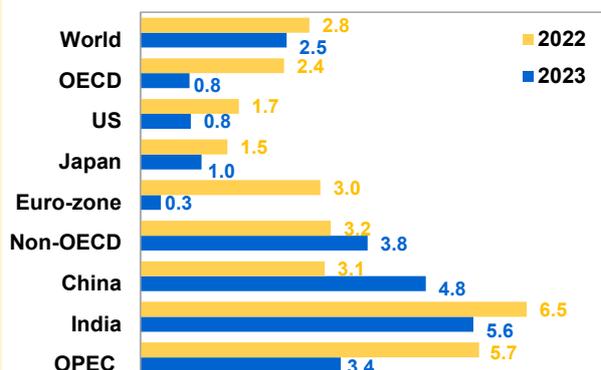
This forecast assumes the successful containment of COVID-19 and a resumption of pre-pandemic economic growth in China, while India's oil demand is projected to be supported by continued healthy economic growth.

Non-OPEC supply growth in 2022 is estimated at 1.9 mb/d. The main drivers of growth are estimated to have been the US, Canada, Guyana, Russia, China and Brazil. US shale oil companies continued to focus on shareholder returns, with higher production costs amid supply chain shortages and inflation limiting overall production growth.

In 2023, non-OPEC supply is forecast to expand by 1.5 mb/d y-o-y. US tight oil output and offshore start-ups in Latin America and the North Sea are expected to drive growth. The US is expected to lead the way with a share of about 75% of total growth, followed by Norway, Brazil, Canada, Kazakhstan and Guyana. Non-OPEC upstream sector investment in 2022 is estimated at around \$424 billion, up around 19% y-o-y. It is forecast at \$459 billion in 2023, up by 8% y-o-y.

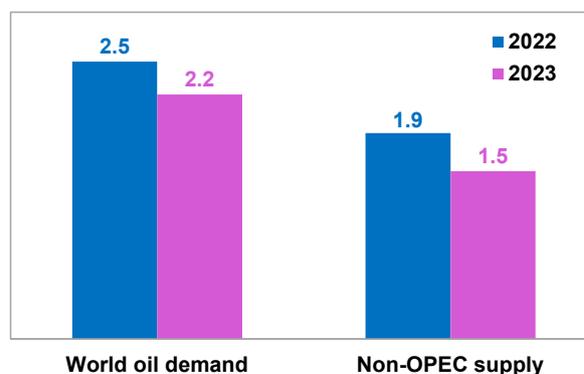
As the year 2022 draws to a close, the recent global economic growth slowdown with all its far-reaching implications is becoming quite evident. The year 2023 is expected to remain surrounded by many uncertainties, mandating vigilance and caution. This is reflected in the continued pro-active and pre-emptive joint efforts of the DoC to provide stability and balance to the global oil market, amid rapidly evolving market conditions.

Graph 1: 2022-2023 real GDP growth in key countries and regions (%)



Source: OPEC.

Graph 2: World oil demand and non-OPEC supply growth in 2022-2023 (mb/d)



Source: OPEC.

Table of Contents

| | |
|---|------------|
| Oil Market Highlights | v |
| Feature Article | vii |
| <i>Review of 2022 and outlook for 2023</i> | <i>vii</i> |
| Crude Oil Price Movements | 1 |
| Crude spot prices | 1 |
| The oil futures market | 3 |
| The futures market structure | 5 |
| Crude spreads | 6 |
| Commodity Markets | 7 |
| Trends in selected commodity markets | 7 |
| Investment flows into commodities | 9 |
| World Economy | 10 |
| OECD | 12 |
| Non-OECD | 17 |
| The impact of the US dollar (USD) and inflation on oil prices | 24 |
| World Oil Demand | 26 |
| OECD | 27 |
| Non-OECD | 31 |
| World Oil Supply | 35 |
| OECD | 38 |
| Non-OECD | 44 |
| OPEC NGLs and non-conventional oils | 47 |
| OPEC crude oil production | 48 |
| World oil supply | 49 |
| Product Markets and Refinery Operations | 50 |
| Refinery margins | 50 |
| Refinery operations | 51 |
| Product markets | 51 |
| Tanker Market | 56 |
| Spot fixtures | 56 |
| Sailings and arrivals | 56 |
| Dirty tanker freight rates | 57 |
| Clean tanker freight rates | 58 |

| | |
|---|-----------|
| Crude and Refined Products Trade | 60 |
| US | 60 |
| China | 61 |
| India | 62 |
| Japan | 63 |
| OECD Europe | 64 |
| Eurasia | 65 |
| Commercial Stock Movements | 66 |
| OECD | 66 |
| US | 67 |
| Japan | 68 |
| EU-14 plus UK and Norway | 69 |
| Singapore, Amsterdam-Rotterdam-Antwerp (ARA) and Fujairah | 70 |
| Balance of Supply and Demand | 71 |
| Balance of supply and demand in 2022 | 71 |
| Balance of supply and demand in 2023 | 72 |
| Appendix | 73 |
| Glossary of Terms | 79 |
| Abbreviations | 79 |
| Acronyms | 79 |

Crude Oil Price Movements

The OPEC Reference Basket (ORB) value and its component-related crude benchmarks declined further in November amid softer market fundamentals in the Atlantic Basin and East of Suez markets. The ORB value fell by \$3.89 m-o-m, or 4.2%, to stand at \$89.73/b. Compared with the previous year, the ORB was up by \$32.43, or 46.7%, from \$69.45/b to an average of \$101.89/b so far this year.

Crude oil spot prices resumed their downward trend in November. Growing concerns about demand in China due to rising COVID-19 cases, and signs of a well-supplied crude market weighed on the value of crude prices in the first three weeks of the month. The decline in prices was fuelled by heavy selloffs in futures markets, amid elevated volatility.

Crude oil futures prices on both sides of the Atlantic moved sharply lower in November, amid elevated volatility and heavy selloffs in futures markets, including from hedge funds and money managers. Downside pressure on futures prices persisted as the outlook for oil demand deteriorated due to extended lockdowns in China and worries that continuing aggressive monetary tightening from major central banks could hinder economic growth. Meanwhile, concerns about the supply outlook eased, amid signs of a well-supplied crude market and transpiring details about the G7 price cap on Russian crude. ICE Brent declined by \$2.74, or 2.9%, on a monthly average, to settle at \$90.85/b, while NYMEX WTI dropped by \$2.64, or 3.0%, to stand at \$84.39/b.

Money managers heavily cut their bullish futures and options positions in November, particularly those related to ICE Brent, amid elevated oil price volatility and high uncertainty. Total futures and options net long positions in both ICE Brent and NYMEX WTI dropped to their lowest point since April 2020, and speculators were sellers of a net equivalent of about 161 mb. Open interest also dropped in November, falling in the last week of November to its lowest since November 2014.

The market structure of all three major oil benchmarks – ICE Brent, NYMEX WTI and DME Oman – weakened last month and the nearest time spread flipped briefly into contango in the fourth week of November. The futures forward curves flattened in the front as traders turned to focus on uncertainty about the short-term oil demand outlook amid a resurgence of COVID-19 in China and soft physical market fundamentals, while worries about short-term oil supply shortages lessened amid signs of the well-supplied crude market.

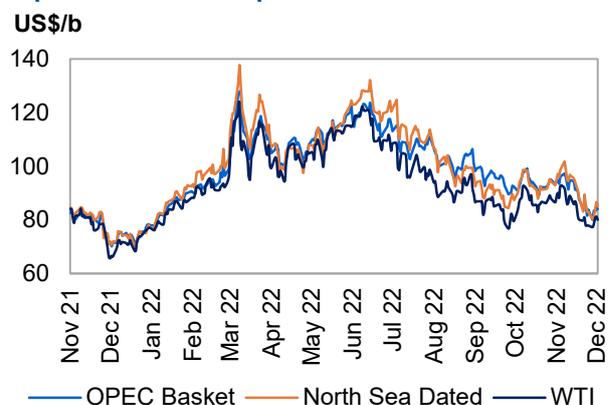
The sweet/sour crude differentials widened further in November in all major regions amid a weak sour crude market. The value of medium and heavy sour crude fell more than light sweet crude value. This is a combination of the high availability of sour crude, low demand, and a wide spread between light/medium distillate and heavy distillate product margins, such as the diesel-HSFO spread.

Crude spot prices

Crude oil spot prices resumed their downward trend in November after they steadied in the previous month. Growing concerns about demand in China due to rising COVID-19 cases, and signs of a well-supplied crude market weighed on the value of crude prices in the first three weeks of the month. The decline was fuelled by heavy sell-offs in futures markets amid elevated volatility. Spot prices were under pressure in November due to a slowdown in buying interest from European and Asia-Pacific refiners, including China, and rising volumes of unsold crude cargoes for late November and December loadings, with sellers struggling to clear their crude programmes. The reinstatement of lockdown measures and mobility restrictions in several major cities in China resulted in lower mobility indexes.

Lower refining margins in Europe and the USGC, and a sharp decline of gasoil/diesel cracks in almost all markets, weighed on the value of spot prices.

Graph 1 - 1: Crude oil price movement



Sources: Argus, OPEC and Platts.

Crude Oil Price Movements

In November, North Sea Dated and WTI's first month dropped m-o-m by \$2.01 and \$3.11, respectively, or 2.2% and 3.6%, to settle at \$91.10/b and \$84.15/b. Dubai's first-month contract fell the most among the benchmarks, declining by \$4.92 m-o-m, or 5.4%, to settle at \$86.12/b.

Oil price losses eased in the last week of November and early December amid easing concerns about the demand outlook after Chinese authorities relaxed some COVID-19-related lockdown measures and mobility restrictions. A large drop in US crude oil stocks in November, along with higher refinery inputs, also limited the oil price decline.

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

| OPEC Reference Basket (ORB) | Oct 22 | Nov 22 | Change | | Year-to-date | |
|-----------------------------|--------------|--------------|---------------|-------------|--------------|---------------|
| | | | Nov 22/Oct 22 | % | 2021 | 2022 |
| ORB | 93.62 | 89.73 | -3.89 | -4.2 | 69.45 | 101.89 |
| Arab Light | 96.20 | 91.58 | -4.62 | -4.8 | 70.17 | 103.34 |
| Basrah Medium | 89.45 | 85.66 | -3.79 | -4.2 | 68.36 | 99.21 |
| Bonny Light | 95.02 | 92.84 | -2.18 | -2.3 | 70.26 | 105.66 |
| Djeno | 85.66 | 83.65 | -2.01 | -2.3 | 63.03 | 95.49 |
| Es Sider | 93.91 | 91.25 | -2.66 | -2.8 | 68.75 | 103.38 |
| Girassol | 95.61 | 92.76 | -2.85 | -3.0 | 70.94 | 105.87 |
| Iran Heavy | 93.21 | 88.73 | -4.48 | -4.8 | 69.32 | 101.76 |
| Kuwait Export | 94.72 | 90.13 | -4.59 | -4.8 | 70.02 | 103.03 |
| Merey | 71.56 | 66.94 | -4.62 | -6.5 | 51.12 | 78.62 |
| Murban | 93.54 | 90.90 | -2.64 | -2.8 | 69.65 | 100.55 |
| Rabi Light | 92.65 | 90.64 | -2.01 | -2.2 | 70.02 | 102.48 |
| Sahara Blend | 95.66 | 93.60 | -2.06 | -2.2 | 70.44 | 106.12 |
| Zafiro | 93.61 | 92.12 | -1.49 | -1.6 | 70.77 | 104.89 |
| Other Crudes | | | | | | |
| North Sea Dated | 93.11 | 91.10 | -2.01 | -2.2 | 70.48 | 102.94 |
| Dubai | 91.04 | 86.12 | -4.92 | -5.4 | 69.00 | 98.02 |
| Isthmus | 83.57 | 79.26 | -4.31 | -5.2 | 65.97 | 94.01 |
| LLS | 90.07 | 87.61 | -2.46 | -2.7 | 69.25 | 98.42 |
| Mars | 83.84 | 80.44 | -3.40 | -4.1 | 66.93 | 93.50 |
| Minas | 91.06 | 89.21 | -1.85 | -2.0 | 68.38 | 98.52 |
| Urals | 70.54 | 67.98 | -2.56 | -3.6 | 69.08 | 80.80 |
| WTI | 87.26 | 84.15 | -3.11 | -3.6 | 67.80 | 96.15 |
| Differentials | | | | | | |
| North Sea Dated/WTI | 5.85 | 6.95 | 1.10 | - | 2.68 | 6.79 |
| North Sea Dated/LLS | 3.04 | 3.49 | 0.45 | - | 1.23 | 4.52 |
| North Sea Dated/Dubai | 2.07 | 4.98 | 2.91 | - | 1.48 | 4.92 |

Sources: Argus, Direct Communication, OPEC and Platts.

The physical market's soft fundamentals were also reflected in the decline of many regional crude oil differentials, specifically sour crude, including in the North Sea, the Mediterranean, West Africa and some East Suez crude markets.

West African, Mediterranean and Caspian crude oil differentials largely weakened in November on weak crude demand from European and Asian refiners, the availability of prompt unsold cargoes, and the high freight rate that made west-to-east arbitrage less favourable. This was also reflected in wider Brent-Dubai EFS m-o-m in November. Bonny Light, Forcados and Qua Iboe crude differentials declined significantly last month against North Sea Dated, falling by a monthly average of \$2.00, 17¢, and \$1.31, respectively, to stand at a discount of 13¢/b, and premiums \$1.90/b and \$1.41/b. The crude differential of medium-heavy sweet Cabinda also fell m-o-m by \$1.32 in November to settle at a premium of 78¢/b.

Saharan Blend crude differentials also averaged lower, falling by 68¢/b m-o-m to stand at a premium of 83¢/b on average. The Caspian CPC Blend differential sharply declined m-o-m in November, decreasing by \$3.36, amid higher supply of the grade and weak demand, averaging at a deep discount of \$4.97/b.

Nonetheless, in North-west Europe, the value of North Sea crude differentials remained supported in November by demand from European refiners, as high freight rates have made North Sea crude more competitive compared to other similar crudes in other regions, including West African, Mediterranean and USGC crudes. The Forties and Ekofisk crude differentials rose by 57¢ and 31¢, respectively, on a monthly average in November to settle at a premium of \$3.23/b and 98¢/b. However, the sour crude differential in Europe fell sharply in an adequately supplied market, with low margins for sour crude and weak demand. The crude differential of Johan Sverdrup fell in November to a record low on higher supply in December coupled with weak demand, despite the expectation of lower availability of Urals crude in Europe in the coming months due to the European Union (EU) ban.

In the Middle East, crude differentials to Dubai mostly weakened in the spot market amid soft demand from Asia Pacific refiners, including China, and lower middle distillate margins and weak fuel oil margins in Singapore. The value of the Oman crude differential fell by \$1.77 m-o-m in November to a premium of \$2.78/b.

In the USGC, crude differentials were mixed. Light sweet crude Light Louisiana Sweet (LLS) averaged higher last month, supported by lower supply due to project work that resulted in reduced operating capacity on the Zydeco oil pipeline, which carries oil from Houston, Texas, to Louisiana. LLS crude differentials to WTI futures rose 82¢ m-o-m in November to an average of \$3.63/b premium. However, Mars sour crude differentials to WTI futures further weakened m-o-m in November, declining by 17¢ to a discount of \$3.59/b. The high availability of sour crude in the regions and weak heavy fuel oil margins weighed on the value of sour crude in the USGC.

OPEC Reference Basket (ORB)

The **ORB value** and its component-related crude benchmarks declined further in November amid softer market fundamentals in the Atlantic Basin and East of Suez markets. The ORB value fell by \$3.89 m-o-m, or 4.2%, to stand at \$89.73/b. Lower crude differentials in November also contributed to the decline in the value of the ORB. Compared with the previous year, the ORB was up by \$32.43, or 46.7%, from \$69.45/b in 2021 to an average of \$101.89/b so far this year.

All ORB component values fell in November, with West and North African Basket components – Bonny Light, Djeno, Es Sider, Girassol, Rabi Light, Sahara Blend and Zafiro – declining on average the most m-o-m, dropping by \$2.18, or 2.3%, to \$90.98/b. Multiple region destination grades – Arab Light, Basrah Light, Iran Heavy and Kuwait Export – also fell m-o-m by \$4.37, or 4.7%, on average, to settle at \$89.03/b. The Murban crude value fell m-o-m by \$2.64, or 2.8%, on average, to settle at \$90.90/b. The Mery component dropped m-o-m by \$4.62, or 6.5% on average, to settle at \$66.94/b.

The oil futures market

Crude oil futures prices on both sides of the Atlantic moved sharply lower in November. They averaged 3% lower m-o-m amid elevated volatility and heavy selloffs in futures markets, including from hedge funds and money managers.

Downside pressure on futures prices was witnessed as the oil demand outlook deteriorated due to the renewed local lockdowns and tightening mobility restrictions in some large cities in China for most of November. This weighed on market sentiment and raised worries about the short-term oil demand outlook. Moreover, worries about continuing aggressive monetary tightening from major central banks, including the US Federal Reserve and the European Central Bank, raised concerns about an economic slowdown, which weighed on oil and other commodity prices. Meanwhile, concerns about the supply outlook eased amid signs of a well-supplied crude market and emerging details about the G7 price cap on Russian crude. The decline in futures prices was fuelled by heavy selloffs in futures markets, specifically from hedge funds and other money managers that sold an equivalent of about 161 mb in November, according to exchange data.

However, oil futures prices pared some losses in the last week of November after Chinese authorities signalled an easing of COVID-19-related lockdowns and mobility restrictions, which raised the expectation of an improving demand outlook. US Energy Information Administration (EIA) weekly data showing a large drop in US crude oil stocks last month and higher refinery inputs also lent support to the market. US crude oil stocks fell by nearly 22 mb between the weeks of 1 and 25 November, according to the EIA weekly data. During the same period, weekly US gross inputs into refineries increased by about 555 tb/d, to 17.11 mb/d, its highest level since January 2020.

ICE Brent ticked down by \$2.74, or 2.9%, on a monthly average, to settle at \$90.85/b, while NYMEX WTI dropped by \$2.64, or 3.0%, to stand at \$84.39/b.

Crude Oil Price Movements

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

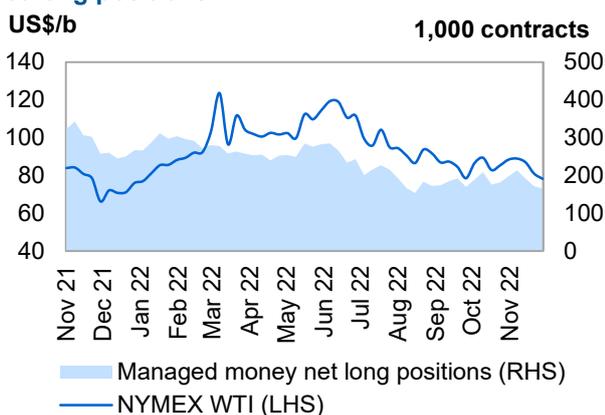
| Crude oil futures | Oct 22 | Nov 22 | Change | | Year-to-date | |
|----------------------------|--------|--------|---------------|------|--------------|--------|
| | | | Nov 22/Oct 22 | % | 2021 | 2022 |
| NYMEX WTI | 87.03 | 84.39 | -2.64 | -3.0 | 67.76 | 95.96 |
| ICE Brent | 93.59 | 90.85 | -2.74 | -2.9 | 70.57 | 100.61 |
| DME Oman | 91.07 | 86.02 | -5.05 | -5.5 | 69.12 | 98.07 |
| Spread | | | | | | |
| ICE Brent-NYMEX WTI | 6.56 | 6.46 | -0.10 | -1.5 | 2.81 | 4.65 |

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

The **spread between the ICE Brent and NYMEX WTI** benchmarks remained wide in November, although it continued to narrow slowly from its peak in September, as ICE Brent fell more than NYMEX WTI. The Brent-WTI futures spread declined by 10¢ in November to average at \$6.46/b. Market expectations of further tightening of the supply/demand fundamentals in Europe kept the Brent benchmark well above WTI. Concerns about the economic outlook and sustained crude oil supply in the US from the Strategic Petroleum Reserve (SPR) kept the US market well supplied. North Sea Dated premium to WTI Houston widened sharply in November, rising by \$2.12 on a monthly average to stand at a premium of \$5.63/b, the highest monthly average since August 2022. High freight rates that reduced the competitiveness of US crude in the international market and weaker demand in the spot market, and high supply availability in the Atlantic Basin put downward pressure on the WTI price.

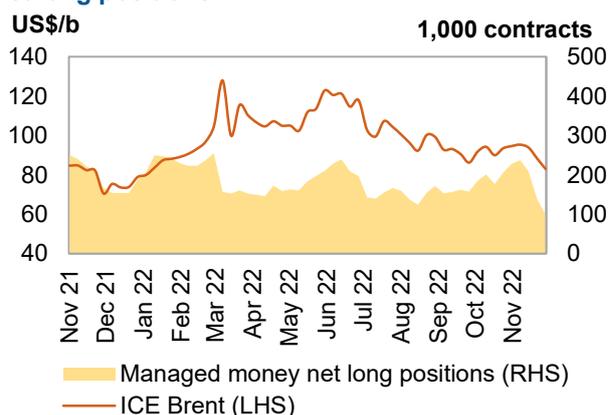
Hedge funds and other money managers sharply cut their bullish futures and options positions in November. Particularly affected were those related to ICE Brent, amid elevated oil price volatility and highly uncertain oil demand and supply outlooks due to lockdowns in China and uncertainty regarding the impact of the price cap on Russian crude exports. This likely prompted speculators to heavily reduce their bullish positions. In November, total futures and options net long positions in both ICE Brent and NYMEX WTI dropped to their lowest point since April 2020, and speculators were sellers of a net equivalent of about 161 mb. Open interest also dropped in November and continued its downward trend for several months, falling in the last week of November to its lowest since November 2014.

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 decline of **net long positions** was more pronounced in futures and options related to ICE Brent, which fell by 56.4%. Money managers cut their futures and options net long positions in ICE Brent by 128,454 lots between the weeks of 1 and 29 November to 99,211 contracts, according to the ICE Exchange. During the same period, gross long positions declined by 83,684 lots, or 31.3%, to 183,827 contracts, while gross short positions rose by 44,770 lots, or 112.4%, to 84,616 contracts.

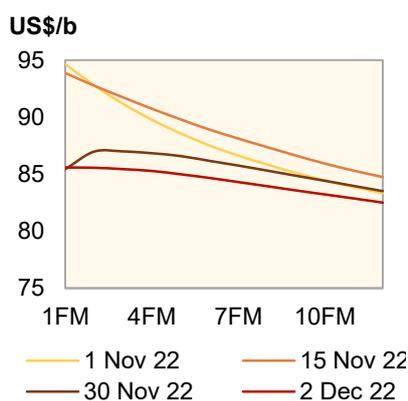
Speculators were also net sellers of about 32 mb in the NYMEX WTI contracts between the weeks of 1 and 29 November. Combined futures and options net long positions dropped by 32,455 contracts, or 16.4%, to reach 165,589 lots in the week of 29 November, according to the US Commodity Futures Trading Commission (CFTC). This is due to a combination of a decline in long positions and a rise in short positions. In the week ending 29 November, gross short positions rose by 6,767 lots, or 20.0%, to stand at 40,568 contracts, while gross long positions fell by 25,688 lots, or 11.1%, to 206,157 contracts during the same period.

Consequently, the long-to-short ratio of speculative positions in the ICE Brent contracts declined in the week to 29 November to 2:1, compared with 7:1 in early November. The NYMEX WTI long-to-short ratio also fell to about 5:1 contracts in the week to 29 November, compared with 7:1 in early November. Total futures and options open interest volumes on the two exchanges dropped in November, falling by 7.5%, or 335,709 contracts, to stand at 4.1 million contracts in the week ending 29 November, with the decline mainly related to NYMEX WTI, which declined by 12.1%, or 254,766 contracts.

The futures market structure

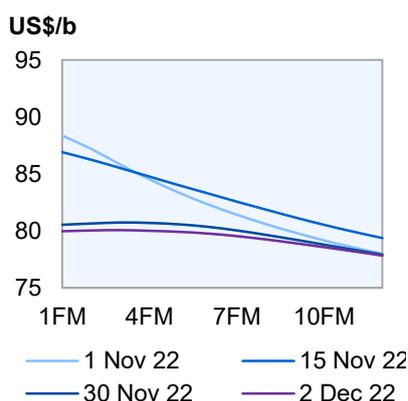
The **market structure** of all three major oil benchmarks – ICE Brent, NYMEX WTI and DME Oman – weakened in November and the nearest time spread flipped briefly into contango in the fourth week of November, despite the EU embargo on seaborne imports of Russian crude oil starting on 5 December. The futures forward curves flattened significantly in the front, compared to October, as traders turned to focus on uncertainty about the short-term oil demand outlook amid a resurgence of COVID-19 in China and soft physical market fundamentals, while worries about short-term oil supply shortages lessened amid signs of the well-supplied crude market. The tightness of middle distillates markets that supported prompt prices in recent months also eased also contributed to adding downward pressure on prompt prices.

Graph 1 - 4: ICE Brent forward curves



Sources: ICE and OPEC.

Graph 1 - 5: NYMEX WTI forward curves



Sources: CME and OPEC.

Graph 1 - 6: DME Oman forward curves



Sources: DME and OPEC.

The backwardation structure of **Brent futures** softened in November as the short-term oil demand outlook weakened due to COVID-19 developments in China and concerns about economic developments in major consuming countries. Meanwhile, the supply risk premium due to geopolitical conflict in Eastern Europe that supported front-month prices in recent months lessened. Signs of a well-supplied crude market, including in the Atlantic Basin and North-west Europe, soft demand from refineries, as well as the availability of unsold cargoes, weighed more on the first-month price compared to forward months, resulting in flattening the ICE Brent forward curve. The ICE Brent first-month premium to the third month flipped briefly to contango in late November, a sign that the market perceives an oversupplied crude market in the short term. However, on a monthly average, the ICE Brent first-month premium to the third month remained in backwardation, although it narrowed m-o-m by \$1.90 to a backwardation of \$1.67/b. Similarly, the ICE Brent's M1/M6 backwardation declined last month by \$3.29 to settle at \$4.13 on average, compared to a backwardation of \$7.42 in October.

Despite a large draw in US crude oil stocks, including in Cushing, Oklahoma, the **NYMEX WTI** forward curve also flattened in November and flipped to contango for several days during the month. Sustained supply coming from the US SPR amid a market that showed a sufficient supply weighed on the value of NYMEX WTI prompt prices. Concern about softened demand in China and further aggressive US interest rate hikes also added downward pressure on prompt prices. The NYMEX WTI M1/M3 month spread narrowed by \$1.22 to a backwardation of \$1.13/b on average in November, compared with a backwardation of \$2.35/b in October.

Following the same trend as other major international crude benchmarks, **DME Oman** and **Dubai** structures flattened significantly last month and moved into softer backwardation. Prompt month prices came under pressure from signs of softer crude buying interest compared to the previous months and concerns about slower Asian oil demand due to the resurgence of COVID-19 in China and the lockdowns and mobility restrictions in some large cities. On a monthly average, the DME Oman M1/M3 spread narrowed m-o-m by \$1.85 to a backwardation of \$2.19/b on average in November.

Crude Oil Price Movements

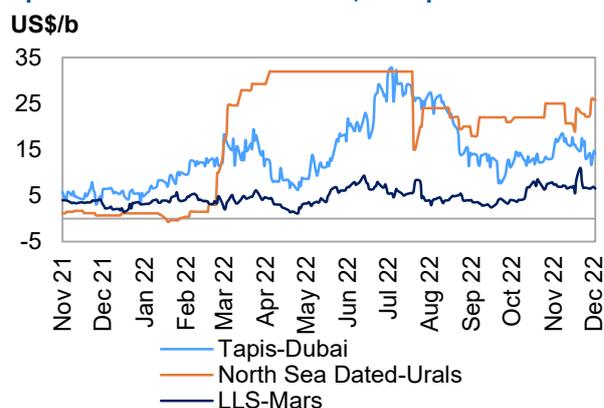
The backwardation structure of spot crude prices flattened last month on the back of soft physical market fundamentals, particularly for December loadings, amid subdued crude demand in the spot market. In terms of the M1/M3 structure, the **North Sea Dated M1/M3** backwardation narrowed in November on a monthly average from \$2.76 to \$2.05/b. In the US, the **WTI M1/M3** backwardation also narrowed in November by \$1.35 to \$1.05/b, compared with a backwardation of \$2.41/b in October. The **Dubai M1/M3** monthly average spread was in a backwardation of \$2.75/b in November, narrowing from a backwardation of \$4.70/b in October.

Crude spreads

The **sweet/sour crude differentials** widened further in November in all major regions, amid a weak sour crude market. The value of medium and heavy sour crude fell more than light sweet crude value. This resulted due to a combination of the high availability of sour crude, low demand, and a wide spread between light/medium distillate and heavy distillate product margins, such as the diesel-HSFO spread. Very low prices of HSFO probably prompted refiners to substitute part of sour crude with HSFO as a feedstock.

In **Europe**, the North Sea Dated-Urals spread in November widened further, specifically in North-west Europe, as the value of Urals came under further pressure from low demand as the buyers remained uncertain about the details of the price cap on Russian crudes, while the EU embargo on seaborne Russian crude entered into force in December. High freight rates for almost all tanker classes, including for Asia-Pacific routes, added downward pressure on the value of Urals. The North Sea Dated-Urals discount in North-west Europe widened last month by \$5.86 m-o-m to average \$25.69/b. In the Mediterranean, the North Sea Dated-Urals discount also widened by 55¢ to \$23.12/b.

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



Sources: Argus, OPEC and Platts.

Similarly, the value of medium sour crude Johan Sverdrup also weakened in November and its crude differential to the North Sea Dated dropped to a record low on subdued demand, high freight rates and a high supply of the grade in December and January. On a daily basis, Johan Sverdrup crude differentials fell to a \$5.20/b discount to North Sea Dated.

In **Asia**, sweet-sour crude differentials continued to rise in November on a weak sour crude market amid soft demand from Asia-Pacific refiners and the expectation of weaker demand from China. Meanwhile, the value of light sweet crude in the Asia-Pacific found support from an unfavourable west-to-east arbitrage due to high freight rates that contributed to reducing the crude flow of light sweet crude from the Atlantic Basin to the east Suez market. This helped to push the value of light sweet crude in the Asia-Pacific significantly higher compared to the Dubai-related sour crude value. The Brent-Dubai front-month exchange of futures-for-swaps (EFS Dubai), a barometer of west-to-east arbitrage, widened again in November to an average of \$7.98/b, widening by \$1.10/b m-o-m. The Tapis-Dubai spread widened by \$2.85, m-o-m, in November, to an average of \$15.90/b.

In the **USGC**, the sweet-sour crude differentials also widened. The LLS-Mars sour crude differential stood above \$7/b in November as the value of light sweet crude remained supported by the lower supply of light sweet crude due to project work that reduced operating capacity on the Zydeco oil pipeline, which transports oil from Houston to Louisiana. Meanwhile, sour crude value in the USGC was under pressure on weak demand and very low margins of fuel oil. The HSFO crack spread dropped to a \$21/b discount against WTI on average in November. In November, the LLS-Mars sour crude differential widened by 94¢ m-o-m, to stand at \$7.17/b.

Commodity Markets

The energy price index declined for the third consecutive month as overall demand for energy commodities fell m-o-m. Meanwhile, non-energy price indices, including both base and precious metals, advanced m-o-m after three consecutive months of declines.

In the paper market, money manager's total net long positions rose across selected commodity markets for the second consecutive month, driven by a decline in short positions. However, the ratio of short positions relative to long positions remained elevated, a sign indicating money managers' bearish perspectives. Meanwhile, open interest declined m-o-m, erasing gains from the previous period.

China's mixed signals from its zero-COVID policy, along with to the ongoing monetary tightening cycle, are challenging the demand recovery of selected commodities. Nonetheless, the decline in energy prices, in addition to a weaker US dollar (USD), have emerged as key upside factors supporting the recent demand improvements in non-energy commodities.

Trends in selected commodity markets

The **energy price index** fell for the third consecutive month, declining by 4.5% m-o-m. Prices of all index components receded under pressure from declining demand amid global macroeconomic headwinds. Coal prices experienced the biggest decline, while average crude oil prices suffered the least amount of losses. The index was up by 21.7% y-o-y, a slight increase compared with the previous month.

The **non-energy index** partially recovered from the previous month's decline, increasing by 0.7% m-o-m. Agricultural prices continued to experience high volatility for the second consecutive month amid mixed signals from US crop conditions and geopolitical developments in Eastern Europe. Y-o-y, the index continued its downward trajectory, falling by 1.0%.

Table 2 - 1: Commodity prices

| Commodity | Unit | Monthly averages | | | % Change | Year-to-date | |
|-------------------------|-----------|------------------|--------------|--------------|---------------|--------------|--------------|
| | | Sep 22 | Oct 22 | Nov 22 | Nov 22/Oct 22 | 2021 | 2022 |
| Energy* | Index | 158.2 | 146.2 | 139.6 | -4.5 | 93.8 | 154.6 |
| Coal, Australia | US\$/mt | 430.8 | 389.8 | 342.2 | -12.2 | 135.2 | 341.8 |
| Crude oil, average | US\$/b | 88.2 | 90.3 | 87.4 | -3.3 | 68.7 | 98.8 |
| Natural gas, US | US\$/mbtu | 7.8 | 5.6 | 5.3 | -6.1 | 3.9 | 6.4 |
| Natural gas, Europe | US\$/mbtu | 59.1 | 39.0 | 35.7 | -8.5 | 14.1 | 40.7 |
| Non-energy* | Index | 114.9 | 113.4 | 114.2 | 0.7 | 111.2 | 124.3 |
| Base metal* | Index | 104.6 | 103.7 | 109.5 | 5.6 | 117.1 | 123.1 |
| Precious metals* | Index | 126.4 | 125.8 | 131.3 | 4.4 | 140.5 | 136.7 |

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

Sources: World Bank and OPEC.

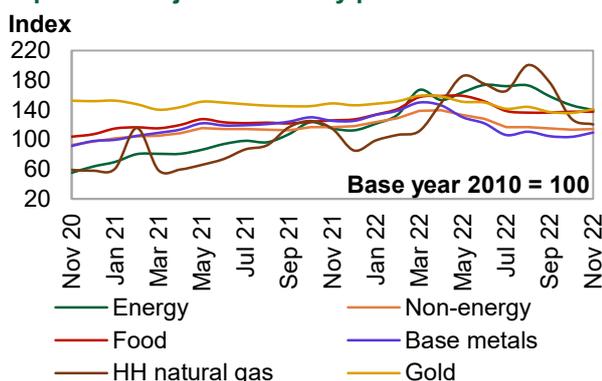
Average crude oil prices receded m-o-m by 3.3%, erasing all gains from the previous month. Mixed signals from China's zero-COVID policy weighed on crude oil prices, and this was exacerbated by sell-offs the futures markets. Prices continued their upward trajectory y-o-y, increasing by 9.4%; however, this is the second consecutive month in which the y-o-y growth rate was lower than the previous month.

Henry Hub's natural gas prices declined for the third consecutive month, falling by 6.1% m-o-m. Gas demand for residential heating remained soft due to mild temperatures. At the same time, storage levels continued to rise, supported by the ongoing increase in US production (according to data from the US Energy Information Administration, average underground storage rose from 3,367 bcf in October to 3,568 bcf in November, a 6.0% increase m-o-m). Both of these factors put downward pressure on prices. Y-o-y, prices were up by 5.2%.

Natural gas prices in Europe fell for the third consecutive month. The **average Title Transfer Facility (TTF) price** went from \$39.02/mmbtu in October to \$35.72/mmbtu in November, an 8.5% decline m-o-m. Declining demand amid mild temperatures and robust storage levels in the EU continued to put downward pressure on prices. The latest data from Gas Infrastructure Europe shows EU gas storage at 92.3% capacity. Although significant upside risks remains due to the ongoing geopolitical developments in the region, the recent declines suggest a price correction supported by market fundamentals. Y-o-y, prices were up by 29.3%, a slightly higher trend compared with last month.

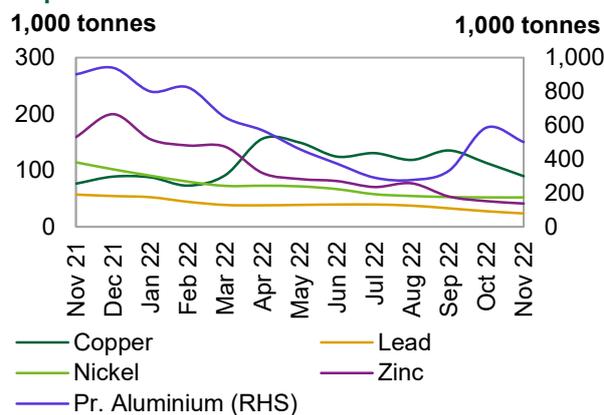
Australian thermal coal prices declined for the second consecutive month, falling by 12.2% m-o-m. Prices continued to fall as concerns of supply disruptions amid a EU's self-imposed embargo on Russian coal imports eased considerably. Ongoing supplies from the Asia-Pacific region to the EU offset losses of Russian coal imports. Meanwhile, declining demand from China combined with increased Russian coal exports to the Asia-Pacific region offset the reallocation of cargoes to the EU. Y-o-y, prices were up by 117.3%.

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** turned around after two consecutive months of declines, increasing by 5.6% m-o-m. Prices of all index components advanced m-o-m, except zinc, which continued to be pressured by low iron ore prices. The index experienced high volatility throughout the month amid mixed signals from China's zero-COVID policy; nonetheless, China's ongoing monetary and fiscal support for property financing, a decline in energy prices, as well as a weaker USD helped improve global demand for metals, thus adding support for the index. Y-o-y, the index continued its downward trajectory, falling by 12.5%.

Aluminium prices rose for the second consecutive month, increasing by 4.2% m-o-m. Earlier in the month, the London Metal Exchange (LME) decided not to ban Russian aluminium. This decision had a counter effect on prices as demand quickly rose, putting upward pressure on prices. According to data from the LME, inventories fell by 14.5% m-o-m. Lower energy prices and a weaker USD also placed upward pressure on prices amid improved demand. Y-o-y, prices continued to trend downwards, falling by 10.8%.

Average monthly **copper prices** recovered from the previous month's decline to increase by 5.2% m-o-m. Ongoing supply disruptions from Chile, one of the biggest metal producers, put pressure on prices. Additionally, inventories at the LME fell for the second consecutive month, declining by 34.6% m-o-m. The decline in inventories signalled supply tightness amid signs of industrial demand recovery. Y-o-y, prices continued to trend downwards, falling by 17.3%.

Lead prices advanced for the second consecutive month, increasing by 5.0% m-o-m. The ongoing surge in EV production and declining inventories continued to support prices. Data from the LME shows that inventories fell for the third consecutive month, decreasing m-o-m by 9.8%. Prices were down by 9.9% y-o-y.

Movement of both **nickel and zinc** prices were mixed m-o-m. **Nickel** prices rose sharply by 16.0% m-o-m, while **zinc** prices fell for the third consecutive month, declining by 0.9% in the same period. **Nickel** prices rose earlier in the month on concerns of a potential supply disruption from Indonesia. These concerns eased later in the month but this was not enough to offset the earlier gains made amid speculative activity. Meanwhile, declining steel orders from China weighed on zinc prices. In terms of inventories, nickel inventories declined further by 3.6% m-o-m, while zinc inventories fell by 16.4% in the same period. Y-o-y, nickel prices were up by 28.2% while zinc prices were down by 11.2%.

The **precious metals index** turned around after two consecutive months of declines, rising by 4.3% m-o-m, led by silver. Metals prices rose on signs that the US Federal Reserve may slow down the pace of its ongoing monetary tightening cycle, in addition to a weaker USD. Gold prices rose by 3.7% m-o-m, and silver and platinum advanced by 8.2% and 8.1%, respectively, in the same period. Rising demand from industrial activity, particularly from EV production, continued to add support to both silver and platinum prices. Y-o-y, the index was down by 4.7%. Gold was down by 5.3%, silver by 13.1% and platinum by 4.7% y-o-y.

Investment flows into commodities

Total money managers' net length rose for the second consecutive month, increasing by 73.4% m-o-m. The net length increase continued to be driven by a sharp decline in short positions held across selected commodities. Meanwhile, total open interest decreased by 1.5% m-o-m, erasing gains from the previous period. Crude oil experienced the biggest decline, followed by copper, but was partially offset by an increase in gold and natural gas.

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

| Selected commodity | Open interest | | Net length | | | |
|--------------------|---------------|--------|------------|------|--------|------|
| | Oct 22 | Nov 22 | Oct 22 | % OI | Nov 22 | % OI |
| Crude oil | 2,090 | 2,003 | 189 | 9 | 188 | 9 |
| Natural gas | 982 | 995 | -91 | -9 | -69 | -7 |
| Gold | 588 | 612 | -12 | -2 | 11 | 2 |
| Copper | 188 | 181 | -3 | -1 | 15 | 8 |

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

Sources: CFTC and OPEC.

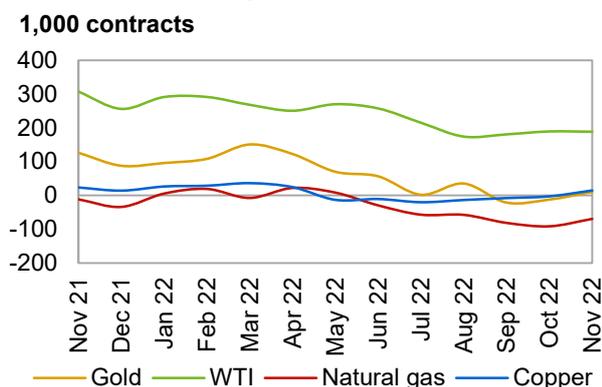
Total crude oil (WTI) open interest (OI) decreased m-o-m by 4.1%. Money managers' net length also fell, decreasing by 0.4% in the same period. Money managers turned bearish by increasing their short positions amid mixed signals from China's zero-COVID policy.

Total Henry Hub natural gas OI increased for the second consecutive month, rising by 1.3% m-o-m. Money managers also increased their net length for the second consecutive month by 24.0% in the same period. Net length continued to rise due to declining short positions; however, ongoing increases in supply availability remained a drag on investor sentiment.

Gold's OI increased after three consecutive months of declines, rising by 4.0% m-o-m. Net length also reversed its negative trend, increasing by 190.1% in the same period. A weaker USD and expectations of a less hawkish US Federal Reserve improved market sentiment on gold m-o-m.

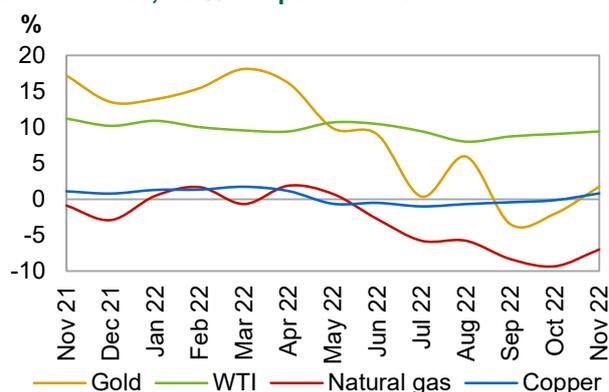
Copper's OI decreased by 3.8% m-o-m. Meanwhile, net length recovered from the previous month's decline (669.8% m-o-m) due to the combination of money managers reducing their short positions while increasing their long positions at the same time. The m-o-m recovery of copper prices was a bullish factor for investors.

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



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

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



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

World Economy

Although global economic uncertainties are high and growth risks in key economies remain tilted to the downside, upside factors that may counterbalance current and upcoming challenges have emerged as well. Downside risks include higher-than-expected inflation that has prompted further monetary tightening by major central banks, with these factors contributing to rising sovereign debt levels in many regions. While labour markets are forecast to become less tight in 2023, labour resource constraints are forecast to continue, especially in the advanced economies, probably prompting a continued rise in wages and salaries. This may have an extended effect on core inflation, although this remains to be seen. Supply chain constraints have eased but could re-emerge, depending on the demand pattern going forward. Other factors to monitor include the outcome of geopolitical tensions and China's zero COVID-19 policy, along with ongoing trade-related issues within the global economic framework – especially between the US and China.

Upside potential – or at least counterbalancing factors – may come from the US Federal Reserve successfully managing a soft landing in the US, as well as from a continued easing of commodity prices and a resolution of the tensions in Eastern Europe.

By taking into account the better-than-expected growth up to 3Q22, particularly in the US and other OECD economies, as well as Brazil and Russia, the global economic growth forecast for 2022 is revised up to 2.8% from 2.7% in the previous estimate. The global slowdown expected to materialize in 4Q22 is forecast to carry over into 1H23, similar to the previous month's forecast. With this trend likely to continue and by taking the rising downside uncertainties as well as potential upside factors into consideration, the 2023 forecast is unchanged at 2.5%.

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

| | World | OECD | US | Euro-zone | UK | Japan | China | India | Brazil | Russia |
|-----------------------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|-------------|
| 2022 | 2.8 | 2.4 | 1.7 | 3.0 | 3.3 | 1.5 | 3.1 | 6.5 | 2.4 | -5.0 |
| Change from previous month | 0.1 | 0.1 | 0.2 | 0.0 | 0.3 | 0.0 | 0.0 | 0.0 | 0.9 | 0.7 |
| 2023 | 2.5 | 0.8 | 0.8 | 0.3 | 0.0 | 1.0 | 4.8 | 5.6 | 1.0 | 0.2 |
| Change from previous month | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

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

Source: OPEC.

Update on the latest global developments

GDP growth levels in both the Euro-zone and the US were better than expected in 3Q22. So far this year, consumer spending – especially in the wealthier economies – has been supported by a combination of ongoing social welfare measures in the advanced economies, rising wages and salaries, and increasing debt-financed consumption (particularly in the US), as well as consumers tapping into their savings. Nevertheless, the effects of ongoing monetary tightening and rising inflation are forecast to be associated with a slowdown in consumption and investment, leading to a decline in the Euro-zone economy in 4Q22 and somewhat lower growth in the US. In 3Q22, growth in China was better than anticipated after the economy faced challenges in 1H22. The decision at the beginning of December to loosen the strict COVID-19 policies could have a positive effect on China's 4Q22 expansion. India experienced a good recovery in 1H22, and its recently released 3Q22 GDP data indicate sound momentum, a trend that appears to continue into 4Q22 and carry over into 2023, albeit at a slowing pace. Brazil rebounded strongly as well, while Russia has faced a range of sanctions, pushing growth levels into negative territory; however, Russia's economy performed better than expected up to 3Q22.

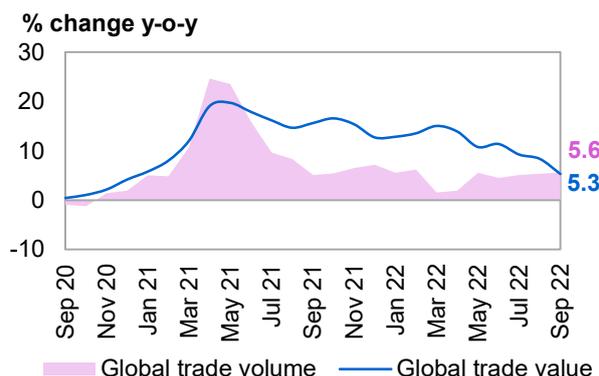
Headline **inflation** recently began to gradually slowdown in most major economies, albeit at varying degrees. This has resulted from the combination of retracting world energy and food prices; declining price pressure from the easing of pent-up demand after lifting COVID-19 lockdowns in advanced economies; and a softening of supply chain issues that have impacted global goods price levels. However, core inflation of the personal consumption expenditure index, which is a general guideline for the Fed, remained persistently high at more than 5%, indicating that inflation may result in further monetary policy actions by the US central bank. In the Euro-zone, headline inflation started to decelerate, while core inflation continued to rise as it stood at more than 6% in November.

Hence, the Fed and the European Central Bank (ECB) have continued carrying out their monetary tightening efforts. Both the Fed and the ECB increased their key interest rates by a further 75 basis points (bp) in November and October, respectively.

World trade performed well in volume terms, less so in value terms, considering the strong US dollar and the softening of commodity prices since mid-year. Global trade in value terms increased by 5.3% y-o-y in September compared with 8.4% y-o-y in August and after growth of 9.2% y-o-y in July, based on the CPB World Trade Monitor Index provided by the CPB Netherlands Bureau for Economic Policy Analysis.

Trade in volume terms rose by 5.6% y-o-y in September, compared with 5.4% y-o-y in August, following 5.1% y-o-y in July.

Graph 3 - 1: Global trade



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

Near-term global expectations

Economic growth levels have varied regionally during the first three quarters of the year. However, taken together, economic growth globally was better than expected up to 3Q22, but the growth dynamic is forecast to slow down in 4Q22 and beyond. The depth of this support in consumer spending will taper off towards the end of the year and in 2023.

The Euro-zone, in particular, is expected to face a GDP growth decline in 4Q22 and 1Q23, impacted by high energy prices in combination with generally rising inflation, a tight labour market and consequently, a pickup in monetary tightening activity. Current 4Q22 indicators point to a relatively moderate decline in the Euro-zone's economic activity during the turn of the year. The US is forecast to slow down as well in 4Q22, and growth is anticipated to be low in 2023 at slightly below 1%. After muted growth in 1H23, growth in the US and the

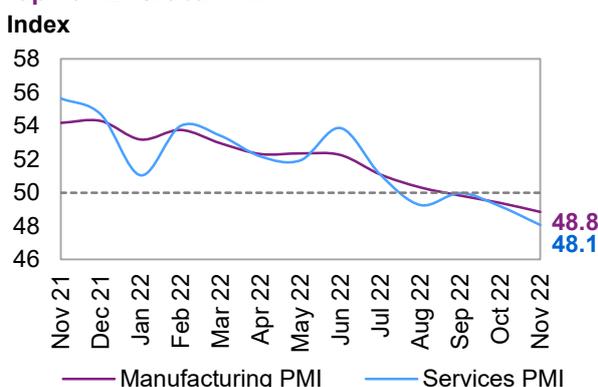
Euro-zone is expected to pick up more significantly in 3Q23, a pattern that is also expected to materialize in Japan. An important driver of this growth dynamic in 2H23 is an expected gradual slowdown in inflation, which would lead to a variety of supportive effects. The Fed, in particular, may start to lower its interest rate level again towards the end of 2023, and the ECB is expected to slow its monetary tightening cycle, although, in contrast to the Fed, it is expected to continue to hike interest rates until the end of 2023. In emerging economies, China's annual growth is forecast to remain slightly below the 5% GDP growth target level, while India is forecast to perform slightly better. Both Brazil and Russia are forecast to remain two weak spots, with both economies expected to experience low growth levels, though for different reasons.

Downside risks to the current growth forecast include ongoing and higher-than-expected inflation and, consequently, further monetary tightening by major central banks, with these factors contributing to rising sovereign debt levels in many regions. While labour markets are forecast to become less tight in 2023, labour resource constraints (especially in the advanced economies) are forecast to continue, probably leading to further rises in wages and salaries. This may have an extended effect on core inflation, although this remains to be seen. Supply chain constraints have eased but could re-emerge, depending on the demand pattern going forward. Other factors to monitor include the outcome of geopolitical tensions and China's zero-COVID-19 policy, along with ongoing trade-related issues within the global economic framework – especially between the US and China. Upside potential or at least counterbalancing factors may come from the Fed successfully managing a soft landing in the US, a continuation of the easing of commodity prices and a resolution of the tensions in Eastern Europe.

Importantly, the forecast assumes that the situation in Ukraine will not escalate further and spread to other countries. Also, inflation is forecast to retract gradually while impacting consumer spending patterns, especially in 4Q22 and 1H23. Consequently, monetary tightening is assumed to continue, but with some slowing momentum, especially by the Fed, while the ECB is expected to continue lifting interest rates relatively more forcefully in 2023, with a more consequential effect in dampening the Euro-zone's economic activity. While challenged by energy prices, Euro-zone economies are not expected to experience recessions in 2023. The pandemic is of less significance than in the past but continues to have some impact – particularly in China. Counterbalancing fiscal measures are expected to be restricted in the coming year as some of the wealthier economies have already indicated that they would reach limitations in fiscal spending in 2023 if they were to continue at this and past years' pace.

Global purchasing managers’ indices (PMIs) reflect the latest slowdown in major economies. The global manufacturing PMI in September retracted to stand at 48.8 in November, compared with 49.4 in October and 49.8 in September, remaining below the growth-indicating level of 50. The global services sector PMI fell to stand at 48.1 in November, compared with 49.2 in October and 50 in September.

Graph 3 - 2: Global PMI



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

Based on better-than-anticipated momentum in the first three quarters of 2022, the annual **GDP growth** forecast was revised up slightly to stand at 2.8%, albeit the 4Q22 growth trend is forecast to slow down. Moreover, the growth forecast for 2023 remains at 2.5%, showing a further slowdown from the 4Q22 growth dynamic and carrying over into 2023, and only picking up momentum by 2H23.

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

| | World |
|-----------------------------------|------------|
| 2022 | 2.8 |
| Change from previous month | 0.0 |
| 2023 | 2.5 |
| Change from previous month | 0.0 |

Note: * 2022 and 2023 = Forecast.

Source: OPEC.

OECD

OECD Americas

US

Update on the latest developments

The latest data confirmed that the US economy rebounded strongly in 3Q22 – and stronger than estimated previously – following reported GDP declines of 1.6% q-o-q SAAR and 0.6% q-o-q SAAR in 1Q22 and 2Q22, respectively. Growth in 3Q22 stood at 2.9% q-o-q SAAR, compared with a previous and first estimate of 2.6% by the US Bureau of Economic Analysis (BEA). Personal consumption rose by 1.7% q-o-q SAAR in 3Q22, slightly below the 2% y-o-y as reported for 2Q22.

Inflation has retracted further but remained elevated amid a tight labour market that has led to strong wage and salary increases. However, the slowing of pent-up demand, the softening of commodity prices and the improvement in global supply chains may have supported the moderation of price increases. Nonetheless, core inflation remained high. Hence, the trend of further monetary tightening will likely continue in December, as the Fed indicates. The Fed’s guiding inflation measure, the core inflation level of the personal consumption expenditures index, remained persistently high at around 5% in recent months. The measure stood at 5% y-o-y in October, the latest available data. This compares with 5.2% in September and 4.9% in August – well above the Fed’s 2% target. Inflation based on the broader consumer price index retracted, albeit remained at a very high level of 7.8% y-o-y in October, compared with 8.2% y-o-y in September and August. Given the loss in real income, which constitutes an important sentiment driver, consumer confidence based on the Conference Board index fell to 100.2 in November, compared with 102.2 in October and 107.8 in September.

The labour market remains tight even after showing tender signs of easing. The **unemployment rate** remained at a very low level of 3.7% in November, the same as in October, compared with 3.5% in September.

Similarly, the **participation rate** has not changed materially. It stood at 62.1% in November, compared with 62.2% in October and 62.3% in September.

Non-farm payrolls continued to rise and remained strong but were at the lowest level for this year in November. There were 263,000 new jobs recorded in November, following an upwardly revised increase of 284,000 in October. The corresponding hourly wage growth remained strong, rising by 5.1% y-o-y compared with 4.9% y-o-y in October and 5.1% in September. This ongoing strong momentum will need further monitoring, given its impact on total inflation.

Near-term expectations

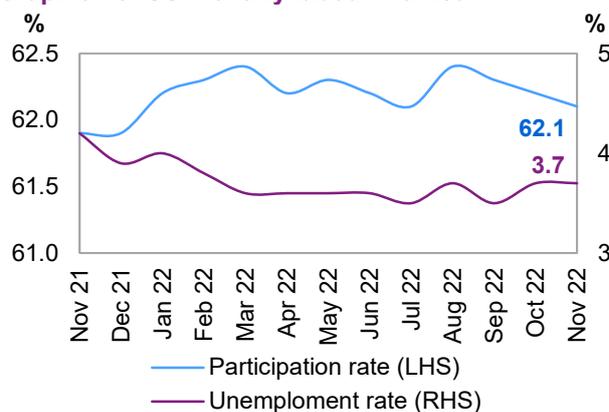
US growth performed relatively better than expected in the first three quarters of 2022, although uncertainty remains about the growth pattern in 4Q22 and beyond. The services sector, a strong motor in 3Q22 growth, is predicted to recover further in 4Q22 and beyond. There is still some room for uncertainty with regard to the interactions between inflation and the Fed's monetary policies. While the Fed may have started to tighten its monetary policies relatively late, inflation has come down gradually, and while core inflation is still high, it seems to have at least stabilized. Depending on the Fed's near-term actions in combination with the inflationary trend, a soft landing, as currently foreseen in the Secretariat's forecast, is a possible outcome. However, some indicators, notably the inverse yield curve, i.e., the negative yield-spread between short-term treasury bonds and the 10-year treasury bond, and the very low unemployment rate as a good indicator for future economic turbulences, are pointing at the likelihood of a US recession somewhere in 2023.

Currently, **4Q22 growth is forecast to slow**, a dynamic that will **carry over into 2023**. Growth is seen picking up in 3Q23 as inflation is expected to drop back to a level of around 4% before falling below 4% in 4Q23. This is anticipated to consequently lead the Fed to slightly lower its key policy rate in 4Q23. For the time being, the Fed is likely to lift interest rates by another 50 bp in December, followed by an increase of up to 50 bp in 1H23. By 4Q23, the Fed is expected to start lowering interest rates again, although that remains to be seen.

Moreover, rising **sovereign debt levels** and associated debt services may cause fiscal constraints. The question of lifting the debt ceiling will again arise soon in Congress and may create troubles for the US administration and the economy, similar to 2011. US federal debt may reach its statutory limit in the next few weeks. Early estimates suggest that funding could be challenging by around the summer of 2023. These factors require close monitoring but are not expected to pose an imminent challenge.

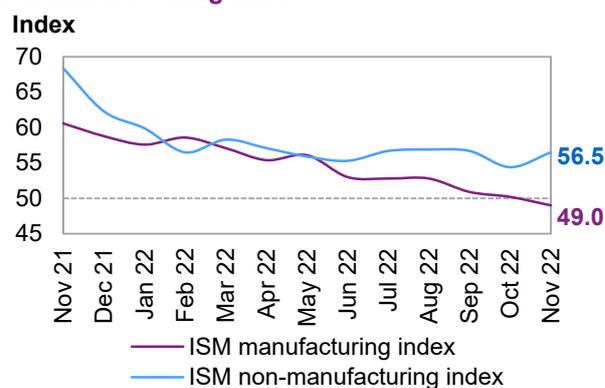
November **PMI** levels, as provided by the Institute for Supply Management (ISM), reflect a weakening in the manufacturing sector, while the services sector rebounded strongly. The November manufacturing PMI fell by 1.2 points to a stand at an index level of 49.0, below the growth-indicating level of 50.0. The index level for the services sector, representing around 70% of the US economy, rose significantly to stand at 56.5 in November, compared with 54.4 in October. This points to a continued sound recovery in this important area of the US economy.

Graph 3 - 3: US monthly labour market



Sources: Bureau of Labor Statistics and Haver Analytics.

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



Sources: Institute for Supply Management and Haver Analytics.

Taking into consideration the decline in 1H22 growth and the potential solid rebound in 2H22, the **US GDP growth** for **2022** was revised up to 1.7%, compared with 1.5% in the previous month.

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

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

| | US |
|-----------------------------------|------------|
| 2022 | 1.5 |
| Change from previous month | 0.0 |
| 2023 | 0.8 |
| Change from previous month | 0.0 |

Note: * 2022 and 2023 = Forecast.

Source: OPEC.

OECD Europe

Euro-zone

Update on the latest developments

Euro-zone growth for 3Q22 was revised up by Eurostat, the EU’s statistical office. After strong 1Q22 GDP growth of 2.4% q-o-q SAAR, it accelerated to 3.3% q-o-q SAAR in 2Q22. In 3Q22, GDP growth slowed considerably but was again reported higher than in the statistical office’s first estimate, as growth stood at 0.8% q-o-q SAAR, compared with the previous estimate of 0.7% q-o-q SAAR. Details of this 3Q22 growth estimate will be published only at a later stage. Growth in the first three quarters of the year has certainly been supported by the relatively accommodative monetary policies of the ECB. However, while the ECB monetary policies remained relatively accommodative throughout 1H22, this has changed considerably, with the ECB lifting key policy rates by 2 pp between July and October. The ECB lifted interest rates by 50 bp in July, hiked its key policy rate by 75 bp in both September and October, and indicated that it would continue to stay the course in monetary tightening.

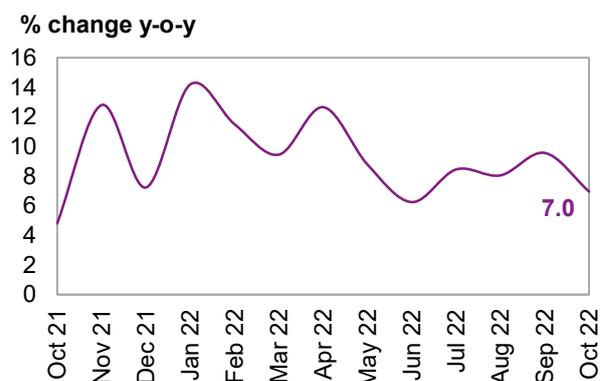
A **recovery in the contact-intensive services sector**, particularly travel and transportation, as well as leisure and hospitality, towards the summer months supported 1H22 economic growth. This strong dynamic came despite numerous COVID-19 restrictions in 1H22 throughout the Euro-zone economies, rising inflation, geopolitical tensions in Eastern Europe, and energy supply disruptions. Some of these challenges were counterbalanced by fiscal spending following the acceleration in inflation after the outbreak of tensions in Eastern Europe in February. Moreover, rising wages, consumers tapping their savings and an increase in consumer credit helped support consumption and counterbalance a negative trend in consumer sentiment.

Inflation eased slightly to stand at 10% y-o-y after reaching a record-high of 10.7% y-o-y in October. It had reached an already elevated level of 9.9% y-o-y in September and 9.1% y-o-y in August. When excluding volatile items such as food and energy, inflation stood at 6.6% y-o-y in November, compared with 6.4% y-o-y in October and a rise of 6% y-o-y in September. The ECB’s still relatively accommodative monetary policy up to at least July supported debt-related financing to the private sector and hence was an important pillar in economic growth in 1H22. Lending to the private sector by financial institutions continued to expand, but, as a consequence, rising interest rates slowed down. Lending activity rose by 6.5% y-o-y in October, a still high number, but retracted from 7% y-o-y in September and 6.6% y-o-y in August.

The **labour market** maintained its positive trajectory. According to the latest numbers from Eurostat, the unemployment rate fell to 6.5% in October from 6.6% in September and 6.7% in August.

Growth in **retail sales** in value terms slowed in October, reaching a level of 7.0% y-o-y compared with 9.6% y-o-y in September and 8.1% y-o-y in August. Hence, consumers have not scaled back their value spending despite higher retail prices. However, spending in volume terms has declined as it fell by 2.6% y-o-y in October, after a stagnant development in September.

Graph 3 - 5: Euro-zone retail sales



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

Industrial production expanded further in September, the latest available data. It grew by 4.3% y-o-y, compared with 3% y-o-y in August and following a decline of 2.3% y-o-y in July. Positively, this yearly uptick compared to already strong September and August levels from 2021. Hence, industrial activity showed solid development and rose by 2% m-o-m in August and 0.9% y-o-y in September.

Near-term expectations

While the **Euro-zone's economy** seems to have performed better than expected in the first three quarters, challenges were on the rise towards the end of the year and could carry over into 2023. The impact of the energy supply issues, in combination with inflation and the consequent monetary tightening efforts by the ECB, will play a major role in how the economy will perform going forward. So far, the growth dynamic has been solid, and there is a possibility that the economy will overcome the energy-intensive heating season better than expected. As the ECB started to gradually tighten its monetary policies and is forecast to lift its key policy rate further in December, strong lending activity was recorded up to 3Q22, but it is forecast to slow in 4Q22 and beyond, with a consequent negative impact, especially in the real estate sector and in business-related investment in general. In addition, rising debt levels could limit fiscal stimulus measures in several key Euro-zone economies.

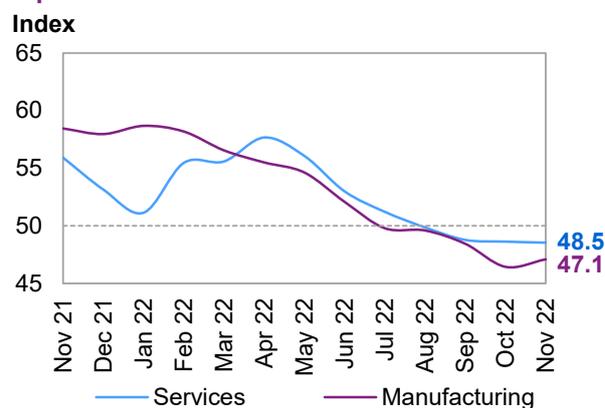
The **ECB's tightening measures** are, however, forecast to have a positive impact on the euro exchange rate and import prices, as has been seen very recently. Hence, these efforts may also have a dampening effect on inflation next year, certainly depending on the Fed's actions and the performance of the US economy, which would impact the euro/US dollar value. The ECB is forecast to lift its key policy rate by 75 bp in December and 50 bp in 1H23, raising the rate to more than 3% in 2023.

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

The PMI for services, the largest sector in the Euro-zone, continues to show signs of a 4Q22 contraction as it remained below the growth-indicating level of 50. The services sector PMI stood at 48.5 in November, compared with 48.6 in October and 48.8 in September.

The manufacturing PMI improved slightly but remained clearly in contraction territory below the index level of 50. It stood at 47.1 in November, rising slightly from 46.4 in October and compared with 48.4 in September.

Graph 3 - 6: Euro-zone PMIs



Sources: IHS Markit and Haver Analytics.

The region's GDP grew respectively by 2.4%, 3.3% and 0.8% q-o-q SAAR in 1Q22, 2Q22 and 3Q22. The Euro-zone's GDP is forecast to decline by 4.7% q-o-q SAAR in 4Q22.

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

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

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

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

Note: * 2022 and 2023 = Forecast.

Source: OPEC.

OECD Asia Pacific

Japan

Update on latest developments

The most **recent economic data** from Japan provided a mixed picture, with some data points, like industrial production or consumer confidence, pointing to economic challenges, while other indicators (like machinery orders and exports) underscore a solid underlying growth trend. In 3Q22, GDP growth was reported to have declined by 1.2% q-o-q SAAR. This came amid a rise in COVID-19 infections in 3Q22 that led to a drop in mobility and dampened some services sector activity. GDP growth in 1Q22 was reported at 0.2% q-o-q SAAR. Japan's GDP growth picked up strongly in 2Q22 to reach a level of 4.6% q-o-q SAAR. Private consumption held up well in 3Q22 at a growth rate of 1.1% q-o-q SAAR, albeit it was much lower than in 2Q22 when it expanded by 5.1% q-o-q SAAR.

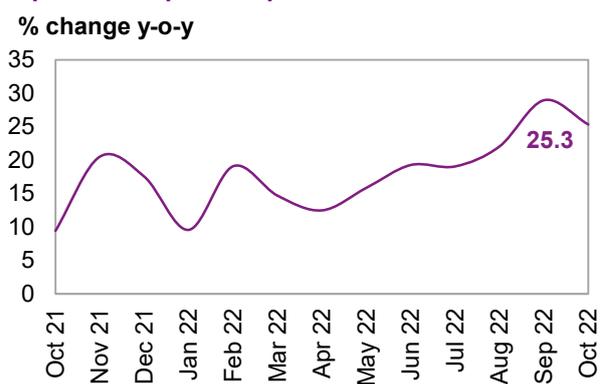
Some further concern came from the weakening yen, an obviously supportive factor for exports, but it also has led to rising import prices, with a dampening effect on the GDP in 3Q22. Imports rose by 10.6% y-o-y, and the effect of the weak yen became visible in Japan's import bill. As the yen appreciated to the US dollar since its low levels in October by more than 10%, this negative effect the strong depreciation had on import prices may lessen in the coming quarters.

Consumer inflation, which has not been an issue for the Japanese economy for a long time, has appreciated significantly, especially when compared with pre-COVID-19 levels. Inflation rose by 3.8% y-o-y in October, the latest available data, which constitutes the highest level since the beginning of the 1990s, except for a period in 2014 when a sales tax increase briefly lifted total inflation to around the same level. 3.8% was reported in October, compared with 3.0% in September and August and 2.6% y-o-y in July. It remains to be seen how the Bank of Japan (BoJ) will react to these inflationary levels, but it is forecast to gradually tighten its monetary policy, yet it will still remain relatively accommodative compared to the other G4 central banks. The limited monetary policy tightening that has occurred has significantly contributed to the weakening of the yen, especially compared to the US dollar, but also the euro. As the BoJ is expected to rein in inflation gradually, the exchange rate has already appreciated and is anticipated to continue in 4Q22. The exchange rate stood at almost 150 to the US dollar at the end of October, while it appreciated to a level of around 135 in December.

Industrial production (IP) retracted to stand at 3.9% y-o-y in October, compared with 9.2% in September and after a rise of 4.1% y-o-y in August. It had declined in all previous months of the year except for February. The yearly retraction translates to a monthly decline of 2.6% m-o-m in October and -1.3% m-o-m in September, all on a seasonally adjusted base.

After a weakening trend in 1Q22, **export growth** accelerated in 2Q22 and again in 3Q22, rising by 25.3 y-o-y in October, compared with 28.9% y-o-y in September and 22% y-o-y in August, all on a non-seasonally adjusted basis. Quarterly growth stood at 14.5% y-o-y in 1Q22, 15.9% y-o-y in 2Q22 and 23.2% y-o-y in 3Q22.

Graph 3 - 7: Japan's exports



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

Retail sales continued their solid trend in October, rising by 4.2% y-o-y, following 4.6% y-o-y in September and 4.1% y-o-y in August.

Consumer confidence has, however, retracted further, standing at an index level of 29.4 in November, compared with 30.7 in October and 31 in September, indicating a clear downward slope in consumption towards the end of the year.

Near-term expectations

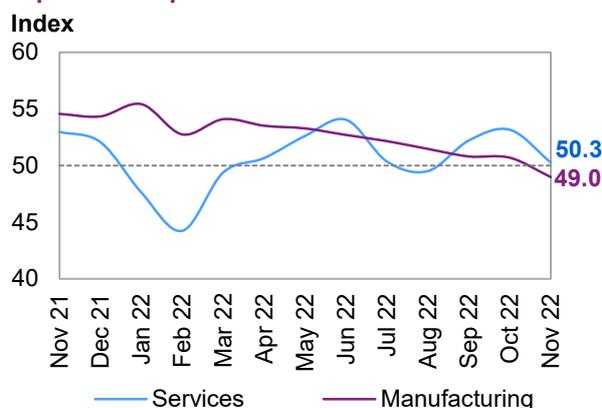
After the surprising decline of 3Q22 growth, **economic activity** is forecast to pick up again in 4Q22. Despite this expected rebound, economic growth is forecast to remain soft in 2023. The current economic signals are mixed, but likely, Japan will not escape the growth limitations of its labour market, its already relatively high utilization rates and the slowdown in global economic activity, which will be felt in external trade.

A positive surprise in exports may come if the US manages a soft landing and avoids a recession, and possibly if the further reopening in China, and the avoidance of further lockdown measures, will lift China's consumption beyond the current base assumptions. As it seems, the 3Q22 GDP decline in Japan was still significantly impacted by the lockdown measures, holding back consumption. The 4Q22 growth dynamic is therefore expected to be very much supported by pent-up demand and a rebound in activity, especially in the contact-intensive services sector. While the momentum in 2023 will slow, Japan's economy will continue to be well supported by exports and local consumption. However, downside risks may come from a resurgence in COVID-19 infections, and the consequent re-emergence of lockdown measures, further rises in inflation and the need for more forceful monetary tightening by the BoJ.

After 1Q22, GDP growth was reported to have expanded by 0.2% q-o-q SAAR and by 4.6% q-o-q SAAR in 2Q22, 3Q22 GDP growth declined, falling by 1.2% q-o-q SAAR. Consequently, 4Q22 growth is forecast to rebound and expand by 2.5%.

November PMI numbers have retracted, pointing to ongoing challenges, especially in the manufacturing sector. The services sector seems to face some challenges, according to the PMI index, but is still in expansion territory. The services sector PMI, which constitutes around two-thirds of the Japanese economy, fell to a level of 50.3, a considerable drop from 53.2 recorded in October. The manufacturing PMI fell below the growth-indicating level of 50.0, to stand at 49 in November, compared with 50.7 in October.

Graph 3 - 8: Japan's PMIs



Sources: IHS Markit, Nikkei and Haver Analytics.

Japan's GDP growth seems to have been relatively well supported, albeit at a volatile and lockdown-related dynamic. **The 2022 GDP growth forecast** remains at 1.5%. While upside potential exists, challenges may lie ahead, including a further rise in inflation, weakening external trade and a continued weak Japanese yen.

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

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

| | Japan |
|-----------------------------------|------------|
| 2022 | 1.5 |
| Change from previous month | 0.0 |
| 2023 | 1.0 |
| Change from previous month | 0.0 |

Note: * 2022 and 2023 = Forecast.

Source: OPEC.

Non-OECD

China

Update on the latest developments

Despite the recent relaxation in the implementation of the zero-COVID-19 policy, **China's economic growth** remains challenged by the lagged impact of the lockdowns and property sector strains.

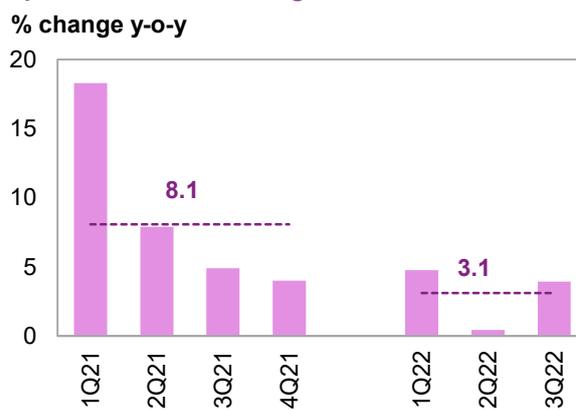
Recent **industrial production** growth eased in October to 5.0% y-o-y from 6.3% y-o-y in the prior month, a clear sign that manufacturing activity continues to be impacted by COVID-19 restrictions. The impact of the restrictions was pronounced in nominal retail trade, which unexpectedly contracted by 0.5% y-o-y in October 2022, shifting from the growth of 2.5% in the prior month. This marked the first drop in retail trade in five months as private consumption remained fragile amid the impact of rising COVID-19 infections and strict countermeasures.

October data suggests that China's **trade surplus** dropped to less than \$70 billion in November 2022 from \$71.7 billion in October 2022. This was the smallest trade surplus since April 2022, mirroring the impact of weakening global and domestic demand.

Exports shrank about 8.7% y-o-y due to the weakening overseas demand amid high inflation and supply disruptions. Similarly, imports fell 10.6% y-o-y due to weak domestic demand amid widespread COVID-19 curbs.

The **annual inflation rate** dropped to 1.6% y-o-y in November from 2.1% y-o-y in October. This decline mirrors the consumption downturn in China, which kept inflation low as the country's zero COVID-19 policy impacted consumer demand. Moreover, the slump in China's real estate sector hurt the demand for energy and commodities. In the meantime, the People's Bank of China (PBoC) set a CPI target of around 3% for 2022, the same as in 2021.

Graph 3 - 9: China's GDP growth



Sources: National Bureau of Statistics and Haver Analytics.

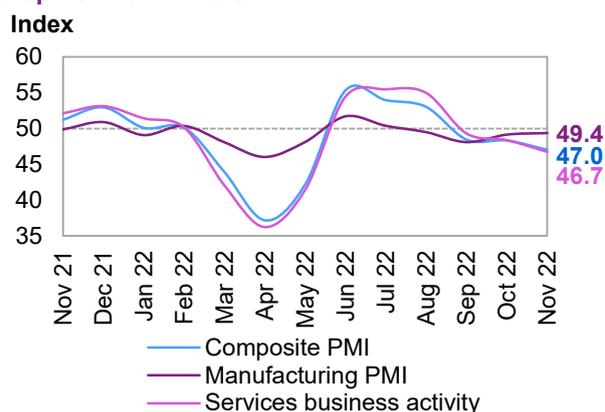
Near-term expectations

China's economy might start to recover, considering the recent easing of some strict lockdown measures and government support that provided more financing for the property sector. However, this recovery might be slow and bumpy as it depends on the government's COVID-19 measures and the rate of infections. Recent monetary and fiscal measures might provide additional recovery support; however, low business and consumer confidence, as well as external economic conditions, might cloud the short-term economic environment. External demand for Chin products might also slowdown as a result of the slowing global growth. Besides, the increased restrictions easing move outside China might drive global demand away from goods and more towards services. At the same time, the US has imposed a fresh set of restrictions on semiconductor-related exports to China, drawing attention to the ongoing trade frictions, which need to be closely monitored. Additional downside risks may also emanate from the pressure on the property sector and its potential financial repercussions, as well as concerns about new virus outbreaks and relatively subdued customer demand.

It is worth mentioning that China's recovery could be uneven amid a strong government sector coupled with a weak private sector associated with stagnant real estate growth.

Recent **Caixin China General PMI** readings for manufacturing went slightly up to 49.4 in November from 49.2 in the previous month. Yet the reading still marked a contraction in the sector for the fourth straight month. Moreover, the November services PMI dropped to 46.7 in November from 48.4 in October, reflecting the impacts of the COVID-19 lockdowns.

Graph 3 - 10: China's PMI



Sources: Caixin, IHS Markit and Haver Analytics.

Considering the uncertainty associated with the recent trends in economic activity. China's 2022 and 2023 **GDP forecast** remains unchanged from last month's assessment at 3.1% and 4.8%, respectively. Potential growth might result from further relaxation of lockdown restrictions as well as higher household consumption and greater external demand. Meanwhile, downside pressure may emerge, including potential risks related to new COVID-19 variants over the upcoming new year celebration, which could hinder the economic recovery in 1Q23.

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

| | China |
|-----------------------------------|------------|
| 2022 | 3.1 |
| Change from previous month | 0.0 |
| 2023 | 4.8 |
| Change from previous month | 0.0 |

Note: * 2022 and 2023 = Forecast.

Source: OPEC.

Other Asia

India

Update on the latest developments

India's real GDP advanced 6.3% y-o-y in 3Q22, well below the 13.5% y-o-y growth in 2Q22 as low base year distortions faded. In comparison to 2Q22, private spending growth slowed sharply to 9.7% from 25.9% y-o-y. While investment growth dropped half its growth compared with 2Q22 growing at 10.4% y-o-y down from 20.1% y-o-y. Both **exports and imports** rose at a slower pace compared to the prior quarter. Export growth slowed to 11.5% y-o-y and imports to 25.4% y-o-y. Public expenditure shrank 4.4% y-o-y compared with 1.3% y-o-y in 2Q22. On the supply side, trade, hotels, transport and communication contributed significantly, growing by 14.7% y-o-y. On the other hand, both manufacturing and mining activities contracted by 4.3% and 2.8% y-o-y, respectively.

Monthly indicators implied a pickup in **industrial output**, which advanced by 3.1% y-o-y in September, following a contraction of 0.7% y-o-y in August as the expansion in capital infrastructure and consumer durables output continued to build momentum.

The **jobless rate** increased to 8% in November from 7.8% in October, while India's labour force participation rate increased to around 48% in 2Q22 from 47.3% in 1Q22.

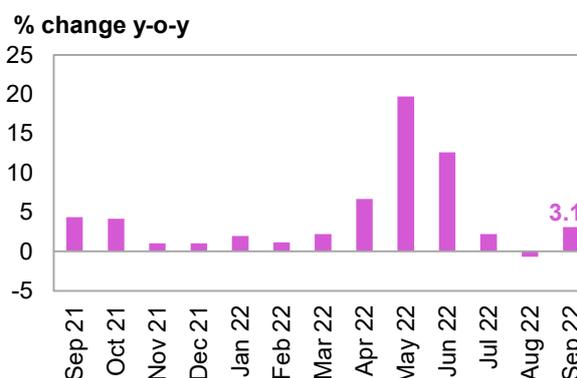
The slower rise in food prices and strong base effects helped ease annual **inflation** to 6.8% in October from 7.4% in September. Still, the Reserve Bank of India (RBI) hiked the **repo rate** for the fifth time this year to 6.25% in December. The central bank maintained its inflation forecast for FY 2023 at 6.7%, while it revised down the economic growth rate to 7.0% from 7.2%.

India's October **trade balance** posted a deficit of about \$26.9 billion and widened from \$25.7 billion in September.

Exports dropped to \$29.78 billion from \$35.45 billion in the previous month, the lowest since February 2021.

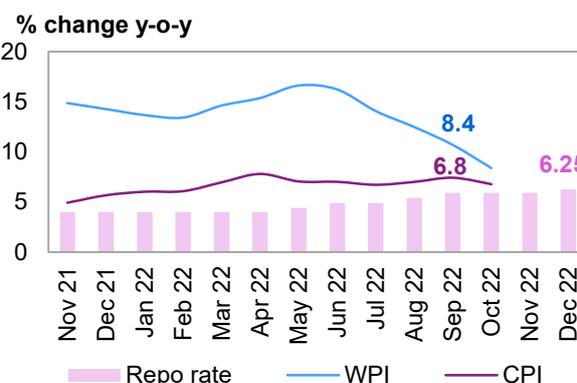
Meanwhile, **imports** declined to \$56.69 billion from \$61.16 billion, the lowest in eight months. Over the April–October period, exports expanded 12.6% y-o-y while imports advanced at a faster 33.1% y-o-y.

Graph 3 - 11: India's industrial production



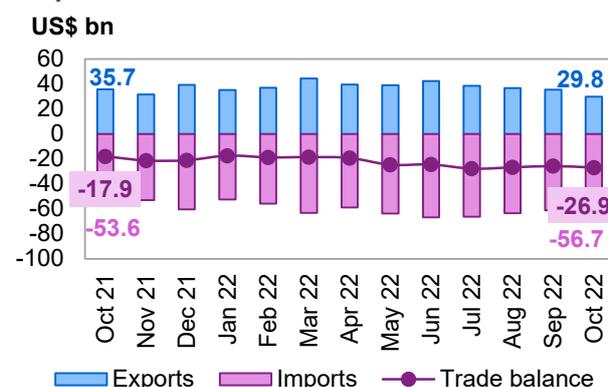
Sources: Ministry of Statistics and Program Implementation of India and Haver Analytics.

Graph 3 - 12: Repo rate and inflation in India



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

Graph 3 - 13: India's trade balance



Sources: Ministry of Commerce and Industry and Haver Analytics.

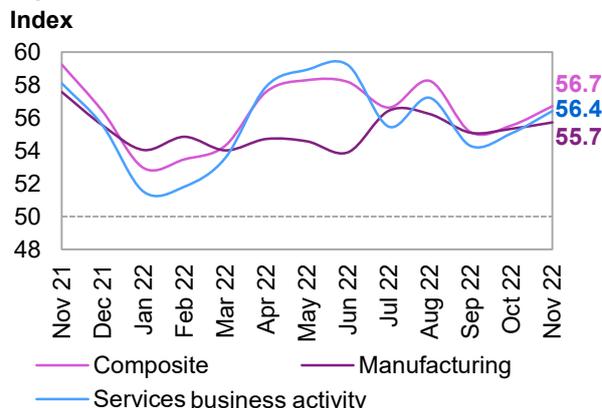
Near-term expectations

The recovery momentum supported by private consumption and investment growth might slow in the coming year due to high inflation, less accommodative monetary conditions and deteriorating external conditions. Household consumption may continue to grow, supported primarily by pent-up demand for high-contact activities. But consumers could turn more cautious amid the monetary policy transmission, which might elevate price pressure.

The S&P Global **Manufacturing PMI** slightly picked up in November to 55.7 from 55.3 in September. The November reading marked the 17th straight month of rising factory activity amid demand resilience that boosted growth, with firms noting the quickest rise in new orders and output.

Likewise, the **Services PMI** rose to 56.4 in November from an October reading of 55.1, supported by a sharp expansion in output and further job creation in the services sector.

Graph 3 - 14: India's PMIs



Sources: IHS Markit and Haver Analytics.

India's 2022 and 2023 **GDP growth** forecasts remain unchanged from the previous assessment of 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 | 0.0 |
| 2023 | 5.6 |
| Change from previous month | 0.0 |

Note: * 2022 and 2023 = Forecast.

Source: OPEC.

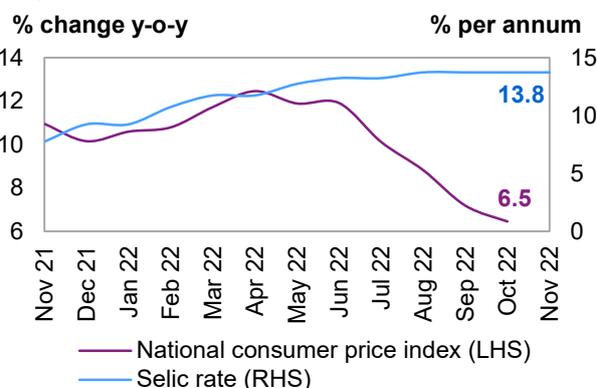
Latin America

Brazil

Update on latest developments

Brazil's **real GDP** grew 3.6% y-o-y in 3Q22, following an upwardly revised 3.7% advance in 2Q22. Growth in 3Q22 was mainly supported by an increase in government spending of 1.0% y-o-y, up from 0.9% y-o-y in 2Q22. Gross fixed capital formation surged 5.0% y-o-y. Meanwhile, private consumption slowed compared with 2Q22 and grew at 4.6% y-o-y vs. 5.7% y-o-y. Exports advanced 8.1 y-o-y compared with a contraction of 4.6% in 2Q22, while imports grew 10.6% y-o-y following a contraction of 1.0% y-o-y 2Q22. On a seasonally adjusted quarterly basis, the GDP grew 0.4%, easing from a revised 1.0% advance in the previous period.

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



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

Economic activity stagnated recently, indicating a slower growth momentum as the tightening in financial conditions triggered by double-digit interest rates and volatile asset prices could impact household spending and investment. Nevertheless, annual inflation in October eased to 6.5% from 7.2% in September. Prices continue to ease for transport, food and non-alcoholic beverages. Monthly consumer prices rose by 0.59% following a 0.29% decline in September.

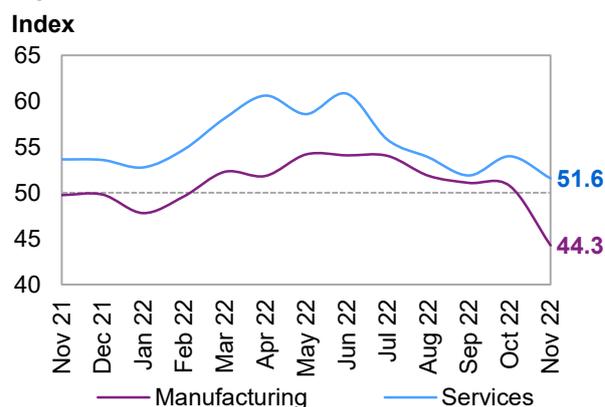
The leading institute for official labour market statistics suggested a further decline in the jobless rate. Based on a three-month moving average, Brazil's unemployment rate dropped to 8.3% in October from 8.7% in the prior month amid the overall improving business and consumer confidence driven by the government's stimulus measures. Nevertheless, the ongoing slowdown in global and US economic growth combined with high domestic interest rates alongside still-elevated inflation may increasingly weigh on the near-term labour market outlook.

Near-term expectations

Throughout most of 2022, Brazil's economic activity has surprised on the upside, supported partly by pre-election fiscal measures combined with higher commodity prices. However, based on recent economic indicators, the upward economic trend might start to slow down. Private consumption growth was mainly driven by the pre-election measures. Moreover, 3Q22 GDP data indicated a delay in private investment and lags in project implementation, which could translate into slower private investment growth considering the high-interest rates. Besides, 2023 will be marked by economic and policy shifts stemming from a change in government, which has promised significantly higher social spending amid a tight budget and a public debt/GDP ratio of almost 80%, according to the Economist Intelligence Unit (EIU). Scepticism surrounding near-term fiscal policy and conditions also generates significant uncertainties for investors and affects Brazil's asset markets and currency value.

Recent PMI indices pointed to these concerns. Indeed, the manufacturing PMI was down for the sixth consecutive month to 44.3 in November 2022 from 50.8 in October. The services PMI fell to 51.6 from 54 in the prior month, the slowest pace of growth in 18 months, pressured by heightened market uncertainty.

Graph 3 - 16: Brazil's PMIs



Sources: IHS Markit and Haver Analytics.

Taking into account the 3Q22 GDP official data and recent economic developments, Brazil's 2022 **GDP forecast** is revised up to 2.4% from 1.5% in the previous MOMR. The GDP forecast for 2023 remains unchanged from last month at 1.0%. Potential growth in the coming year might come in the form of slower inflation, looser monetary policy, stronger asset market conditions, and optimistic business confidence. However, concerns over heavier spending, which could lead to tighter monetary policy, may weigh on the outlook for private investment and keep Brazil's overall growth rates below these expectations.

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

| | Brazil |
|-----------------------------------|------------|
| 2022 | 1.5 |
| Change from previous month | 0.0 |
| 2023 | 1.0 |
| Change from previous month | 0.0 |

Note: * 2022 and 2023 = Forecast.

Source: OPEC.

Africa

South Africa

Update on the latest developments

South Africa's economy expanded by 4.1% y-o-y in 3Q22, following about 0.2% y-o-y growth in the prior quarter. Most of the supply-side activities expanded on a seasonally adjusted q-o-q basis. The agricultural sector contributed the most to 3Q22 growth, expanding 19.5% q-o-q. Significant growth of 3.7% q-o-q was also seen in transportation. On the expenditure side, government spending and fixed investment have grown

while household consumption contracted by 0.3% q-o-q. Meanwhile, net trade contributed positively as exports expanded by 4.2% q-o-q, faster than import growth of 0.6% q-o-q.

The quarterly Labour Force Survey (QLFS) indicated that the jobless rate eased to 32.9% in 3Q22, down from 33.9% in 2Q22, marking the lowest jobless rate since 1Q21, as the number of unemployed persons declined by 269,000 to 7.725 million and employment rose by 204,000 to 15.765 million. However, the labour force fell by 66,000 to 23.491 million.

In September, manufacturing production rose by 2.9% y-o-y, the third straight monthly increase, amid the positive contributions of motor vehicle parts and accessories output. On a seasonally adjusted monthly basis, manufacturing output grew by 4.9% in September, the most in ten months, while markets had expected it to stagnate. In the meantime, the RMB/BER business confidence index in South Africa dropped for the third consecutive quarter to 38 in the 4Q22, the lowest since 1Q21, amid a deterioration in business sentiment.

Near-term expectations

The outlook for South Africa's economy remains gloomy amid the impact of natural disasters, including the flooding that occurred this year. Furthermore, elevated concerns about the energy crisis in the country adversely affect consumer and business confidence. The slight improvement in labour market conditions may not be sustained, given the prospect of slower economic growth over the short term.

Despite the worrisome trends, the forward-looking seasonally adjusted Absa Purchasing Managers' Index rose to 52.6 points in November 2022 from 50 points in the previous month. This was the highest reading since May 2022, as business activity and new orders improved for the second month in a row.

South Africa's 2022 and 2023 real GDP was kept unchanged from the last assessment at 1.8% and 1.1%. More downside risks could surface, depending on domestic and global economic developments over the short-term horizon.

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

| | South Africa |
|-----------------------------------|--------------|
| 2022 | 1.8 |
| Change from previous month | 0.0 |
| 2023 | 1.1 |
| Change from previous month | 0.0 |

Note: * 2022 and 2023 = Forecast.

Source: OPEC.

Russia and Central Asia

Russia

Update on the latest developments

Russia's real GDP contracted by 4.0% y-o-y in 3Q22, according to preliminary estimates, following a contraction of 4.1% y-o-y in 2Q22. The economy continued to be impacted by external conditions related to the geopolitical tensions in Eastern Europe.

Retail trade continued to decline but was almost unchanged from last month, slipping by 9.7% y-o-y in October of 2022, following a 9.8% y-o-y plunge in the prior month. On a monthly basis, retail sales were up by 0.9% compared with a 2.6% decline in September.

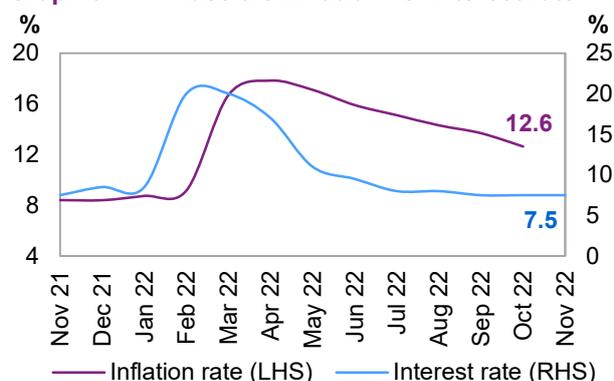
The industrial production contraction eased to 2.6% y-o-y in October 2022 from a 3.1% y-o-y decline in the previous month. This remarked the seventh consecutive monthly decline in industrial activity, as output fell for mining, electricity, steam and air conditioning, manufacturing, water supply and wastewater disposal. On a monthly basis, industrial production jumped 5.3%, following a 0.5% increase in September.

Consumer inflationary pressures eased as the CPI fell to 12.6% y-o-y in October from 13.7% y-o-y in September. The moderation in price pressures partly reflects the recent strength of the rouble.

Similarly, **producer price** growth eased to 0.8% y-o-y in October from 3.8% y-o-y in the prior month.

In the meantime, Russia's central bank held the policy rate at 7.5% while indicating it would continue to use the latest data to adjust monetary policy in future meetings. Russia's **jobless rate** was unchanged at 3.9% in September.

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



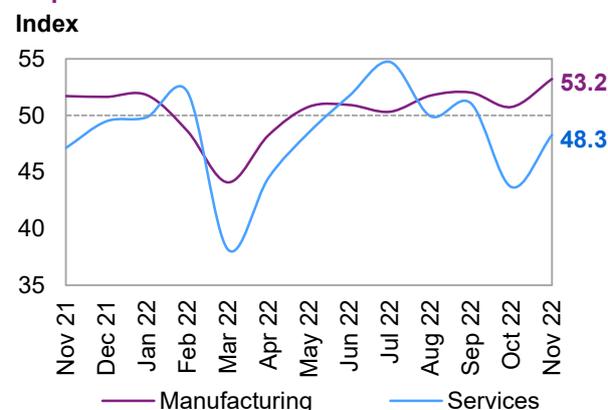
Sources: Federal State Statistics Service, Central Bank of Russia and Haver Analytics.

Near-term expectations

Public spending should continue to provide significant support to Russia's economy. Nevertheless, the economy could continue to face significant uncertainty in light of sanctions to be implemented in 4Q22 and 1Q23. Still, with a large domestic market, high production, strong energy export revenue and robust commodity prices, the economy might turn from contraction to growth in the coming year – assuming that geopolitical tensions do not worsen over the short term. However, the contraction that started in 2Q22 might carry over to 3Q22 at a slower pace, and it could deepen again in 4Q22 with the implementation of the EU ban on Russian crude seaborne imports.

PMI indices reflected the recent trends in both the manufacturing and services sectors. November's S&P Global Manufacturing PMI increased to 53.2 from 50.7 in October, marking the seventh straight month of expansion in factory activity, as new orders returned to growth, boosted by higher domestic demand. The services PMI rose to 48.3 in November from October's reading of 43.7, indicating 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 activity, **Russia's real economic** contraction is forecast at 5.0%, an upward revision from a contraction of 5.7%. The 2023 GDP growth forecast of 0.2% remains the same as the previous month's assessment. These forecasts are still surrounded by high levels of uncertainty amid the ongoing geopolitical tensions and COVID-19-related developments.

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

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

Note: * 2022 and 2023 = Forecast.

Source: OPEC.

OPEC Member Countries

Saudi Arabia

According to preliminary estimates, **Saudi Arabia's economy** grew 8.6% y-o-y in 3Q22, its strongest performance since 3Q11, following a 12.2% 2Q22. Non-oil activity expanded by 5.6% y-o-y. On a seasonally adjusted quarterly basis, the GDP grew by 2.6% in 3Q22, following a 2.2% rise in the previous quarter. Recent major indicators measuring household consumption showed strong domestic demand. Indeed, the value of point-of-sales transactions grew by 17.8% y-o-y in October. The latest purchasing managers index (PMI) reading of 58.5 in November, which was above the long-run series average of 56.8, continued to indicate expansion in the non-oil private sector with improving market conditions and ongoing projects that boosted demand. Meanwhile, the value of non-oil exports surged by 13.1% y-o-y. However, private non-oil growth might be challenged by higher interest rates following the Saudi Central Bank's 75 bp hike in November, raising the policy rate to 4.5%.

Nigeria

Nigeria's economy expanded by 2.3% y-o-y in 3Q22, decelerating from the growth of 3.5% y-o-y in 2Q22. This marks the eighth consecutive quarter of growth, yet the slowest rate since 1Q21. Moreover, economic conditions are challenged by the factors such as natural disasters that have hampered productivity. The non-oil sector has been the key growth engine but expanded at a slower pace of 4.3% y-o-y in 3Q22 compared with 4.8% in 2Q22. The 4Q22 data indicates a sharp rise in inflation accompanied by higher interest rates, slowing private sector momentum and a slowdown in household consumption. The inflation rate accelerated to its highest level in 17 years in October as localized food, and fuel shortages increased the headline inflation rate to 21.1% y-o-y from 20.8% y-o-y in September. Yet, on a monthly basis, CPI inflation eased to 1.2% m-o-m in October from 1.4% m-o-m in September. The Stanbic IBTC Bank's total economy PMI rose to 54.3 in November from 53.6 in October, recording the fastest expansion in private sector activity since April 2022.

The United Arab Emirates (UAE)

The **UAE economy** has experienced sustained momentum in 2022, boosted by Expo 2020 and the easing of COVID-19 restrictions. Recent economic indicators suggest strong growth has been maintained in most activities. The tourism sector, which accounts for around 6% of the UAE's GDP, experienced strong growth and Dubai was again the world's busiest international airport, with passenger numbers for the first time exceeding pre-pandemic levels in 2Q22. Considering the FIFA World Cup in Qatar, tourism growth might increase further and boost 4Q22 GDP growth. In October, the S&P Global UAE PMI increased to 56.6 from 56.1 amid strengthening demand. The current expansion momentum might carry over to 2023 in line with government policies that aim to increase foreign direct investment through eight comprehensive economic and trade agreements it expects to sign in the near term.

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

The **US dollar (USD) index** declined after rising for nine consecutive months. The index fell by 3.5% m-o-m as increased hawkishness from other major central banks, particularly from **developed market (DM)** economies, continued to weigh on the USD while inflationary pressures eased. In DM currencies, the USD fell against the euro by 3.4% m-o-m and 2.9% and 3.5% against the yen and the pound sterling, respectively, in the same period.

In **emerging markets (EMs)**, the USD fell by 0.6% m-o-m against both the rupee and the yuan in the same period. Meanwhile, the USD continued to advance for the third consecutive month against the real, increasing 0.3% m-o-m.

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



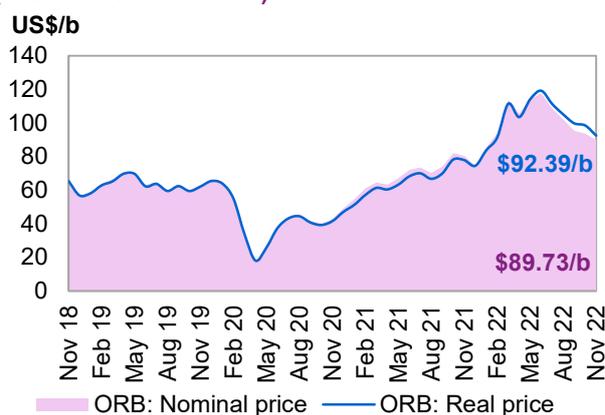
Sources: IMF and OPEC.

The differential between nominal and real **ORB** prices narrowed on a weaker USD and lowered inflation in November. In absolute terms, **inflation** (nominal price minus real price) fell from \$4.78/b in October to \$2.66/b in November, a 44.4% decline m-o-m.

In **nominal terms**, accounting for inflation, the ORB price declined for the fifth consecutive month, from \$96.62/b in October to \$89.73/b in November, a 4.2% decline m-o-m.

In **real terms** (excluding inflation), the ORB fell from \$98.40/b in October to \$92.39/b in November, a 6.1% 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 expected to remain at 2.5 mb/d y-o-y, the same as last month's assessment. Growth estimates were adjusted higher in 3Q22, amid better-than-expected transportation fuel consumption in the OECD region. However, these were offset by a downwardly-revised estimate for 4Q22 due to slower economic activity in the OECD and reduced mobility and lower industrial production in China due to the government's zero-COVID policy.

Total oil demand is projected to average 99.6 mb/d in 2022. In the OECD region, oil demand is expected to rise by around 1.4 mb/d to 46.2 mb/d y-o-y. OECD Americas demand is expected to rise the most in 2022, led by the US, on the back of recovering gasoline and diesel demand. Light distillates are also projected to support demand growth this year.

In the non-OECD region, total oil demand for the year is expected to rise by roughly 1.2 mb/d to 53.4 mb/d. In India, the Middle East and Other Asia, a recovery in economic activity is forecast to result in a steady increase in industrial and transportation fuel demand in 2022.

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

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

| World oil demand | 2021 | 1Q22 | 2Q22 | 3Q22 | 4Q22 | 2022 | Change 2022/21 | |
|--------------------------|--------------|--------------|--------------|--------------|---------------|--------------|----------------|-------------|
| | | | | | | | Growth | % |
| Americas | 24.32 | 24.77 | 24.98 | 25.35 | 25.19 | 25.08 | 0.76 | 3.13 |
| <i>of which US</i> | 20.03 | 20.38 | 20.41 | 20.62 | 20.74 | 20.54 | 0.50 | 2.51 |
| Europe | 13.13 | 13.15 | 13.43 | 14.09 | 13.90 | 13.65 | 0.52 | 3.94 |
| Asia Pacific | 7.38 | 7.85 | 6.99 | 7.25 | 7.81 | 7.47 | 0.09 | 1.24 |
| Total OECD | 44.83 | 45.77 | 45.40 | 46.69 | 46.91 | 46.20 | 1.37 | 3.06 |
| China | 14.97 | 14.74 | 14.42 | 14.69 | 15.32 | 14.79 | -0.18 | -1.17 |
| 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 | 0.36 | 4.12 |
| Latin America | 6.23 | 6.32 | 6.36 | 6.55 | 6.40 | 6.41 | 0.18 | 2.91 |
| Middle East | 7.79 | 8.06 | 8.13 | 8.50 | 8.17 | 8.22 | 0.42 | 5.44 |
| Africa | 4.22 | 4.51 | 4.15 | 4.25 | 4.53 | 4.36 | 0.14 | 3.24 |
| Russia | 3.61 | 3.67 | 3.42 | 3.45 | 3.59 | 3.53 | -0.08 | -2.32 |
| Other Eurasia | 1.21 | 1.22 | 1.16 | 1.00 | 1.21 | 1.15 | -0.06 | -5.07 |
| Other Europe | 0.75 | 0.79 | 0.75 | 0.73 | 0.80 | 0.77 | 0.01 | 1.62 |
| Total Non-OECD | 52.18 | 53.58 | 52.81 | 52.84 | 54.20 | 53.36 | 1.18 | 2.25 |
| Total World | 97.01 | 99.35 | 98.21 | 99.54 | 101.11 | 99.56 | 2.55 | 2.62 |
| Previous Estimate | 97.03 | 99.36 | 98.35 | 99.32 | 101.25 | 99.57 | 2.55 | 2.62 |
| Revision | -0.02 | -0.01 | -0.14 | 0.22 | -0.14 | -0.02 | 0.00 | 0.00 |

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

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

| World oil demand | 2022 | 1Q23 | 2Q23 | 3Q23 | 4Q23 | 2023 | Change 2023/22 | |
|--------------------------|--------------|---------------|---------------|---------------|---------------|---------------|----------------|-------------|
| | | | | | | | Growth | % |
| Americas | 25.08 | 25.00 | 25.24 | 25.66 | 25.45 | 25.34 | 0.26 | 1.05 |
| of which US | 20.54 | 20.51 | 20.52 | 20.85 | 20.87 | 20.69 | 0.15 | 0.74 |
| Europe | 13.65 | 13.19 | 13.46 | 14.12 | 13.95 | 13.68 | 0.03 | 0.24 |
| Asia Pacific | 7.47 | 7.88 | 7.04 | 7.29 | 7.83 | 7.51 | 0.04 | 0.48 |
| Total OECD | 46.20 | 46.07 | 45.73 | 47.07 | 47.23 | 46.53 | 0.33 | 0.72 |
| China | 14.79 | 14.63 | 15.37 | 15.34 | 15.92 | 15.32 | 0.53 | 3.56 |
| 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 | 9.10 | 9.20 | 9.33 | 0.35 | 3.85 |
| Latin America | 6.41 | 6.48 | 6.48 | 6.70 | 6.54 | 6.55 | 0.15 | 2.29 |
| Middle East | 8.22 | 8.45 | 8.46 | 8.84 | 8.46 | 8.55 | 0.33 | 4.06 |
| Africa | 4.36 | 4.71 | 4.34 | 4.43 | 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 | 1.02 | 1.22 | 1.16 | 0.01 | 0.72 |
| Other Europe | 0.77 | 0.80 | 0.76 | 0.75 | 0.82 | 0.78 | 0.02 | 2.32 |
| Total Non-OECD | 53.36 | 54.77 | 55.05 | 55.02 | 56.23 | 55.27 | 1.91 | 3.59 |
| Total World | 99.56 | 100.85 | 100.78 | 102.08 | 103.46 | 101.80 | 2.25 | 2.26 |
| Previous Estimate | 99.57 | 101.26 | 100.83 | 101.76 | 103.40 | 101.82 | 2.24 | 2.25 |
| Revision | -0.02 | -0.41 | -0.04 | 0.32 | 0.06 | -0.02 | 0.00 | 0.00 |

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

OECD

OECD Americas

Update on the latest developments

Contrary to expectations, **US oil demand** in **September** bounced back to grow by 0.3 mb/d y-o-y from 30 tb/d y-o-y growth in August. Economic activity in the US is impacted by high core inflation, which stood at 5.2% in September, and gave the impetus for the US Federal Reserve bank to commence with monetary tightening measures. However, industrial activity continued its declining trend, with the manufacturing PMI dropping further in September to only 50.9, just within the expansion range.

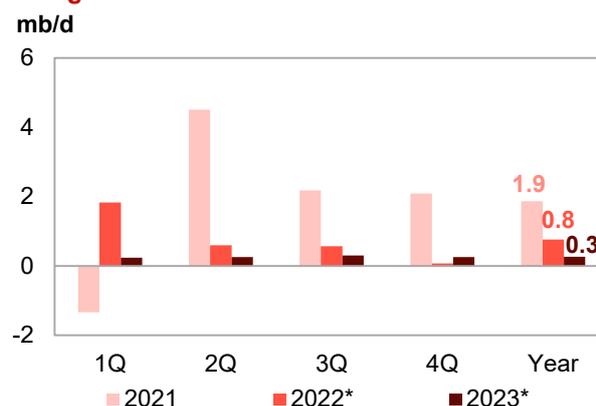
Oil demand in September was led by 0.2 mb/d y-o-y growth of other products. LPG and residual fuels posted 0.1 mb/d y-o-y growth each. Jet/kerosene recorded marginal annual growth of 60 tb/d.

However, gasoline demand has been on a declining trend since 2Q22. The decline in US gasoline demand during the summer was also partly due to gasoline prices, which led to curtailments of some discretionary trips due to their unaffordability, especially for US households whose income falls below a certain threshold.

With the conclusion of the summer driving season, automobile gasoline consumption in the US typically decreases between August and September. In line with this trend, gasoline weakened by 0.1 mb/d y-o-y in September.

On the other hand, naphtha and its feedstock, ethane, were among the major products that saw increased demand during 2020 and 2021. However, naphtha has been on a declining trajectory since March. This turnaround reflects a squeeze in petrochemical profitability, as poor demand for petrochemicals continued to weigh on demand for naphtha-fed steam cracker grades. In September, naphtha demand softened, declining by 60 tb/d y-o-y.

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 | Sep 21 | Sep 22 | Change Sep 22/Sep 21 | |
|----------------|--------------|--------------|----------------------|------------|
| | | | Growth | % |
| LPG | 3.32 | 3.44 | 0.12 | 3.7 |
| Naphtha | 0.19 | 0.13 | -0.06 | -32.1 |
| Gasoline | 8.93 | 8.82 | -0.12 | -1.3 |
| Jet/kerosene | 1.49 | 1.55 | 0.06 | 4.1 |
| Diesel | 4.03 | 4.01 | -0.02 | -0.5 |
| Fuel oil | 0.34 | 0.46 | 0.12 | 36.1 |
| Other products | 2.13 | 2.35 | 0.23 | 10.6 |
| Total | 20.43 | 20.76 | 0.33 | 1.6 |

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

Near-term expectations

In **4Q22**, US GDP is projected to contract by 6% y-o-y. In addition, the recent monetary tightening to contain persistently elevated inflation will weigh on consumers' purchasing power with a consequent decline in household spending that will potentially affect oil demand in the US. In 4Q22, oil demand is expected to grow by 60 tb/d y-o-y. The beginning of winter in 4Q22 will also 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**, US GDP is not foreseen to record any growth. Slow growth combined with the downward trend in industrial activity is likely to weigh on oil demand in 1Q23. Oil demand is projected to grow by 0.1 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

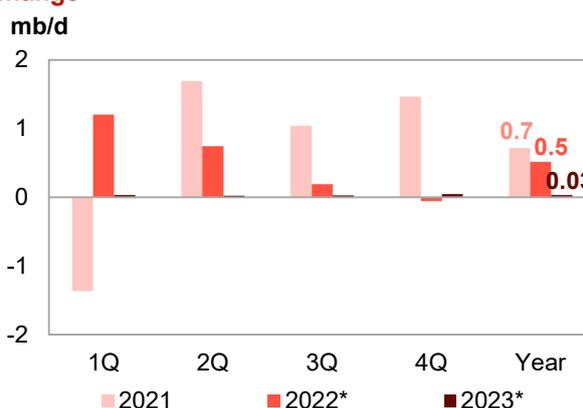
Update on the latest developments

Oil demand in OECD Europe contracted by 60 tb/d, y-o-y in **September** after growth of 0.2 mb/d in August. The region is battling high inflation and supply chain bottlenecks induced by geopolitical crises, which weigh heavily on economic activity and negatively affect oil demand. In September, the European Union's annual inflation rate was 10.9%, up from 3.6% a year earlier. Despite this, the aviation sector remained resilient, as airline activity has maintained stable growth, achieving 78.3% growth in international revenue passenger-kilometers (RPKs) over the year to September and reaching 78.4% of pre-pandemic levels. On the back of this, jet/kerosene posted growth of 0.3 mb/d (32%) y-o-y.

LPG also remained positive with a 70 tb/d y-o-y increase. LPG demand in the region was aided by a

rise in energy requirements and enhanced affordability due to government subsidies for LPG market cylinders in some countries in the region. Similarly, residual fuel also grew by 60 tb/d y-o-y, mostly driven by rising demand from the industrial sector due to soaring natural gas prices. However, gas diesel suffered the biggest contraction, dropping by 0.3 mb/d y-o-y. Demand for diesel was mostly affected by soaring prices and scarcity of supply due to geopolitical crises. For that reason, industries cut production in Europe, with the industrial PMI declining from 49.7 in August to 48.5 in September.

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



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

Similarly, naphtha weakened by 0.2 mb/d y-o-y as European petrochemical industries reduced their requirements for feedstock due to a lower demand outlook for plastic goods amid an economic downturn and inflationary pressures in the region. These factors weighed on the demand for naphtha in the region. Finally, high inflation and rising gasoline prices impacted consumers' purchasing power and mobility in the region with negative effects on gasoline demand, which slowed by 50 tb/d y-o-y.

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

| By product | Sep 21 | Sep 22 | Change Sep 22/Sep 21 | |
|----------------|-------------|-------------|----------------------|-------------|
| | | | Growth | % |
| LPG | 0.37 | 0.40 | 0.03 | 7.5 |
| Naphtha | 0.56 | 0.46 | -0.10 | -17.9 |
| Gasoline | 1.22 | 1.18 | -0.04 | -3.6 |
| Jet/kerosene | 0.58 | 0.77 | 0.19 | 33.6 |
| Diesel | 3.44 | 3.27 | -0.17 | -4.9 |
| Fuel oil | 0.18 | 0.21 | 0.03 | 13.9 |
| Other products | 0.52 | 0.51 | -0.01 | -1.7 |
| Total | 6.87 | 6.79 | -0.08 | -1.1 |

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

Looking ahead, the GDP of the region is expected to be at about 0.4% in 4Q22. Furthermore, ongoing geopolitical tension and a counter-seasonal slowdown amid low economic activity and inflationary pressures in the region will weigh on mobility and manufacturing activity during winter. These factors may result in gasoline and diesel demand declines during the fourth quarter. However, rising natural gas prices are expected to support gas-to-oil switching, particularly during winter. Therefore, demand for fuel oil and residuals is expected to improve due to switching. Furthermore, sustained growth in air travel activity, both international and regional, will boost demand for jet/ kerosene during 4Q22. However, oil demand in the region is projected to weaken by 50 tb/d y-o-y .

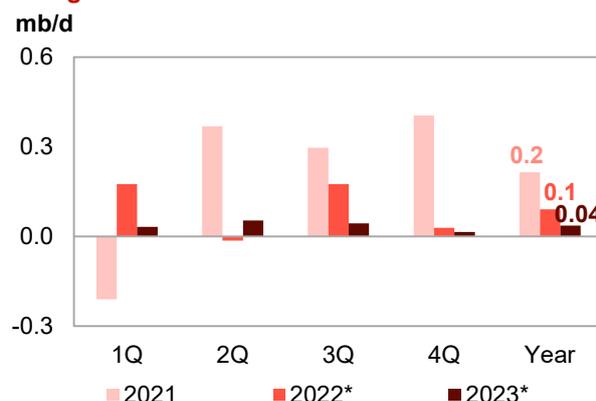
In 1Q23, persistent inflationary pressures observed recently could raise the risk of recession in the region. Accordingly, the economy of the region is projected to decelerate by 0.8% in 1Q22. Slowing growth momentum and ongoing geopolitical tensions in the region could exacerbate supply chain bottlenecks for manufacturing activity. The combined effects of these factors are expected to take a toll on oil demand, which is projected to grow marginally by 30 tb/d y-o-y. Nevertheless, expected gas-to-oil switching due to rising natural gas prices and steady improvements in air travel activity are expected to support demand for fuel oil and jet/ kerosene in the region during 1Q23. However, risks are still skewed toward a more severe and protracted downturn.

OECD Asia Pacific

Update on the latest developments

Oil demand in OECD Asia Pacific nosedived in **September** by 0.2 mb/d y-o-y, declining after strong growth of 0.6 mb/d y-o-y in August. The region's two strongest economies – Japan and South Korea – have been facing some daunting economic challenges, which are weighing on their economic activity and, consequently, on oil demand in the region. The two countries are facing rising inflation of about 5.7 and 3.7 y-o-y in September. Apart from facing high prices for farm and oil products, South Korea has had to deal with a trucker strike, which has worsened manufacturing supply chain bottlenecks and is disrupting industrial activity in Asia's fourth-largest economy. Additionally, concrete has run out at building sites, negatively impacting construction activity. Those factors have been negatively impacting oil demand. Overall, manufacturing activity in the two large manufacturing

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



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

World Oil Demand

hubs have not been doing very well. In September, the manufacturing PMIs in Japan and South Korea were at 49 and 48.2, respectively, both below the threshold of 50.

Oil demand in September was driven by jet/kerosene, which recorded 70 tb/d y-o-y growth. According to IATA Air Passenger Market Analysis, airlines based in the Asia Pacific region continued to record the strongest y-o-y growth rates for international revenue passenger-kilometers (RPKs) in September. In seasonally adjusted terms, recent developments showed a sustained recovery but with a significant lag compared to other regions. In September 2022, international RPKs were down 58.5% compared to September 2019. Gasoline also recorded 50 tb/d y-o-y growth, with demand growth predominantly coming from Japan and Australia. Finally, residual fuels posted a marginal growth of 40 tb/d y-o-y.

Petrochemical feedstock demand was still weak, as China's ongoing zero-COVID policy continued to affect the petrochemical industry in Japan and South Korea, with naphtha suffering big declines of 0.3 mb/d y-o-y and LPG sliding by only 10 tb/d y-o-y.

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

| By product | Oct 21 | Oct 22 | Change Growth | Oct 22/Oct 21 % |
|----------------|-------------|-------------|---------------|-----------------|
| LPG | 0.34 | 0.30 | -0.04 | -11.5 |
| Naphtha | 0.71 | 0.61 | -0.10 | -14.2 |
| Gasoline | 0.72 | 0.81 | 0.09 | 13.0 |
| Jet/kerosene | 0.33 | 0.35 | 0.01 | 4.2 |
| Diesel | 0.76 | 0.76 | 0.01 | 0.7 |
| Fuel oil | 0.24 | 0.27 | 0.03 | 12.3 |
| Other products | 0.23 | 0.26 | 0.03 | 12.7 |
| Total | 3.33 | 3.37 | 0.03 | 1.0 |

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

Near-term expectations

Looking ahead, the GDP of the region is projected to grow by 1.9% in 2022 as COVID-19 wanes and mobility gradually improves in Japan and Australia. Furthermore, as South Korea temporarily lowered fuel taxes by 20% in an effort to ease the impacts of surging oil prices on the country's consumer inflation, a reduction in taxes on gasoline, diesel and LPG will remain in place for six months until the end of April next year. This policy aims to support the demand for these fuels in the country.

In addition, air travel activity continued to recover. Accordingly, gasoline and jet/kerosene are projected to remain steady in **4Q22**. Furthermore, petrochemical feedstock requirements and diesel demand in Japan and South Korea are expected to add to the oil demand requirement in 4Q22. Fuel substitution may also provide support to oil demand as a result of high natural gas prices. Accordingly, oil demand is projected to grow by 0.03 mb/d y-o-y, reaching 7.81 mb/d.

In 2023, the GDP of the region is projected to grow by 1.2%, mainly due to expected slow performance in global economic activity and spillover effects related to geopolitical tensions in the region. These factors are expected to weigh on economic and manufacturing activity in the region during **1Q23**, with oil demand forecast to grow by 0.03 mb/d y-o-y at 7.88 mb/d. Air travel recovery combined with vibrant petrochemical feedstock requirements is expected to drive demand for jet/kerosene and naphtha to support oil demand in the region.

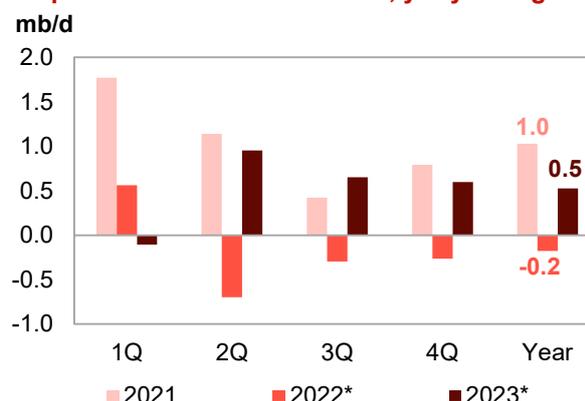
Non-OECD

China

Update on the latest developments

Oil demand in China softened in **October** after recording strong growth in September. In October, China posted a decline of 0.2 mb/d, y-o-y, down from a growth of 0.6 mb/d in September. Despite ongoing zero-COVID restrictions, diesel demand was still strong, with 0.7 mb/d y-o-y growth in October. Diesel is the most important refined product in China's oil demand, mostly consumed by the industrial and petrochemical sectors and in freight and fueling trucks and commercial vehicles. The manufacturing PMI in October has shown signs of improvement to 49.2 from 48.5 in September.

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



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

Most of the diesel demand in October was supported by the petrochemical industry as petrochemical feedstock consumption, mostly from the Shandong independent refineries, whose requirements edged up 2.6% in October. Demand for naphtha (including internally produced naphtha for use in refinery-integrated plants) and LPG as feedstock for olefins and aromatics remain stable. Accordingly, naphtha and LPG grew by 0.2 mb/d and 0.1 mb/d y-o-y.

However, demand for transportation fuels remained weak in October, as zero-COVID mobility restrictions continued and several cities in China went into full/partial lockdowns, affecting mobility. Gasoline weakened further by 0.4 mb/d y-o-y in October from a decline of 0.2 mb/d in September. Similarly, jet fuel remained weak at 0.3 mb/d y-o-y as AITA reported that restrictions in some provinces led to contractions in domestic and international air travel activity in China. Finally, other products also weakened by 0.5 mb/d y-o-y, from a decline of 0.2 mb/d in October.

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

| By product | Oct 21 | Oct 22 | Change Oct 22/Oct 21 | |
|----------------|--------------|--------------|----------------------|-------------|
| | | | Growth | % |
| LPG | 2.30 | 2.42 | 0.12 | 5.4 |
| Naphtha | 1.53 | 1.72 | 0.19 | 12.6 |
| Gasoline | 3.31 | 2.91 | -0.39 | -11.9 |
| Jet/kerosene | 0.61 | 0.30 | -0.31 | -51.1 |
| Diesel | 3.60 | 4.34 | 0.73 | 20.4 |
| Fuel oil | 0.69 | 0.58 | -0.11 | -16.4 |
| Other products | 2.47 | 2.01 | -0.45 | -18.4 |
| Total | 14.51 | 14.29 | -0.22 | -1.5 |

Note: * Apparent oil demand. Totals may not add up due to independent rounding.

Sources: Argus Global Markets, China OGP (Xinhua News Agency), Facts Global Energy, JODI, National Bureau of Statistics China and OPEC.

Near-term expectations

Looking ahead, the economy of China is projected to grow by 3.1% despite the ongoing zero COVID-19 lockdowns. Demand for petrochemical feedstock has been relatively resilient as China continues to build new petrochemical capacities. Consumption of petrochemical feedstock will thus remain steady. However, overall demand is not expected to be robust as lockdowns will take a toll on transportation and industrial fuels. Gasoline, diesel and jet/kerosene are expected to be the largest categories in China's oil product consumption and are expected to soften in **4Q22**. This could weigh on overall oil demand, which is expected to decline by 0.3 mb/d y-o-y.

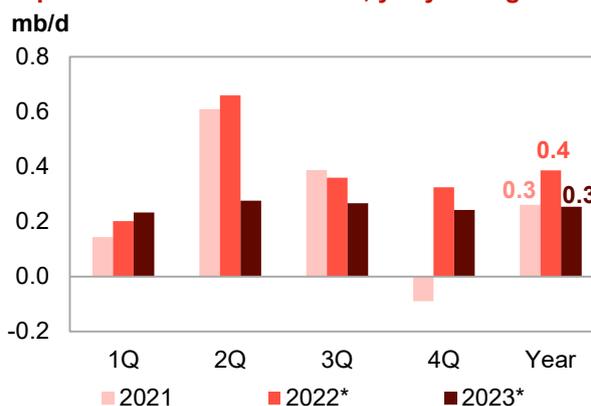
China has eased pandemic restrictions in 10 new measures for dealing with COVID-19 issued on 7 December, marking the biggest shift away from the restrictive zero-COVID strategy the country has maintained for over two years. The measures include a reduction of mass testing frequency and scale, home isolation for asymptomatic and mild COVID-19 cases and a ramp-up of vaccination for the elderly. By the end of 1Q23, China is expected to relax COVID-19-related restrictions in most regions. China’s oil demand is thus expected to improve marginally from the contraction in 4Q22 but will remain on a negative trajectory. In 1Q23, China’s oil demand is projected to decline by 55 tb/d y-o-y. Nevertheless, China’s GDP is projected to grow by 4.8%. This, combined with the expected loosening of COVID-19-related restrictions, will pave the way for an uptick in mobility and manufacturing activity. Similarly, domestic and international air travel should improve considerably. Furthermore, petrochemical requirements for feedstock are expected to remain stable from 2Q23 onwards. Accordingly, these factors are expected to boost oil demand from 2Q23 onwards up to 4Q23.

India

Update on the latest developments

Oil demand in India has remained healthy for nine consecutive months. In October, oil demand posted growth of 0.1 mb/d y-o-y at 4.7 mb/d, significantly larger than the 4.6 mb/d growth recorded at the same time in 2021. Demand was supported by an uptick in economic and social activity during the post-monsoon season and the Diwali festival. Diesel was the main driver of growth in October’s oil demand, with support coming from the agricultural sector activity as the sowing season of rabi crops and harvest season aided diesel consumption in irrigation, pumps and tractor mobility. Furthermore, manufacturing sector activity remained steady, as indicated by the manufacturing PMI, which increased to 55.3 in October 2022 from 55.1 in September 2022.

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



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

Accordingly, diesel posted a growth of 80 tb/d, (6%) y-o-y. Other products grew by 80 tb/d y-o-y, mostly supported by post-monsoon increases in road construction activity, which boosted demand for bitumen. Gasoline demand also remained positive at 70 tb/d y-o-y growth, fuelled by an uptick in economic activity, festivities and an influx of tourists, as well as rises in mobility due to the full operation of schools, colleges and offices during the month. To a lesser extent, jet/ kerosene grew by 10 tb/d y-o-y, slightly lower than the 20 tb/d increase seen in September. Air passenger traffic for October 2022 stood at 26% more than in October 2021; however, it was still short of the level seen in October 2019 by 8%. Naphtha and LPG saw declines of 80 bd/d and 30 tb/d y-o-y, respectively.

Table 4 - 7: India’s oil demand, mb/d

| By product | Oct 21 | Oct 22 | Change Oct 22/Oct 21 | |
|----------------|-------------|-------------|----------------------|------------|
| | | | Growth | % |
| LPG | 0.99 | 0.96 | -0.03 | -3.1 |
| Naphtha | 0.29 | 0.21 | -0.08 | -28.2 |
| Gasoline | 0.78 | 0.84 | 0.07 | 8.5 |
| Jet/kerosene | 0.20 | 0.21 | 0.01 | 5.7 |
| Diesel | 1.43 | 1.51 | 0.08 | 5.5 |
| Fuel oil | 0.30 | 0.30 | 0.00 | 0.4 |
| Other products | 0.63 | 0.71 | 0.08 | 12.9 |
| Total | 4.62 | 4.75 | 0.13 | 2.7 |

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

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

Near-term expectations

Looking ahead, as the negative impacts of the monsoon season are now coming to an end, India’s GDP growth is expected to be healthy at 6.5% in 2022, as economic and social activities are expected to rise. Gasoline demand in India is expected to expand due to state elections in Himachal Pradesh during November and Gujarat in December.

Similarly, middle distillates (gasoil and kerosene/jet fuel combined) will also grow significantly in **4Q22** due to agriculture, construction and airline travel activity. Due to these factors, oil demand in 4Q22 is projected to grow by 0.3 mb/d y-o-y. Demand in 4Q22 is projected to surpass the levels of 4Q21 by 0.14 mb/d.

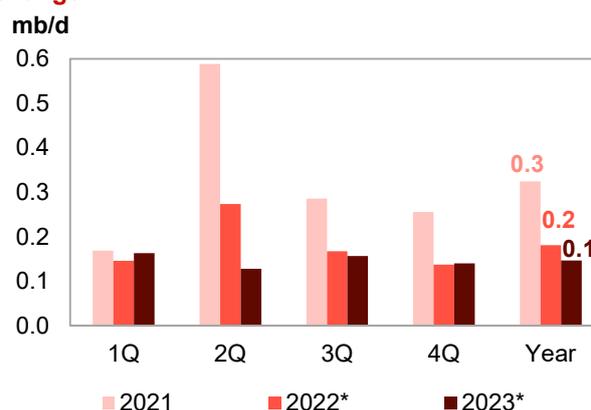
With projected healthy GDP growth of 6.55.6% in **1Q23**, economic and social activity are also expected to remain steady. In 1Q23, oil demand in India is forecast to grow by 0.2 mb/d y-o-y. The total demand is expected to surpass the same period in 2021 by 0.43 mb/d. Regarding products, gasoline is anticipated to be the strongest product in 1Q23, supported by an acceleration in mobility, an uptick in vehicle sales and overall steady economic growth. Diesel is expected to be supported by healthy growth in the industrial, construction and agricultural sectors during the period, and jet fuel will be aided by accelerations in domestic and international air travel demand. On the whole, there are favourable prospects for a positive outlook in India's oil demand during 1Q23.

Latin America

Update on the latest developments

Latin America posted healthy oil demand growth of 0.2 mb/d y-o-y in September. Despite the menace of COVID-19 in the region, economic activity has not performed badly in major oil-consuming countries of the region. Manufacturing PMI in Brazil increased from 53.2 in August to 53.9 in September. Furthermore, airline activity continues to improve in the region. Oil demand in September was led by 0.1 mb/d y-o-y growth of other fuels. On the back of healthy air travel activity, jet/kerosene remained firm at 50 tb/d y-o-y growth. Similarly, gasoil grew by 50 tb/d y-o-y, supported mainly by manufacturing and trucking activity improvements in the region. LPG remained at 10 tb/d y-o-y growth, the same as in August. However, gasoline eased by 10 tb/d y-o-y from 50 tb/d y-o-y growth in August. Residual fuels and naphtha also softened by 20 tb/d and 10 tb/d y-o-y, respectively.

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



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

Near-term expectations

Looking ahead, as of September **2022**, Brazil had administered the largest number of vaccines in the region, followed by Mexico and Argentina. The COVID-19 situation could foreseeably be fully contained very soon. The GDP of the region is expected to be relatively healthy at 3.3%. Mobility and manufacturing activity should propel the demand for gasoline and distillates. Similarly, as air travel recovery accelerates, jet/kerosene demand in the region is projected to improve. Therefore, oil demand in the region is projected to remain healthy, with a growth of 0.1 mb/d y-o-y at a level of 6.40 mb/d.

In 2023, the GDP of the region is projected to remain positive at 1.5%; however, still below 2022 levels. Nonetheless, as COVID-19 fades in the region, economic and social activity is expected to pick up to support oil demand, which is forecast to rise by 0.2 mb/d y-o-y at 6.48 mb/d in 1Q23, which is about 0.16 mb/d above the same period in 2022. The rise in oil demand will be largely linked to a positive economic outlook, supporting industrial fuel demand led by diesel. The outlook for growth sees Brazil taking the lead, followed by Argentina. In terms of fuel, transportation fuels are expected to grow the most in **1Q23**, supported by the continued recovery in mobility and air travel as containment measures for COVID-19 are relaxed and as the overall economy gains momentum.

Middle East

Update on the latest developments

Oil demand in the Middle East remains strong at 0.4 mb/d y-o-y, supported by requirements for power generation, other fuels and diesel. In September, demand for other products posted growth of 0.2 mb/d y-o-y and diesel grew by 0.1 mb/d y-o-y. Demand growth for other products and diesel was fuelled by the Saudi Arabian and Iraqi power generation sectors due to hot weather. Furthermore, mobility in the region remained relatively healthy, with gasoline demand growing by 30 tb/d y-o-y. Residual fuels remained on a positive growth trajectory at 30 tb/d y-o-y. The IATA Air Passenger Market Analysis for September suggested that airline activity in the Middle East continued on a positive trend, recording a growth of 149.7% y-o-y in September. The passenger load factor increased to 80.0% this month.

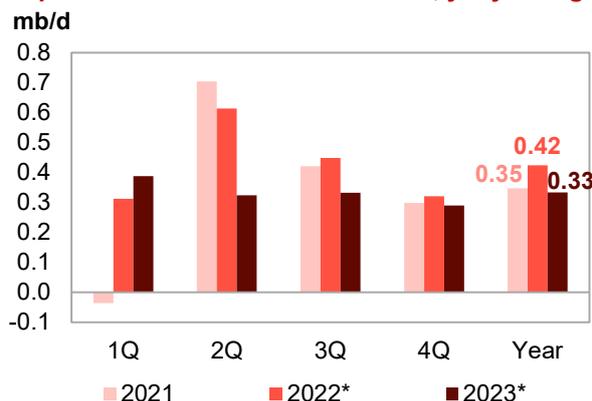
Seasonally adjusted traffic figures continued to suggest a strong upward trend in the region. Accordingly, jet/kerosene grew by 0.02 mb/d y-o-y. LPG remained at 20 tb/d y-o-y, the same as in August. However, naphtha has remained on a negative trajectory since February. In September, naphtha posted a 10 tb/d y-o-y decline.

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. The anticipated strong economic growth in the region is expected to support consumer spending and accelerate mobility and industrial activity. This will support the demand for gasoline and diesel. In addition, hot weather 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, 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.

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



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

World Oil Supply

Non-OPEC liquids supply in 2022 (including processing gains) is estimated to grow by 1.9 mb/d to average 65.6 mb/d. This is broadly unchanged from the previous assessment. Upward revisions to liquids production in OECD Americas, Russia and Latin America were offset by downward revisions to OECD Europe, Other Eurasia and Other Asia. However, it should be noted that uncertainty remains with regard to Russia's liquid output in December.

In the US, oil drilling activity has recovered to near pre-pandemic levels with the total rig count at its highest level since March 2020. However, producers are still challenged with labour and supply chain issues as well as cost inflation. Liquids production rose noticeably in September on the back of higher crude and condensate production, and steady growth is expected in the coming months. Accordingly, the US liquids supply growth forecast for 2022 is revised up slightly to average 1.1 mb/d. The production forecast for Other Eurasia was revised down, due to lower-than-anticipated production in Azerbaijan, as well as restricted output at an export terminal and a gas leak issue at the Kashagan field in Kazakhstan. Extended maintenance on UK offshore platforms, along with lower-than-anticipated output in Norway, reduced 4Q22 output in the North Sea region. The main drivers of liquids supply growth for 2022 are expected to be the US, Canada, Guyana, Russia, China and Brazil, while production is expected to see the largest declines in Norway and Thailand.

Non-OPEC liquids production growth in 2023 is forecast to grow by 1.5 mb/d to average 67.1 mb/d, largely unchanged from last month. Liquids supply in OECD countries is forecast to increase by 1.6 mb/d, while the non-OECD region is expected to show a decline of 0.2 mb/d. The main growth drivers are expected to be the US, Norway, Brazil, Canada, Kazakhstan and Guyana, whereas oil production is forecast to see declines in Russia and Mexico. Nonetheless, large uncertainties remain around European Union sanctions on Russian oil imports, other geopolitical developments in Eastern Europe, and US shale output potential in 2023.

OPEC NGLs and non-conventional liquids production in 2022 are forecast to grow by 0.1 mb/d to average 5.4 mb/d and to increase by 50 tb/d to average 5.4 mb/d in 2023. OPEC-13 crude oil production in November decreased by 744 tb/d m-o-m to average 28.83 mb/d, according to available secondary sources.

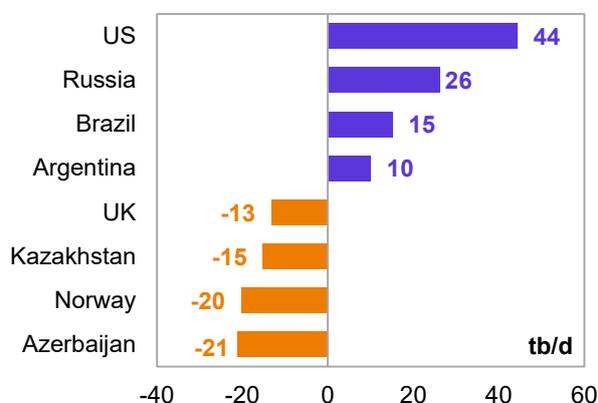
Non-OPEC liquids production in November, including OPEC NGLs, is estimated to have increased m-o-m by 0.8 mb/d to average 72.7 mb/d, up 2.1 mb/d y-o-y. As a result, preliminary data indicates that November's global oil supply increased by 43 tb/d m-o-m to average 101.5 mb/d, up by 3.2 mb/d y-o-y.

The **non-OPEC liquids supply forecast for 2022** remained broadly unchanged to average 65.6 mb/d. Y-o-y growth averaged 1.9 mb/d, unchanged compared to the previous month.

The overall **OECD** supply growth estimate for 2022 has remained steady. While OECD Europe saw downward revisions, OECD Americas was revised up from the previous month's assessment and there were no changes for OECD Asia Pacific.

The **non-OECD** supply growth forecast for 2022 was revised down by a minor 14 tb/d. A downward revision to Other Eurasia and Other Asia, was almost offset by upward revisions to Latin America and Russia.

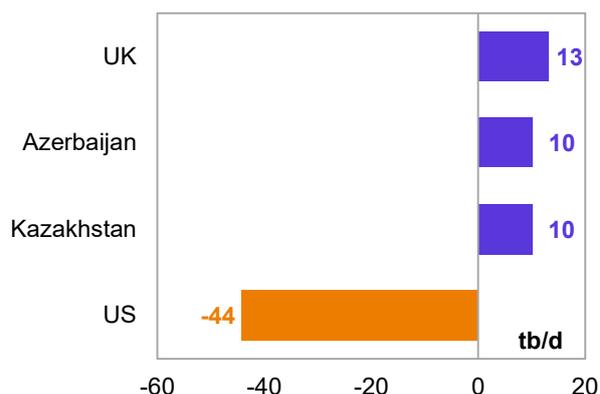
Graph 5 - 1: Major revisions to annual supply change forecast in 2022*, MOMR Dec 22/Nov 22



Note: * 2022 = Forecast. Source: OPEC.

Non-OPEC liquids production growth in 2023 is forecast to remain largely unchanged compared with the previous month's assessment, with downward revisions in OECD America offset by upward revisions in Other Eurasia and OECD Europe.

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

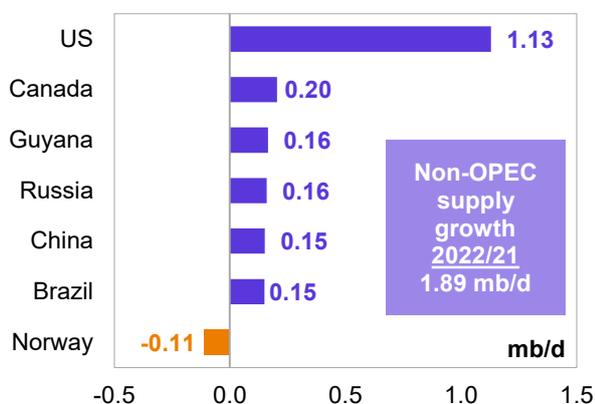


Note: * 2023 = Forecast. Source: OPEC.

Key drivers of growth and decline

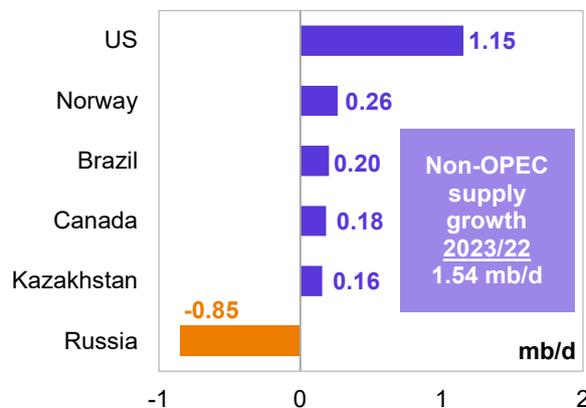
The **key drivers of non-OPEC liquids supply growth in 2022** are projected to be the US, Canada, Guyana, Russia, China and Brazil, while oil production is expected to see the largest declines in Norway and Thailand.

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



Note: * 2022 = Forecast. Source: OPEC.

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



Note: * 2023 = Forecast. Source: OPEC.

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

Non-OPEC liquids production in 2022 and 2023

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

| Non-OPEC liquids production | 2021 | 1Q22 | 2Q22 | 3Q22 | 4Q22 | 2022 | Change 2022/21 | |
|--|--------------|--------------|--------------|--------------|--------------|--------------|----------------|-------------|
| | | | | | | | Growth | % |
| Americas | 25.25 | 25.86 | 26.27 | 27.04 | 27.36 | 26.64 | 1.39 | 5.49 |
| <i>of which US</i> | 17.85 | 18.27 | 18.83 | 19.30 | 19.50 | 18.98 | 1.13 | 6.33 |
| Europe | 3.76 | 3.73 | 3.43 | 3.49 | 3.74 | 3.60 | -0.16 | -4.18 |
| Asia Pacific | 0.51 | 0.49 | 0.51 | 0.43 | 0.53 | 0.49 | -0.02 | -4.11 |
| Total OECD | 29.52 | 30.08 | 30.22 | 30.97 | 31.63 | 30.73 | 1.21 | 4.09 |
| China | 4.31 | 4.51 | 4.52 | 4.38 | 4.43 | 4.46 | 0.15 | 3.51 |
| India | 0.78 | 0.78 | 0.77 | 0.76 | 0.77 | 0.77 | -0.01 | -1.31 |
| Other Asia | 2.41 | 2.35 | 2.30 | 2.25 | 2.33 | 2.31 | -0.10 | -4.15 |
| Latin America | 5.95 | 6.11 | 6.18 | 6.45 | 6.63 | 6.34 | 0.39 | 6.54 |
| Middle East | 3.24 | 3.29 | 3.33 | 3.36 | 3.36 | 3.34 | 0.10 | 3.01 |
| Africa | 1.35 | 1.33 | 1.31 | 1.32 | 1.32 | 1.32 | -0.03 | -1.96 |
| Russia | 10.80 | 11.33 | 10.63 | 11.01 | 10.88 | 10.96 | 0.16 | 1.47 |
| Other Eurasia | 2.93 | 3.05 | 2.77 | 2.61 | 2.95 | 2.84 | -0.08 | -2.83 |
| Other Europe | 0.11 | 0.11 | 0.11 | 0.10 | 0.10 | 0.11 | -0.01 | -6.36 |
| Total Non-OECD | 31.87 | 32.85 | 31.92 | 32.24 | 32.76 | 32.44 | 0.57 | 1.79 |
| Total Non-OPEC production | 61.39 | 62.93 | 62.14 | 63.21 | 64.39 | 63.17 | 1.78 | 2.90 |
| Processing gains | 2.29 | 2.40 | 2.40 | 2.40 | 2.40 | 2.40 | 0.11 | 4.90 |
| Total Non-OPEC liquids production | 63.68 | 65.33 | 64.54 | 65.61 | 66.79 | 65.57 | 1.89 | 2.97 |
| Previous estimate | 63.68 | 65.33 | 64.54 | 65.53 | 66.90 | 65.58 | 1.90 | 2.98 |
| Revision | 0.00 | 0.00 | 0.00 | 0.08 | -0.11 | -0.01 | -0.01 | -0.01 |

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

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

| Non-OPEC liquids production | 2022 | 1Q23 | 2Q23 | 3Q23 | 4Q23 | 2023 | Change 2023/22 | |
|--|--------------|--------------|--------------|--------------|--------------|--------------|----------------|--------------|
| | | | | | | | Growth | % |
| Americas | 26.64 | 27.60 | 27.70 | 28.05 | 28.43 | 27.95 | 1.31 | 4.91 |
| <i>of which US</i> | 18.98 | 19.75 | 20.05 | 20.24 | 20.47 | 20.13 | 1.15 | 6.09 |
| Europe | 3.60 | 3.95 | 3.93 | 3.82 | 3.95 | 3.91 | 0.31 | 8.69 |
| Asia Pacific | 0.49 | 0.51 | 0.48 | 0.50 | 0.49 | 0.50 | 0.00 | 0.97 |
| Total OECD | 30.73 | 32.06 | 32.11 | 32.38 | 32.87 | 32.36 | 1.63 | 5.29 |
| China | 4.46 | 4.51 | 4.50 | 4.47 | 4.47 | 4.49 | 0.03 | 0.64 |
| India | 0.77 | 0.80 | 0.78 | 0.77 | 0.76 | 0.78 | 0.01 | 1.14 |
| Other Asia | 2.31 | 2.37 | 2.37 | 2.34 | 2.36 | 2.36 | 0.05 | 2.36 |
| Latin America | 6.34 | 6.49 | 6.67 | 6.73 | 6.80 | 6.68 | 0.33 | 5.25 |
| Middle East | 3.34 | 3.35 | 3.36 | 3.39 | 3.39 | 3.37 | 0.04 | 1.08 |
| Africa | 1.32 | 1.32 | 1.34 | 1.35 | 1.37 | 1.35 | 0.02 | 1.87 |
| Russia | 10.96 | 9.95 | 10.10 | 10.17 | 10.22 | 10.11 | -0.85 | -7.76 |
| Other Eurasia | 2.84 | 3.09 | 3.05 | 3.02 | 3.06 | 3.06 | 0.21 | 7.44 |
| Other Europe | 0.11 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.00 | -2.83 |
| Total Non-OECD | 32.44 | 31.97 | 32.28 | 32.35 | 32.54 | 32.29 | -0.16 | -0.48 |
| Total Non-OPEC production | 63.17 | 64.03 | 64.39 | 64.72 | 65.41 | 64.64 | 1.47 | 2.33 |
| Processing gains | 2.40 | 2.47 | 2.47 | 2.47 | 2.47 | 2.47 | 0.07 | 2.96 |
| Total Non-OPEC liquids production | 65.57 | 66.50 | 66.86 | 67.19 | 67.88 | 67.11 | 1.54 | 2.35 |
| Previous estimate | 65.58 | 66.51 | 66.86 | 67.20 | 67.89 | 67.12 | 1.54 | 2.35 |
| Revision | -0.01 | -0.01 | -0.01 | -0.01 | -0.01 | -0.01 | 0.00 | 0.00 |

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

OECD

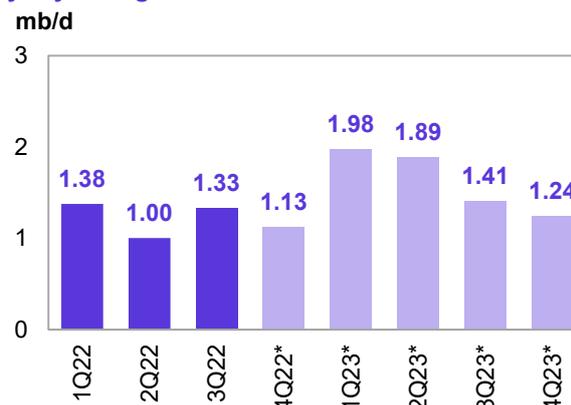
OECD liquids production in 2022 is forecast to increase y-o-y by 1.2 mb/d to average 30.7 mb/d. This has been unchanged compared with a month earlier, since the upward revisions for OECD America were offset by downward revisions in OECD Europe.

OECD Americas was revised up by 44 tb/d compared with last month's assessment. It is now expected to grow by 1.4 mb/d to average 26.6 mb/d.

OECD Europe is anticipated to decline y-o-y by 0.2 mb/d to average 3.6 mb/d.

OECD Asia Pacific is forecast to drop by 21 tb/d y-o-y to average 0.5 mb/d.

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



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

For **2023**, oil production in the OECD is forecast to grow by 1.6 mb/d to average 32.4 mb/d. Growth is led by OECD Americas with 1.3 mb/d to average 27.9 mb/d. Yearly liquids production in OECD Europe is anticipated to grow by 0.3 mb/d to average 3.9 mb/d, while OECD Asia Pacific is expected to remain broadly unchanged to average 0.5 mb/d.

OECD Americas

US

US liquids production increased m-o-m by 262 tb/d in **September 2022** to average 19.5 mb/d. This was up by 1.8 mb/d compared with September 2021.

Crude oil and condensate production rose m-o-m by 289 tb/d in **September 2022** to average 12.3 mb/d, up by 1.3 mb/d y-o-y.

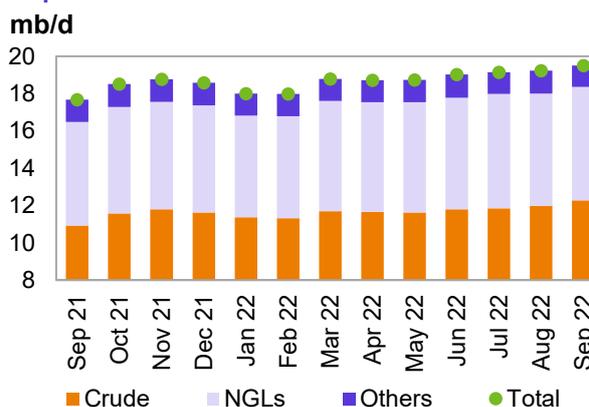
In terms of the **crude and condensate production breakdown by region (PADDs)**, production increased mainly in the US Gulf Coast (USGC). The region was up by 228 tb/d to average 8.8 mb/d. Production in the Midwest and West Coast regions rose by 45 tb/d and 14 tb/d, respectively, while the Rocky Mountain and the East Coast remained broadly unchanged m-o-m. Production growth in the main regions was primarily driven by higher completion and fracking activities and production recovering to normal levels in the Gulf of Mexico (GoM).

NGLs production was up by 65 tb/d m-o-m to average 6.1 mb/d in September. This was higher y-o-y by 0.5 mb/d. Production of **non-conventional liquids** (mainly ethanol) fell by 92 tb/d m-o-m to average 1.1 mb/d in September, according to the US Department of Energy (DoE). Preliminary estimates see non-conventional liquids averaging 1.2 mb/d in October 2022, up by 75 tb/d compared with the previous month.

GoM production rose m-o-m by 64 tb/d in September to average 1.8 mb/d, as production ramps up in the Gulf Coast offshore platforms. In the **onshore Lower 48**, September production increased m-o-m by 208 tb/d to average 10.0 mb/d.

Looking at **individual states**, New Mexico's oil production increased m-o-m by 75 tb/d to average 1.7 mb/d, which is 327 tb/d higher than a year ago. Texas production was up by 90 tb/d to average 5.1 mb/d, which is 163 tb/d higher than a year ago. In the Midwest, North Dakota production increased m-o-m by 43 tb/d to average 1.1 mb/d, up by a minor 5 tb/d y-o-y, while Oklahoma's production was broadly unchanged at an average 0.4 mb/d. Alaska's output was up by 17 tb/d m-o-m, and in Colorado, production remained steady.

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



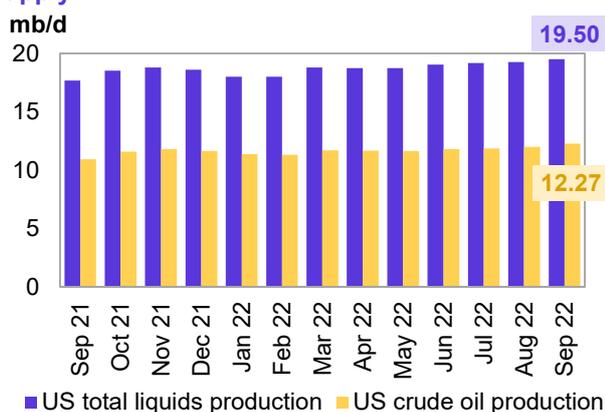
Source: OPEC.

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

| State | | | | Change | |
|----------------------|---------------|---------------|---------------|------------|--------------|
| | Sep 21 | Aug 22 | Sep 22 | m-o-m | y-o-y |
| Texas | 4,982 | 5,055 | 5,145 | 90 | 163 |
| Gulf of Mexico (GOM) | 1,060 | 1,785 | 1,849 | 64 | 789 |
| New Mexico | 1,354 | 1,606 | 1,681 | 75 | 327 |
| North Dakota | 1,103 | 1,065 | 1,108 | 43 | 5 |
| Colorado | 434 | 434 | 435 | 1 | 1 |
| Alaska | 430 | 413 | 430 | 17 | 0 |
| Oklahoma | 398 | 414 | 415 | 1 | 17 |
| Total | 10,918 | 11,979 | 12,268 | 289 | 1,350 |

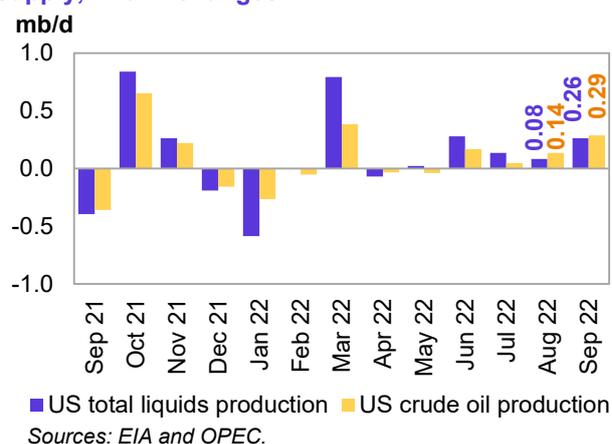
Sources: EIA and OPEC.

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



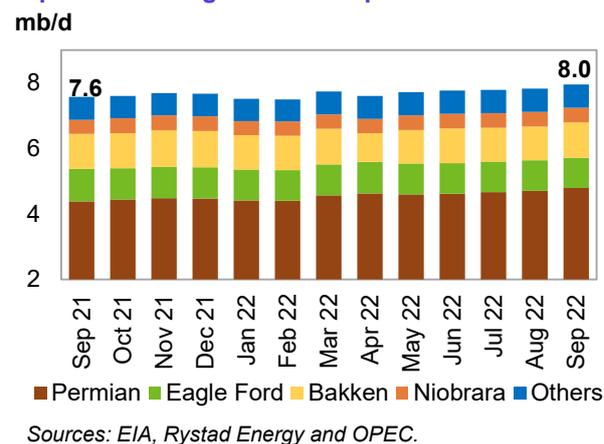
Sources: EIA and OPEC.

US tight crude output in September 2022 is estimated to have risen by 124 tb/d m-o-m to average 7.95 mb/d, according to the latest estimation. This was 0.4 mb/d higher than in the same month last year.

The m-o-m increase from shale and tight formations using horizontal wells came mainly from the Permian, which increased by 84 tb/d to average 4.6 mb/d. This was up by 0.4 mb/d y-o-y.

In the Williston Basin, Bakken shale production was up m-o-m by 45 tb/d to average 1.1 mb/d. This is up by a minor 5 tb/d y-o-y. Tight crude output at Eagle Ford in Texas fell marginally by 5 tb/d to average 0.9 mb/d. This is down by 65 tb/d y-o-y. Production in Niobrara-Codell in Colorado and Wyoming was unchanged at an average 0.45 mb/d.

Graph 5 - 9: US tight crude output breakdown



Sources: EIA, Rystad Energy and OPEC.

US liquids production in 2022, excluding processing gains, is forecast to expand y-o-y by 1.1 mb/d to average 19.0 mb/d. This is revised up by 44 tb/d compared with the previous assessment due to higher-than-expected September output reported by the Energy Information Administration (EIA). 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 5.9 mb/d, and production in the GoM is anticipated to increase by a minor 30 tb/d. Non-conventional liquids are projected to expand by 40 tb/d to average 1.2 mb/d. However, the expected growth is likely to be partially offset by y-o-y natural declines of 50 tb/d in onshore conventional fields.

Given the current pace of oil field drilling and well completions, **crude oil and condensate production** is forecast to grow by 0.6 mb/d y-o-y to average 11.8 mb/d in 2022. This forecast assumes continued capital discipline, current inflation rates, continuing supply chain issues and oil field service limitations (labour and equipment). Tightness in the hydraulic fracking market has been one of the biggest issues for US producers in recent months, and this is expected to remain a challenge.

US liquids production in 2023, excluding processing gains, is forecast to grow y-o-y by 1.2 mb/d to average 20.1 mb/d. This is revised down by 44 tb/d from the previous assessment. Higher drilling activities and fewer supply chain/logistical issues in the prolific Permian, Eagle Ford and Bakken shale sites are assumed for 2023. Crude oil output is anticipated to increase by 0.8 mb/d y-o-y to average 12.6 mb/d. Average tight crude output in 2023 is forecast at 8.6 mb/d, up by 0.8 mb/d y-o-y.

At the same time, NGLs production and non-conventional liquids, particularly ethanol, are forecast to increase y-o-y by 0.33 mb/d and 40 tb/d, to average 6.3 mb/d and 1.3 mb/d, respectively.

Graph 5 - 10: US liquids supply developments by component

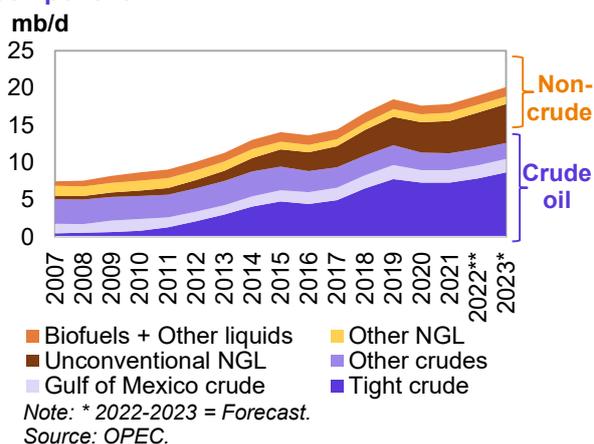


Table 5 - 4: US liquids production breakdown, mb/d

| US liquids | Change | | Change | | Change | |
|---------------------------------|--------------|--------------|--------------|-------------|--------------|-------------|
| | 2021 | 2021/20 | 2022* | 2022/21 | 2023* | 2023/22 |
| Tight crude | 7.28 | -0.03 | 7.87 | 0.59 | 8.65 | 0.78 |
| Gulf of Mexico crude | 1.71 | 0.04 | 1.74 | 0.03 | 1.82 | 0.09 |
| Conventional crude oil | 2.27 | -0.07 | 2.22 | -0.05 | 2.12 | -0.09 |
| Total crude | 11.25 | -0.06 | 11.82 | 0.56 | 12.60 | 0.78 |
| Unconventional NGLs | 4.30 | 0.22 | 4.86 | 0.55 | 5.25 | 0.39 |
| Conventional NGLs | 1.12 | 0.03 | 1.10 | -0.03 | 1.04 | -0.06 |
| Total NGLs | 5.42 | 0.25 | 5.95 | 0.53 | 6.29 | 0.33 |
| Biofuels + Other liquids | 1.17 | 0.02 | 1.21 | 0.04 | 1.25 | 0.04 |
| US total supply | 17.85 | 0.21 | 18.98 | 1.13 | 20.13 | 1.15 |

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

US tight crude production in the Permian in 2022 is estimated to increase y-o-y by 0.5 mb/d to 4.7 mb/d. It is then forecast to grow by 0.6 mb/d y-o-y to average 5.3 mb/d in 2023.

The **Bakken** shale production decline that occurred in 2020 and 2021 is expected to continue in 2022. Tight crude production in the Bakken is estimated to drop by 27 tb/d in 2022 to average 1.1 mb/d. This is lower than the pre-pandemic average output of 1.4 mb/d. Drilling activities in North Dakota and available DUC wells are lower than the required levels to revive output. In 2023, growth is forecast to resume at 21 tb/d to average 1.1 mb/d.

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

Niobrara production is estimated to grow y-o-y by 35 tb/d in 2022 and is then forecast to increase by 30 tb/d in 2023 to average 449 tb/d and 479 tb/d, respectively. Other shale plays are expected to show marginal increases totalling 34 tb/d and 40 tb/d in 2022 and 2023, given current drilling and completion activities.

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

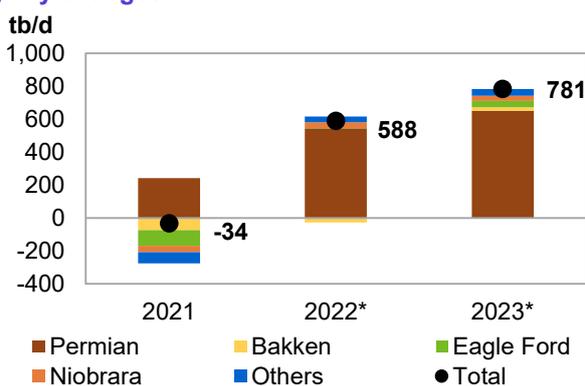


Table 5 - 5: US tight oil production growth, mb/d

| US tight oil | Change | | Change | | Change | |
|-------------------|-------------|--------------|-------------|-------------|-------------|-------------|
| | 2021 | 2021/20 | 2022* | 2022/21 | 2023* | 2023/22 |
| Permian tight | 4.15 | 0.24 | 4.70 | 0.54 | 5.35 | 0.65 |
| Bakken shale | 1.08 | -0.07 | 1.05 | -0.03 | 1.07 | 0.02 |
| Eagle Ford shale | 0.96 | -0.09 | 0.96 | 0.00 | 1.00 | 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 | 0.03 | 0.75 | 0.04 |
| Total | 7.28 | -0.03 | 7.87 | 0.59 | 8.65 | 0.78 |

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

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

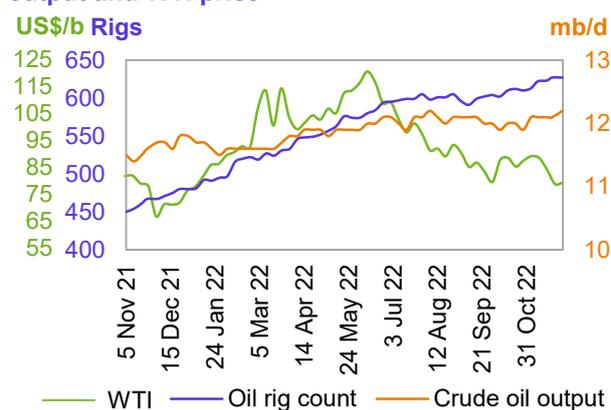
Total **US active drilling rigs** remained unchanged at 784 rigs in the week ending 2 December. This was up by 215 rigs compared with a year ago. The number of active offshore rigs rose w-o-w to 18, an increase of one. This is up from 13 in the same month a year earlier. Onshore oil and gas rigs decreased by one w-o-w to stand at 763 rigs, up by 209 rigs y-o-y, with three rigs in inland waters.

The **US horizontal rig count** fell by three w-o-w to 711, compared with 513 horizontal rigs a year ago. The number of drilling rigs for oil remained unchanged w-o-w at 627. At the same time, gas-drilling rig counts were steady at 155.

The Permian's rig count fell by two w-o-w to 350 rigs. However, rig counts remained steady in Eagle Ford, Williston and DJ-Niobrara at 71, 42 and 20, respectively. The rig count increased w-o-w by one in the Cana Woodford to 30.

There have been just two operating oil rigs in the Barnett basin, unchanged w-o-w.

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



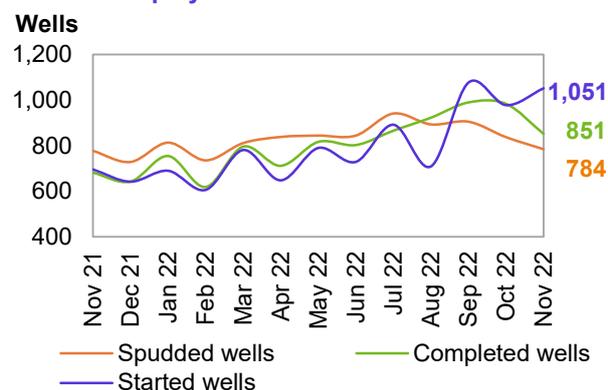
Sources: Baker Hughes, EIA and OPEC.

Drilling and completion (D&C) activities for spudded, completed and started oil producing wells in all US shale plays, based on the EIA-DPR regions, saw 837 horizontal wells spudded in October 2022 (as per preliminary data). This is down by 68 m-o-m, but 10% higher than in October 2021.

In October 2022, preliminary data indicates a lower number of completed wells at 983. However, this is up 36% y-o-y. Moreover, the number of started wells was estimated at 977, which is 34% higher than a year earlier.

Preliminary data for November estimates 784 spudded, 851 completed and 1,051 started wells, according to Rystad Energy.

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



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

In terms of identified **US oil and gas fracking operations by region**, Rystad Energy reported that 1,156 wells were fracked in September 2022. In October and November, it stated that 1,252 and 1,092 wells began fracking, respectively. These preliminary numbers are based on an analysis of high-frequency satellite data.

Preliminary October data on fracking showed that 275 and 272 wells were fracked in the Permian Midland Tight and Permian Delaware Tight, respectively. In comparison with September, there was a jump of 13 and 46 wells fracked in the Midland and Delaware tight, respectively, according to preliminary data. Data also indicated that 97 wells were fracked in the DJ Basin, 136 in the Eagle Ford and 81 in the Bakken during October.

Canada

Canada's liquids production in October is estimated to have increased m-o-m by 18 tb/d to average 5.8 mb/d, as seasonal 3Q22 maintenance was almost completed. This was the highest Canadian production on record.

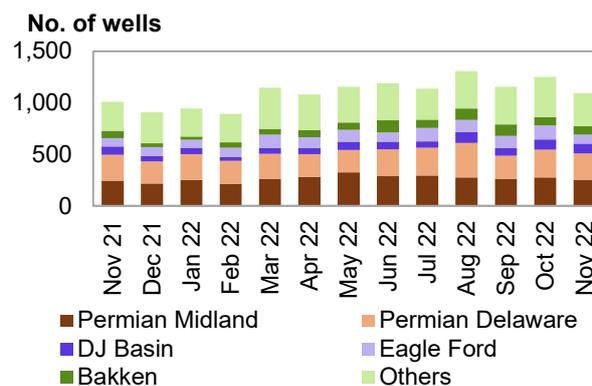
Conventional crude production increased m-o-m by 15 tb/d to average 1.3 mb/d and NGLs output rose m-o-m by 54 tb/d to average 1.2 mb/d. At the same time, crude bitumen production output fell m-o-m by 37 tb/d in October, while synthetic crude dropped by 14 tb/d. Taken together, crude bitumen and synthetic crude production declined by 51 tb/d to 3.2 mb/d.

Canada's liquids supply in **2022** is estimated to grow by 0.2 mb/d to average 5.6 mb/d, unchanged from the previous assessment.

Canada's production is forecast to continue growing in 4Q22, as upgraders return from maintenance. Turnaround recoveries will combine with oil sands project ramp-ups and debottlenecks, alongside conventional growth. Moreover, the Terra Nova FPSO is expected to resume production by the end of the year, adding to supply.

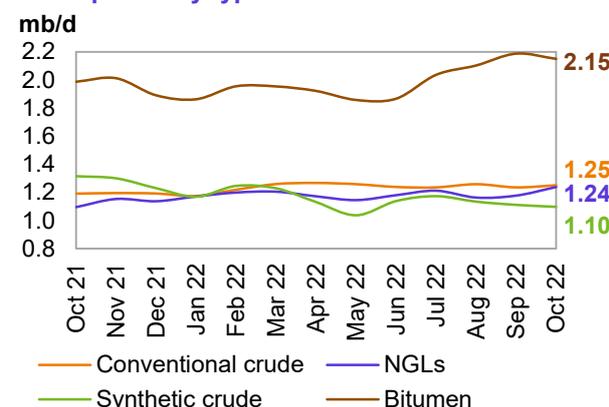
For **2023**, Canada's liquids production is forecast to increase at a pace similar to 2022, rising by 0.2 mb/d to average 5.8 mb/d. Incremental production will come mainly from Alberta's oil sands, which saw an average output of 3.1 mb/d from January to October 2022.

Graph 5 - 14: Fracked wells count per month



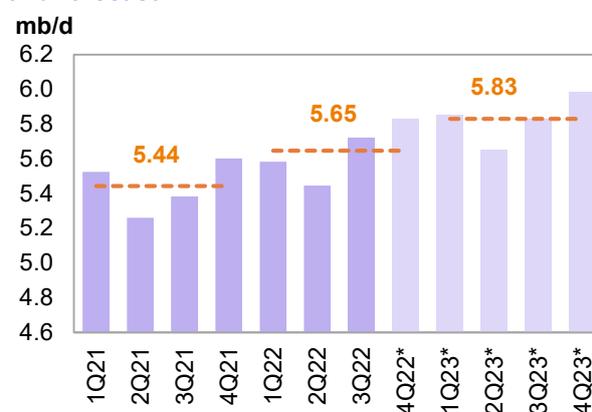
Note: Oct 22 - Nov 22 = Preliminary data.
Sources: Rystad Energy Shale Well Cube and OPEC.

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



Sources: National Energy Board and OPEC.

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



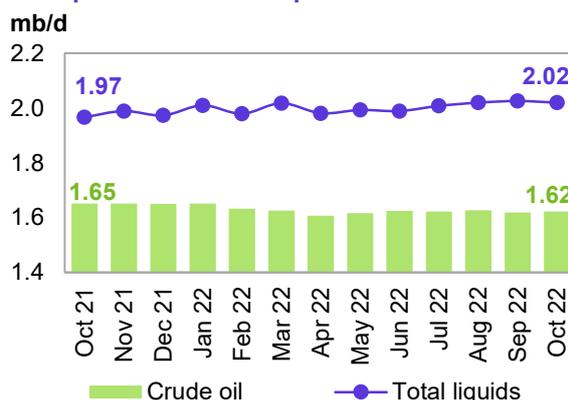
Note: * 4Q22-4Q23 = Forecast. Source: OPEC.

Mexico

Mexico's crude output remained largely flat m-o-m in **October** to average 1.6 mb/d, while NGLs output fell by a minor 8 tb/d. This saw Mexico's total October liquids output remain broadly unchanged m-o-m at an average 2.0 mb/d, according to Pemex.

For **2022**, Mexico's liquids production is estimated to average 2.0 mb/d, broadly unchanged from the previous month's assessment. The 50 tb/d growth in 2022 is expected to be driven by foreign-operated fields, while minor growth is also anticipated in Pemex-operated assets. High decline rates in Pemex's mature and heavy oil fields are set to mostly offset its other grades in 4Q22.

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



Sources: PEMEX and OPEC.

For **2023**, liquids production is forecast to decline by 29 tb/d to average 1.98 mb/d, which is similar to the previous assessment. The total crude production decline in Pemex's mature fields is projected to outweigh production ramp-ups from Mexico's foreign-operated fields.

OECD Europe

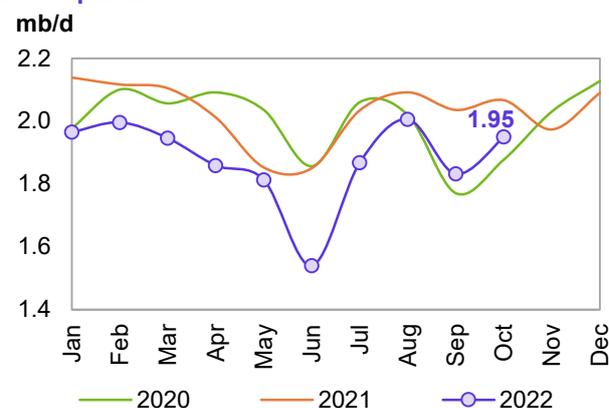
Norway

Norwegian liquids production in **October** increased by 118 tb/d m-o-m, to average 2.0 mb/d. This reflects a recovery from maintenance activities in September.

Norway's crude production rose by 106 tb/d m-o-m in October to average 1.7 mb/d, down by 75 tb/d y-o-y. Monthly oil production was 7.3% lower than the Norwegian Petroleum Directorate's (NPD) forecast.

At the same time, the production of NGLs and condensates increased by 12 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 20 tb/d y-o-y to average 1.9 mb/d. This is mainly due to the downward revision in 4Q22 output on the back of lower-than-anticipated October output and the expected delay to planned start ups in this quarter.

Equinor has shut in gas output from the Aasgard B facility following a fire that broke out in mid-November. However, the impact seems to be limited on the platform's gas production, but natural gas liquids production could be affected. Technical issues have also arisen at the Yme field, which has only produced intermittently since first start-up at the end of last year. The field has been shut-in since mid-September after damage was found on parts of the process pipe system. However, phase 2 of Norway's giant Johan Sverdrup oil development is expected on stream in early-December 2022, according to Aker BP. The development, which produces relatively heavy and sour crude, generally accounts for more than a quarter of Norway's oil production.

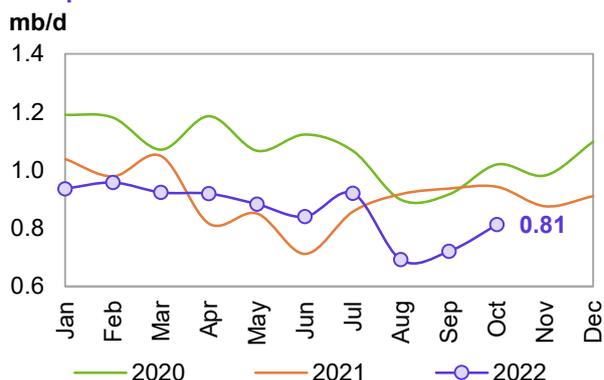
For **2023**, Norwegian liquids production is forecast to grow by 0.3 mb/d, broadly unchanged compared with the previous month, to average 2.2 mb/d. A number of small-to-large projects are scheduled to ramp up in 2023. The continuing Johan Sverdrup Phase 2 ramp-up is projected to be the main source of increased output for the coming year.

UK

UK liquids production increased m-o-m in **October** by 92 tb/d to average 0.8 mb/d. Crude oil output increased by 91 tb/d m-o-m to average 0.7 mb/d, according to official data, but this was lower by 133 tb/d y-o-y. NGLs output remained broadly unchanged at an average 88 tb/d. UK liquids output in October was down 14% from the same month a year earlier, which was mainly due to extended maintenance and natural declines.

For **2022**, UK liquids production is forecast to decline by 42 tb/d to average 0.9 mb/d. This was revised down by 13 tb/d from the previous assessment, owing to lower-than-expected October production and a lower forecast for 4Q22.

Graph 5 - 19: UK monthly liquids production development



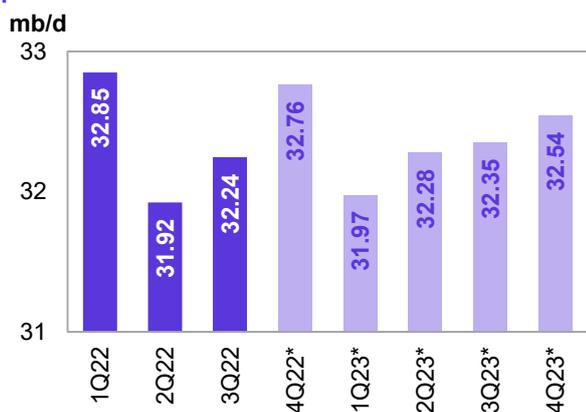
Sources: Department of Energy & Climate Change and OPEC.

For **2023**, UK liquids production is forecast to increase by 43 tb/d to average 0.9 mb/d. The Penguins FPSO delivery date has been already confirmed for November 2022. Shell has indicated that peak production from the redeveloped Penguins field is expected to reach 28 tboe/d, given a one-year ramp up period after first oil.

Project sanctioning will be essential to maintain future oil and gas output, as UK output has been in long-term decline. It should be noted that the UK government in November approved an increase to the windfall tax, which will jump by ten percentage points to 35% in January 2023.

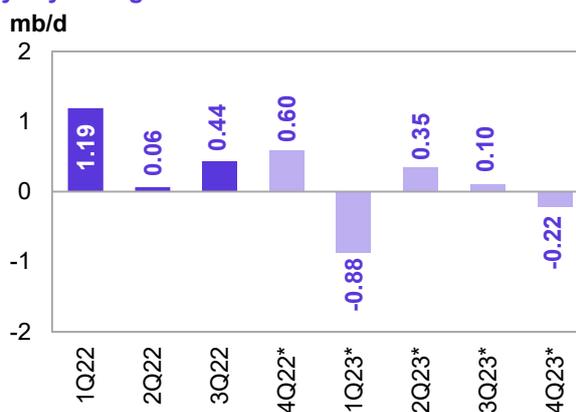
Non-OECD

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



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

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

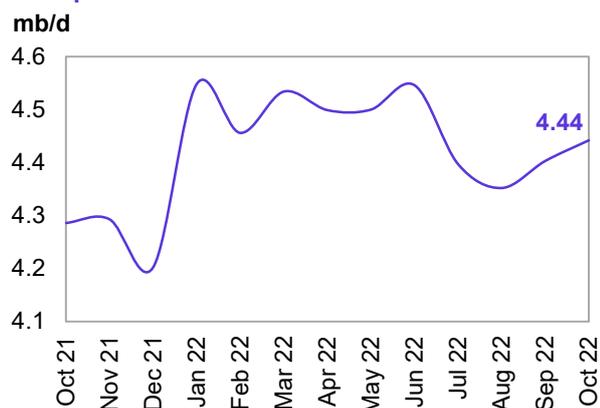


Note: * 4Q22-4Q23 = Forecast. Source: OPEC.

China

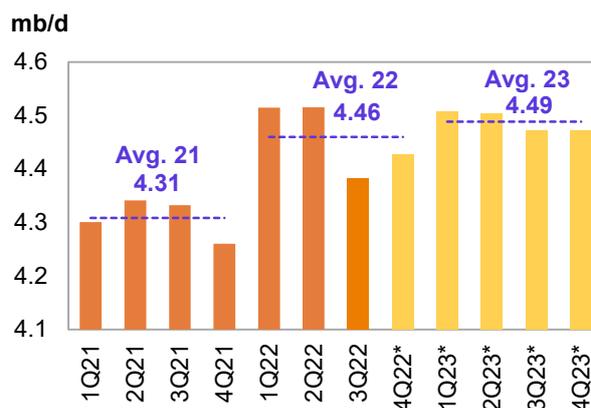
China's liquids production increased m-o-m in **October** by 39 tb/d to average 4.4 mb/d, which was up by 156 tb/d y-o-y, according to official data. Crude oil output in October averaged 4.0 mb/d, up by 41 tb/d compared with the previous month, and higher y-o-y by 121 tb/d. Liquids production over the first ten months of 2022 averaged 4.5 mb/d, higher by 3.4% compared with the same period last year.

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



Sources: CNPC and OPEC.

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



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

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

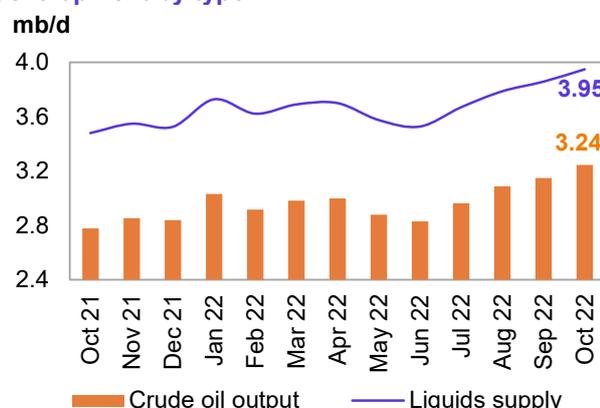
For **2023**, y-o-y growth of 30 tb/d is forecast for an average of 4.5 m/d, broadly unchanged from last month's assessment. New projects will slightly offset the mature onshore production declines. According to China's latest Five-Year Plan (FYP) and guidelines, from 2021 to 2025, the country aims to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

Latin America

Brazil

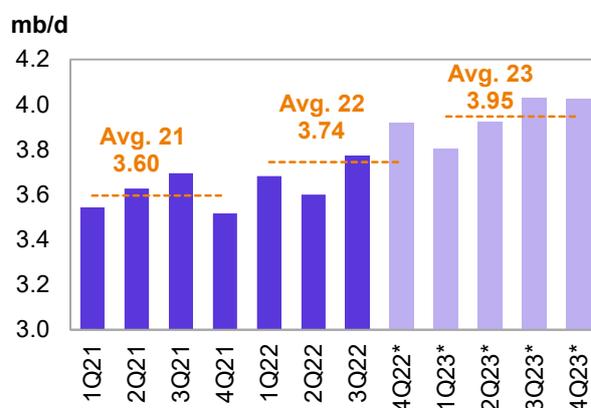
Brazil's crude output in October increased m-o-m by 96 tb/d, to average 3.2 mb/d. NGLs production was largely unchanged at an average of 93 tb/d and is expected to remain flat in November. Biofuels output (mainly ethanol) was flat in October at an average 612 tb/d, with preliminary data showing a flat trend in November too. Total liquids production increased by 91 tb/d in October to average 3.9 mb/d, the highest production rate on record. This is up by 0.5 mb/d y-o-y. Crude and condensate production rose for the fourth consecutive month through October, as new projects continued to ramp up production offshore and maintenance eased.

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

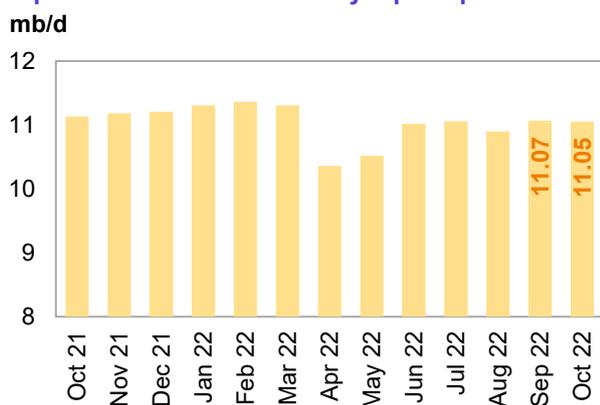
For **2022**, Brazil's liquids supply, including biofuels, is forecast to increase by 0.1 mb/d y-o-y to average 3.7 mb/d. This is up by 15 tb/d from the previous month's assessment, due to higher-than-expected production in October. Equinor's Peregrino Phase 2 (Platform C) started production in October and is set to continue to ramp up volumes in 4Q22 and into 2023. Growth in 2022 is being driven by the continued ramp up of the Sepia field and the start-up of Mero 1 in the pre-salt Santos basin, as well as Peregrino (Phases 1 and 2) in the Campos basin.

For **2023**, Brazil's liquids supply, including biofuels, is forecast to increase by 0.2 mb/d y-o-y to average 3.9 mb/d, broadly unchanged from the previous forecast. Crude oil output is set to increase through production ramp ups in the Mero (Libra NW), Buzios (Franco), Tupi (Lula), Peregrino, Sepia, Marlim and Itapu (Florim) fields. However, offshore maintenance is expected to cause interruptions in major fields. It should also be noted that Petrobras announced the platform ship Anita Garibaldi is bound for Brazil after it left its shipyard in China on October 6. The new FPSO system will be installed in the Marlim and Voador fields in the Campos basin, with production expected to begin in 3Q23.

Russia

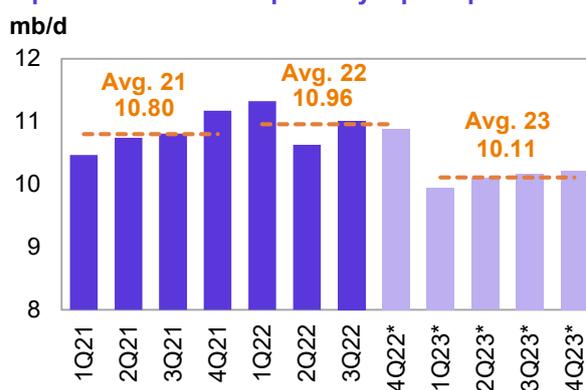
Russia's liquids production in October declined m-o-m by a minor 15 tb/d to average 11.1 mb/d. This includes 9.7 mb/d of crude oil and 1.3 mb/d of NGLs and condensate. A preliminary estimate for Russia's crude production in November 2022 shows a m-o-m increase of 96 tb/d to average 9.8 mb/d, while there is an expected decline of around 22 tb/d for NGLs and condensate.

Graph 5 - 26: Russia's monthly liquids production



Sources: Nefte Compass and OPEC.

Graph 5 - 27: Russia's quarterly liquids production



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

Russian liquids output in **2022** is forecast to increase y-o-y by 160 tb/d to average 11.0 mb/d. This is revised up by 26 tb/d from the previous month's assessment, mainly due to higher October output and higher-than-expected preliminary production data in November.

For **2023**, Russian liquids production is forecast to drop by 0.85 mb/d to average 10.1 mb/d. This is unchanged from the previous assessment. It should be noted that Russia's oil forecast remains subject to high uncertainty.

Caspian

Kazakhstan & Azerbaijan

Liquids output in Kazakhstan rose by 150 tb/d to average 1.7 mb/d in **October**. Crude production was up by 89 tb/d m-o-m to average 1.4 mb/d, and NGLs increased by 61 tb/d to average 0.3 mb/d. Higher oil output was due to the gradual ramp up of the Kashagan oil field, as well as the completion of planned maintenance at the Karachaganak gas condensate field. However, emergency repairs at the Caspian Pipeline Consortium (CPC) terminal on Russia's Black Sea coast reduced October's total monthly liquids output.

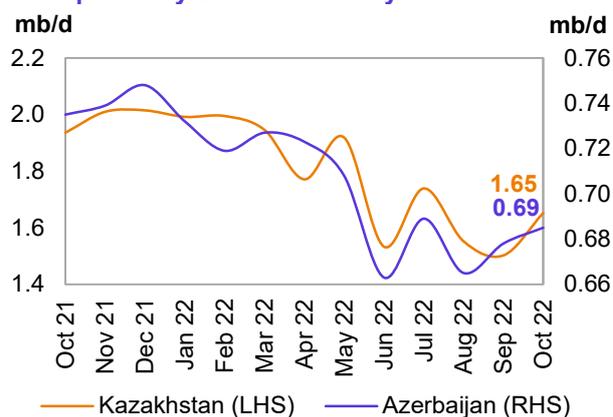
Kazakhstan's liquids supply for **2022** is now forecast to decline by 40 tb/d y-o-y to average 1.8 mb/d. This is down by 15 tb/d compared with the previous month's assessment and due to downward revisions applied to 4Q22. CPC stated that it restarted one of its Single Point Moorings (SPM) on 12 November following maintenance. Therefore, the CPC crude terminal on Russia's Black Sea coast is now operating with two of its three SPMs. At the same time, crude production at the Kashagan field recovered to nominal capacity of around 400 tb/d in the second week of November, after five months of constraints caused by planned and unplanned maintenance.

For **2023**, liquids supply is forecast to increase by 157 tb/d, up by a minor 10 tb/d compared with the previous forecast. This is due to base changes in 2022. In addition to the production ramp-up at the Kashagan oil field, oil output in the Tengiz field and gas condensate production in the Karachaganak field are also expected to rise marginally.

Azerbaijan's liquids production in October increased m-o-m by a minor 7 tb/d to average 0.7 mb/d, although this was down by 50 tb/d y-o-y. Crude production averaged 551 tb/d, with NGLs output at 134 tb/d, according to official sources.

For **2022**, liquids supply in Azerbaijan is estimated to decline y-o-y by 27 tb/d to average 0.7 mb/d. This has been revised down by 21 tb/d due to downward revisions in 3Q22 and lower-than-expected production in major oil fields in 4Q22. The main declines in legacy fields are expected to be offset by ramp-ups in other fields, such as the BP-led consortium's Shah Deniz field that has increased gas production capacity in the Azeri sector of the Caspian Sea.

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 59 tb/d to average 0.8 mb/d, according to the voluntary production adjustments agreed on at the 33rd OPEC and non-OPEC Ministerial Meeting. Growth is forecast to come from the Shah Deniz and Absheron condensate projects. Production could rise further after output starts up at the Azeri Central East project in 2023.

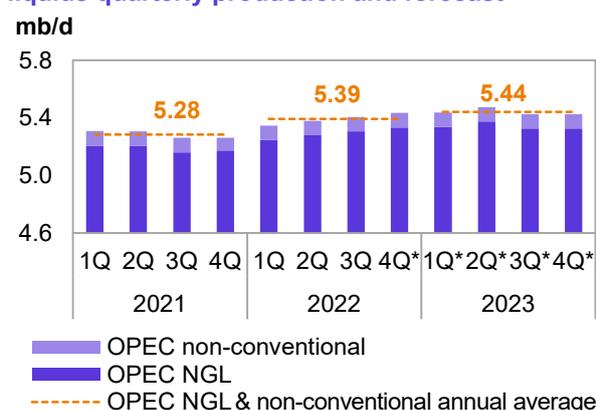
OPEC NGLs and non-conventional oils

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

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

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

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



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

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

| OPEC NGL and non-conventional oils | Change | | Change | | Change | | | | | |
|------------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| | 2021 | 21/20 | 2022 | 22/21 | 1Q23 | 2Q23 | 3Q23 | 4Q23 | 2023 | 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 28.83 mb/d in November 2022, lower by 744 tb/d m-o-m. Crude oil output increased mainly in Nigeria and Angola, while production in Saudi Arabia, the UAE, Kuwait and Iraq declined.

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

| Secondary sources | 2020 | 2021 | 1Q22 | 2Q22 | 3Q22 | Sep 22 | Oct 22 | Nov 22 | Change Nov/Oct |
|-------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------|
| Algeria | 904 | 913 | 984 | 1,015 | 1,039 | 1,042 | 1,041 | 1,022 | -19 |
| Angola | 1,245 | 1,117 | 1,152 | 1,171 | 1,155 | 1,131 | 1,064 | 1,102 | 38 |
| Congo | 289 | 265 | 263 | 268 | 267 | 278 | 260 | 259 | -2 |
| Equatorial Guinea | 115 | 97 | 91 | 90 | 90 | 87 | 73 | 69 | -4 |
| Gabon | 191 | 182 | 199 | 190 | 199 | 202 | 205 | 207 | 2 |
| IR Iran | 1,991 | 2,392 | 2,529 | 2,555 | 2,566 | 2,555 | 2,561 | 2,559 | -1 |
| Iraq | 4,076 | 4,049 | 4,286 | 4,440 | 4,540 | 4,546 | 4,582 | 4,465 | -117 |
| Kuwait | 2,439 | 2,419 | 2,612 | 2,690 | 2,801 | 2,822 | 2,806 | 2,685 | -121 |
| Libya | 367 | 1,143 | 1,063 | 751 | 992 | 1,157 | 1,166 | 1,133 | -32 |
| Nigeria | 1,578 | 1,372 | 1,376 | 1,211 | 1,064 | 1,015 | 1,066 | 1,158 | 92 |
| Saudi Arabia | 9,204 | 9,114 | 10,165 | 10,450 | 10,893 | 11,008 | 10,878 | 10,474 | -404 |
| UAE | 2,804 | 2,727 | 2,954 | 3,045 | 3,168 | 3,192 | 3,186 | 3,037 | -149 |
| Venezuela | 512 | 555 | 684 | 714 | 667 | 661 | 682 | 656 | -26 |
| Total OPEC | 25,714 | 26,345 | 28,358 | 28,589 | 29,442 | 29,696 | 29,570 | 28,826 | -744 |

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 | Sep 22 | Oct 22 | Nov 22 | Change Nov/Oct |
|----------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|----------------|
| Algeria | 899 | 911 | 984 | 1,016 | 1,050 | 1,058 | 1,060 | 1,021 | -39 |
| Angola | 1,271 | 1,124 | 1,161 | 1,173 | 1,151 | 1,091 | 1,051 | 1,088 | 37 |
| Congo | 300 | 267 | 267 | 258 | 261 | 271 | 267 | 260 | -8 |
| Equatorial Guinea | 114 | 93 | 95 | 91 | 83 | 75 | 57 | 56 | -1 |
| Gabon | 207 | 181 | 197 | 184 | 198 | 191 | 170 | 191 | 21 |
| IR Iran | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Iraq | 3,997 | 3,971 | 4,188 | 4,472 | 4,632 | 4,662 | 4,651 | 4,430 | -221 |
| Kuwait | 2,438 | 2,415 | 2,612 | 2,694 | 2,799 | 2,818 | 2,811 | 2,676 | -135 |
| Libya | 389 | 1,207 | 1,151 | .. | .. | .. | .. | .. | .. |
| Nigeria | 1,493 | 1,323 | 1,299 | 1,133 | 999 | 938 | 1,014 | 1,186 | 171 |
| Saudi Arabia | 9,213 | 9,125 | 10,224 | 10,542 | 10,968 | 11,041 | 10,957 | 10,468 | -489 |
| UAE | 2,779 | 2,718 | 2,949 | 3,042 | 3,170 | 3,193 | 3,188 | 3,047 | -141 |
| Venezuela | 569 | 636 | 756 | 745 | 673 | 666 | 717 | 693 | -25 |
| Total OPEC | .. | .. | .. | .. | .. | .. | .. | .. | .. |

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

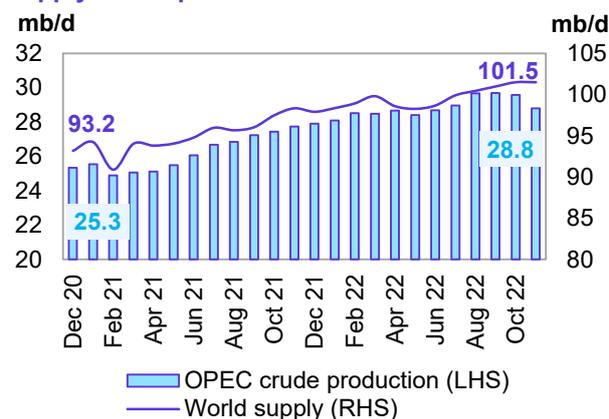
World oil supply

Preliminary data indicates that **global liquids production in November** increased by 43 tb/d to average 101.5 mb/d compared with the previous month.

Non-OPEC liquids production (including OPEC NGLs) is estimated to have increased m-o-m in November by 0.8 mb/d to average 72.7 mb/d. This was higher by 2.1 mb/d y-o-y. Preliminary estimated production increases in November were mainly driven by Other Eurasia, OECD Europe and Other Asia, which was partially offset by declines in Latin America.

The **share of OPEC crude oil in total global production** decreased by 0.7 pp to 28.4% in November, compared with the previous month. Estimates are based on preliminary data for non-OPEC supply, OPEC NGLs and non-conventional oil, while assessments 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 November, refinery margins in the Atlantic Basin underwent a downward correction. This was a reflection of a recovery in refinery processing rates, as heavy seasonal refinery repair works subsided, with the recovery in product output levels exerting pressure on product crack spreads, particularly for gasoil/diesel. However, in Asia, margins continued to improve, supported by lower Dubai prices, strong regional product demand, which led to stronger margins for all products across the barrel with the exception of gasoil/diesel. Over the month, global refinery processing rates began recovering, and rose by 2.1 mb/d in response to a decline in offline capacity amid the end of peak refinery maintenance. In the coming month, refinery intakes are expected to continue their recovery, and gain nearly 2.1 mb/d according to preliminary data, as refineries aim to restock products, as key product inventories in the OECD still remain below the 5-year average.

Refinery margins

USGC refining margins against WTI reversed trends to lose the gains registered in the previous month. The end of heavy maintenance works in the country resulted in higher product output. Consequently, the growth in product balances exerted pressure on product crack spreads and led to negative performance all across the barrel. Most of the downturn in US product markets came from gasoil/diesel as inventory levels picked up from the alarmingly low level witnessed in the previous month, although they still remain below the 5-year average.

According to preliminary estimates, refinery intake in the US reversed trend in November and gained 940 tb/d m-o-m to average 16.92 mb/d in November. Going forward, intakes are expected to continue their recovery, which should help lengthen product balances in the coming months. USGC margins against WTI averaged \$35.84/b in November, up by \$12.77 m-o-m and \$21.63 y-o-y.

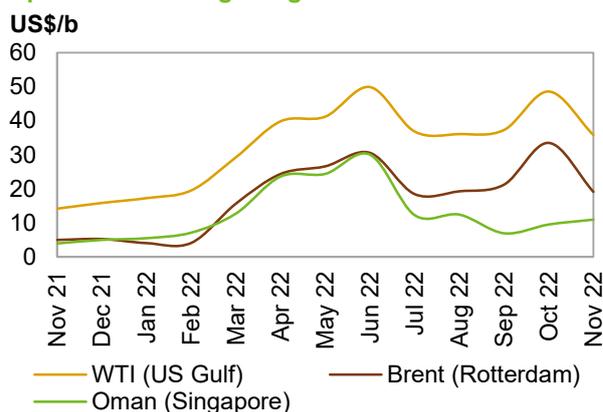
Refinery margins in Rotterdam against Brent ended their 3-month upward trend and lost solid ground in November to show the largest monthly decline compared with the other main trading hubs. The return of refineries from the heavy maintenance season in Europe and the subsequent rise in processing rates and product output weighed on regional product markets. In addition, despite weekly Amsterdam-Rotterdam-Antwerp hub inventory declines during November and higher road fuel consumption in the UK, strong diesel imports from Russia and from the East kept the NWE region well supplied, further contributing to the weakness in European refinery economics.

Refinery throughput in Europe increased by 460 tb/d to average 9.99 mb/d according to preliminary data. Refinery margins against Brent in Europe averaged \$19.12/b in November, down by \$14.38/b compared with a month earlier but were higher by \$14.15 y-o-y.

Singapore refining margins against Oman, in contrast, continued to rise, for the second consecutive month, with a positive performance registered all across the barrel with the exception of gasoil. Strong product demand particularly from India, Indonesia and Vietnam, provided support to the regional product market. The negative impact linked to the zero Covid-19 measures in China, continued to suppress fuel consumption levels in the country, while refinery runs in China reached new highs in November. However, this negative impact was completely offset by positive demand side support within Asia, although overall refinery output levels remained elevated.

Regional refinery run rates increased by 310 tb/d in November relative to the previous month and averaged of 26.34 mb/d, according to preliminary data. Refinery margins against Oman in Asia gained \$1.44/b m-o-m to average \$10.97/b, higher by \$7.01 y-o-y.

Graph 6 - 1: Refining margins



Sources: Argus and OPEC.

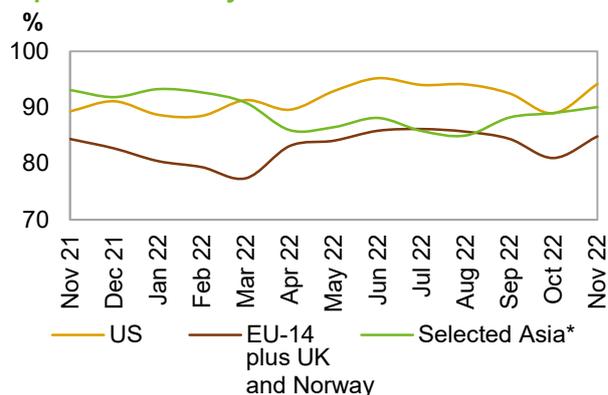
Refinery operations

US refinery utilization rates increased in November to average 94.18%, which corresponds to a throughput of 16.92 mb/d. This represented a rise of 5.2 pp and 940 tb/d, respectively, compared with October. Y-o-y, the November refinery utilization rate was up by 4.9 pp, with throughput showing a rise of 759 tb/d.

European refinery utilization averaged 84.86% in November, corresponding to a throughput of 9.99 mb/d. This is an m-o-m rise of 3.9 pp or 460 tb/d. On a y-o-y basis, utilization rates were up by 0.5 pp, while throughput was higher by 56 tb/d.

In **Selected Asia** – comprising Japan, China, India, Singapore and South Korea – refinery utilization rates increased to average 90.05% in November, corresponding to a throughput of 26.34 mb/d. Compared with the previous month, utilization rates were up by 1.1 pp, and throughput was higher by 310 tb/d. However, y-o-y utilization rates were lower by 3.0 pp, and throughput was down by 258 tb/d.

Graph 6 - 2: Refinery utilization rates



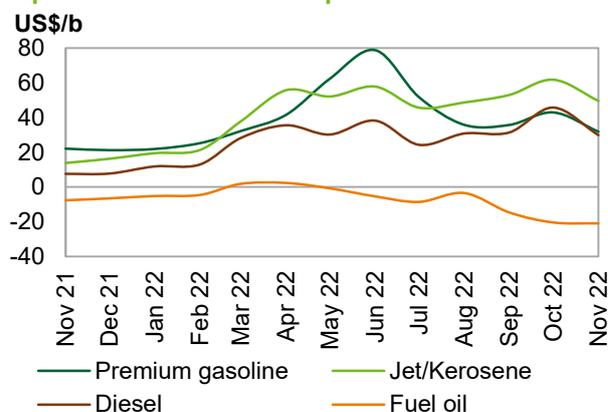
Note: * China, India, Japan, Singapore and South Korea.
Sources: Argus, EIA, Euroilstock, PAJ and OPEC.

Product markets

US market

The **USGC gasoline crack spread** came under pressure and lost the gain registered in the previous month. Total US gasoline inventory levels in November showed considerable growth, following 3 consecutive months of declines. In addition, seasonally weaker domestic demand due to colder temperatures resulted in subdued gasoline consumption for road transportation. Road travel activities experienced a mild pick-up around the Thanksgiving holiday. However this supportive factor was rather short lived and insufficient to avert the overall winter-related gasoline weakness. Moreover, gasoline exports to Latin America were reported to have slowed down towards the end of the month, due to ample inflows of competitive volumes from other sources, further weighing on US gasoline markets.

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



Sources: Argus and OPEC.

In November, wholesale gasoline 93 prices reversed trends and decreased by \$14.17 m-o-m to average \$116.04/b, however stood \$14.79 higher compared to the same month a year earlier. The USGC gasoline crack spread lost \$11.06 m-o-m to average \$31.89/b in November, but was up by \$9.75 y-o-y.

The USGC jet/kerosene crack spread suffered an m-o-m loss but remained at elevated levels and kept its position as the main margin contributor across the barrel in the USGC product market. This weakness was mainly a result of a supply-side upturn, with stronger refinery output leading to stronger availability. Jet fuel wholesale prices declined by \$15.31/b over the month to average \$133.69/b and retained its position as the highest-priced product in the USGC market in November as inventories for the fuel remain below the 5-year average and availability remains tight. The US jet/kerosene crack spread against WTI averaged \$49.54/b, down by \$12.20 m-o-m but higher by \$35.69 y-o-y.

The USGC gasoil crack spread came under pressure following a solid stock build over the month. US gasoil inventories increased every week during the month of November after having remained nearly unchanged on a weekly basis throughout the previous month, although they remain below the five-year average. Gasoil prices averaged \$114.01/b in November, down by \$18.92 relative to October. The US gasoil crack spread against WTI averaged \$29.86/b, down by \$15.81 m-o-m but was up by \$22.23 y-o-y.

Product Markets and Refinery Operations

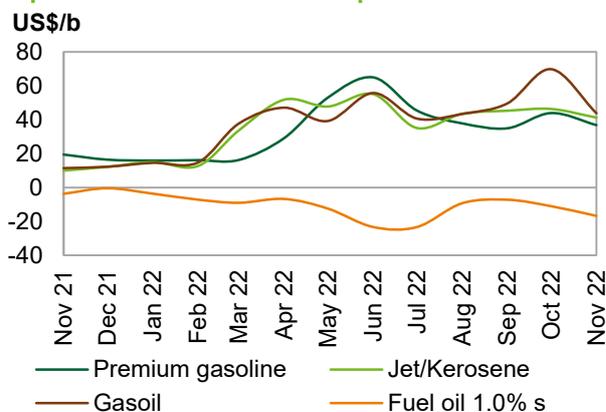
The USGC fuel oil crack spread against WTI continued to trend downward to show a decline for the third consecutive month in November, although the loss was the most limited across the barrel. Although fuel oil demand has remained somewhat subdued in recent months, the downturn in fuel oil prices has triggered renewed buying interest for fuel oil conversion. In addition, the restart of secondary units likely increased demand for the residual fuel which partially eroded the fuels surplus. Therefore, despite rising primary unit processing rates, market sentiment seems to be much more responsive to secondary unit ramp ups which kept losses in fuel oil margins largely limited. In November, the US fuel oil crack spread against WTI averaged minus \$20.84/b, lower by 51¢/b m-o-m and \$13.22 y-o-y.

European market

Gasoline crack spreads weakened affected by supply-side pressure as refinery output levels for the same product rose. The gasoline crack spread against Brent averaged \$36.79/b in November, down by \$7.12 m-o-m but up by \$17.39 y-o-y.

In October, **jet/kerosene crack spreads** decreased in line with the adverse supply-side dynamics. The Rotterdam jet/kerosene crack spread against Brent averaged \$41.16/b, down by \$5.08 m-o-m but up by \$31.27 y-o-y.

Graph 6 - 4: Rotterdam crack spreads vs. Brent



Sources: Argus and OPEC.

Gasoil 10 ppm crack spreads showed the strongest negative performance across the European barrel, while the European gasoil balance expanded. Favourable diesel margins seen in the previous month as well as lower natural gas prices and subsequently lower refinery operational costs for European refineries likely further backed stronger diesel production rates. Moreover, according to secondary sources, diesel exports from Russia reached a record-high of 3 million mt in November, which represents a 90.7% rise m-o-m, and 38% rise y-o-y further contributing to the oversupply in the region and the poor performance in European gasoil markets. The gasoil crack spread against Brent averaged \$43.83/b, down by \$25.96 m-o-m but up by \$32.37 y-o-y.

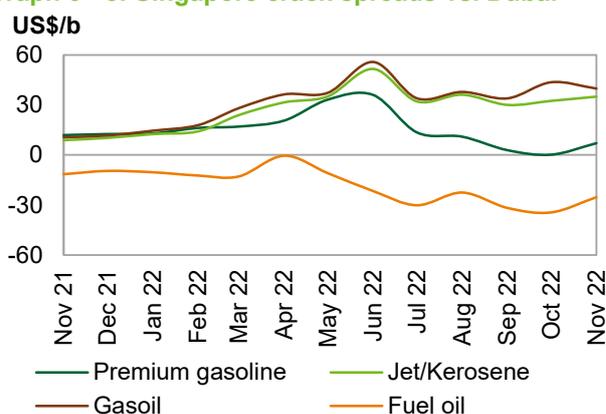
At the bottom of the barrel, **fuel oil 1.0% crack spreads** extended their downward trend for the third consecutive month, affected by weak bunker demand and healthy availability, amid steady flows from Russia—one of the key suppliers in the region. In terms of prices, fuel oil 1.0% maintained most of its value m-o-m and averaged \$74.32/b, which was \$7.74 lower relative to the previous month. In Europe, fuel oil cracks averaged minus \$16.78/b in November, having lost \$5.73 m-o-m and \$13.06 y-o-y.

Asian market

The **Asian gasoline 92 crack spread** recovered some ground over the month, mainly supported by robust consumption levels within the region. Although gasoline output levels remained strong as refiners in the region rose run rates relative to the previous month, nevertheless, improvement in gasoline requirements helped drive gasoline crack spreads higher.

In addition, gasoline markets appear to have reacted positively to news regarding the relaxation of the ongoing zero-COVID measures in China in the near future. This led to positive market sentiment as the materialization of such adjustment is set to boost mobility activity and unlock additional gasoline demand in Asia. The Singapore gasoline crack spread against Oman in November averaged \$6.99/b, up by \$6.87 m-o-m but down by \$4.87 y-o-y.

Graph 6 - 5: Singapore crack spreads vs. Dubai



Sources: Argus and OPEC.

Asian **naphtha crack spreads** improved over the month with firmed up demand as naphtha reforming margins for the same product remained at healthy levels, although naphtha processing for gasoline production offer better economics. Going forward, COVID-19 policy changes in China are expected to have a deep impact on the manufacturing sector and supply-chain disruptions. The relaxation of the policy should support naphtha intake to boost chemicals output, once lockdowns are eased and the manufacturing sector in China returns to normal operational conditions. The Singapore naphtha crack spread against Oman averaged minus \$11.90/b, increasing by \$7.28 m-o-m but dropping by \$15.82 y-o-y.

In the middle of the barrel, **jet/kerosene crack spreads** saw slight gains as overall jet/kerosene demand was relatively well supported, particularly y-o-y in wider Asia, although levels remained affected by the travel restrictions in China. In addition, the strong gasoil margins witnessed on a global level recently resulting from the gasoil shortage in the West likely incentivized refiners to focus on maximum gasoil production. This likely weighed on jet/kerosene output and consequently supported jet/kerosene crack spreads. The Singapore jet/kerosene crack spread against Oman averaged \$34.89/b, up by \$2.53 m-o-m and by \$26.09 y-o-y.

The Singapore **gasoil crack spread** represented the sole negative performer across the barrel in November. This was a reflection of eased supply tightness as gasoil exports from China surged in November and led to higher gasoil availability in the Singapore trading hub. In addition, poorer arbitrage economics to Europe attributed to the impact of the end of French refinery workers strikes in October, amid the end of major refinery repair works in November, weighed on gasoil exports to Europe and consequently adversely impacted Asian diesel markets. The Singapore gasoil crack spread against Oman averaged \$39.79/b, down by \$3.78 m-o-m and by \$29.24 y-o-y.

The Singapore **fuel oil 3.5% crack spread** reversed course and strengthened following two consecutive months of declines. This development was attributed to an open arbitrage window linked to a wider HSFO East-West spread which incentivized fuel oil flows. Consequently, downstream bunker demand was relatively robust during the second half of the month. Singapore fuel oil cracks against Oman averaged minus \$25.34/b, up by \$9.13 m-o-m but down by \$13.81 y-o-y.

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

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

Source: OPEC.

Product Markets and Refinery Operations

Table 6 - 2: Refinery operations in selected OECD countries

| | Refinery throughput, mb/d | | | | Refinery utilization, % | | | |
|------------------------------------|---------------------------|--------------|--------------|-------------------|-------------------------|--------------|--------------|-------------------|
| | Sep 22 | Oct 22 | Nov 22 | Change Nov/Oct | Sep 22 | Oct 22 | Nov 22 | Change Nov/Oct |
| US | 16.66 | 15.98 | 16.92 | 0.94 | 92.50 | 88.97 | 94.18 | 5.2 pp |
| Euro-14, plus UK and Norway | 9.94 | 9.54 | 9.99 | 0.46 | 84.40 | 80.98 | 84.86 | 3.9 pp |
| France | 0.88 | 0.71 | 0.82 | 0.12 | 76.29 | 61.27 | 71.68 | 10.4 pp |
| Germany | 1.88 | 1.89 | 1.94 | 0.05 | 91.64 | 92.13 | 94.57 | 2.4 pp |
| Italy | 1.40 | 1.30 | 1.40 | 0.10 | 73.68 | 68.44 | 73.62 | 5.2 pp |
| UK | 1.04 | 1.00 | 1.06 | 0.07 | 88.40 | 84.82 | 90.38 | 5.6 pp |
| Selected Asia* | 25.79 | 26.02 | 26.34 | 0.31 | 88.19 | 88.98 | 90.05 | 1.1 pp |

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

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

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

| Refinery crude throughput | 2019 | 2020 | 2021 | 4Q21 | 1Q22 | 2Q22 | 3Q22 |
|---------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| OECD Americas | 19.04 | 16.59 | 17.79 | 18.21 | 18.35 | 18.74 | 19.02 |
| of which US | 16.99 | 14.72 | 15.66 | 16.02 | 16.06 | 16.61 | 16.82 |
| OECD Europe | 12.13 | 10.65 | 10.92 | 11.51 | 10.99 | 11.57 | 11.80 |
| of which: | | | | | | | |
| France | 1.00 | 0.67 | 0.69 | 0.76 | 0.79 | 0.84 | 0.96 |
| Germany | 1.78 | 1.72 | 1.72 | 1.91 | 1.75 | 1.87 | 1.83 |
| Italy | 1.35 | 1.11 | 1.23 | 1.34 | 1.16 | 1.42 | 1.41 |
| UK | 1.08 | 0.92 | 0.92 | 0.99 | 1.04 | 1.06 | 1.02 |
| OECD Asia Pacific | 6.79 | 5.87 | 5.76 | 6.00 | 6.21 | 5.83 | 6.15 |
| of which Japan | 3.02 | 2.48 | 2.49 | 2.69 | 2.80 | 2.60 | 2.73 |
| Total OECD | 37.96 | 33.12 | 34.47 | 35.72 | 35.55 | 36.14 | 36.98 |
| Latin America | 3.83 | 3.12 | 3.41 | 3.51 | 3.30 | 3.51 | 3.55 |
| Middle East | 6.97 | 6.09 | 6.78 | 7.27 | 7.23 | 7.33 | 7.51 |
| Africa | 2.01 | 1.79 | 1.80 | 1.83 | 1.83 | 1.83 | 1.80 |
| India | 5.04 | 4.42 | 4.73 | 5.02 | 5.18 | 5.22 | 4.69 |
| China | 13.02 | 13.48 | 14.07 | 14.03 | 13.96 | 12.89 | 13.00 |
| Other Asia | 5.13 | 4.74 | 4.80 | 4.90 | 5.04 | 5.32 | 5.23 |
| Russia | 5.70 | 5.39 | 5.61 | 5.75 | 5.71 | 5.04 | 5.50 |
| Other Eurasia | 1.21 | 1.03 | 1.18 | 1.20 | 1.22 | 1.20 | 1.23 |
| Other Europe | 0.55 | 0.43 | 0.41 | 0.33 | 0.42 | 0.51 | 0.56 |
| Total Non-OECD | 43.44 | 40.49 | 42.78 | 43.85 | 43.89 | 42.86 | 43.09 |
| Total world | 81.40 | 73.61 | 77.25 | 79.57 | 79.45 | 79.00 | 80.06 |

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

| | Oct 22 | Nov 22 | Change Nov/Oct | Annual avg. 2021 | Year-to-date 2022-to-date |
|---------------------------------------|--------|--------|-------------------|---------------------|------------------------------|
| US Gulf (Cargoes FOB) | | | | | |
| Naphtha* | 79.62 | 75.03 | -4.59 | 70.70 | 91.05 |
| Premium gasoline (unleaded 93) | 130.21 | 116.04 | -14.17 | 91.41 | 137.89 |
| Regular gasoline (unleaded 87) | 116.65 | 102.84 | -13.81 | 86.72 | 126.28 |
| Jet/Kerosene | 149.00 | 133.69 | -15.31 | 78.32 | 141.75 |
| Gasoil (0.2% S) | 132.93 | 114.01 | -18.92 | 73.94 | 125.04 |
| Fuel oil (3.0% S) | 52.59 | 59.44 | 6.85 | 59.84 | 78.90 |
| Rotterdam (Barges FoB) | | | | | |
| Naphtha | 74.30 | 73.87 | -0.43 | 70.15 | 86.85 |
| Premium gasoline (unleaded 98) | 137.02 | 127.89 | -9.13 | 85.89 | 138.62 |
| Jet/Kerosene | 139.35 | 132.26 | -7.09 | 77.17 | 141.56 |
| Gasoil/Diesel (10 ppm) | 162.90 | 134.93 | -27.97 | 78.31 | 144.28 |
| Fuel oil (1.0% S) | 82.06 | 74.32 | -7.74 | 69.12 | 90.96 |
| Fuel oil (3.5% S) | 60.75 | 61.28 | 0.53 | 61.38 | 80.86 |
| Mediterranean (Cargoes FOB) | | | | | |
| Naphtha | 71.14 | 70.34 | -0.80 | 69.40 | 84.22 |
| Premium gasoline** | 109.00 | 112.50 | 3.50 | 80.46 | 122.79 |
| Jet/Kerosene | 134.35 | 127.05 | -7.30 | 75.06 | 137.23 |
| Diesel | 148.51 | 129.87 | -18.64 | 77.73 | 138.07 |
| Fuel oil (1.0% S) | 89.45 | 80.64 | -8.81 | 70.51 | 96.61 |
| Fuel oil (3.5% S) | 56.62 | 57.73 | 1.11 | 58.98 | 74.05 |
| Singapore (Cargoes FOB) | | | | | |
| Naphtha | 71.86 | 74.22 | 2.36 | 70.83 | 85.50 |
| Premium gasoline (unleaded 95) | 94.78 | 98.27 | 3.49 | 80.28 | 117.38 |
| Regular gasoline (unleaded 92) | 91.16 | 93.11 | 1.95 | 78.28 | 113.35 |
| Jet/Kerosene | 123.40 | 121.01 | -2.39 | 75.10 | 128.23 |
| Gasoil/Diesel (50 ppm) | 136.76 | 127.11 | -9.65 | 77.36 | 136.88 |
| Fuel oil (180 cst) | 133.96 | 125.41 | -8.55 | 75.71 | 131.49 |
| Fuel oil (380 cst 3.5% S) | 56.57 | 60.78 | 4.21 | 62.07 | 78.55 |

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

Sources: Argus and OPEC.

Tanker Market

Dirty freight rates continued to move higher in November, with strong gains on all monitored routes. Aframax rates saw the strongest gains, as demand was robust as refiners loaded up on Russian crude ahead of EU sanctions. An ongoing shift to longer-haul routes due to trade dislocations also limited tanker availability.

Aframax rates on the intra-Mediterranean route rose 43% m-o-m in November and were well above levels seen in recent years. Suezmax rates witnessed similar support, with rates on the US Gulf to Europe route up 31% m-o-m. VLCCs saw continued steady gains, up around 21% on average. Rates slipped mid-month, as uncertainties regarding the EU sanctions and price cap led some charters to adopt a wait-and-see approach.

Clean spot freight rates on medium-range vessels were up 13% in November both East and West of Suez, amid tight tonnage availability.

Spot fixtures

The latest estimates show **global spot fixtures** saw significant gains in November to average 16.7 mb/d. Fixtures increased by 2.7 mb/d, or more than 19% m-o-m. Compared with the previous year, spot fixtures rose by 1.8 mb/d or over 12%.

Table 7 - 1: Spot fixtures, mb/d

| Spot fixtures | Sep 22 | Oct 22 | Nov 22 | Change Nov 22/Oct 22 |
|----------------------------|--------|--------|--------|-------------------------|
| All areas | 14.93 | 14.02 | 16.73 | 2.71 |
| OPEC | 10.70 | 9.56 | 12.34 | 2.78 |
| Middle East/East | 6.61 | 5.63 | 7.52 | 1.89 |
| Middle East/West | 1.46 | 1.43 | 1.26 | -0.17 |
| Outside Middle East | 2.64 | 2.50 | 3.56 | 1.06 |

Sources: Oil Movements and OPEC.

OPEC spot fixtures rose in November to average 12.3 mb/d. This represents a m-o-m gain of almost 2.8 mb/d, or close to 30%. In comparison with the same month in 2021, fixtures were up by 3.4 mb/d, or more than 37%.

Middle East-to-East fixtures increased by 1.9 mb/d, or more than 34%, to average 7.5 mb/d. Compared with the same month last year, eastward flows from the Middle East were just under 2 mb/d, or 35%, higher.

In contrast, spot fixtures from the **Middle East-to-West** showed a decline in November, down by around 0.2 mb/d, or almost 12% m-o-m, to average around 1.3 mb/d. However, y-o-y, rates were 0.5 mb/d, or almost 60%, higher.

Outside the Middle East, fixtures averaged 3.6 mb/d. This represents an increase of 1.0 mb/d, or 42% m-o-m, and an increase of 0.9 mb/d, or almost 36%, y-o-y.

Sailings and arrivals

OPEC sailings rose by around 0.8 mb/d, or around 4% m-o-m in November, to average 23.5 mb/d. This was 1.7 mb/d, or about 8%, higher compared with the same month a year ago.

Middle East sailings edged up marginally to average 17.6 mb/d. However, y-o-y, sailings from the region were up by about 0.9 mb/d, or around 5%, compared with November 2021.

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

| Sailings | | | | Change |
|----------------------|--------|--------|--------|---------------|
| | Sep 22 | Oct 22 | Nov 22 | Nov 22/Oct 22 |
| OPEC | 23.82 | 22.64 | 23.45 | 0.81 |
| Middle East | 18.49 | 17.54 | 17.59 | 0.05 |
| Arrivals | | | | |
| North America | 8.97 | 9.07 | 9.51 | 0.44 |
| Europe | 13.00 | 12.63 | 12.21 | -0.42 |
| Far East | 16.93 | 15.23 | 18.38 | 3.15 |
| West Asia | 8.12 | 8.56 | 7.68 | -0.88 |

Sources: Oil Movements and OPEC.

Crude arrivals saw a mixed performance in November. Arrivals in North America increased by around 0.4 mb/d, or almost 5% m-o-m, to average 9.5 mb/d. There were up by a similar amount y-o-y. Arrivals in Europe fell 0.4 mb/d, or over 3%, to average 12.2 mb/d. This was a drop of 0.6 mb/d, or about 5%, compared with the same month last year.

Arrivals in the Far East rose 3.2 mb/d, or about 21%, to average 18.4 mb/d. Y-o-y they were around 3.4 mb/d, or almost 23%, higher. West Asian arrivals declined 0.9 mb/d, or 10%, to average 7.7 mb/d. Y-o-y, arrivals in the region slipped 0.4 mb/d, or about 5%.

Dirty tanker freight rates

Very large crude carriers (VLCCs)

VLCC spot rates continued to show a strong performance in November, gaining 21% on average m-o-m. Y-o-y, VLCC rates were up 162% on average.

On the **Middle East-to-East** route, rates rose 20% m-o-m to average WS112 points. This was 160% higher y-o-y. Rates on the **Middle East-to-West** route gained 26% m-o-m to average WS68 points. Y-o-y, rates on the route were up by 183%.

West Africa-to-East spot rates gained 17% m-o-m to average WS111 points in November. Compared with the same month last year, rates were 147% higher.

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

| VLCC | Size | | | | Change |
|-------------------------|-----------|--------|--------|--------|---------------|
| | 1,000 DWT | Sep 22 | Oct 22 | Nov 22 | Nov 22/Oct 22 |
| Middle East/East | 230-280 | 86 | 93 | 112 | 19 |
| Middle East/West | 270-285 | 50 | 54 | 68 | 14 |
| West Africa/East | 260 | 86 | 95 | 111 | 16 |

Sources: Argus and OPEC.

Suezmax

Suezmax rates enjoyed a strong performance in November, gaining 31% m-o-m. Rates remained supported by ongoing trade dislocations, which boosted demand for longer-haul voyages in this class. Compared with the same month last year, they were considerably higher, up 216%.

Rates on the **West Africa-to-US Gulf Coast (USGC)** gained 30% to average WS194 points. Compared with the same month last year, they were 218% higher.

Spot freight rates on the **USGC-to-Europe** route rose 31% compared with the previous month to average WS172 points. Y-o-y, rates were 207% higher.

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

| Suezmax | Size | | | | Change |
|----------------------------------|-----------|--------|--------|--------|---------------|
| | 1,000 DWT | Sep 22 | Oct 22 | Nov 22 | Nov 22/Oct 22 |
| West Africa/US Gulf Coast | 130-135 | 127 | 149 | 194 | 45 |
| US Gulf Coast/ Europe | 150 | 113 | 131 | 172 | 41 |

Sources: Argus and OPEC.

Aframax

Aframax spot freight rates saw robust gains on all monitored routes in November. On average, spot Aframax rates increased 45% m-o-m. Compared with the same month last year, rates were 201% higher.

The **Indonesia-to-East** route rose 29% to average WS260 points. Y-o-y, rates on the route were up 148%.

Spot rates on the **Caribbean-to-US East Coast (USEC)** route increased by 62% m-o-m to average WS466 points. Y-o-y, they were 276% higher.

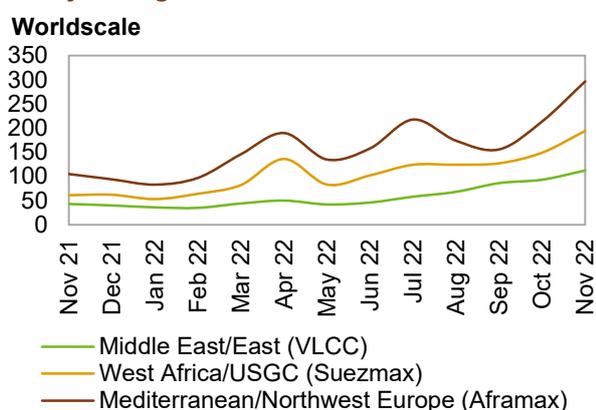
Table 7 - 5: Dirty Aframax spot tanker freight rates, WS

| Aframax | Size 1,000 DWT | Sep 22 | Oct 22 | Nov 22 | Change |
|--------------------------------|-------------------|--------|--------|--------|---------------|
| | | | | | Nov 22/Oct 22 |
| Indonesia/East | 80-85 | 227 | 202 | 260 | 58 |
| Caribbean/US East Coast | 80-85 | 246 | 287 | 466 | 179 |
| Mediterranean/Mediterranean | 80-85 | 175 | 228 | 325 | 97 |
| Mediterranean/Northwest Europe | 80-85 | 156 | 214 | 297 | 83 |

Sources: Argus and OPEC.

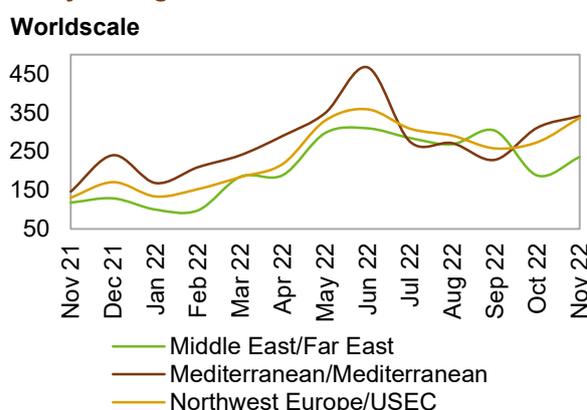
Cross-Med spot freight rates rose 43% m-o-m to average WS325 points. They were 178% higher y-o-y. On the **Mediterranean-to-Northwest Europe (NWE)** route, rates increased by 39% m-o-m to average WS297 points. Compared with the same month last year, they were around 183% higher.

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 saw strength on all reported routes in November. On average, rates increased 13% m-o-m and were up 134% compared with November levels last year.

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

| East of Suez | Size 1,000 DWT | Sep 22 | Oct 22 | Nov 22 | Change |
|--------------------------------|-------------------|--------|--------|--------|---------------|
| | | | | | Nov 22/Oct 22 |
| Middle East/East | 30-35 | 304 | 188 | 236 | 48 |
| Singapore/East | 30-35 | 415 | 319 | 337 | 18 |
| West of Suez | | | | | |
| Northwest Europe/US East Coast | 33-37 | 258 | 274 | 337 | 63 |
| Mediterranean/Mediterranean | 30-35 | 228 | 311 | 341 | 30 |
| Mediterranean/Northwest Europe | 30-35 | 238 | 325 | 351 | 26 |

Sources: Argus and OPEC.

Rates on the **Middle East-to-East** route rose 26% in November to average WS236. Y-o-y, rates were up 100%. Freight rates on the **Singapore-to-East** route rose 6% m-o-m to average WS337 and were 144% higher compared with the same month last year.

Spot freight rates on the **NWE-to-USEC** route increased 23% m-o-m to average WS337 points in November. They were 157% higher y-o-y. Rates for the **Cross-Med** route rose 10% to average WS341 points, while rates on the **Med-to-NWE** route gained 8% to average WS351 points. Compared with the same month last year, rates on the Med routes were 134% and 125% higher, respectively.

Crude and Refined Products Trade

Preliminary data shows US crude imports in November recovered from a six-month low to average 6.3 mb/d in November, while crude exports reached a fresh record high of 4.2 mb/d.

China's crude imports continued to recover in October, averaging 10.2 mb/d. Product exports fell back from a fifteen-month high with declines across most major products. Preliminary data for November shows China's crude imports increasing to 11.4 mb/d, the second-highest level this year, while product exports also rose sharply.

India's crude imports saw a seasonal improvement in October, reaching 4.2 mb/d. Product imports saw the third month of negligible declines, while product exports fell to a two-year low of 1.0 mb/d, as festivals boosted domestic demand, leaving less for export.

Japan's crude imports continued to slip from a two-year high to average 2.7 mb/d in October, but still showed fifteen-months of consecutive y-o-y gains.

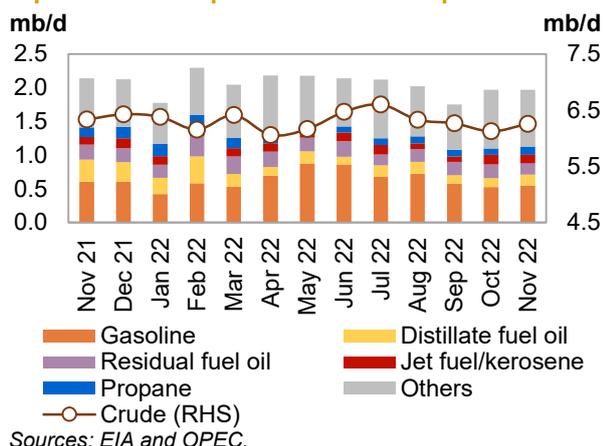
Preliminary figures show crude imports into OECD Europe remaining steady in 3Q before dipping in November. Imports of Russian crude into OECD Europe were down by close to 1.0 mb/d y-o-y in November, ahead of the implementation of EU sanctions, although flows to Turkey increased sharply reaching as high as 400 tb/d, according to tanker tracking data, up from relatively minor levels last year.

US

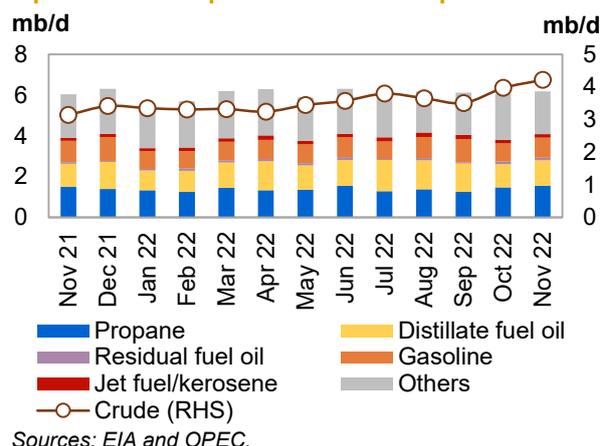
Preliminary data shows **US crude imports in November** recovered from a six-month low, averaging 6.3 mb/d. Crude imports rose by 0.1 mb/d or about 2% m-o-m. Compared with the same month in 2021, inflows slipped by about 0.1 mb/d, or around 1%.

The **top three suppliers of crude** to the US remained unchanged in November, according to estimates based on preliminary weekly US Energy Information Administration (EIA) data. Canada held the top spot, with a share of 62%, followed by Mexico with 10%. Saudi Arabia was third with a share of 6%.

Graph 8 - 1: US imports of crude and products



Graph 8 - 2: US exports of crude and products



US crude exports reached fresh new highs in November, averaging 4.2 mb/d, according to preliminary data. Recently released monthly EIA data shows that US crude exports moved above 4.0 mb/d for the first time in October. Outflows in November rose by 0.3 mb/d m-o-m or about 6%. Compared with the same month last year, crude exports were more than 1.1 mb/d, or 35%, higher.

According to the latest EIA monthly data, South Korea was the top **destination** for **US crude exports** in September, with a share of 14%, followed by India and the Netherlands both with 11%. Canada, China and the UK had 9% each.

Based on weekly data, **US net crude imports** averaged 2.0 mb/d in **November**, compared with 2.2 mb/d in October and just under 3.2 mb/d in the same month last year.

On the **product** side, **imports** were broadly unchanged at just under 2.0 mb/d. A strong decrease in fuel oil was offset by gains in distillates and gasoline. Compared with the same month last year, product imports declined by 0.2 mb/d, or over 8%.

Product exports picked up in November, averaging 6.2 mb/d, representing a gain of about 2% or 0.1 mb/d. Compared with November 2021, product exports were 0.1 mb/d, or about 2%, higher.

As a result, preliminary data sees **US net product exports** averaging 4.2 mb/d in November, compared with 4.1 mb/d in October and 3.9 mb/d in the same month of 2021.

Preliminary data indicates that **US net crude and product exports** averaged 2.2 mb/d in November, compared with 1.9 mb/d the month before and just 0.7 mb/d in November 2021.

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

| US | Sep 22 | Oct 22 | Nov 22 | Change Nov 22/Oct 22 |
|---------------------------------|--------------|--------------|--------------|-------------------------|
| Crude oil | 2.76 | 2.16 | 2.04 | -0.12 |
| Total products | -4.36 | -4.10 | -4.21 | -0.11 |
| Total crude and products | -1.60 | -1.94 | -2.17 | -0.23 |

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

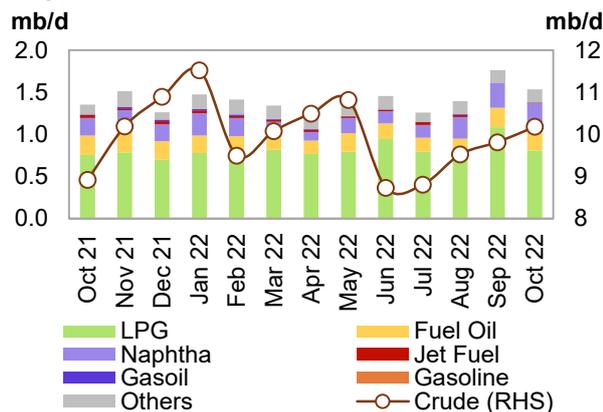
Sources: EIA and OPEC.

Looking ahead, US crude imports are likely to be supported by seasonal demand and strength in the product exports sector. US crude exports are likely to continue to be supported by rising domestic production and European and Asian demand.

China

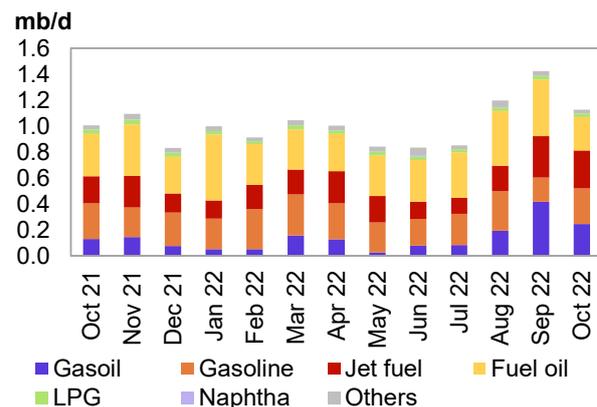
China's crude imports continued to recover in **October**, averaging 10.2 mb/d. Compared with the previous month, crude imports for the month rose close to 4%, or 0.4 mb/d. Compared with the same month last year, crude inflows were around 1.3 mb/d, or 14%, lower. Preliminary data for November shows China's crude imports with a sharp gain to reach 11.4 mb/d, the second highest level so far this year.

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



Sources: China OGP and OPEC.

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



Sources: China OGP and OPEC.

In terms of **crude imports by source**, Saudi Arabia remained in the top spot during **October** for the third month in a row, at almost 1.9 mb/d. Russia came in a close second, with 1.9 mb/d. Iraq came in third with 1.2 mb/d. The UAE saw a sharp increase in flows to China, averaging just under 1.0 mb/d, representing an increase of 0.6 mb/d m-o-m.

Product imports gave back much of the previous month's sharp gains, declining 13% or around 0.2 mb/d, to average 1.5 mb/d. Inflows of LPG dropped sharply, outpacing gains by fuel oil. Compared with the same month last year, product imports increased by 0.2 mb/d, or around 14%.

Meanwhile, **product exports** fell back from a fifteen-month high in October to average 1.1 mb/d with declines across the board, except for gasoline. Diesel and fuel oil were sharply lower. Product outflows declined by 0.3 mb/d, or 21%, compared to the previous month. Y-o-y, product exports rose by almost 12%, or 0.1 mb/d.

As a result, China's **net product imports** averaged 411 tb/d in October, compared with 340 tb/d the month before and 347 tb/d in the same month of 2021.

Crude and Refined Products Trade

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

| China | Aug 22 | Sep 22 | Oct 22 | Change Oct 22/Sep 22 |
|---------------------------------|-------------|-------------|--------------|-------------------------|
| Crude oil | 9.41 | 9.64 | 10.14 | 0.50 |
| Total products | 0.20 | 0.34 | 0.41 | 0.07 |
| Total crude and products | 9.61 | 9.98 | 10.55 | 0.57 |

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

Sources: China OGP and OPEC.

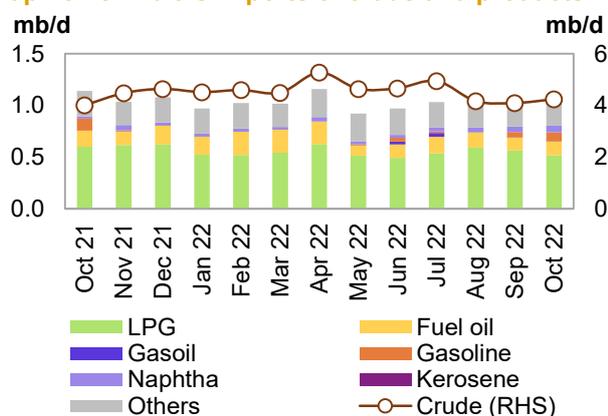
Looking ahead, China's crude imports are likely to remain close to November levels, supported by a potential pickup in domestic consumption following the easing of lockdown measures. Product exports should remain supported by demand for diesel on the international market.

India

India's crude imports saw a seasonal improvement in October as refiners geared up for the end of the monsoon season. Crude inflows averaged 4.2 mb/d, up by about 4% or 0.1 mb/d m-o-m. Y-o-y, crude inflows were 6%, or over 0.2 mb/d, higher.

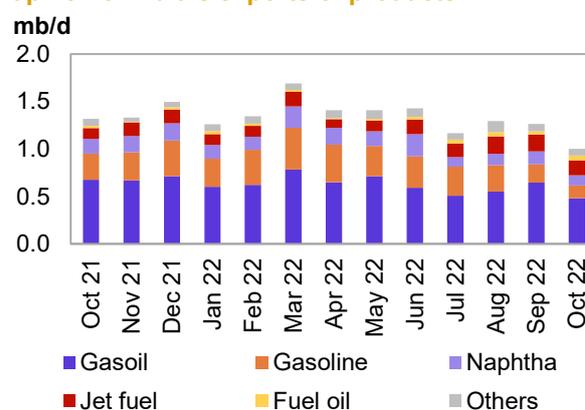
In terms of **crude imports by source**, Kpler data shows Russia as the top supplier of crude to India in October for the fifth-month in a row, as refiners continued to bring in discounted barrels. Russia held a share of 24%. Saudi Arabia was second with 22%, followed by Iraq with 20%.

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 October averaged 1.1 mb/d, representing the third month of negligible gains. Higher flows of gasoline, naphtha and fuel oil were offset by a further decline in LPG, which is used as a clean cooking fuel in India. Compared with the same month in 2021, inflows fell by 8%, or 88 tb/d.

Product exports declined to a two-year low of 1.0 mb/d, as festivals boosted domestic demand, leaving less for export. Product outflows fell 0.3 mb/d or almost 21%. Declines were seen across all major products, except fuel oil, with gasoline leading losses. In October, the government cut windfall taxes on gasoil and jet fuel at the start of the month and then more than doubled them again by mid-month. Y-o-y, product exports fell 0.3 mb/d or 24%.

As a result, net product flows flipped to net imports for the first time since February 2021, averaging 52 tb/d in October. This compares to net exports of 215 tb/d in September and 174 tb/d in the same month of 2021.

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

| India | Aug 22 | Sep 22 | Oct 22 | Change Oct 22/Sep 22 |
|---------------------------------|-------------|-------------|-------------|-------------------------|
| Crude oil | 4.16 | 4.09 | 4.24 | 0.15 |
| Total products | -0.24 | -0.22 | 0.05 | 0.27 |
| Total crude and products | 3.92 | 3.88 | 4.29 | 0.41 |

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

India data table does not include information for crude import and product export by Reliance Industries.

Sources: PPAC and OPEC.

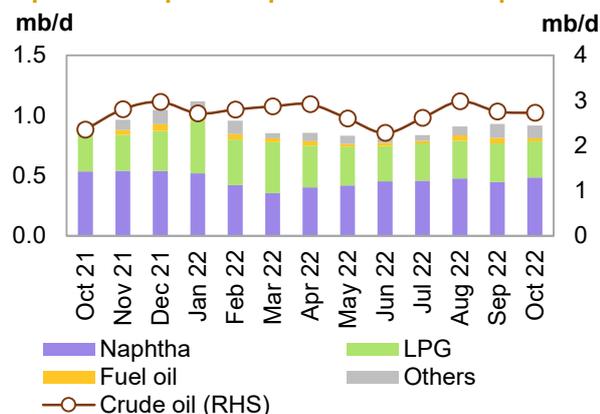
Looking ahead, crude imports are expected to remain close to current moderate levels in October, with steadily higher inflows from Russia. Product exports are seen picking up in November amid higher flows to Europe.

Japan

Japan's crude imports continued to slip from a two-year high to average 2.7 mb/d in October, but still showed 15-months of consecutive y-o-y gains. Inflows declined marginally by about 1%, m-o-m. Compared with the same month last year, imports were 0.4 mb/d, or 16%, higher.

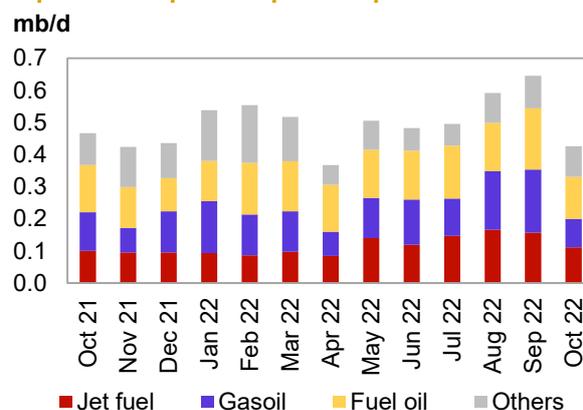
In terms of **crude imports by source**, the United Arab Emirates remained in the top spot during October, with a share of 40%, on higher volumes compared with the previous month. Saudi Arabia was second with 37%, followed by Kuwait with around 9%.

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



Sources: METI and OPEC.

Graph 8 - 8: Japan's exports of products



Sources: METI and OPEC.

Product imports, including LPG, edged down by less than 2% to average 916 tb/d in October. Gasoil, gasoline, LPG and fuel oil registered losses, which outpaced gains in naphtha and kerosene. Y-o-y, imports slipped by about 2%.

Product exports declined from an almost two-year high to average 426 tb/d. Losses were seen across all major products, led by gasoil, except for gasoline, which rose to a seven-month high. Compared with the same month last year, product outflows dropped by 0.2 mb/d or 34%. Y-o-y, product outflows were around 9% below the same month of 2021.

As a consequence, Japan's **net product imports** averaged 490 tb/d in October. This compares with just 284 tb/d the month before and 470 tb/d in October 2021.

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

| Japan | Aug 22 | Sep 22 | Oct 22 | Change Oct 22/Sep 22 |
|---------------------------------|-------------|-------------|-------------|-------------------------|
| Crude oil | 2.98 | 2.76 | 2.72 | -0.03 |
| Total products | 0.32 | 0.28 | 0.49 | 0.21 |
| Total crude and products | 3.30 | 3.04 | 3.21 | 0.17 |

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

Sources: METI and OPEC.

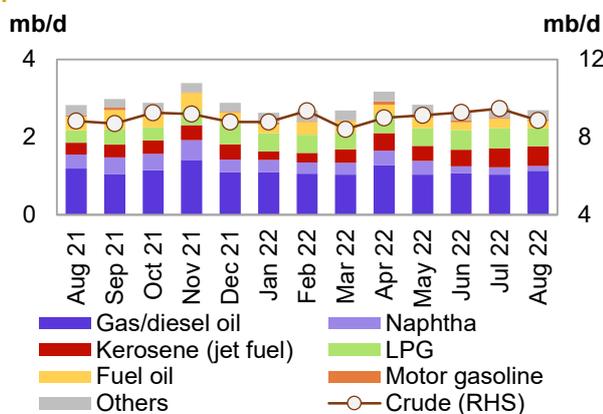
Looking ahead, Japan's crude imports are seen remaining steady in November before a seasonal pickup in December.

OECD Europe

The latest regional data shows **OECD Europe** crude imports averaged 8.9 mb/d in August, falling back from the strong levels seen in the previous month. M-o-m, crude inflows were up 6% or 0.6 mb/d. Y-o-y, crude imports were broadly unchanged.

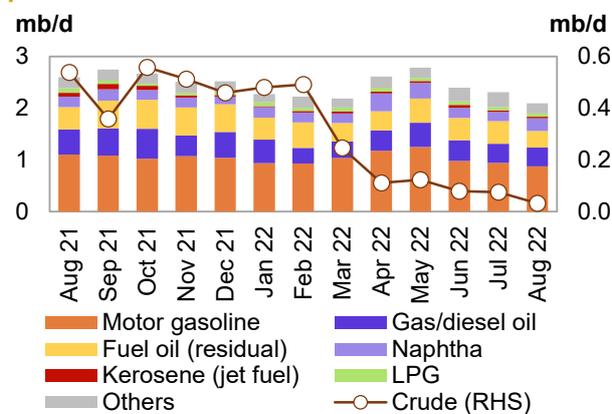
In terms of **import sources** from outside the region, Russia remained the top supplier in August, despite volumes falling to 1.8 mb/d, the lowest since at least 2005. Norway came in second with 1.4 mb/d, followed by Iraq with 1.0 mb/d.

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



Sources: IEA and OPEC.

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



Sources: IEA and OPEC.

Crude exports dwindled further in August, as trade dislocations caused more volumes to remain in the region. Outflows reached their lowest point since June 2014, averaging 33 tb/d, down from 75 tb/d in the previous month and from 539 tb/d in August 2021.

In terms of **destination**, Canada was the top destination outside the region in August, taking in around 21 tb/d.

Net crude imports averaged 8.8 mb/d in August, compared with 9.4 mb/d in July and 8.3 mb/d in the same month last year.

On the **product** side, **imports** edged down marginally in August, falling by less than 2% to average 2.7 mb/d. The m-o-m performance was driven by declines in LPG, naphtha and fuel oil, which were partially offset by gains in diesel, gasoline and jet fuel. Compared with the same month last year, imports were about 5%, or 129 tb/d, lower.

Product exports retreated for the third month in a row, down 9% or more than 0.2 mb/d m-o-m, to average 2.1 mb/d. M-o-m losses were primarily driven by fuel oil and gasoline, offsetting a gain in naphtha. Y-o-y, exports were 19%, or 0.5 mb/d, lower.

Net product imports averaged 597 tb/d in August, compared with net imports of 437 tb/d in July and 224 tb/d in August 2021.

Combined, **net crude and product imports** averaged 9.4 mb/d in August. This compares with 9.8 mb/d the month before and 8.5 mb/d in August 2021.

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

| OECD Europe | Jun 22 | Jul 22 | Aug 22 | Change Aug 22/Jul 22 |
|---------------------------------|-------------|-------------|-------------|-------------------------|
| Crude oil | 9.20 | 9.40 | 8.83 | -0.57 |
| Total products | 0.26 | 0.44 | 0.60 | 0.16 |
| Total crude and products | 9.46 | 9.83 | 9.43 | -0.41 |

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

Sources: IEA and OPEC.

Looking ahead, preliminary figures show crude imports picking up in September and October before tapering off in November. Imports of Russian crude were seen falling in October, amid lower pipeline flows. Product imports are seen rising gradually from August, amid higher flows from the Middle East and India.

Eurasia

Total crude oil exports from Russia and Central Asia declined by 0.1 mb/d, or about 2%, in October, to average 6.2 mb/d, with declines on the Druzhba pipeline being offset by comparable gains at the Pacific port of Kozmino. Compared with the same month in 2021, total crude exports from the Eurasian region fell by 6%, or 0.4 mb/d.

Crude exports through the **Transneft system** declined slightly m-o-m in October. Outflows slipped just 21 tb/d, or less than 1%, to average 4.1 mb/d. Compared with the same month last year, exports were 0.2 mb/d, or 4%, higher. Exports from the **Baltic Sea** fell by 22 tb/d m-o-m, or just over 1%, to average 1.4 mb/d. Flows from Ust-Luga rose 8% to average 653 tb/d, while exports from Primorsk fell by about 9% to average 764 tb/d. Shipments from the **Black Sea** port of Novorossiysk declined by around 3% to average 576 tb/d.

Shipments via the **Druzhba** pipeline experienced losses, declining by 139 tb/d, or about 17% m-o-m, to average 683 tb/d. Exports to China via the **ESPO pipeline** regained the 19 tb/d lost in the previous month to average 597 tb/d in October. Flows to the Pacific port of **Kozmino** rose by 136 tb/d, or about 19%, m-o-m to average 860 tb/d.

In the **Lukoil system**, exports via the Varandey offshore platform in the Barents Sea averaged 117 tb/d in October, down by 3% m-o-m. Exports from the Kaliningrad terminal were negligible over the month.

On other routes, **Russia's Far East** exports fell by 27%, or 26 tb/d, to 72 tb/d on average in October. This was 76%, or 0.1 mb/d, lower than the volumes shipped in October 2021.

Central Asian exports averaged 224 tb/d in October, representing a gain of 5% compared with the month before and 3% y-o-y.

Black Sea total exports from the **CPC terminal** fell by 5% to average 976 tb/d in October. This was a decline of 33%, or 479 tb/d, compared with the same month in 2021. There were no exports via the Supsa pipeline in October. Exports via the **Baku-Tbilisi-Ceyhan (BTC) pipeline** were broadly unchanged at 669 tb/d in October. This was a gain of 219 tb/d, or 49%, y-o-y.

Total product exports from Russia and Central Asia rose by 6% m-o-m to average 2.6 mb/d in October. M-o-m gains were driven primarily by fuel oil and to a lesser extent gasoline and VGO, while gasoil, naphtha and jet experienced losses. Y-o-y, total product exports were 12%, or 352 tb/d, lower in October, with losses fuelled by gasoil and naphtha.

Commercial Stock Movements

Preliminary October data sees total OECD commercial oil stocks up m-o-m by 22.5 mb. At 2,748 mb, they were 15 mb less than the same time one year ago, 168 mb lower than the latest five-year average and 197 mb below the 2015–2019 average. Within the components, crude and product stocks rose m-o-m by 12.9 mb and 9.5 mb, respectively.

At 1,335 mb, OECD crude stocks were 8 mb higher than the same time a year ago, but 80 mb lower than the latest five-year average and 118 mb lower than the 2015–2019 average.

OECD product stocks stood at 1,413 mb, representing a deficit of 23 mb from the same time a year ago, 87 mb lower than the latest five-year average and 79 mb below the 2015–2019 average.

In terms of days of forward cover, OECD commercial stocks rose m-o-m by 1.0 day in October to stand at 59.1 days. This is 0.6 days below October 2021 levels, 4.0 days less than the latest five-year average and 3.3 days lower than the 2015–2019 average.

Preliminary data for November showed that total US commercial oil stocks fell by 6.9 mb m-o-m to stand at 1,217 mb. This is 16.6 mb, lower than the same month in 2021 and 67.4 mb, below the latest five-year average. Crude stocks fell by 22.9 mb, while product stocks rose by 16.0 mb.

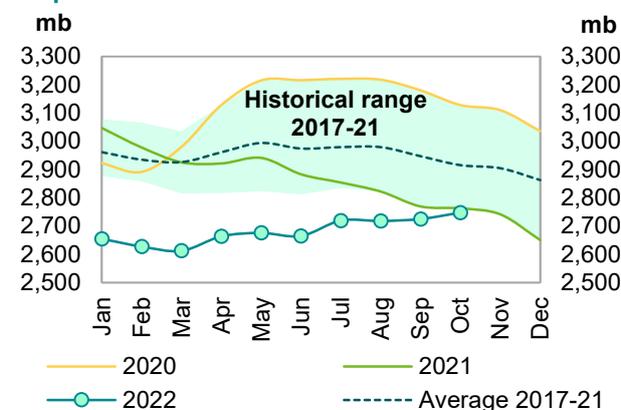
OECD

Preliminary **October** data sees **total OECD commercial oil stocks** up m-o-m by 22.5 mb. At 2,748 mb, they were 15 mb less than the same time one year ago, 168 mb lower than the latest five-year average and 197 mb below the 2015–2019 average.

Within the components, crude and product stocks rose m-o-m by 12.9 mb and 9.5 mb, respectively. Total commercial oil stocks in October rose in all OECD regions.

OECD commercial **crude stocks** stood at 1,335 mb in October. This is 8 mb higher than the same time a year ago, but 80 mb lower than the latest five-year average and 118 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 America saw a stock build of 8.0 mb, OECD Europe stocks rose by 0.8 mb, and stocks in OECD Asia Pacific increased by 4.1 mb.

Total product inventories stood at 1,413 mb in October. This is 23 mb below the same time a year ago; 87 mb lower than the latest five-year average and 79 mb below the 2015–2019 average. Product stocks in OECD Americas and OECD Asia Pacific rose by 3.3 mb and 4.1 mb, respectively. OECD Europe stocks rose by 2.1 mb.

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

| OECD stocks | Oct 21 | Aug 22 | Sep 22 | Oct 22 | Change Oct 22/Sep 22 |
|------------------------------|--------------|--------------|--------------|--------------|-------------------------|
| Crude oil | 1,328 | 1,315 | 1,322 | 1,335 | 12.9 |
| Products | 1,435 | 1,403 | 1,403 | 1,413 | 9.5 |
| Total | 2,763 | 2,718 | 2,725 | 2,748 | 22.5 |
| Days of forward cover | 59.7 | 58.2 | 58.1 | 59.1 | 1.0 |

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

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

In terms of **days of forward cover**, OECD commercial stocks rose m-o-m by 1.0 day in October to stand at 59.1 days. This is 0.6 days below October 2021 levels, 4.0 days less than the latest five-year average and 3.3 days lower than the 2015–2019 average.

All three OECD regions were below the latest five-year average: the Americas by 4.0 days at 59.1 days; the Asia Pacific by 4.5 days at 44.6 days; and Europe by 4.1 days at 67.8 days.

OECD Americas

OECD Americas total commercial stocks rose by 11.3 mb m-o-m in October to settle at 1,497 mb. This is 52 mb less than the same month in 2021 and 76 mb lower than the latest five-year average.

Commercial **crude oil stocks** in OECD Americas rose m-o-m by 8.0 mb in October to stand at 747 mb, which is 26 mb lower than in October 2021 and 28 mb less than the latest five-year average. The monthly build in crude oil stocks can be attributed to lower crude runs, which fell by 0.7 mb/d to 15.98 mb/d as well as additional barrels released from strategic petroleum reserves (SPRs).

Total product stocks in OECD Americas also rose m-o-m by 3.3 mb in October to stand at 732 mb. This was 26 mb lower than the same month in 2021 and 49 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 rose m-o-m by 2.9 mb in October to settle at 912 mb. This is 35 mb higher than the same month in 2021, but 46 mb below the latest five-year average.

OECD Europe's **commercial crude stocks** rose by 0.8 mb m-o-m to end the month of October at 401 mb, which is 17 mb higher than one year ago but 21 mb below the latest five-year average. The build in crude oil inventories came on the back of lower m-o-m refinery throughput in the EU-14, plus the UK and Norway, which declined by 400 tb/d to 9.54 mb/d.

Europe's **product stocks** also rose m-o-m by 2.1 mb to end October at 510 mb. This is 18 mb higher than a year ago but 25 mb below the latest five-year average.

OECD Asia Pacific

OECD Asia Pacific's total commercial oil stocks rose m-o-m by 8.2 mb in October to stand at 357 mb. This is 1.7 mb higher than a year ago, but 45 mb below the latest five-year average.

OECD Asia Pacific's **crude inventories** rose by 4.1 mb m-o-m to end October at 187 mb, which is 17 mb higher than one year ago, but 31 mb below the latest five-year average.

OECD Asia Pacific's **total product inventories** also rose m-o-m by 4.1 mb to end October at 170 mb. This is 15 mb lower than the same time a year ago and 13 mb below the latest five-year average.

US

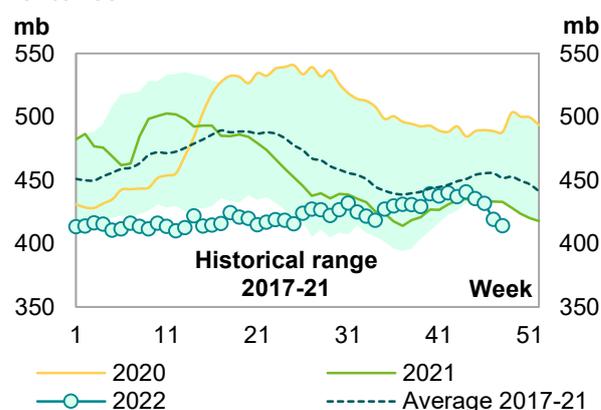
Preliminary data for November showed that **total US commercial oil stocks** fell by 6.9 mb m-o-m to stand at 1,217 mb. This is 16.6 mb, or 1.3%, lower than the same month in 2021 and 67.4 mb, or 5.2%, below the latest five-year average. Crude stocks fell by 22.9 mb, while product stocks rose by 16.0 mb.

US commercial crude stocks in November stood at 413.9 mb. This is 19.5 mb, or 4.5%, below the same month of the previous year, and 42.6 mb, or 9.3%, below the latest five-year average. The monthly drop in crude oil stocks can be attributed to higher crude runs, which rose by 0.94 mb/d to 16.92 mb/d.

In contrast, **total product stocks** rose in November to stand at 803.3 mb. This is 2.9 mb, or 0.4%, higher than November 2021 levels but 24.8 mb, or 3.0%, lower than the latest five-year average. The stock build was mainly driven by lower product consumption.

Gasoline stocks rose m-o-m by 12.5 mb to settle at 219.1 mb. This is 1.5 mb, or 0.7% lower than in the same month in 2021 and 11.0 mb, or 4.8%, lower than the latest five-year average.

Graph 9 - 2: US weekly commercial crude oil inventories



Sources: EIA and OPEC.

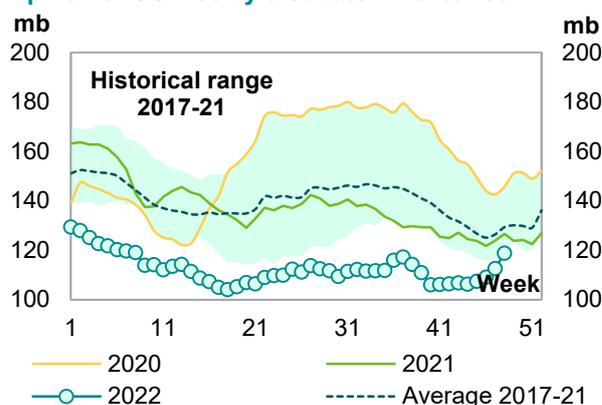
Commercial Stock Movements

Distillate stocks also rose m-o-m in November by 12.0 mb to stand at 118.8 mb. This is 12.9 mb, or 9.8%, lower than the same month of the previous year and 16.2 mb, or 12.0%, below the latest five-year average.

Jet fuel stocks rose m-o-m by 1.6 mb, ending November at 38.0 mb. This is 1.2 mb, or 3.3%, higher than the same month in 2021, but 1.1 mb, or 2.9%, below the latest five-year average.

In contrast, **residual fuel oil stocks** fell by 1.3 mb m-o-m in November. At 29.0 mb, this was 1.1 mb, or 3.9%, higher than a year earlier, but 1.3 mb, or 4.2%, less than 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 | Nov 21 | Sep 22 | Oct 22 | Nov 22 | Change |
|-------------------|---------|---------|---------|---------|---------------|
| | | | | | Nov 22/Oct 22 |
| Crude oil | 433.4 | 428.8 | 436.8 | 413.9 | -22.9 |
| Gasoline | 220.6 | 209.6 | 206.6 | 219.1 | 12.5 |
| Distillate fuel | 131.7 | 110.5 | 106.8 | 118.8 | 12.0 |
| Residual fuel oil | 27.9 | 27.3 | 30.3 | 29.0 | -1.3 |
| Jet fuel | 36.8 | 36.2 | 36.4 | 38.0 | 1.6 |
| Total products | 800.4 | 786.3 | 787.3 | 803.3 | 16.0 |
| Total | 1,233.7 | 1,215.1 | 1,224.1 | 1,217.2 | -6.9 |
| SPR | 601.5 | 416.4 | 399.8 | 387.0 | -12.8 |

Sources: EIA and OPEC.

Japan

In **Japan**, **total commercial oil stocks** in October rose m-o-m by 8.2 mb to settle at 133.5 mb. This is 12.2 mb, or 10.1%, higher than the same month in 2021 but 7.2 mb, or 5.1%, below the latest five-year average. Crude and product stocks rose m-o-m by 4.1 mb and 7.1 mb, respectively.

Japanese **commercial crude oil stocks** rose in October to stand at 71.6 mb. This is 15.7 mb, or 28.1% higher than the same month of the previous year, but 4.1 mb, or 5.1%, lower than the latest five-year average. The build came on the back of lower crude imports, which declined m-o-m by 1.2%.

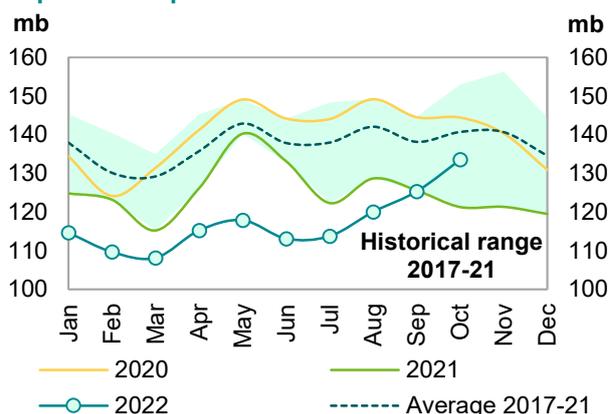
Japan's **total product inventories** also rose m-o-m by 4.1 mb to end October at 61.9 mb. This is 3.5 mb, or 5.3%, lower than the same month in 2021 and 3.1 mb, or 4.7%, below the latest five-year average.

Distillate stocks rose m-o-m by 2.8 mb to end October at 29.8 mb. This is 2.0 mb, or 6.3%, lower than the same month in 2021 and 2.3 mb, or 7.2%, below the latest five-year average. Within distillate components, kerosene, jet fuel and gasoil stocks went up by 11.3%, 4.6% and 13.1%, respectively.

Total residual fuel oil stocks rose m-o-m by 0.9 mb to end October at 12.4 mb. This is 0.3 mb, or 2.7%, higher than in the same month of the previous year but 0.4 mb, or 3.5%, below the latest five-year average. Within the components, fuel oil A and fuel oil B.C stocks rose by 6.7% and 7.9%, m-o-m, respectively.

Meanwhile, **gasoline stocks** remained unchanged m-o-m to stand at 9.8 mb in October. This was 1.9 mb, or 15.9% lower than a year earlier and 1.1 mb, or 9.8%, lower than the latest five-year average. The build came on higher gasoline production by 6.9% m-o-m.

Graph 9 - 4: Japan's commercial oil stocks



Sources: METI and OPEC.

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

| Japan's stocks | Oct 21 | Aug 22 | Sep 22 | Oct 22 | Change Oct 22/Sep 22 |
|-----------------------|--------------|--------------|--------------|--------------|-------------------------|
| Crude oil | 55.9 | 64.2 | 67.5 | 71.6 | 4.1 |
| Gasoline | 11.7 | 9.7 | 9.8 | 9.8 | 0.0 |
| Naphtha | 9.8 | 8.1 | 9.5 | 9.9 | 0.4 |
| Middle distillates | 31.9 | 26.6 | 27.0 | 29.8 | 2.8 |
| Residual fuel oil | 12.0 | 11.4 | 11.5 | 12.4 | 0.9 |
| Total products | 65.4 | 55.8 | 57.8 | 61.9 | 4.1 |
| Total** | 121.3 | 120.0 | 125.3 | 133.5 | 8.2 |

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

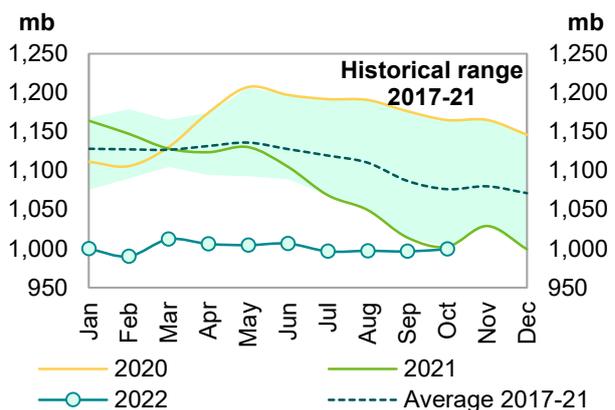
Sources: METI and OPEC.

EU-14 plus UK and Norway

Preliminary data for October showed that **total European commercial oil stocks** rose m-o-m by 2.9 mb to stand at 999.5 mb. At this level, they were 3.1 mb, or 0.3%, below the same month a year earlier and 76.6 mb, or 7.1% lower than the latest five-year average. Crude and product stocks rose m-o-m by 0.8 mb and 2.1 mb, respectively.

European **crude inventories** rose in October to stand at 432.7 mb. This is 4.6 mb, or 1.1%, higher than the same month in 2021 but 35.1 mb, or 7.5%, below the latest five-year average. The build in crude oil inventories came on the back of lower m-o-m refinery throughput in the EU-14, plus the UK and Norway, which declined by 400 tb/d to 9.54 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 rose m-o-m by 2.1 mb to end October at 566.7 mb. This is 7.8 mb, or 1.4%, lower than the same month of the previous year and 41.6 mb, or 6.8%, below the latest five-year average.

Gasoline stocks fell m-o-m by 0.5 mb in October to stand at 105.5 mb. At this level, they were 1.1 mb, or 1.1%, lower than the same time a year earlier, and 4.3 mb/d, or 3.9%, below the latest five-year average.

Distillate stocks also fell m-o-m by 0.6 mb in October to stand at 367.7 mb. This is 21.8 mb, or 5.6%, below the same month in 2021 and 41.7 mb, or 10.2%, less than the latest five-year average.

In contrast, **residual fuel stocks** rose m-o-m by 2.3 mb in October to stand at 62.0 mb. This is 6.5 mb, or 11.5%, higher than the same month in 2021, but 0.2 mb, or 0.3%, below the latest five-year average.

Naphtha stocks also rose by 0.9 mb in October, ending the month at 31.5 mb. This is 8.7 mb, or 38.3%, higher than October 2021 levels and 4.7 mb, or 17.4%, higher than the latest five-year average.

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

| EU stocks | Oct 21 | Aug 22 | Sep 22 | Oct 22 | Change Oct 22/Sep 22 |
|-----------------------|----------------|--------------|--------------|--------------|-------------------------|
| Crude oil | 428.1 | 436.8 | 431.9 | 432.7 | 0.8 |
| Gasoline | 106.6 | 110.3 | 106.0 | 105.5 | -0.5 |
| Naphtha | 22.8 | 30.5 | 30.6 | 31.5 | 0.9 |
| Middle distillates | 389.6 | 361.3 | 368.3 | 367.7 | -0.6 |
| Fuel oils | 55.6 | 58.4 | 59.7 | 62.0 | 2.3 |
| Total products | 574.5 | 560.5 | 564.6 | 566.7 | 2.1 |
| Total | 1,002.6 | 997.3 | 996.6 | 999.5 | 2.9 |

Sources: Argus, Euroilstock and OPEC.

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

Singapore

In October, **total product stocks in Singapore** fell m-o-m by 4.6 mb to 41.2 mb. This is 1.9 mb, or 4.4%, lower than the same month in 2021.

Light distillate stocks fell m-o-m by 1.0 mb in October to stand at 14.8 mb. This is 3.8 mb, or 34.9%, higher than the same month of the previous year.

Middle distillate stocks also fell m-o-m by 0.7 mb in October to stand at 6.8 mb. This is 3.2 mb, or 32.0%, lower than a year earlier.

Residual fuel oil stocks also dropped m-o-m by 2.9 mb, ending October at 19.6 mb. This is 2.5 mb, or 11.5%, lower than October 2021.

ARA

Total product stocks in ARA fell m-o-m in October by 0.2 mb. At 39.7 mb, they were 1.6 mb, or 4.2%, higher than the same month in 2021.

Gasoline stocks in October fell by 0.3 mb m-o-m to stand at 10.5 mb, which is 3.0 mb, or 39.3%, higher than the same month of the previous year.

Gasoil stocks also dropped by 0.7 mb m-o-m, ending October at 12.9 mb. This is 2.1 mb, or 13.8%, lower than levels seen in October 2021.

In contrast, **fuel oil stocks** rose by 0.3 mb m-o-m in October to stand at 7.1 mb, which is 0.6 mb, or 8.5%, higher than in October 2021.

Jet oil stocks also rose by 0.5 mb m-o-m to stand at 6.7 mb. This is 0.3 mb, or 4.5%, lower than levels seen in October 2021.

Fujairah

During the week ending 5 December 2022, **total oil product stocks in Fujairah** rose w-o-w by 0.34 mb to stand at 22.85 mb, according to data from Fed Com and S&P Global Platts. At this level, total oil stocks were 7.08 mb higher than at the same time a year ago.

Light distillate stocks rose by 0.80 mb to stand at 7.13 mb, which is 2.74 mb higher than a year ago.

Middle distillate stocks also rose w-o-w by 0.19 mb to stand at 3.16 mb, which is 0.81 mb higher than the same time last year. By contrast, **heavy distillate stocks** fell by 0.65 mb w-o-w to stand at 12.56 mb in the week to 5 December 2022, which is 3.54 mb higher than the same period a year ago.

Balance of Supply and Demand

Demand for OPEC crude in 2022 remains unchanged from the previous month's assessment to stand at 28.6 mb/d. This is around 0.5 mb/d higher than in 2021.

According to secondary sources, OPEC crude production averaged 28.4 mb/d in 1Q22, which is 0.3 mb/d lower than demand for OPEC crude. In 2Q22, OPEC crude production averaged 28.6 mb/d, which is 0.2 mb/d higher than demand for OPEC crude. In 3Q22, OPEC crude oil production averaged 29.4 mb/d, which is 0.9 mb/d higher than demand for OPEC crude.

Demand for OPEC crude in 2023 also remains unchanged from the previous assessment to stand at 29.2 mb/d. This is around 0.6 mb/d higher than in 2022.

Balance of supply and demand in 2022

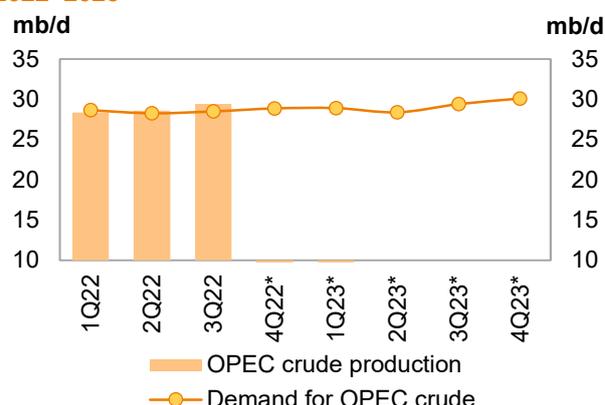
Demand for OPEC crude in 2022 remains unchanged from the previous MOMR to stand at 28.6 mb/d. This is around 0.5 mb/d higher than in 2021.

Compared with the previous assessment, 2Q22 was revised down by 0.1 mb/d, while 3Q22 was revised up by 0.1 mb/d. Both 1Q22 and 4Q22 were unchanged from the previous month.

Compared with the same quarters in 2021, demand for OPEC crude in 1Q22 and 2Q22 is estimated to be higher by 2.4 mb/d and 1.3 mb/d, respectively, while 3Q22 and 4Q22 are expected to be lower by 0.2 mb/d and 1.3 mb/d, respectively.

According to secondary sources, OPEC crude production averaged 28.4 mb/d in 1Q22, which is 0.3 mb/d lower than demand for OPEC crude. In 2Q22, OPEC crude production averaged 28.6 mb/d, which is 0.2 mb/d higher than demand for OPEC crude. In 3Q22, OPEC crude oil production averaged 29.4 mb/d, which is 0.9 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 | 97.01 | 99.35 | 98.21 | 99.54 | 101.11 | 99.56 | 2.55 |
| Non-OPEC liquids production | 63.68 | 65.33 | 64.54 | 65.61 | 66.79 | 65.57 | 1.89 |
| OPEC NGL and non-conventionals | 5.28 | 5.35 | 5.38 | 5.41 | 5.43 | 5.39 | 0.11 |
| (b) Total non-OPEC liquids production and OPEC NGLs | 68.96 | 70.68 | 69.92 | 71.01 | 72.22 | 70.96 | 2.00 |
| Difference (a-b) | 28.05 | 28.67 | 28.29 | 28.52 | 28.89 | 28.59 | 0.55 |
| OPEC crude oil production | 26.35 | 28.36 | 28.59 | 29.44 | | | |
| Balance | -1.70 | -0.31 | 0.30 | 0.92 | | | |

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 also remains unchanged from the previous assessment to stand at 29.2 mb/d. This is around 0.6 mb/d higher than in 2022.

Compared with the previous assessment, 1Q23 and 2Q23 were revised down by 0.4 mb/d and 0.1mb/d respectively, while 3Q22 was revised up by 0.3 mb/d. The 4Q22 was unchanged from the previous month.

Compared with the same quarters in 2022, demand for OPEC crude in 1Q23 and 2Q23 is forecast to be higher by 0.3 mb/d and 0.1 mb, respectively, while 3Q23 and 4Q23 are expected to be 0.9 mb/d and 1.2 mb/d higher, respectively.

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

| | 2022 | 1Q23 | 2Q23 | 3Q23 | 4Q23 | 2023 | Change 2023/22 |
|--|--------------|---------------|---------------|---------------|---------------|---------------|-------------------|
| (a) World oil demand | 99.56 | 100.87 | 100.74 | 102.04 | 103.41 | 101.77 | 2.22 |
| Non-OPEC liquids production | 65.57 | 66.50 | 66.86 | 67.19 | 67.88 | 67.11 | 1.54 |
| OPEC NGL and non-conventionals | 5.39 | 5.44 | 5.47 | 5.43 | 5.43 | 5.44 | 0.05 |
| (b) Total non-OPEC liquids production and OPEC NGLs | 70.96 | 71.94 | 72.33 | 72.62 | 73.31 | 72.55 | 1.59 |
| Difference (a-b) | 28.59 | 28.93 | 28.41 | 29.42 | 30.10 | 29.22 | 0.63 |

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 | 25.40 | 22.45 | 24.32 | 24.77 | 24.98 | 25.35 | 25.19 | 25.08 | 25.00 | 25.24 | 25.66 | 25.45 | 25.34 |
| of which US | 20.58 | 18.35 | 20.03 | 20.38 | 20.41 | 20.62 | 20.74 | 20.54 | 20.51 | 20.52 | 20.85 | 20.87 | 20.69 |
| Europe | 14.31 | 12.41 | 13.13 | 13.15 | 13.43 | 14.09 | 13.90 | 13.65 | 13.19 | 13.46 | 14.12 | 13.95 | 13.68 |
| Asia Pacific | 7.95 | 7.17 | 7.38 | 7.85 | 6.99 | 7.25 | 7.81 | 7.47 | 7.88 | 7.04 | 7.29 | 7.83 | 7.51 |
| Total OECD | 47.66 | 42.03 | 44.83 | 45.77 | 45.40 | 46.69 | 46.91 | 46.20 | 46.07 | 45.73 | 47.07 | 47.23 | 46.53 |
| China | 13.81 | 13.94 | 14.97 | 14.74 | 14.42 | 14.69 | 15.32 | 14.79 | 14.68 | 15.32 | 15.32 | 15.89 | 15.31 |
| 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 | 9.10 | 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 | 6.70 | 6.54 | 6.55 |
| Middle East | 8.20 | 7.45 | 7.79 | 8.06 | 8.13 | 8.50 | 8.17 | 8.22 | 8.45 | 8.46 | 8.84 | 8.46 | 8.55 |
| Africa | 4.34 | 4.05 | 4.22 | 4.51 | 4.15 | 4.25 | 4.53 | 4.36 | 4.71 | 4.34 | 4.43 | 4.72 | 4.55 |
| Russia | 3.57 | 3.39 | 3.61 | 3.67 | 3.42 | 3.45 | 3.59 | 3.53 | 3.63 | 3.45 | 3.59 | 3.75 | 3.61 |
| Other Eurasia | 1.19 | 1.07 | 1.21 | 1.22 | 1.16 | 1.00 | 1.21 | 1.15 | 1.21 | 1.16 | 1.02 | 1.22 | 1.15 |
| 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 | 52.81 | 52.84 | 54.20 | 53.36 | 54.80 | 55.01 | 54.97 | 56.18 | 55.24 |
| (a) Total world demand | 100.18 | 91.16 | 97.01 | 99.35 | 98.21 | 99.54 | 101.11 | 99.56 | 100.87 | 100.74 | 102.04 | 103.41 | 101.77 |
| Y-o-y change | 0.97 | -9.01 | 5.85 | 5.14 | 2.55 | 1.87 | 0.67 | 2.55 | 1.53 | 2.53 | 2.50 | 2.30 | 2.22 |
| Non-OPEC liquids production | | | | | | | | | | | | | |
| Americas | 25.84 | 24.75 | 25.25 | 25.86 | 26.27 | 27.04 | 27.36 | 26.64 | 27.60 | 27.70 | 28.05 | 28.43 | 27.95 |
| of which US | 18.49 | 17.64 | 17.85 | 18.27 | 18.83 | 19.30 | 19.50 | 18.98 | 19.75 | 20.05 | 20.24 | 20.47 | 20.13 |
| Europe | 3.70 | 3.89 | 3.76 | 3.73 | 3.43 | 3.49 | 3.74 | 3.60 | 3.95 | 3.93 | 3.82 | 3.95 | 3.91 |
| Asia Pacific | 0.52 | 0.52 | 0.51 | 0.49 | 0.51 | 0.43 | 0.53 | 0.49 | 0.51 | 0.48 | 0.50 | 0.49 | 0.50 |
| Total OECD | 30.07 | 29.16 | 29.52 | 30.08 | 30.22 | 30.97 | 31.63 | 30.73 | 32.06 | 32.11 | 32.38 | 32.87 | 32.36 |
| China | 4.05 | 4.15 | 4.31 | 4.51 | 4.52 | 4.38 | 4.43 | 4.46 | 4.51 | 4.50 | 4.47 | 4.47 | 4.49 |
| India | 0.83 | 0.78 | 0.78 | 0.78 | 0.77 | 0.76 | 0.77 | 0.77 | 0.80 | 0.78 | 0.77 | 0.76 | 0.78 |
| Other Asia | 2.72 | 2.51 | 2.41 | 2.35 | 2.30 | 2.25 | 2.33 | 2.31 | 2.37 | 2.37 | 2.34 | 2.36 | 2.36 |
| Latin America | 6.08 | 6.03 | 5.95 | 6.11 | 6.18 | 6.45 | 6.63 | 6.34 | 6.49 | 6.67 | 6.73 | 6.80 | 6.68 |
| Middle East | 3.19 | 3.19 | 3.24 | 3.29 | 3.33 | 3.36 | 3.36 | 3.34 | 3.35 | 3.36 | 3.39 | 3.39 | 3.37 |
| Africa | 1.51 | 1.41 | 1.35 | 1.33 | 1.31 | 1.32 | 1.32 | 1.32 | 1.32 | 1.34 | 1.35 | 1.37 | 1.35 |
| Russia | 11.51 | 10.54 | 10.80 | 11.33 | 10.63 | 11.01 | 10.88 | 10.96 | 9.95 | 10.10 | 10.17 | 10.22 | 10.11 |
| Other Eurasia | 3.07 | 2.91 | 2.93 | 3.05 | 2.77 | 2.61 | 2.95 | 2.84 | 3.09 | 3.05 | 3.02 | 3.06 | 3.06 |
| Other Europe | 0.12 | 0.12 | 0.11 | 0.11 | 0.11 | 0.10 | 0.10 | 0.11 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 |
| Total Non-OECD | 33.09 | 31.67 | 31.87 | 32.85 | 31.92 | 32.24 | 32.76 | 32.44 | 31.97 | 32.28 | 32.35 | 32.54 | 32.29 |
| Total Non-OPEC production | 63.16 | 60.83 | 61.39 | 62.93 | 62.14 | 63.21 | 64.39 | 63.17 | 64.03 | 64.39 | 64.72 | 65.41 | 64.64 |
| Processing gains | 2.37 | 2.16 | 2.29 | 2.40 | 2.40 | 2.40 | 2.40 | 2.40 | 2.47 | 2.47 | 2.47 | 2.47 | 2.47 |
| Total Non-OPEC liquids production | 65.53 | 62.98 | 63.68 | 65.33 | 64.54 | 65.61 | 66.79 | 65.57 | 66.50 | 66.86 | 67.19 | 67.88 | 67.11 |
| OPEC NGL + non-conventional oils | 5.21 | 5.17 | 5.28 | 5.35 | 5.38 | 5.41 | 5.43 | 5.39 | 5.44 | 5.47 | 5.43 | 5.43 | 5.44 |
| (b) Total non-OPEC liquids production and OPEC NGLs | 70.74 | 68.15 | 68.96 | 70.68 | 69.92 | 71.01 | 72.22 | 70.96 | 71.94 | 72.33 | 72.62 | 73.31 | 72.55 |
| Y-o-y change | 2.18 | -2.60 | 0.82 | 2.72 | 1.25 | 2.03 | 2.01 | 2.00 | 1.26 | 2.41 | 1.60 | 1.08 | 1.59 |
| OPEC crude oil production (secondary sources) | 29.36 | 25.71 | 26.35 | 28.36 | 28.59 | 29.44 | | | | | | | |
| Total liquids production | 100.10 | 93.86 | 95.31 | 99.04 | 98.51 | 100.46 | | | | | | | |
| Balance (stock change and miscellaneous) | -0.08 | 2.70 | -1.70 | -0.31 | 0.30 | 0.92 | | | | | | | |
| OECD closing stock levels, mb | | | | | | | | | | | | | |
| Commercial | 2,894 | 3,036 | 2,651 | 2,613 | 2,666 | 2,725 | | | | | | | |
| SPR | 1,535 | 1,541 | 1,484 | 1,442 | 1,343 | 1,248 | | | | | | | |
| Total | 4,429 | 4,578 | 4,134 | 4,055 | 4,009 | 3,973 | | | | | | | |
| Oil-on-water | 1,033 | 1,148 | 1,202 | 1,222 | 1,290 | 1,386 | | | | | | | |
| Days of forward consumption in OECD, days | | | | | | | | | | | | | |
| Commercial onland stocks | 69 | 68 | 57 | 58 | 57 | 58 | | | | | | | |
| SPR | 37 | 34 | 32 | 32 | 29 | 27 | | | | | | | |
| Total | 105 | 102 | 89 | 89 | 86 | 85 | | | | | | | |
| Memo items | | | | | | | | | | | | | |
| (a) - (b) | 29.43 | 23.02 | 28.05 | 28.67 | 28.29 | 28.52 | 28.89 | 28.59 | 28.93 | 28.41 | 29.42 | 30.10 | 29.22 |

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 | -0.02 | -0.02 | -0.02 | -0.01 | -0.02 | 0.32 | -0.02 | 0.07 | -0.01 | -0.02 | 0.32 | -0.02 | 0.07 |
| of which US | - | - | - | - | - | 0.03 | - | 0.01 | - | - | 0.03 | - | 0.01 |
| Europe | - | - | - | - | 0.02 | 0.06 | - | 0.02 | - | 0.02 | 0.06 | - | 0.02 |
| Asia Pacific | - | - | - | - | - | -0.06 | - | -0.01 | - | - | -0.06 | - | -0.01 |
| Total OECD | -0.02 | -0.02 | -0.02 | -0.01 | - | 0.32 | -0.02 | 0.07 | -0.01 | - | 0.32 | -0.02 | 0.07 |
| China | - | - | - | - | -0.14 | - | -0.12 | -0.07 | -0.35 | -0.09 | 0.08 | 0.05 | -0.08 |
| India | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Other Asia | - | - | - | - | - | -0.03 | - | -0.01 | - | - | -0.03 | - | -0.01 |
| Latin America | - | - | - | - | - | -0.03 | - | -0.01 | - | - | -0.03 | - | -0.01 |
| Middle East | - | - | - | - | - | -0.01 | - | - | - | - | -0.01 | - | - |
| Africa | - | - | - | - | - | -0.02 | - | -0.01 | - | - | -0.02 | - | -0.01 |
| Russia | - | - | - | - | - | - | - | - | -0.01 | 0.01 | -0.03 | -0.02 | -0.01 |
| Other Eurasia | - | - | - | - | - | - | - | - | -0.01 | - | - | - | - |
| Other Europe | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Total Non-OECD | - | - | - | - | -0.14 | -0.10 | -0.12 | -0.09 | -0.37 | -0.08 | -0.04 | 0.03 | -0.12 |
| (a) Total world demand | -0.02 | -0.02 | -0.02 | -0.01 | -0.14 | 0.22 | -0.14 | -0.02 | -0.39 | -0.08 | 0.28 | 0.01 | -0.04 |
| Y-o-y change | -0.02 | - | - | 0.01 | -0.13 | 0.23 | -0.12 | - | -0.37 | 0.06 | 0.06 | 0.15 | -0.03 |
| Non-OPEC liquids production | | | | | | | | | | | | | |
| Americas | - | - | - | - | - | 0.11 | 0.07 | 0.04 | - | - | - | - | - |
| of which US | - | - | - | - | - | 0.11 | 0.07 | 0.04 | - | - | - | - | - |
| Europe | - | - | - | - | - | -0.02 | -0.13 | -0.04 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 |
| Asia Pacific | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Total OECD | - | - | - | - | - | 0.09 | -0.07 | 0.01 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 |
| China | - | - | - | - | - | - | - | - | - | - | - | - | - |
| India | - | - | - | - | - | 0.01 | -0.04 | -0.01 | -0.01 | -0.01 | -0.01 | -0.01 | -0.01 |
| Other Asia | - | - | - | - | - | - | -0.05 | -0.01 | -0.01 | -0.01 | -0.01 | -0.01 | -0.01 |
| Latin America | - | - | - | - | - | 0.01 | 0.07 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 |
| Middle East | - | - | - | - | - | -0.01 | - | - | - | - | - | - | - |
| Africa | - | - | - | - | - | -0.01 | - | - | - | - | - | - | - |
| Russia | - | - | - | - | - | - | 0.10 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 |
| Other Eurasia | - | - | - | - | - | -0.01 | -0.13 | -0.04 | -0.02 | -0.02 | -0.02 | -0.02 | -0.02 |
| Other Europe | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Total Non-OECD | - | - | - | - | - | -0.01 | -0.05 | -0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 |
| Total Non-OPEC production | - | - | - | - | - | 0.08 | -0.11 | -0.01 | -0.01 | -0.01 | -0.01 | -0.01 | -0.01 |
| Processing gains | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Total Non-OPEC liquids production | - | - | - | - | - | 0.08 | -0.11 | -0.01 | -0.01 | -0.01 | -0.01 | -0.01 | -0.01 |
| OPEC NGL + non-conventional oils | - | - | - | - | - | - | - | - | - | - | - | - | - |
| (b) Total non-OPEC liquids production and OPEC NGLs | - | - | - | - | - | 0.08 | -0.11 | -0.01 | -0.01 | -0.01 | -0.01 | -0.01 | -0.01 |
| Y-o-y change | - | - | - | - | - | 0.08 | -0.11 | -0.01 | -0.01 | -0.01 | -0.09 | 0.10 | - |
| OPEC crude oil production (secondary sources) | | | | | | | | | | | | | |
| Total liquids production | - | - | - | - | - | 0.08 | - | - | - | - | - | - | - |
| Balance (stock change and miscellaneous) | 0.02 | 0.02 | 0.02 | 0.01 | 0.15 | -0.14 | - | - | - | - | - | - | - |
| mb | | | | | | | | | | | | | |
| Commercial | - | - | - | -1 | -1 | -24 | - | - | - | - | - | - | - |
| SPR | - | - | - | - | - | -6 | - | - | - | - | - | - | - |
| Total | - | - | - | -1 | -1 | -30 | - | - | - | - | - | - | - |
| Oil-on-water | | | | | | | | | | | | | |
| Days of forward consumption in OECD, days | | | | | | | | | | | | | |
| Commercial onland stocks | - | - | - | - | - | - | - | - | - | - | - | - | - |
| SPR | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Total | - | - | - | - | -1 | -1 | - | - | - | - | - | - | - |
| Memo items | | | | | | | | | | | | | |
| (a) - (b) | -0.02 | -0.02 | -0.02 | -0.01 | -0.14 | 0.14 | -0.03 | -0.01 | -0.38 | -0.08 | 0.28 | 0.02 | -0.04 |

Note: * This compares Table 11 - 1 in this issue of the MOMR with Table 11 - 1 in the November 2022 issue.

This table shows only where changes have occurred.

Source: OPEC.

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

| OECD oil stocks and oil on water | 2020 | 2021 | 2Q20 | 3Q20 | 4Q20 | 1Q21 | 2Q21 | 3Q21 | 4Q21 | 1Q22 | 2Q22 | 3Q22 |
|--|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Closing stock levels, mb | | | | | | | | | | | | |
| OECD onland commercial | 3,036 | 2,651 | 3,217 | 3,181 | 3,036 | 2,926 | 2,884 | 2,770 | 2,651 | 2,613 | 2,666 | 2,725 |
| Americas | 1,613 | 1,470 | 1,719 | 1,690 | 1,613 | 1,578 | 1,553 | 1,523 | 1,470 | 1,407 | 1,436 | 1,468 |
| Europe | 1,043 | 857 | 1,098 | 1,079 | 1,043 | 1,002 | 973 | 891 | 857 | 890 | 911 | 909 |
| Asia Pacific | 380 | 324 | 400 | 411 | 380 | 346 | 357 | 355 | 324 | 316 | 318 | 349 |
| OECD SPR | 1,541 | 1,484 | 1,561 | 1,551 | 1,541 | 1,546 | 1,524 | 1,513 | 1,484 | 1,442 | 1,343 | 1,248 |
| Americas | 640 | 596 | 658 | 644 | 640 | 640 | 623 | 620 | 596 | 568 | 495 | 419 |
| Europe | 487 | 479 | 487 | 490 | 487 | 493 | 487 | 485 | 479 | 468 | 452 | 449 |
| Asia Pacific | 414 | 409 | 416 | 417 | 414 | 413 | 413 | 408 | 409 | 406 | 395 | 380 |
| OECD total | 4,578 | 4,134 | 4,778 | 4,732 | 4,578 | 4,472 | 4,407 | 4,282 | 4,134 | 4,055 | 4,009 | 3,973 |
| Oil-on-water | 1,148 | 1,202 | 1,329 | 1,174 | 1,148 | 1,138 | 1,131 | 1,169 | 1,202 | 1,222 | 1,290 | 1,386 |
| Days of forward consumption in OECD, days | | | | | | | | | | | | |
| OECD onland commercial | 68 | 57 | 76 | 74 | 71 | 66 | 63 | 59 | 58 | 58 | 57 | 58 |
| Americas | 66 | 59 | 76 | 73 | 70 | 65 | 63 | 61 | 59 | 56 | 57 | 58 |
| Europe | 79 | 63 | 85 | 86 | 87 | 79 | 70 | 64 | 65 | 66 | 65 | 65 |
| Asia Pacific | 51 | 43 | 59 | 56 | 50 | 49 | 51 | 46 | 41 | 45 | 44 | 45 |
| OECD SPR | 35 | 34 | 37 | 36 | 36 | 35 | 33 | 32 | 32 | 32 | 29 | 27 |
| Americas | 26 | 24 | 29 | 28 | 28 | 26 | 25 | 25 | 24 | 23 | 20 | 17 |
| Europe | 37 | 35 | 38 | 39 | 41 | 39 | 35 | 35 | 36 | 35 | 32 | 32 |
| Asia Pacific | 56 | 55 | 61 | 57 | 54 | 59 | 58 | 52 | 52 | 58 | 55 | 49 |
| OECD total | 103 | 92 | 113 | 110 | 108 | 101 | 96 | 91 | 90 | 89 | 86 | 85 |

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

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

| Non-OPEC liquids production and OPEC NGLs | Change | | | | | | | | | | | | |
|---|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| | 2019 | 2020 | 2021 | 3Q22 | 4Q22 | 2022 | 22/21 | 1Q23 | 2Q23 | 3Q23 | 4Q23 | 2023 | 23/22 |
| US | 18.5 | 17.6 | 17.8 | 19.3 | 19.5 | 19.0 | 1.1 | 19.7 | 20.1 | 20.2 | 20.5 | 20.1 | 1.2 |
| Canada | 5.4 | 5.2 | 5.4 | 5.7 | 5.8 | 5.6 | 0.2 | 5.9 | 5.7 | 5.8 | 6.0 | 5.8 | 0.2 |
| Mexico | 1.9 | 1.9 | 2.0 | 2.0 | 2.0 | 2.0 | 0.1 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 0.0 |
| Chile | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| OECD Americas | 25.8 | 24.7 | 25.3 | 27.0 | 27.4 | 26.6 | 1.4 | 27.6 | 27.7 | 28.1 | 28.4 | 27.9 | 1.3 |
| Norway | 1.7 | 2.0 | 2.0 | 1.9 | 2.1 | 1.9 | -0.1 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 | 0.3 |
| UK | 1.1 | 1.1 | 0.9 | 0.8 | 0.9 | 0.9 | 0.0 | 0.9 | 0.9 | 0.8 | 0.9 | 0.9 | 0.0 |
| Denmark | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 |
| Other OECD | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.0 | 0.8 | 0.8 | 0.7 | 0.7 | 0.8 | 0.0 |
| OECD Europe | 3.7 | 3.9 | 3.8 | 3.5 | 3.7 | 3.6 | -0.2 | 3.9 | 3.9 | 3.8 | 4.0 | 3.9 | 0.3 |
| Australia | 0.5 | 0.5 | 0.4 | 0.4 | 0.5 | 0.4 | 0.0 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.0 |
| Other Asia Pacific | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 |
| OECD Asia Pacific | 0.5 | 0.5 | 0.5 | 0.4 | 0.5 | 0.5 | 0.0 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.0 |
| Total OECD | 30.1 | 29.2 | 29.5 | 31.0 | 31.6 | 30.7 | 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 | 0.6 | 0.6 | 0.0 | 0.7 | 0.7 | 0.6 | 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 | 2.2 | 2.3 | 2.3 | -0.1 | 2.4 | 2.4 | 2.3 | 2.4 | 2.4 | 0.1 |
| Argentina | 0.7 | 0.7 | 0.7 | 0.8 | 0.8 | 0.8 | 0.1 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.1 |
| Brazil | 3.6 | 3.7 | 3.6 | 3.8 | 3.9 | 3.7 | 0.1 | 3.8 | 3.9 | 4.0 | 4.0 | 3.9 | 0.2 |
| Colombia | 0.9 | 0.8 | 0.8 | 0.8 | 0.8 | 0.8 | 0.0 | 0.8 | 0.8 | 0.7 | 0.8 | 0.8 | 0.0 |
| Ecuador | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.0 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.0 |
| Guyana | 0.0 | 0.1 | 0.1 | 0.4 | 0.4 | 0.3 | 0.2 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.1 |
| Latin America | 0.4 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.0 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.0 |
| Latin America | 6.1 | 6.0 | 6.0 | 6.4 | 6.6 | 6.3 | 0.4 | 6.5 | 6.7 | 6.7 | 6.8 | 6.7 | 0.3 |
| Bahrain | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.0 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.0 |
| Oman | 1.0 | 1.0 | 1.0 | 1.1 | 1.1 | 1.1 | 0.1 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 0.0 |
| Qatar | 1.9 | 1.9 | 2.0 | 2.0 | 2.0 | 2.0 | 0.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 0.0 |
| Syria | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 |
| Yemen | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 |
| Middle East | 3.2 | 3.2 | 3.2 | 3.4 | 3.4 | 3.3 | 0.1 | 3.3 | 3.4 | 3.4 | 3.4 | 3.4 | 0.0 |
| Cameroon | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 |
| Chad | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 |
| Egypt | 0.7 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.0 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.0 |
| Ghana | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.0 | 0.1 | 0.1 | 0.1 | 0.2 | 0.1 | 0.0 |
| South Africa | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 |
| Sudans | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.0 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.0 |
| Africa other | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 |
| Africa | 1.5 | 1.4 | 1.3 | 1.3 | 1.3 | 1.3 | 0.0 | 1.3 | 1.3 | 1.4 | 1.4 | 1.3 | 0.0 |
| Russia | 11.5 | 10.5 | 10.8 | 11.0 | 10.9 | 11.0 | 0.2 | 9.9 | 10.1 | 10.2 | 10.2 | 10.1 | -0.9 |
| Kazakhstan | 1.9 | 1.8 | 1.8 | 1.6 | 1.9 | 1.8 | 0.0 | 2.0 | 1.9 | 1.9 | 2.0 | 2.0 | 0.2 |
| 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 | 0.1 |
| Eurasia others | 0.4 | 0.4 | 0.4 | 0.3 | 0.3 | 0.3 | 0.0 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.0 |
| Other Eurasia | 3.1 | 2.9 | 2.9 | 2.6 | 2.9 | 2.8 | -0.1 | 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 | 32.2 | 32.8 | 32.4 | 0.6 | 32.0 | 32.3 | 32.3 | 32.5 | 32.3 | -0.2 |
| Non-OPEC | 63.2 | 60.8 | 61.4 | 63.2 | 64.4 | 63.2 | 1.8 | 64.0 | 64.4 | 64.7 | 65.4 | 64.6 | 1.5 |
| Processing gains | 2.4 | 2.2 | 2.3 | 2.4 | 2.4 | 2.4 | 0.1 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 0.1 |
| Non-OPEC liquids production | 65.5 | 63.0 | 63.7 | 65.6 | 66.8 | 65.6 | 1.9 | 66.5 | 66.9 | 67.2 | 67.9 | 67.1 | 1.5 |
| OPEC NGL | 5.1 | 5.1 | 5.2 | 5.3 | 5.3 | 5.3 | 0.1 | 5.3 | 5.4 | 5.3 | 5.3 | 5.3 | 0.0 |
| OPEC Non- conventional | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 |
| OPEC (NGL+NCF) | 5.2 | 5.2 | 5.3 | 5.4 | 5.4 | 5.4 | 0.1 | 5.4 | 5.5 | 5.4 | 5.4 | 5.4 | 0.0 |
| Non-OPEC & OPEC (NGL+NCF) | 70.7 | 68.1 | 69.0 | 71.0 | 72.2 | 71.0 | 2.0 | 71.9 | 72.3 | 72.6 | 73.3 | 72.6 | 1.6 |

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

Appendix

Table 11 - 5: World rig count, units

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

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

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

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

Totals may not add up due to independent rounding.

Sources: Baker Hughes and OPEC.

Glossary of Terms

Abbreviations

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

Acronyms

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

Glossary of Terms

| | |
|-------|--|
| 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 3.89 in November

| | |
|---------------------|---------------|
| November 2022 | 89.73 |
| October 2022 | 93.62 |
| Year-to-date | 101.89 |

November OPEC crude production

mb/d, according to secondary sources



down 0.74 in November

| | |
|---------------|-------|
| November 2022 | 28.83 |
| October 2022 | 29.57 |

Economic growth rate

per cent

| | World | OECD | US | Euro-zone | Japan | China | India |
|-------------|-------|------|-----|-----------|-------|-------|-------|
| 2022 | 2.8 | 2.4 | 1.7 | 3.0 | 1.5 | 3.1 | 6.5 |
| 2023 | 2.5 | 0.8 | 0.8 | 0.3 | 1.0 | 4.8 | 5.6 |

Supply and demand

mb/d

| 2022 | | 22/21 | 2023 | | 23/22 |
|-----------------------------|-------------|--------------|-----------------------------|-------------|--------------|
| World demand | 99.6 | 2.5 | World demand | 101.8 | 2.2 |
| Non-OPEC liquids production | 65.6 | 1.9 | Non-OPEC liquids production | 67.1 | 1.5 |
| OPEC NGLs | 5.4 | 0.1 | OPEC NGLs | 5.4 | 0.0 |
| Difference | 28.6 | 0.5 | Difference | 29.2 | 0.6 |

OECD commercial stocks

mb

| | Aug 22 | Sep 22 | Oct 22 | Oct 22/Sep 22 |
|-----------------------|---------------|---------------|---------------|----------------------|
| Crude oil | 1,315 | 1,322 | 1,335 | 12.9 |
| Products | 1,403 | 1,403 | 1,413 | 9.5 |
| Total | 2,718 | 2,725 | 2,748 | 22.5 |
| Days of forward cover | 58.2 | 58.1 | 59.1 | 1.0 |

Next report to be issued on 17 January 2023.