Organization of the Petroleum Exporting Countries

OPEC Monthly Oil Market Report

17 January 2023

Feature article:
Monetary policies and their impact on the oil market

Organization of the Petroleum Exporting Countries

Helferstorferstrasse 17, A-1010 Vienna, Austria
E-mail: prid(at)opec.org
Website: www.opec.org

Disclaimer

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. Joerg Spitzy	Senior Research Analyst, PSD	*email: jspitzy(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

Dr. Asmaa Yaseen	Senior Modelling & Forecasting Analyst, PSD	*email: ayaseen(at)opec.org*
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 $79.68/b in December, a drop of $10.05 m-o-m, or 11.2%. The ICE Brent front-month fell $9.51, or 10.5%, to average $81.34/b, and NYMEX WTI dropped by $7.87, or 9.3%, to average $76.52/b. The Brent/WTI futures spread narrowed further m-o-m, contracting by $1.64 to average $4.82/b. The market structure of ICE Brent and NYMEX WTI weakened again as the first-to-third month spreads moved into contango in December. The combined futures and options net long positions of hedge funds and other money managers rose slightly in December compared to late-November's low levels for both ICE Brent and NYMEX WTI.

World Economy

The world economic growth forecast for 2022 is revised up slightly to 3%, given better-than-anticipated 2H22 economic performance in various key economies. The 2023 global economic growth forecast remained unchanged at 2.5%. For the US, the economic growth forecast is revised up to 2% for 2022 and 1% for 2023. Similarly, the Euro-zone economic growth forecast is revised up to 3.2% for 2022 and 0.4% for 2023. Japan's economic growth forecast is revised down to 1.2% for 2022, but remained at 1% for 2023. China's economic growth forecasts remained unchanged at 3.1% for 2022 and 4.8% for 2023. India's economic growth forecast is revised up to 6.8% for 2022 but remained at 5.6% for 2023. Brazil's economic growth forecast is revised up to 2.8% for 2022, but remained unchanged at 1% for 2023. The 2022 economic growth forecast for Russia is revised up to a contraction of 4%, followed by a small contraction of 0.5% in 2023. Although growth momentum is expected to carry over into 2023, the world economy will continue navigating through many challenges, amid high inflation, monetary tightening by major central banks, and high sovereign debt levels in many regions. Moreover, geopolitical and COVID-19 related risks and uncertainties may add to the downside risk in a few selected economies.

World Oil Demand

The world oil demand forecast for 2022 is unchanged at 2.5 mb/d. Oil demand is adjusted downward in the 3Q22, amid data showing a demand decline in the OECD and China, but non-OECD countries outside of China are revised higher. Similarly, world oil demand growth for 2023 is also unchanged at 2.2 mb/d, with the OECD growing by 0.3 mb/d and non-OECD at 1.9 mb/d. This forecast remains surrounded by uncertainties including global economic developments, shifts in COVID-19 containment policies, and geopolitical tensions.

World Oil Supply

Non-OPEC liquids supply is estimated to expand by 1.9 mb/d in 2022, unchanged from last month's assessment. Upward adjustments to liquids production in Russia and OECD Americas were largely offset by downward revisions to OECD Europe and OECD Asia Pacific. The main drivers of liquids supply growth for 2022 are the US, Russia, Canada, Guyana, China and Brazil, while production is expected to see the largest declines in Norway and Thailand. For 2023, non-OPEC liquids production growth remains unchanged from last month's assessment at 1.5 mb/d. The main drivers of liquids supply growth are expected to be the US, Norway, Brazil, Canada, Kazakhstan and Guyana, while declines are forecast in Russia and Mexico. Nonetheless, large uncertainties remain over the impact of geopolitical developments, as well as expectations for US shale output in 2023. OPEC NGLs and non-conventional liquids are set to grow by 0.1 mb/d in 2022 to average 5.4 mb/d and by 50 tb/d in 2023 to average 5.4 mb/d. OPEC-13 crude oil production in December increased by 91 tb/d m-o-m to average 28.97 mb/d, according to available secondary sources.

Product Markets and Refining Operations

Refinery margins weakened in all main trading hubs in December, as product availability continued to rise. The largest losses were in the Atlantic Basin, particularly from transport fuels, reflecting the easing tightness, especially in the middle section of the barrel. Similarly, in Asia, margins were pressured by elevated refinery runs and fuel supplies. This weighed on regional gasoil and jet/kero markets, despite the relaxation of China's zero COVID-19 policy and positive regional gasoline and residual fuel performance. Global refinery processing rates continued to rise in December, gaining nearly 700 tb/d as refineries ramped up in line with seasonal trends. In the coming month, refinery intakes are expected to remain strong, as returning US capacity from the recent winter storm will likely offset the slight rise in offline capacity elsewhere.

Tanker Market

Dirty freight rates in December fell from elevated levels as activities slowed ahead of seasonal holidays, with losses on almost all monitored routes. VLCCs on average showed the biggest decline, with spot freight rates on the Middle East-to-East route falling 31% m-o-m. In the Suezmax class, dirty spot freight rates dropped 22% on the US Gulf Coast to Europe route. Aframax rates saw the smallest decline, slipping around 3% on the inter-Mediterranean route. In contrast, clean rates remained robust, up 50% on the Middle East-to-East route and around 27% higher in the Mediterranean. Continued tonnage demand amid ongoing trade dislocations kept clean tanker availability relatively tight.

Crude and Refined Products Trade

US crude imports followed seasonal trends, falling to an eight-month low of 6.2 mb/d in December. US crude exports remained above 4 mb/d for the third-consecutive month. US product flows were broadly steady, despite a cold wave that shut-in US refineries and disrupted travel. Preliminary figures show crude imports into OECD Europe remaining at healthy levels through the end of the year, despite imports of Russian crude falling to near zero excluding flows to Turkey. OECD Europe product imports are also seen to be higher in anticipation of the impending February sanctions on Russian oil product imports. Japan's crude imports fell to a five-month low in November, averaging 2.6 mb/d and marking the first y-o-y decline in 15-months. China's crude imports continued to recover in November, averaging 11.4 mb/d, and preliminary data shows December flows remaining at similarly high levels. China's product exports jumped to the highest since June 2020, with diesel and gasoline outflows rising sharply. India's crude imports continued to recover from the 11-month low reached in September, averaging of 4.6 mb/d in November. India's product imports rose to a seven-month high, driven by LPG flows which were the highest on record. Product exports picked up from a two-year low in the previous month, with gasoline leading gains.

Commercial Stock Movements

Preliminary November data sees total OECD commercial oil stocks up 2.7 mb from the previous month. At 2,768 mb, inventories were 26 mb higher than the same month a year ago, 137 mb lower than the latest five-year average and 173 mb below the 2015–2019 average. Within the components, crude stocks fell by 25.8 mb, while product stocks rose m-o-m by 28.5 mb. At 1,343 mb, OECD crude stocks were 22 mb higher than the same time a year ago, but 73 mb lower than the latest five-year average and 108 mb lower than the 2015–2019 average. OECD product stocks stood at 1,425 mb, representing a surplus of 4 mb from the same time a year ago, but 63 mb lower than the latest five-year average and 65 mb below the 2015–2019 average. In terms of days of forward cover, OECD commercial stocks rose m-o-m by 0.1 day in November to stand at 59.5 days. This is 0.3 days above levels seen in the same month last year, but 3.5 days less than the latest five-year average and 2.6 days lower than the 2015–2019 average.

Balance of Supply and Demand

Demand for OPEC crude in 2022 remains broadly unchanged from the previous month's assessment to stand at 28.5 mb/d. This is around 0.5 mb/d higher than in 2021. Demand for OPEC crude in 2023 remained also unchanged from the previous assessment to stand at 29.2 mb/d, which is 0.6 mb/d higher than in 2022.

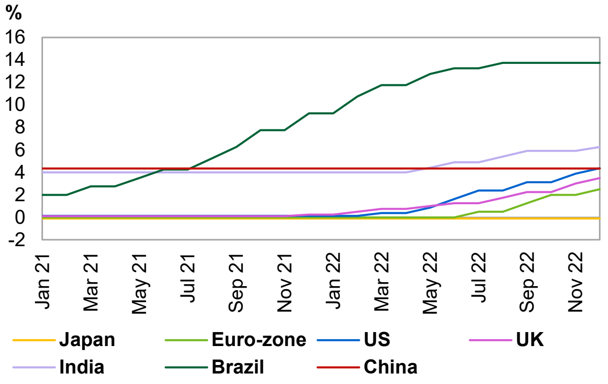
Feature Article

Monetary policies and their impact on the oil market

In early 2022, major central banks stepped up their monetary tightening measures in an effort to reign in increasing levels of inflation and recalibrate their overheating economies amid continued strong global economic growth. These tightening measures, in combination with the COVID-19 situation in China and the geopolitical developments in Eastern Europe, contributed to oil market volatility over the course of the year.

By the end of 1Q22, inflationary pressures forced many major central banks to become even more hawkish, most notably the US Fed, which had a considerable impact on oil markets as well. However, the trend in, and pace of, policies were not uniform in all countries.

Graph 1: Official/policy interest rate, 2021-2022



Sources: BoJ, ECB, FRB, BoE, RBI, BCB, CSIC and Haver Analytics.

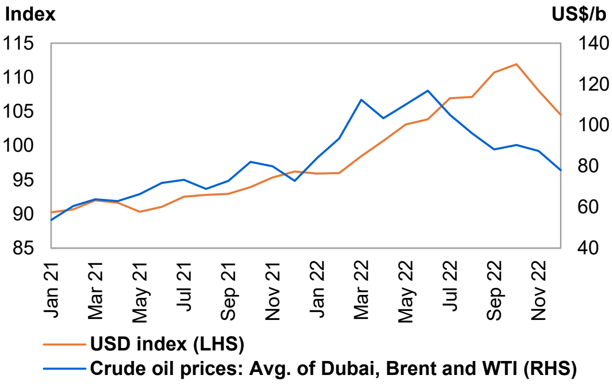
The Bank of England raised rates by late 4Q21 and the US Federal Reserve (Fed) followed suit with an initial announcement to increase their policy rate beginning in 1Q22 and continued with more hikes until the year's end. Meanwhile, the European Central Bank (ECB) and the Bank of Japan maintained their accommodative rates for a longer period of time, in an effort to support markets and keep capitalization rates low.

These divergent monetary policies had three major results, namely, they: (1) strengthened the US dollar, (2) raised the average cost of capital and (3) inverted the yield curve for short-to-long- term US bonds.

With regard to the first point, as most commodities are priced in US dollars, the appreciation of the US dollar, relative to other currencies, led to an increase in commodity prices, including oil. Additionally, the safe-haven appeal of the US dollar rose relative to other currencies amid the strong and rapid rise in US interest rates.

Additionally, the strengthening of the US dollar, along with the rapid monetary tightening by the US Fed, put upward pressure on non-US government bonds and increased bond market sell-offs outside the US, leading to some fragility in the global economy. Furthermore, the rise in US interest rates increased the cost of capital, hindering capital investment, notably in the oil industry. Moreover, high-interest rates weighed on investors' risk appetite and contributed to a decline in liquidity, which also affected the oil futures markets.

Graph 2: US dollar index and crude oil prices, monthly average



Sources: Thomson Reuters and World Bank.

With regard to the third point, the rapid monetary tightening created an inverted yield curve in the US, with the consequence that short-term interest rates are higher than long-term interest rates. This is generally regarded as a warning sign that the US economy is likely to head into a recession in the coming months.

Emerging market economies also saw monetary policy divergences. China maintained its accommodative policy rates to sustain its economy. However, its economy continued to be challenged by the zero COVID-19 policy and the ongoing issues in the property and construction markets, which contributed to a y-o-y decline in oil demand for the country in 2022. Brazil raised interest rates early on, at a time when its economy received support from rising commodity prices. India resisted raising rates earlier in the year, providing a base for relatively strong economic growth in 2022, but then decided to lift rates by 2Q22. While oil demand in the country remained strong, inflation had a limited impact, as India benefited from discounted Russian crude oil imports.

By the end of 3Q22, monetary tightening policies were largely aligned across major central banks, with the exception of China and Japan. However, by year-end, Japan's central bank also became more hawkish in tightening its yield curve control measures. The extent to which monetary tightening will slow economic growth, particularly in advanced economies, and subsequently drag on oil demand in 2023 remains to be seen. In light of the ongoing challenges, OPEC and non-OPEC countries participating in the Declaration of Cooperation will continue to coordinate their efforts to sustain a balanced and stable oil market in order to support healthy global economic growth.

Table of Contents

Crude Oil Price Movements

Crude oil spot prices continued falling in December, with North Sea Dated dropping nearly $11, or 12%, on average m-o-m. Crude oil prices were pressured by growing concerns about an economic slowdown that dampened market sentiment, adding to uncertainty about the demand recovery in China. Signs of a well-supplied crude market, specifically in the Atlantic Basin, coupled with weakening oil product margins, added downward pressure. Oil prices pared some losses in the second half of December on signs of renewed buying interest from Chinese refiners and improving arbitrage economics from west to east that could raise flows from the Atlantic Basin to Asia.

In December, the ORB value dropped by $10.05/b, or 11.2%, to stand at $79.68/b, as all ORB component values declined alongside their perspective crude oil benchmarks, accompanied by a decline in official selling prices for volumes exported to Asia. On a yearly average, the ORB was up $30.19, or 43.2%, from an average of $69.89/b in 2021 to an average of $100.08/b in 2022.

Crude oil futures prices also dropped in December amid heavy selloffs in futures markets, a decline in major equity markets and elevated volatility, which offset risks related to supply disruption. Worries about the economic and demand outlook amid rising global COVID-19 cases in Asia, especially in China, and lower refining margins for gasoline and diesel/gasoil in Europe and the US, weighed on oil prices.

On a monthly average, the ICE Brent first-month contract fell by $9.51 in December, or 10.5%, to stand at $81.34/b, and the NYMEX WTI first-month contract declined by $7.87, or 9.3%, to average $76.52/b. In 2022, ICE Brent was $28.09, or 39.6%, higher compared with 2021, to average $99.04/b, while NYMEX WTI was higher by $26.22, or 38.5%, at $94.33/b.

Hedge funds and other money managers extended sharp selling in the first half of December, particularly in ICE Brent futures and options. Speculators cut combined futures and options net long positions related to ICE Brent and NYMEX WTI by about 41% between the weeks of November 8 and December 13, representing the sale of an equivalent of about 187 mb. However, in the second half of December, money managers recovered part of their long position on expected higher prices amid an improving demand outlook, specifically in China, following the easing of COVID-19 mobility restrictions.

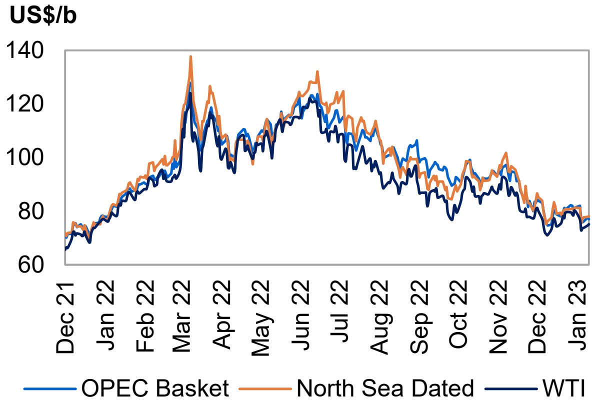
The market structure of all three crude benchmarks, ICE Brent, NYMEX WTI and DME Oman, weakened in December, and the front-end of the ICE Brent and NYMEX WTI forward curves flipped into contango, signalling easing worries about an oil supply disruption in the short term. Signs of a well-supplied physical crude market and rising unsold volumes put downward pressure on prompt month contracts.

The premium of light sweet to medium sour crudes recorded different trends in December in key markets. Sweet/sour differentials in Asia and the US Gulf Coast (USGC) narrowed as the price of light sweet benchmarks fell markedly compared with sour grades, amid weaker light and middle distillate margins, including diesel. However, in Europe, sweet/sour crude differentials widened despite the entry into force of the EU ban on Russian crude imports on December 5.

Crude spot prices

Crude oil spot prices fell in December, with North Sea Dated dropping nearly $11, or 12%, on average m-o-m. Crude oil prices were pressured by growing concerns of an economic slowdown in major economies that dampened market sentiment regarding demand outlooks, adding to uncertainty about the demand recovery in China. Spot prices came under pressure from signs of a well-supplied crude market, specifically in the Atlantic Basin, coupled with weakening oil product margins, including gasoline and diesel/gasoil for the US Gulf Coast (USGC) and Europe. Subdued crude buying interest, including from European buyers, and rising volumes of unsold crude cargoes for December loadings and for early January for some grades, weighed on the value of spot prices.

Graph 1 - 1: Crude oil price movements



Sources: Argus, OPEC and Platts.

Crude Oil Price Movements

Softer crude market fundamentals translated into the near time-spreads of the Brent and WTI price structure flipping into contango, along with weak crude differentials in almost all markets.

Oil prices pared some losses in the second half of December on signs of renewed buying interest from Chinese refiners and improving arbitrage economics from west to east that could raise flows from the Atlantic Basin to Asia.

Physical crude benchmark North Sea Dated continued to trade below the ICE Brent futures benchmark in December, signalling soft physical market fundamentals. The value of North Sea Dated against ICE Brent flipped from a premium of 24¢/b in November to a discount of 96¢/b in December.

All physical crude oil benchmarks declined m-o-m in December, with North Sea Dated falling the most among the other main spot benchmarks, dropping by $10.72, or 11.8%, to average $80.38/b. WTI and Dubai first months fell respectively by $7.65 and $9.03, or 9.1% and 10.5%, to settle at $76.50/b and $77.09/b.

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

			Change		*Annual average*	
OPEC Reference Basket (ORB)	**Nov 22**	**Dec 22**	**Dec 22/Nov 22**	**%**	**2021**	**2022**
ORB	**89.73**	**79.68**	**-10.05**	**-11.2**	**69.89**	**100.08**
Arab Light	91.58	82.44	-9.14	-10.0	70.65	101.64
Basrah Medium	85.66	76.07	-9.59	-11.2	68.76	97.33
Bonny Light	92.84	80.69	-12.15	-13.1	70.63	103.63
Djeno	83.65	72.93	-10.72	-12.8	63.35	93.65
Es Sider	91.25	77.53	-13.72	-15.0	69.16	101.28
Girassol	92.76	78.69	-14.07	-15.2	71.31	103.66
Iran Heavy	88.73	79.11	-9.62	-10.8	69.80	99.92
Kuwait Export	90.13	80.46	-9.67	-10.7	70.50	101.19
Merey	66.94	58.17	-8.77	-13.1	51.45	76.96
Murban	90.90	80.17	-10.73	-11.8	70.09	98.89
Rabi Light	90.64	79.92	-10.72	-11.8	70.34	100.64
Sahara Blend	93.60	83.03	-10.57	-11.3	70.89	104.24
Zafiro	92.12	80.28	-11.84	-12.9	71.09	102.88
Other Crudes						
North Sea Dated	91.10	80.38	-10.72	-11.8	70.80	101.10
Dubai	86.12	77.09	-9.03	-10.5	69.38	96.32
Isthmus	79.26	67.48	-11.78	-14.9	66.20	91.85
LLS	87.61	78.04	-9.57	-10.9	69.66	96.76
Mars	80.44	71.49	-8.95	-11.1	67.31	91.71
Minas	89.21	79.14	-10.07	-11.3	68.75	96.94
Urals	67.98	52.23	-15.75	-23.2	69.45	78.47
WTI	84.15	76.50	-7.65	-9.1	68.17	94.55
Differentials						
North Sea Dated/WTI	6.95	3.88	-3.07	-	2.64	6.55
North Sea Dated/LLS	3.49	2.34	-1.15	-	1.14	4.34
North Sea Dated/Dubai	4.98	3.29	-1.69	-	1.42	4.78

Sources: Argus, Direct Communication, OPEC and Platts.

Crude oil differentials declined in December in almost all regions and for all crude qualities. North Sea crude differentials weakened last month on weak European demand and tumbling light distillate product margins in Europe. Forties and Ekofisk crude differentials declined by 36¢ each m-o-m in December to settle respectively at premiums of 62¢/b and $2.86/b. Crude differentials for Johan Sverdrup also fell to a deeper discount against North Sea Dated on weak demand for the grade, despite the entry into force of the EU ban on Russian crude imports on December 5. Johan Sverdrup's crude differential fell by $2.96/b in December m-o-m to average a discount of $5.42/b.

West African crude differentials were under pressure in December on subdued demand and a rising volume of unsold cargoes for prompt loadings. A more favourable west-to-east arbitrage and narrower Brent-Dubai spread failed to offset low demand in the West of Suez market. On a monthly average, the crude differential of Bonny Light against the North Sea Dated benchmark declined by 17¢ m-o-m in December to settle at a discount of 29¢/b. Forcados and Qua Iboe crude differentials against North Sea Dated fell by 66¢ and 39¢ respectively m-o-m to settle at premiums of $1.25/b and $1.03/b.

The crude differential of medium-heavy sweet crude Cabinda also fell heavily in December by $2.73 m-o-m on average, to a discount of $2.73/b, compared with a premium of 78¢/b in November. Likewise, in the Mediterranean, Saharan Blend crude differentials weakened last month, declining by 40¢ m-o-m to stand at a premium of 43¢/b. The Caspian CPC Blend differential fell sharply, specifically in the first half of December, declining to as low as a $10.05/b discount to North Sea Dated. On a monthly average, the differential dropped by $2.65/b m-o-m, falling to a discount of $7.62/b to North Sea Dated.

In the Middle East, crude differentials to Dubai fell in December. The value of the Oman crude differential declined by $1.23 m-o-m to a premium of $1.52/b.

Similarly, in the USGC, the crude differentials of Light Louisiana Sweet (LLS) and Mars sour weakened amid a narrowed Brent/WTI spread. LLS and Mars sour crude differentials against WTI at Cushing declined m-o-m in December, decreasing by $2.09 and $1.41, respectively, on a monthly average, to a premium of $1.54/b and a discount of $5.01/b.

OPEC Reference Basket (ORB)

The **ORB value** fell in December, dropping by $10.05/b, or 11.2%, to stand at $79.68/b, as all ORB component values declined alongside their perspective crude oil benchmarks, and a decline was seen in official selling prices for volumes exported to Asia. Crude differentials of almost all grade qualities fell amid softer physical crude market fundamentals for December and January loading. On a yearly average, the ORB was up $30.19, or 43.2%, from $69.89/b in 2021 to average $100.08/b in 2022.

All ORB component values fell last month alongside their respective crude oil benchmarks. West and North African Basket components – Bonny Light, Djeno, Es Sider, Girassol, Rabi Light, Sahara Blend, and Zafiro – declined by $11.97 m-o-m in December, or 13.2% on average, to $79.01/b. Multiple region destination grades – Arab Light, Basrah Light, Iran Heavy, and Kuwait Export – also decreased by $9.51 m-o-m, or 10.7% on average, to settle at $79.52/b. Murban crude declined by $10.73 m-o-m, or 11.8% on average, to settle at $80.17/b, while the Merey crude component fell by $8.77 m-o-m, or 13.1% on average, to settle at $58.17/b.

The oil futures market

Crude oil futures prices averaged lower in December amid heavy selloffs in futures markets, a decline in major equity markets and elevated volatility. Oil futures trended sharply lower in the first half of December, extending their decline from November in a volatile market that remained dominated by growing uncertainty regarding the global economy and energy demand growth, which offset risks about supply disruptions due to planned and unplanned outages. Investors focused on concerns that rising interest rates from central banks, including the US Federal Reserve, the European Central Bank and the Bank of England, would slow economic activity. ICE Brent and NYMEX WTI fell by $9.51 and $7.87, respectively, m-o-m, or by 10.5% and 9.3%.

Futures prices also came under further pressure due to rising global COVID-19 cases in Asia, including in some major cities in China, and signs of slowing road transportation fuels which was reflected in lower refining margins for gasoline and diesel/gasoil in Europe and the US. According to Energy Information Administration (EIA) data, US gasoline stocks rose by 9.2 mb between the weeks of 25 November and 23 December. During the same period, US distillate fuel oil stocks rose by 7.6 mb.

The decline in oil price was exacerbated by the selling of bullish futures and options positions, while open interest continued to be low in December. Open interest for NYMEX WTI futures dropped that month to its lowest point since 2006, while that for ICE Brent futures also fell to its lowest point since 2014, as investors sought to reduce risky positions amid uncertainty and market volatility.

However, oil futures prices recovered slightly in the second half of December on improving market sentiment after a further easing of COVID-19 restrictions in China, which raised optimism for a recovery in oil demand. A weaker US dollar in December compared with previous months and a large drop in US crude stocks in the week to December 16 also lent some support to oil prices. The US dollar index value (DXY) declined about 3% in December from November levels.

On a monthly average, the ICE Brent first-month contract fell by $9.51 in December, or 10.5%, to stand at $81.34/b, and the NYMEX WTI first-month contract declined by $7.87, or 9.3%, to average $76.52/b. In 2022, ICE Brent was $28.09, or 39.6%, higher compared with 2021 to average $99.04/b, while NYMEX WTI was higher by $26.22, or 38.5%, at $94.33/b. DME Oman crude oil futures prices fell m-o-m in December by $8.66, or 10.1%, to settle at $77.36/b. In 2022, DME Oman was higher by $26.84, or 38.6%, compared with the previous year, at $94.39/b.

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

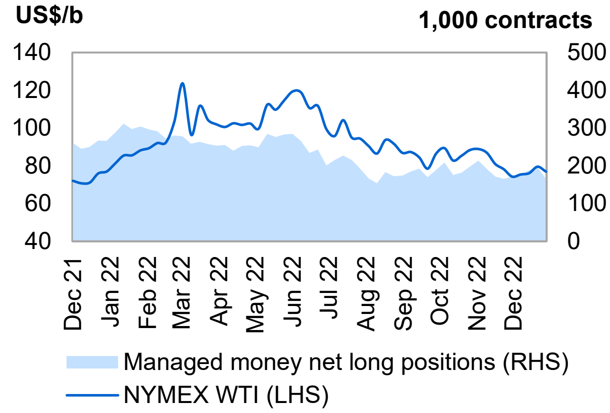
Crude oil futures	Nov 22	Dec 22	Change Dec 22/Nov 22	%	Annual average 2021	2022
NYMEX WTI	84.39	76.52	-7.87	-9.3	68.11	94.33
ICE Brent	90.85	81.34	-9.51	-10.5	70.95	99.04
DME Oman	86.02	77.36	-8.66	-10.1	69.50	96.34
Spread						
ICE Brent-NYMEX WTI	6.46	4.82	-1.64	-25.4	2.84	4.71

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 first-month premium** narrowed again in December for the third consecutive month, averaging just below $5/b for the first time since June 2022. The narrowing transatlantic spread indicates easing supply concerns in Europe — Northwest Europe specifically — amid signs of a well-supplied crude market in the Atlantic Basin, which was reflected in the flipping of the Brent futures price structure into contango. Slowing supply flow from the US strategic petroleum reserve (SPR) compared with previous months contributed to alleviating downward pressure on the value of WTI. On a monthly basis, the ICE Brent/NYNEX WTI differential contracted by $1.64 to stand at an average of $4.82/b in December. The spread between North Sea Dated and WTI Houston also contracted sharply last month on weaker North Sea Dated and light sweet crude values in the Atlantic Basin compared with the USGC. The North Sea Dated premium to WTI Houston narrowed in December by $2.46 m-o-m to average $3.17/b. However, the spread remained large enough to support US crude exports, which remained at about 4 mb/d in November and December, according to weekly EIA data.

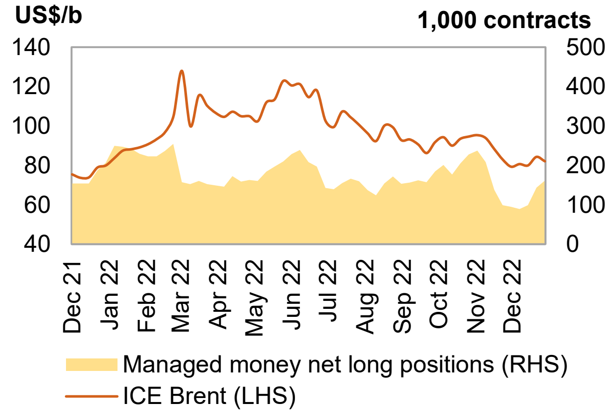
Hedge funds and other money managers extended sharp selling in the first half of December, particularly in futures and options related to ICE Brent. Speculators cut combined futures and options net long positions related to ICE Brent and NYMEX WTI by about 41% between the weeks of November 8 and December 13, representing the sale of an equivalent of about 187 mb. Selling by money managers probably fuelled the price decline registered in November and the first half of December. However, in the second half of December, money managers recovered some of their long positions on expected higher prices amid an improving demand outlook, specifically in China, following the easing of COVID-19 mobility restrictions. By the end of the week of December 27, money managers held net long positions equivalent to about 339 mb in the two main crude oil futures and options contracts. Money managers were net buyers of about 74 mb between the weeks ending December 13 and November 27, a rise of about 28%.

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.

In the first two weeks of December, money managers reduced combined futures and options net long positions in ICE Brent to their lowest level since October 2020, reaching 89,393 contracts. Speculators cut combined futures and options net long positions related to ICE Brent by about 62% between the weeks of November 8 and December 13, representing the sale of an equivalent of about 149 mb. However, in the second half of the month, an equivalent of about 54 mb was recovered amid rising oil prices and easing concerns about the economy and demand outlook.

Between the weeks of November 29 and December 27, speculators raised their futures and options net long positions in ICE Brent by 44,492 contracts, or 45%, to reach 143,703 lots, according to the ICE Exchange. During the same period, gross long positions rose by 27,332 lots, or 15%, to 227,206 contracts, while gross short positions fell by 17,160 lots, or 20%, to 65,750 contracts.

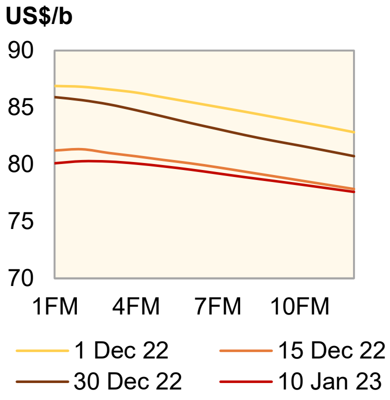
Hedge fund and other money managers raised their NYMEX WTI net long positions in the first half of December, adding 10,064 lots, or 6.1%, to stand at 175,653 lots in the week of December 13. Between the weeks of November 29 and December 27, futures and options net long positions also rose by 29,820 contracts, or 18%, to stand at 195,409 contracts in the week ending December 27. This was due to a decline in short positions by 4,189 lots, or 10%, to 56,013 contracts, and an increase of 25,631 lots, or 12%, in long positions to 231,788 contracts, according to the US Commodity Futures Trading Commission (CFTC).

The **long-to-short ratio of speculative positions** in the NYMEX WTI contract rose to 6:1 in the week to December 27, compared with about 5:1 in late November. However, the ICE Brent long-to-short ratio was as low as 2:1 in December, lower than levels registered in early November at about 7:1. **Total futures and options open interest volumes** on the two exchanges increased in December, rising by 2.2%, or 89,012 contracts, to stand at 4.2 million contracts in the week ending December 27.

The futures market structure

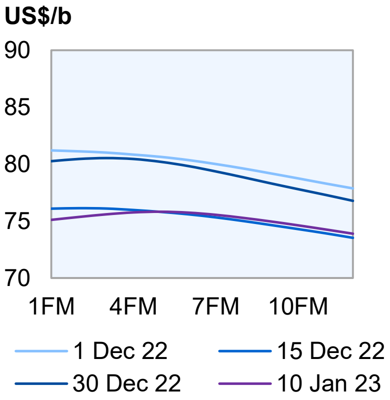
The **market structure** of all three crude benchmarks, ICE Brent, NYMEX WTI and DME Oman, weakened in December compared with the previous month, and the front-end of the forward curve of ICE Brent and NYMEX WTI flipped into contango, signalling easing worries about oil supply disruptions in the short term. Signs of a well-supplied physical crude market and rising unsold volumes, along with a weakening petroleum product market, pressured prompt month contracts down, which contributed to a widening contango structure. Meanwhile, worries about the global economy and demand outlook amid monetary policy tightening and uncertain COVID-19 developments in China dampened market sentiment. The market perception of the supply/demand balance outlook softened in the short term.

Graph 1 - 4: ICE Brent forward curves



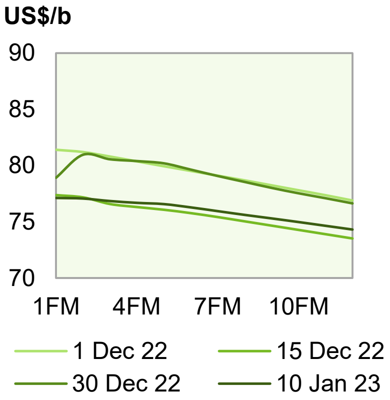
Sources: ICE and OPEC.

Graph 1 - 5: NYMEX WTI forward curves



Sources: CME and OPEC.

Graph 1 - 6: DME Oman forward curves



Sources: DME and OPEC.

The **ICE Brent** crude futures structure weakened in December, with the ICE Brent first-to-third month spread declining by $1.93, flipping from a backwardation of $1.67/b in November to a contango of 26¢/b on average in December. COVID-19 developments in China over the last month, weak demand for December crude loadings in the Atlantic Basin and lower refinery margins in Europe, including for gasoline and diesel, weighed heavily on the Brent futures prompt month contract. ICE Brent's M1-M6 spread also weakened but stayed at a backwardation of 46¢/b on average in December, falling by $3.67 m-o-m from a backwardation of $4.13/b in November.

In the US, the **NYMEX WTI** first-to-third month spread also flipped into contango last month. Worries about the US economic outlook and the turbulent US equity market weighed on the value of WTI's first-month contract. The NYMEX WTI first-to-third month spread slipped into a contango of 16¢/b on average in December, compared with a backwardation of $1.13/b in November, a decline of $1.29.

DME Oman and Dubai structures remained in backwardation in December, although the first-to-third month spreads fell significantly compared with recent months. The DME Oman M1-M3 backwardation weakened m-o-m in December, narrowing by $1.81 to 38¢/b on average from a backwardation of $2.19/b in November.

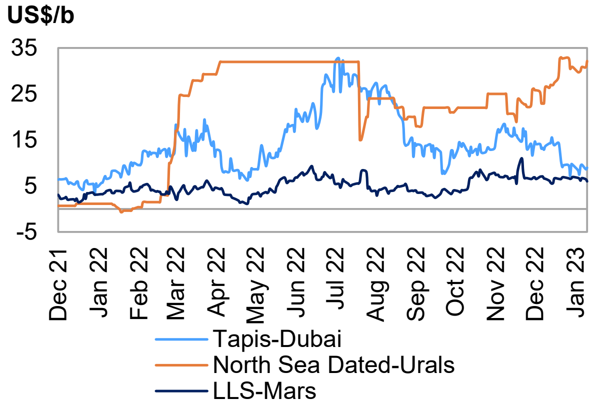
Regarding the **M1/M3 structure**, the North Sea Brent M1/M3 spread declined in December on a monthly average by $2.52 to a contango of 47¢/b, compared with a backwardation of $2.05/b in November. In the US, the WTI M1/M3 backwardation also fell in December by $1.24 to a contango 19¢/b, compared with a backwardation of $1.05/b in November. The Dubai M1/M3 backwardation weakened on average in December, narrowing by $1.58 to a backwardation of $1.17/b.

Crude spreads

The **premium of light sweet to medium sour crudes** recorded different trends in December in key markets. Sweet/sour differentials in Asia and the USGC narrowed as outright prices from light sweet benchmarks fell markedly compared with sour grades, amid weaker light and middle distillate margins, including diesel. Meanwhile, the value of heavy distillate margins, like high sulphur fuel oil (HSFO), strengthened in all markets. However, in Europe, sweet/sour crude differentials widened despite the entry into force of the EU ban on Russian crude imports on December 5.

In **Europe**, the North Sea Dated-Urals spread widened for the third consecutive month in December, as the value of Urals came under further pressure with the entry into force of EU and G7 sanctions against Russian crude. The crude differential of Urals to North Sea Dated fell in December by $6.80 m-o-m to stand at a discount of $32.49/b. In the Mediterranean, the Urals discount to North Sea Dated also widened by $4.81 to stand at $27.92/b. The value of sour crude Johan Sverdrup also fell against that of light sweet crude in Northwest Europe, such as Ekofisk, amid a weak sour crude market and low demand from European and Asian buyers. The Ekofisk-Johan Sverdrup spread widened in December by $2.20 m-o-m to average $7.89/b.

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



Sources: Argus, OPEC and Platts.

However, the value of light sweet crude weakened slightly last month in the **USGC** against the value of sour crude on a sharp decline in gasoline and gasoil margins, which dropped respectively by about $10/b and $17/b m-o-m, while HSFO product margins strengthened by about $3/b m-o-m. The LLS premium over medium sour Mars narrowed on average in December by 63¢ to stand at $6.54/b.

In **Asia**, the sweet-sour crude differential represented in the Tapis-Dubai spread also narrowed in December, as higher HSFO margins lent support to heavy sour crude, while at the same time, low sulphur gasoil and a narrower Brent-Dubai spread weighed on the value of light sweet crude in the East of Suez market. The Brent-Dubai spread narrowed by $1.69 to stand at an average of $3.29/b in December. Meanwhile, the Brent-Dubai exchange of futures for swaps (EFS) also narrowed last month by $2.62 to stand at $5.36/b. The Tapis/Dubai spread narrowed by $3.50 in December to $12.41/b from $15.91/b the previous month.

Commodity Markets

The energy price index continued its downward trajectory, falling for the fourth consecutive month. Meanwhile, non-energy price indices for both base and precious metals advanced for the second consecutive month.

In the paper market, money managers' total net long positions rose across selected commodity markets for the third consecutive month, driven by an increase in long positions, while short positons decreased at the same time. However, sentiment remained bearish as total open interest declined for the second consecutive month.

Despite closing the year under pressure from macroeconomic headwinds, upside potential to selected commody prices remains. Going into 2023, ongoing monetary tightening by major central banks will continue to challenge prices. However, the geopolitical risk premium, optimism over China's reopening, and the carry-over of supply uncertainties from 2022 will continue to add support.

Trends in selected commodity markets

The **energy price index** fell for the fourth consecutive month, declining by 6.2% m-o-m. Prices of most index components recovered m-o-m, however the index was dragged down by a sharp decline in average crude oil prices. The index closed the year up by 17.9% y-o-y, which underscores the upside potential of energy prices going into 2023.

The **non-energy index** rose for the second consecutive month, increasing by 1.0% m-o-m. Agricultural prices were under pressure earlier in the month following the extension of safe passage exports from the Black Sea. However, adverse weather in the US, Latin America and Southeast Asia weighed on the crop outlook of agricultural commodities, adding upward pressure to prices. The index closed the year down by 1.0% y-o-y. Going into 2023, concerns over supply availability will continue to support agricultural commodity prices amid adverse weather and geopolitical developments in Eastern Europe.

Table 2 - 1: Commodity prices

Commodity	Unit	*Monthly averages*			*% Change*	*Annual average*	
		Oct 22	Nov 22	Dec 22	Dec 22/Nov 22	2021	2022
Energy*	Index	**146.2**	**139.4**	**130.8**	**-6.2**	**95.4**	**152.6**
Coal, Australia	US$/mt	389.8	342.2	379.2	10.8	138.1	344.9
Crude oil, average	US$/b	90.3	87.4	78.1	-10.7	69.1	97.1
Natural gas, US	US$/mbtu	5.6	5.3	5.5	4.3	3.9	6.4
Natural gas, Europe	US$/mbtu	39.0	35.7	36.0	0.9	16.1	40.3
Non-energy*	Index	**113.5**	**114.2**	**115.3**	**1.0**	**111.7**	**123.6**
Base metal*	Index	**103.7**	**109.5**	**114.8**	**4.8**	**117.7**	**122.4**
Precious metals*	Index	**125.8**	**131.3**	**138.1**	**5.2**	**140.2**	**136.8**

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

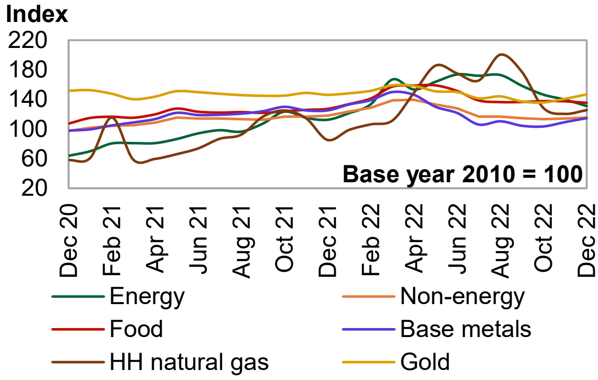
Average crude oil prices declined for the second consecutive month, falling sharply by 10.7% m-o-m. Concerns over a global economic slowdown amid tighter financial conditions, exacerbated by mixed signals from China's zero COVID-19 policy, continued to put downward pressure on crude oil prices. Nonetheless, prices closed higher for the second consecutive year, up by 7.1% y-o-y.

Henry Hub's natural gas prices partially recovered from the previous month's decline, increasing by 4.3% m-o-m. Colder weather across the US in the second half of the month increased demand for residential heating. According to data from the US Energy Information Administration, average underground storage decreased from 3,568 bcf in November to 3,240 bcf in December, a 9.2% decline m-o-m. Additionally, demand for US LNG exports to Asia rose amid higher Asia spot prices (up 22.4% m-o-m). Prices closed the year up by 47.4% y-o-y. Going into 2023, Henry Hub prices will likely be sustained by elevated LNG demand from Europe, as the continent tries to rebuild inventory without Russian gas imports, along with Asia, particularly China, as it works on returning to normalcy.

Natural gas prices in Europe rose after three consecutive months of decline. The **average Title Transfer Facility (TTF) price** went from $35.72/MMBtu in November to $36.0/MMBtu in December, a 0.9% increase m-o-m. Demand for residential heating increased m-o-m amid supported by winter seasonal demand but was still below the seasonal average due to warmer weather. The latest data from Gas Infrastructure Europe shows EU gas storage at 83.2% capacity, down from 92.3% the previous month. Nonetheless, inventories remain at healthy levels. Prices closed the year down by 5.2%. Going into 2023, significant upside potential to prices remains because, should weather conditions deteriorate, inventories would deplete faster than LNG inventory additions, thus adding upward pressure to prices.

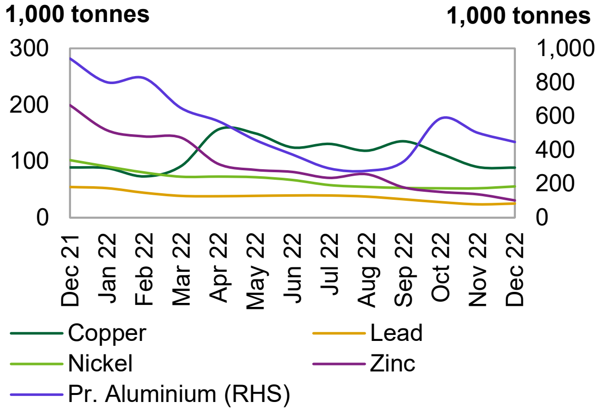
Australian thermal coal prices partially recovered from the previous month's declines, increasing by 10.8% m-o-m. Following a two-year ban on Australian coal imports, China began to secure coal shipments from Australia in December. Renewed demand from China added competition to the demand increase for power generation in Europe amid a ban on Russian coal imports. The competition for high quality Australian coal supported a coal price rally m-o-m. Coal prices closed the year up by 123.5% y-o-y. If gas prices remain elevated in 2023, gas-to-coal fuel switching will be sustained, which would support elevated coal prices.

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** advanced for the second consecutive month, increasing by 4.8% m-o-m. Prices for all index components advanced for the first time since August. Industrial activity remained weak in China (the latest manufacturing Purchasing Managers' Index from China showed a contraction from 49.4 November to 49 in December). However, China's pledge to support the property and construction sectors, in addition to announcing the relaxation of some COVID-19 restrictions, added optimism to the demand for base metals. Outside of China, lower energy prices, particularly in Europe, in addition to a weaker USD, also continued to support the demand for base metals. Y-o-y, the index continued its downward trajectory, closing the year down by 8.3%.

Aluminium prices rose for the third consecutive month, increasing by 2.2% m-o-m. Improved demand amid lower energy prices and a weaker US dollar continued to sustain upward pressure on prices in combination with declining inventory levels. According to data from the London Metal Exchange (LME), inventories fell by 10.8% m-o-m. Y-o-y, prices continued to trend downward, falling by 10.8%.

Average monthly **copper prices** advanced for the second consecutive month, increasing by 4.0% m-o-m. Ongoing supply disruptions from Chile and declining inventory levels at the LME continued to sustain upward pressure on prices. Inventories at the LME fell for the third consecutive month, declining by 1.3% m-o-m. Y-o-y they are down by 12.3%.

Lead prices rose for the third consecutive month, increasing by 5.5% m-o-m. Despite data from the LME showing inventories increasing m-o-m by 5.9% in December, rising demand for electrical vehicle production continued to add support to prices, which are down by 3.7% y-o-y.

Nickel and zinc prices advanced m-o-m. Nickel prices rose for the second consecutive month, increasing by 13.2% m-o-m, while zinc prices recovered from the previous month's decline, increasing by 6.5% in the same period. Prices for both nickel and zinc advanced on optimism over China's support of the property and construction sectors and the relaxation of some COVID-19 restrictions. In terms of LME inventories, nickel increased by 6.3% m-o-m and zinc fell by 26.2% in the same period. Y-o-y, nickel prices were up by 44.6% while zinc was down by 7.9%.

The **precious metals index** rose for the second consecutive month, increasing by 5.2% m-o-m. All index components rose m-o-m, led by silver. Precious metals advanced amid a weaker US dollar, expectations of lower interest rate hikes by the US Federal Reserve amid lower inflation data, and optimism on China's reopening. **Gold prices** rose by 4.2% m-o-m, and **silver and platinum** advanced by 11.0% and 2.2%, respectively, in the same period. Y-o-y, the index was up by 1.0%. Gold was up by 0.4%, silver by 3.5% and platinum by 7.0%.

Investment flows into commodities

Total money managers' net length rose for the third consecutive month, increasing by 34.4% m-o-m. The net length increase was driven by an increase in long positions (7.6% increase m-o-m), while short positons held across selected commodities decreased (down by 3.7% m-o-m). Meanwhile, total open interest decreased for the second consecutive month, falling by 3.5% m-o-m. Crude oil continued to lead the decline in open interest, followed by gold and copper, but partially offset by an increase in natural gas.

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

Selected commodity	*Open interest*		*Net length*			
	Nov 22	Dec 22	Nov 22	% OI	Dec 22	% OI
Crude oil	2,003	1,875	188	9	183	10
Natural gas	995	1,015	-69	-7	-60	-6
Gold	612	590	11	2	55	9
Copper	181	179	15	8	15	9

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

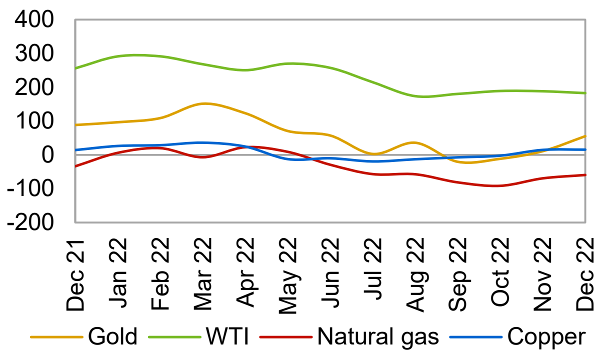
Total crude oil (WTI) open interest (OI) decreased for the second consecutive month, falling m-o-m by 6.4%. Money managers' net length also fell for the second consecutive month, down by 2.9% in the same period. Concerns over the global economy, exacerbated by mix signals from China's zero COVID-19 policy, continued to weigh on money managers' sentiment.

Total Henry Hub natural gas OI increased for the third consecutive month, rising by 2.1% m-o-m. Meanwhile, money managers decreased their net length by 14.2% in the same period. Net length declined amid the liquidation of expiring contracts at year-end.

Gold's OI decreased by 3.6% m-o-m. Meanwhile, money managers' net length rose sharply by 413.4% in the same period. A weaker USD and expectations of a less hawkish US Federal Reserve continued to support bullish sentiment on gold.

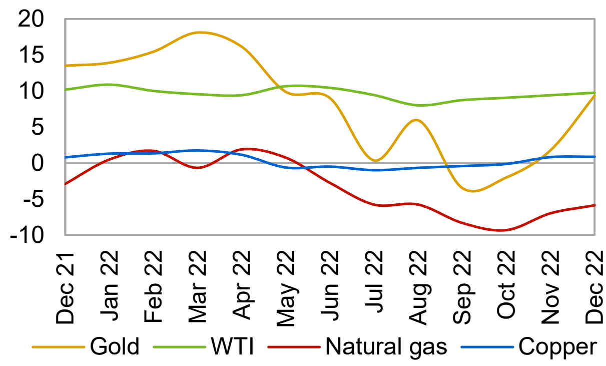
Copper's OI decreased for the second consecutive month, falling by 1.1% m-o-m. Meanwhile, net length rose for the second consecutive month, increasing by 5.1%. Limited supply availability amid optimism over China's reopening supported money manager bullishness.

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

Multiple economic indicators point to a relative slowdown in global economic growth for 2023. Inflation remains high and further lifts in key interest rates, particularly in the Euro-zone are likely, potentially impacting growth. Indeed, the global momentum in 4Q22 appears stronger than previously expected, potentially providing a sound base for the year 2023, especially in the OECD economies. The 2022 growth in both Euro-zone and US has surpassed previous forecasts.

In the emerging economies, China faced a tough environment in 2022 with zero-COVID-19 policies and a slowing property market, among other issues, hindering the growth dynamic. However, with the latest efforts to reopen the economy and support the property sector, the prospects for a rebound in 2023 economic growth have improved. India is also likely to weather the current global economic issues relatively well in 2023, following strong growth in 2022. Brazil and Russia are forecast to face challenging environments in 2023, for different reasons. Brazil is expected to show only shallow growth while Russia is forecast to face a slight contraction in 2023.

With this, the global economic growth forecast for 2022 is revised up to stand at 3% while the global economic growth forecast for 2023 remains at 2.5%.

Upside potential may come from the US Federal Reserve successfully managing a soft landing in the US. This is the most likely outcome, given the expected slowdown in inflation and the sufficient underlying demand dynamic. An even stronger-than-anticipated rebound in China is another possibility as well. Moreover, as the Euro-zone experienced unexpectedly sound economic growth in 2H22, despite the ongoing challenges stemming from the conflict in Eastern Europe, an extension of the relatively better-than-expected dynamic may continue into 2023. Finally, a continued easing of commodity prices in 2023 compared to annual averages in 2022 and a resolution of the tensions in Eastern Europe may provide further upside potential.

Downside risks include higher-than-expected inflation, which could prompt further monetary tightening by major central banks. This may also cause further fiscal stress in those economies that carry elevated sovereign debt. While labour markets are forecast to become less tight in 2023, labour resource constraints are expected to persist, 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 and logistical developments. Other factors to monitor include the outcome of geopolitical tensions and China's COVID-19 policy, along with trade-related issues within the global economic framework – especially those between the US and China.

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

	World	OECD	US	Euro-zone	UK	Japan	China	India	Brazil	Russia
2022	**3.0**	**2.6**	**2.0**	**3.2**	**3.8**	**1.2**	**3.1**	**6.8**	**2.8**	**-4.0**
Change from previous month	0.2	0.2	0.3	0.2	0.5	-0.3	0.0	0.3	0.4	1.0
2023	**2.5**	**0.9**	**1.0**	**0.4**	**0.0**	**1.0**	**4.8**	**5.6**	**1.0**	**-0.5**
Change from previous month	0.0	0.1	0.2	0.1	0.0	0.0	0.0	0.0	0.0	-0.7

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

Source: OPEC.

Update on the latest global developments

The latest GDP numbers and output measures point to better-than-expected momentum in 2H22 on a global level, especially in OECD economies, with the US and the Euro-zone having weathered the ongoing challenges of monetary tightening and high inflation, among other factors, relatively well. Consumer spending – especially in the wealthier economies – has been supported by a combination of social welfare measures, rising wages and salaries, and increasing debt-financed consumption (particularly in the US), as well as consumers tapping into their savings.

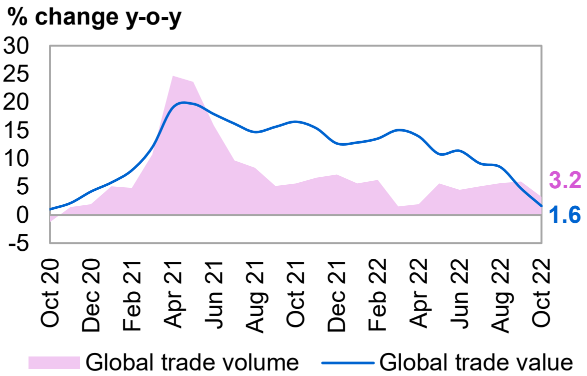
In the emerging economies, China had a continued weak 2H22. The economy appears to have slowed down in 4Q22, and the government reacted by lifting its zero-COVID-19 policies increasing its support for the housing sector. India seems to have performed relatively better in 2022 and to have enjoyed sound growth towards the end of the year. Brazil and Russia also have performed better than expected, but while Brazil was showing an uptick of growth in 2H22, the Russian economy was supported by an ongoing supportive commodity market.

Headline **inflation** continued to gradually slow in most major economies, albeit at varying degrees. However, core inflation, which is the main guideline for central banks, remained persistently high at around 6% in the US and even slightly higher in the Euro-zone, so further monetary policy actions are likely in the US and especially in the Euro-zone.

World trade retracted in value terms, less so in volume terms, considering the strong US dollar and the softening of commodity prices since mid-2022. Global trade in value terms increased by 1.6% y-o-y in October, after a rise of 4.7% y-o-y in September and compared with 8.5% y-o-y in August, based on the CPB World Trade Monitor Index provided by the CPB Netherlands Bureau for Economic Policy Analysis.

Trade in volume terms rose by 3.2% y-o-y in October, compared with 5.9% y-o-y in September and 5.7% y-o-y in August.

Graph 3 - 1: Global trade



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

Near-term global expectations

After better-than-expected global **growth** in 2H22, which lifted last year's global economic growth estimate to 3%, the world economy is forecast to slow somewhat in 2023. However, the 2H22 growth dynamic in the US and the Euro-zone, as well as economic support measures undertaken in China and sound momentum in India, are confirming the expectation of a continued good growth level of around 2.5% in 2023.

There will be several **key factors** in the near term that will determine the depth and the magnitude of this year's growth. At the core, the monetary policies of G4 central banks, and especially the policies of the Fed and the ECB, will be important factors. Overtightening on the one hand, or on the other hand an overly accommodative monetary policy by these key central banks, could have a negative effect on global growth. Currently a soft-landing scenario seems likely and is currently accommodated in the global growth forecast. Moreover, China's support measures – the end of its strict zero-COVID-19 policy and easing funding for the ailing property market, in combination with further fiscal measures – are also elements that are expected to hold up economic growth in 2023. At the same time, these measures could also have a negative impact. A too-loose COVID-19 policy could lead to an overstretch of China's health system, amid rising infections, and too much support for the property sector could again lead to an overheated and highly-indebted real-estate sector with the consequence of further insolvencies. In addition, India's expected growth path for 2023, as currently forecast, will depend on continued strong domestic demand. Finally, the conflict in Eastern Europe is ongoing and while the major consequences, especially the spill-over from rising energy and agricultural prices rises, have abated to a significant extent, many uncertainties remain.

While the global economic growth momentum seems to be well supported in 2023, albeit at a below pre-pandemic growth level, the **growth dynamics vary significantly**, not only among, but also within economies. Low-income countries in particular are expected to face fiscal constraints in 2023, especially those with elevated debt levels. Moreover, lower-income populations in the wealthier and more advanced economies will face rising financial constraints in the near-term due to high inflation, despite major compensatory factors via social welfare spending or energy subsidies.

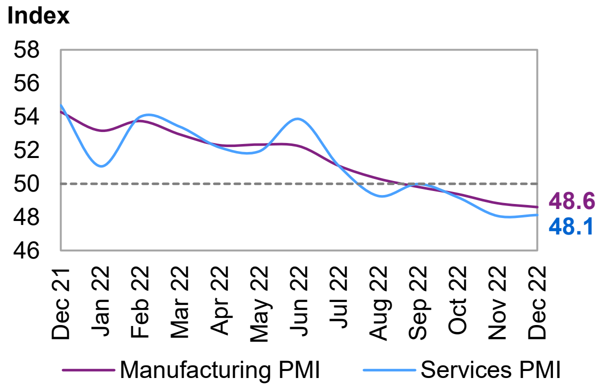
Downside risks to the current growth forecast include ongoing and higher-than-expected inflation and, consequently, further monetary tightening by major central banks, with these factors contributing to rising sovereign debt levels in many regions. While labour markets are forecast to become less tight 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. 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 and the European Central Bank (ECB) successfully managing a soft landing. Further upside support could come from the continued easing of commodity prices and a resolution of the tensions in Eastern Europe.

Monetary tightening is assumed to continue, but with slowing momentum, especially by the Fed, while the ECB is expected to continue lifting interest rates more forcefully in 2023, with a more consequential effect in dampening the Euro-zone's economic activity. The Fed is expected to lift rates further by 75 bp in 1H23, while the ECB is forecast to lift interest rates by 1.25 pp up to the end of the year. While challenged by energy prices, Euro-zone economies are not expected to experience recessions in 2023. The pandemic is also clearly of less significance globally than it was in recent years.

Global purchasing managers' indices (PMIs) reflect the latest slowdown in major economies, with the notable exception of India. The global manufacturing PMI in December retracted to stand at 48.6, compared with 48.8 in November and 49.4 in October. The global services sector PMI remained unchanged to stand at 48.1 in December.

Graph 3 - 2: Global PMI



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

Based on better-than-anticipated momentum in 2H22, the annual **GDP growth** forecast was revised up slightly to stand at 3%. Moreover, the growth forecast for 2023 remains at 2.5%. While showing a slowdown from 2022, it is considered a sound growth level, especially when considering global economic challenges that include monetary tightening, elevated inflation, high global debt levels and continued geopolitical tensions.

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

	World
2022	**3.0**
Change from previous month	0.2
2023	**2.5**
Change from previous month	0.0

*Note: * 2022 = Estimate and 2023 = Forecast.*

Source: OPEC.

OECD

OECD Americas

US

Update on the latest developments

The final 3Q22 GDP 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 3.2% q-o-q SAAR, compared with a previous estimate of 2.9% q-o-q SAAR and a first estimate of 2.6% q-o-q SAAR by the US Bureau of Economic Analysis (BEA). Personal consumption rose by 2.4% q-o-q SAAR in 3Q22, higher than the 1.6% q-o-q SAAR that was reported for 2Q22.

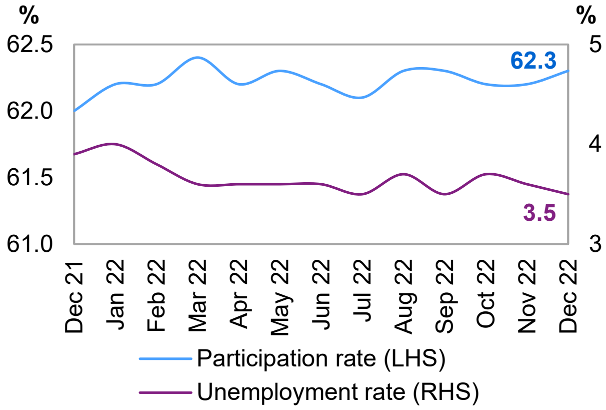
Inflation retracted further but remained elevated amid a tight labour market that has led to strong wage and salary increases. However, the slowing of pent-up demand, the softening of commodity prices and the improvement in global supply chains may have supported the moderation of price increases. Nonetheless, core inflation remained high. Hence, further monetary tightening will likely continue in 2023, as the Fed has indicated, but likely at a less forceful pace. The Fed increased the key policy rate by 50 bp in December. The Fed's guiding inflation measure (the core inflation level of the personal consumption expenditures index) retracted as well in the latest available month, November, when it stood at 4.7% y-o-y. This compares with around 5% in the preceding months. Core inflation based on the broader consumer price index retracted, although remained at a very high 6.5% y-o-y in November, compared with 7.1% y-o-y in October. The softening inflation in combination with the ongoing strong labour market may also have supported consumer confidence, which has risen considerably by 6.9 index points to a level of 108.3, based on the Conference Board index.

The labour market remains tight even after showing signs of easing in recent months. The **unemployment rate** fell to a very low level of 3.5% in December from 3.6% in November and 3.7% in October.

The **participation rate** improved very slightly as well in December. It stood at 62.3%, a slight uptick from 62.2% in November.

Non-farm payrolls continued to rise in December. There were 223,000 new jobs recorded in December, compared with 256,000 new jobs in November. The corresponding hourly wage growth remained strong, but continued to gradually soften. Hourly earnings rose by 4.6% y-o-y in December compared with 4.8% y-o-y in November and October and 5.1% in September.

Graph 3 - 3: US monthly labour market



Sources: Bureau of Labor Statistics and Haver Analytics.

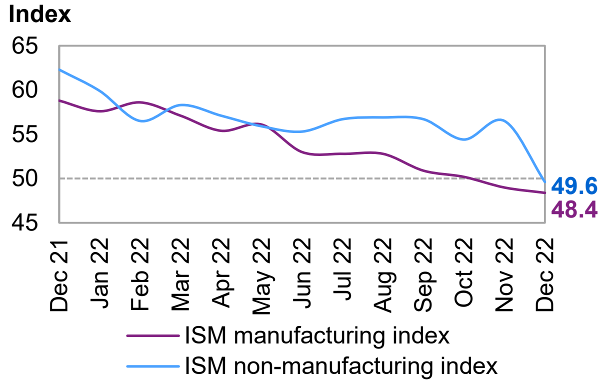
Near-term expectations

So far the **US economy has weathered the ongoing challenges** better than expected and has apparently posted solid growth levels in 2H22. Some of this dynamic is expected to carry over into 1H23. Inflation has come down gradually recent months, but core inflation has remained persistently high. Consequently, monetary tightening has continued, but is expected to slow down in the coming months. As underlying consumption continues and the important housing market is holding up relatively well, indications of a soft-landing have grown. 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 turbulence – point to the likelihood of a US recession somewhere in 2023. Moreover, with budget and debt ceiling discussions in Congress coming up in the very near-term, the political aspects need to be monitored closely. US federal debt is expected to reach its statutory limit in the next few weeks. Early estimates suggest that funding could become a challenge by around the summer of 2023. These factors also require close monitoring but are not expected to pose an imminent challenge. In the past, such budgetary and fiscal matters have triggered economic uncertainty. In 2011 the debt ceiling gridlock ultimately led to a downgrade of the US debt credit rating. More recently, the government shutdown at the end of 2018 lasted for more than 30 days with noticeable economic consequences.

On a quarterly level 4Q22 GDP growth is expected to stay at around 1% q-o-q SAAR. Some effect from the cold weather is expected to be seen at the end of last year, but it is anticipated to be minor. Some estimates, especially one by the Atlanta Fed branch, point to a higher growth rate in 4Q22.

December **PMI** levels, as provided by the Institute for Supply Management (ISM), reflect a weakening in the manufacturing sector, and to some extent surprisingly in the services sector as well. The December manufacturing PMI fell by 0.6 points to a stand at an index level of 48.4 from 49.0 in November, both below the growth-indicating level of 50.0. The index level for the services sector, representing around 70% of the US economy, fell significantly and unexpectedly to stand a 49.6 in December, compared with 56.5 in November, likely impacted by the cold weather towards the end of the year.

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



Sources: Institute for Supply Management and Haver Analytics.

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

Provided that a soft landing materializes, the forecast foresees GDP growth of 1% in **2023**, compared with 0.8% from last month.

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

	US
2022	**2.0**
Change from previous month	0.3
2023	**1.0**
Change from previous month	0.2

*Note: * 2022 = Estimate and 2023 = Forecast.*

Source: OPEC.

OECD Europe

Euro-zone

Update on the latest developments

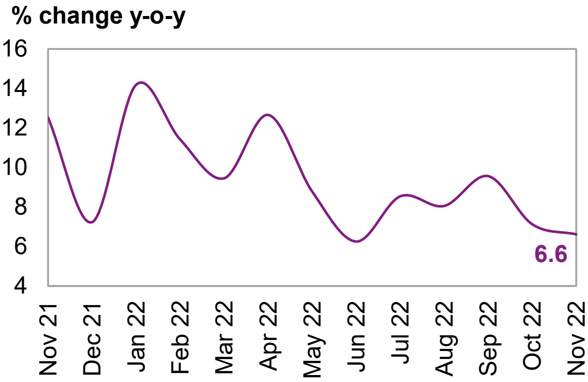
Euro-zone growth for 3Q22 was revised up again by Eurostat, the EU's statistical office. After strong 1Q22 GDP growth of 2.5% q-o-q SAAR, it accelerated to 3.2% q-o-q SAAR in 2Q22. In 3Q22, GDP growth slowed considerably but was again reported higher than in Eurostat's first and second estimates, as growth stood at 1.3% q-o-q SAAR, compared with the second estimate of 0.8% q-o-q SAAR and the first estimate of 0.7% q-o-q SAAR. Private household consumption remained strong in 3Q22, rising by 2.7% q-o-q SAAR in 3Q22, almost unchanged from 2Q22, when consumption expanded by 2.8% q-o-q SAAR. While growth in the first three quarters of the year has been supported by the ECB's relatively accommodative monetary policies, this has changed considerably, with the ECB lifting key policy rates by 2.5 pp between July and December. The ECB lifted interest rates 50 bp in December, and indicated that it would continue to stay the course in monetary tightening.

Inflation eased slightly to stand at 9.2% y-o-y in December after reaching 10.1% y-o-y in November and a record high of 10.6% y-o-y in October. When excluding volatile items such as food and energy, inflation stood at 6.9% y-o-y in December, higher than the 6.6% and 6.4% y-o-y recorded in November and October, respectively. The ECB's 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 of rising interest rates, it began to slow. Lending activity rose by 5.9% y-o-y in November from 6.6% y-o-y in October and 7.1% y-o-y in September.

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

Growth in **retail sales** in value terms slowed slightly in November, reaching a level of 6.6% y-o-y, following 7.1% y-o-y in October and compared with 9.6% y-o-y in September. Hence, consumers have not scaled back their value spending despite higher retail prices. However, spending in volume terms fell by 2.8% y-o-y in November, after a decline of 2.4% y-o-y in October.

Graph 3 - 5: Euro-zone retail sales



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

Industrial production expanded further in November, but the expansion decelerated based on the latest available data. It grew by 1.9% y-o-y, compared with 2.8% y-o-y in October and 4.3% y-o-y in September. On a monthly basis, industrial activity rose by 1% m-o-m in November.

Near-term expectations

The Euro-zone was showing **unexpectedly high growth in the first three quarters** of 2022, despite the ongoing challenges of the pandemic in 1H22; the consequences of the conflict in Eastern Europe, especially on energy supply; and rising interest rates. Energy supply disruptions were circumvented better than expected towards the end of 4Q22 and with a retraction in general inflation, upside potential could materialize not only in 4Q22, but also in 2023.

However, growth is still expected to slow materially in 2023, and the 2022 estimates anticipate a GDP decline in 4Q22. The ECB started to gradually tighten its monetary policies and is forecast to lift its key policy rate further in 2023. The strong lending activity – an important factor for investment – is forecast to slow in 4Q22 and beyond with a consequent negative impact, especially on the real estate sector and business-related investment in general. In addition, high debt levels could limit fiscal stimulus measures in several key Euro-zone economies. Especially those economies with high debt-to-GDP ratios may be negatively affected in 2023 via rising interest rates as well as falling GDP growth levels. Italy's economy in particular will need to be closely monitored in this respect.

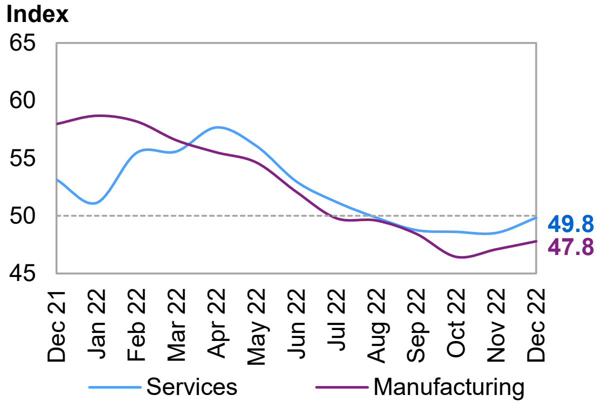
The **ECB's tightening measures** are forecast to continue well into 2023. The ECB is forecast to lift its key policy rate by another 125 bp this year, raising the rate to more than 3% in 2023.

The **Euro-zone's December PMI** pointed to some improvement in the manufacturing and services sectors.

The **PMI for services**, the largest sector in the Euro-zone, rose by 1.3 index points to 49.8.

The **manufacturing PMI** improved as well, to stand at 47.8 in December. However, both indexes remained in contraction territory below the level of 50.

Graph 3 - 6: Euro-zone PMIs



Sources: IHS Markit and Haver Analytics.

The region's GDP grew respectively by 2.5%, 3.2% and 1.3% q-o-q SAAR in 1Q22, 2Q22 and 3Q22. The Euro-zone's GDP is forecast to decline by 3.2% in 4Q22, which compares to the previous month's 4Q22 forecast of -4.7% q-o-q SAAR in 4Q22.

By considering the growth momentum in the first three quarters and the latest improving developments, the **GDP annual growth forecast for 2022** was revised up to 3.2%, compared to the previous month's estimate of 3.0%.

This forecast is followed by an anticipated slowdown into 2023. Considering inflation and monetary tightening, as well as expected energy supply constraints and other dampening factors, **2023** GDP growth stands at 0.4%, which is slightly higher than last month's forecast of 0.3%.

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

	Euro-zone
2022	**3.2**
Change from previous month	0.2
2023	**0.4**
Change from previous month	0.1

*Note: * 2022 = Estimate and 2023 = Forecast.*

Source: OPEC.

OECD Asia Pacific

Japan

Update on latest developments

Japan's growth dynamic remains low on an annual basis, while quarterly growth remains volatile and impacted by a variety of external factors – including the slowdown in its important trade partner China. Internal factors are also at play, including the COVID-19 pandemic and the consequent social-distancing measures. Economic data on average provide a mixed picture. In 3Q22, GDP growth was reported to have declined by 0.8% 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. The latest GDP data release also showed a strong revision in GDP growth for 1Q22, which was reported at a decline of 1.8% q-o-q SAAR. That compares to the previous estimate of growth of 0.2% q-o-q SAAR. Japan's 2Q22 GDP growth number remained almost unchanged, compared to the previous estimate and was reported at 4.5% q-o-q SAAR. Private consumption decelerated sharply in

3Q22 based on these latest numbers and grew by 0.5% q-o-q SAAR, compared with 6.8% q-o-q SAAR in 2Q22.

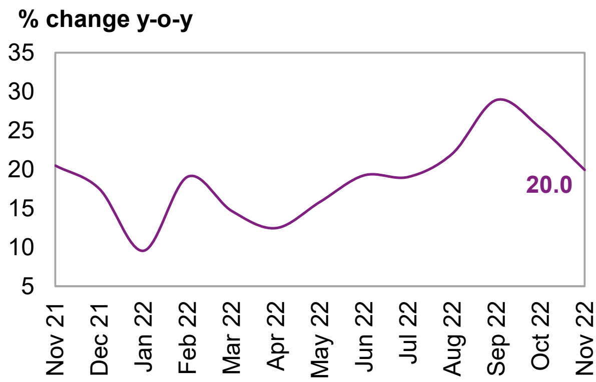
Consumer inflation, which has not been an issue for the Japanese economy for a long time, has appreciated significantly. Inflation rose by 3.8% y-o-y in November, slightly higher than in October, when it stood at 3.7% y-o-y. This constitutes the highest level since the beginning of the 1990s, except for a period in 2014 when a sales tax increase briefly lifted total inflation to around the same level. Core inflation, excluding food and energy, stood at 1.5% y-o-y in November, the same as in October and compared to 0.9% y-o-y in September.

The **Bank of Japan** (BoJ) has already reacted to these rising inflation levels by adjusting its yield curve control policy. At the end of December the BoJ announced that it would allow 10-year bond yields to fluctuate by 0.5 pp above or below its target of zero, replacing the previous band of 0.25 pp, while it kept overnight interest rates at minus 0.1%. While this was a surprising move, the pressure on the BoJ has increased again in the meantime. In mid-January the 10-year bond yield briefly rose above 0.5 pp, the new ceiling, reaching the highest level since mid-2015. Consequently the yen strengthened and stood clearly below 130 compared to the US dollar, reaching its highest level since mid-2020. This comes after the limited monetary policy tightening of the BoJ throughout 2022 had significantly contributed to the weakening of the yen, especially compared to the US dollar, as well as the euro. The exchange rate stood at almost 150 to the US dollar at the end of October.

Industrial production (IP) retracted to stand at -1.5% y-o-y in November, after it had risen by 3.4% y-o-y in October and compared with 9.2% in September.

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. The latest available month, November, shows that a solid trend will continue, but that exports will also witness some gradual slowdown, likely impacted by the weakened 4Q22 situation in China, Japan's most important trading partner in Asia. Exports in November rose by 20% y-o-y.

Graph 3 - 7: Japan's exports



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

Retail sales continued their solid trend in November in value terms, rising by 2.6% y-o-y compared with 4.4% y-o-y in October and 4.8% y-o-y in September. **Consumer confidence** rebounded, standing at an index level of 30.6 in December, compared with 29.4 in November and 30.7 in October.

Near-term expectations

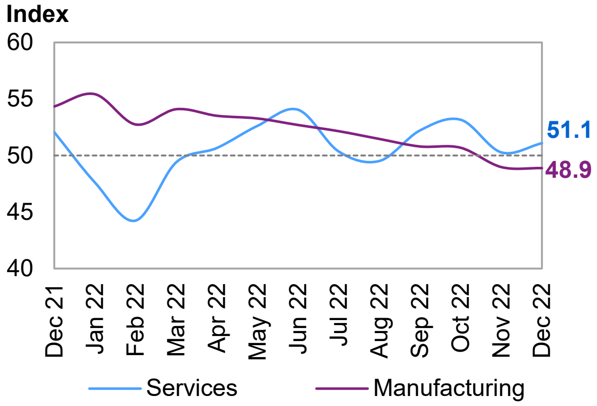
Japan's economy is estimated to continue its low **growth dynamic** in 2023. Economic activity is forecast to pick up in 4Q22 following a decline in 3Q22. The current economic signals are mixed, but Japan will not likely escape the growth limitations of its labour market, its relatively high utilization rates and the slowdown in global economic activity, which will be felt in external trade. An important aspect in the near term will be monetary policy developments. As Japan pursued a relatively accommodative monetary policy up to the end of 2022, it now seems that as inflation has risen, the BoJ will further tighten its monetary policy. This has also been mirrored in the latest bond market developments and the appreciation of the yen's exchange rate.

Upside to the current growth expectations may come from a positive surprise in exports if the US manages a soft landing and the US economy could enjoy even higher growth rates than currently assumed. Moreover, the reopening in China, and the avoidance of further lockdown measures, could lift China's consumption beyond the current base case. As it seems, the 3Q22 GDP decline in Japan was still significantly impacted by the lockdown measures and held 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.

On a quarterly level 1Q22 GDP growth was reported to have declined by -1.8% q-o-q SAAR. Growth in 2Q22 appreciated by 4.5% q-o-q SAAR in 2Q22, while 3Q22 GDP growth declined, falling by 0.8% q-o-q SAAR. Consequently, 4Q22 growth is forecast to rebound and expand by 3%.

December PMI numbers are mixed and point to ongoing challenges, especially in the manufacturing sector. The services sector appears to face some challenges, according to the PMI index, but it is still in expansion territory. The services sector PMI, which constitutes around two-thirds of the Japanese economy, rose to 51.1, following an index level of 50.3 in November. The manufacturing PMI remained almost unchanged at 48.9, still below the growth-indicating level of 50.0 and comparing with 49 in November.

Graph 3 - 8: Japan's PMIs



Sources: IHS Markit, Nikkei and Haver Analytics.

Japan's **GDP growth** seems to have been again impacted by COVID-19-related lockdown measures in both 1Q22 and 3Q22. Hence, the **2022** growth estimate was revised down to stand at 1.2%, compared with 1.5% in the previous month. While upside potential exists, further challenges may be ahead, including a further rise in inflation, weakening external trade and more forceful monetary tightening.

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

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

	Japan
2022	**1.2**
Change from previous month	-0.3
2023	**1.0**
Change from previous month	0.0

*Note: * 2022 = Estimate and 2023 = Forecast.*

Source: OPEC.

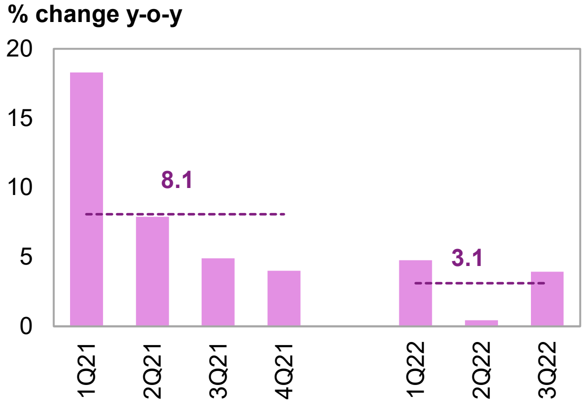
Non-OECD

China

Update on the latest developments

Amid the significant **slowdown in 2022**, the Chinese government reversed course on its strict COVID-19 policies and continued its support for the ailing property sector. While these measures are forecast to support growth in 2023, GDP growth in 2022 was relatively low. In the first three quarters of 2022 it stood at only 3% y-o-y on average. 4Q22 growth is forecast to remain low as well, considering that most of the quarter remained materially affected by the zero-COVID-19 policies.

Graph 3 - 9: China's GDP growth



Sources: National Bureau of Statistics and Haver Analytics.

The change in course in ending the restrictions for the property sector was introduced very recently, after a deleveraging policy of the sector was implemented in mid-2020. At the time, China had lowered its interest rates in order to stimulate economic growth during the COVID-19-induced downturn, with a consequent positive effect on the property sector.

As a consequence, the sector was required to follow three restrictions: to hold cash equal to short-term borrowing; limit liabilities to 70% of its assets; and to have net debt equal to, or below, equity. These three elements were meant to prevent insolvency. But in light of the severe fall in sales in 2022, combined with the COVID-19 restrictions, the sector remains under considerable pressure. This has caused problems for property companies in raising funds, an issue that the government now seems to want to resolve. Investments into real estate development continued to decline in November and fell 19.9% y-o-y.

Recent **industrial production** growth eased in November to stand at 2.2% y-o-y, compared with an October level of 5.0% y-o-y and a rise in September of 6.3% y-o-y. The impact of the most recent restrictions was also visible in nominal retail trade, which declined by 6.5% y-o-y in November after contracting by 0.5% y-o-y in October.

December data suggests that China's **trade surplus** rose to $78 billion from $69.2 billion in November 2022. **Exports** rose by 3.7% y-o-y in December. Imports rose by only 0.8% y-o-y due to weak domestic demand amid widespread COVID-19 curbs.

The **annual inflation rate** remained at a very low 1.8% y-o-y in December, compared with 1.5% y-o-y in November and 2.1% y-o-y in October. This low level mirrors the consumption downturn in China, which curbed inflation as the country's zero-COVID-19 policy impacted consumer demand.

Near-term expectations

China seems to have had another challenging quarter in 4Q22. The decision to soften its strict COVID-19 policies provides a base for a **potential rebound in 2023**. This comes in combination with steps to support the ailing property market, the sector that has contributed significantly to China's economic challenges in the recent past. As it seems, constraints that have tightened leverage-based financing in the real estate sector have been widely reduced. Therefore, a rebound from relatively low growth levels is likely.

Besides these domestically driven developments, external trade is also expected to provide support with the US and the Euro-zone likely seeing a milder slowdown in 2023 compared to previous expectations.

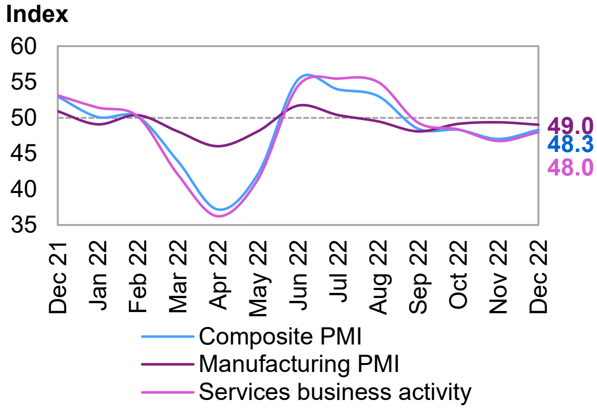
Quarterly growth in 2022 was reported at 4.8% y-o-y in 1Q22, 0.4% y-o-y in 2Q22 and 3.9% y-o-y in 3Q22. By extrapolating this pattern and considering a similar impact from zero-COVID-19 policies towards the end of the year, 4Q22 is estimated at 3.3%.

The end of the strict zero-COVID-19 policies towards the end of last year is expected to lift growth in 1Q23 and beyond. However, with rising COVID-19 infection rates, it remains to be seen what the scale of the rebound in 1Q23 will be as there is still a possibility that new social-distancing measures could be implemented in the coming weeks if the burden on the health system becomes too large. In such a case, pent-up demand is forecast to materialize only a few weeks later in the year, similar to the pattern seen in advanced economies that were impacted by COVID-19 measures.

The housing sector will also provide some limited support to the economy. National home sales are expected to grow at a low single-digit level in 2023, while real estate investment is forecast to be flat.

The December **PMI** readings as provided by S&P Global show that the manufacturing sector remains constrained. The index for the sector retracted to 49 in December, compared with 49.4 in November and 49.2 in October. The December services PMI shows a positive trend, moving up to 48, but remaining clearly below the growth-indicating threshold of 50. Both indices seem to reflect the impacts of the COVID-19 lockdowns, but are expected to rebound given the current support measures by the government.

Graph 3 - 10: China's PMI



Sources: Caixin, IHS Markit and Haver Analytics.

Both the **2022 and the 2023 GDP growth** forecasts remain unchanged at 3.1% and 4.8%, respectively. While the outcome of the ongoing COVID-19 policies and stimulus measures remains uncertain, this provides some further upside to the current 2023 GDP growth level, but the depth of this year's rebound remains unclear. Meanwhile, downside risks remain, including those related to new COVID-19 restrictions 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 = Estimate and 2023 = Forecast.*

Source: OPEC.

Also, a continued lacklustre performance in domestic demand, including ongoing challenges in the real estate market, could prevent GDP growth from rebounding significantly.

Other Asia

India

Update on the latest developments

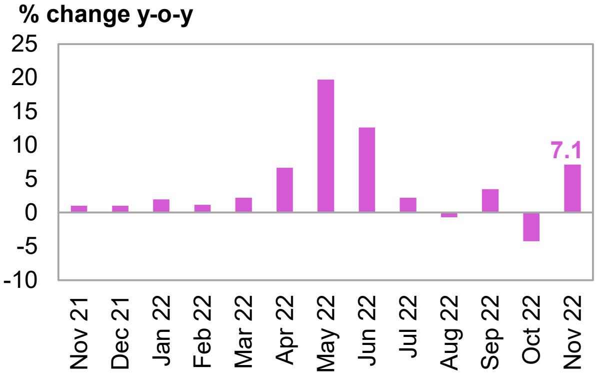
India's **economy appears to have continued its rebound into 4Q22.** While the growth levels remain below pre-pandemic levels, the recovery seems to be continuing, supported by domestic demand and lately, by the services sector and agriculture. As in other economies, a shift from manufacturing to the services sector became obvious. The manufacturing sector was a major driver during the pandemic, but in 3Q22 especially, the contact-intensive services sector was a beneficiary of the recovery from the 2021 COVID-19-driven impacts.

While the manufacturing sector declined by 4.3% y-o-y in 3Q22, the services sector rose by 9.3% y-o-y and the major contributor was the "trade, hotel, transportation and communication" sub-sector, which expanded by 14.7% y-o-y. However, private spending growth slowed to 9.7% in 3Q22 from 25.9% y-o-y in 2Q22. Both **exports and imports** rose at a slower pace compared to the prior quarter. Export growth slowed to 11.5% y-o-y in 3Q22 from 14.7% y-o-y in 2Q22 and imports slowed to 25.4% y-o-y in 3Q22 from 37.2% y-o-y. Public expenditure shrank 4.4%y-o-y compared with an expansion of 1.3% y-o-y in 2Q22.

Monthly indicators implied a pickup in **industrial output**, which advanced by 7.1% y-o-y in November, following a contraction of 4.2% y-o-y in October.

The **unemployment rate** increased to 8.3% in December from 8% in November and 7.8% in October. India's labour force participation rate stood at 47.9% in 3Q22.

Graph 3 - 11: India's industrial production

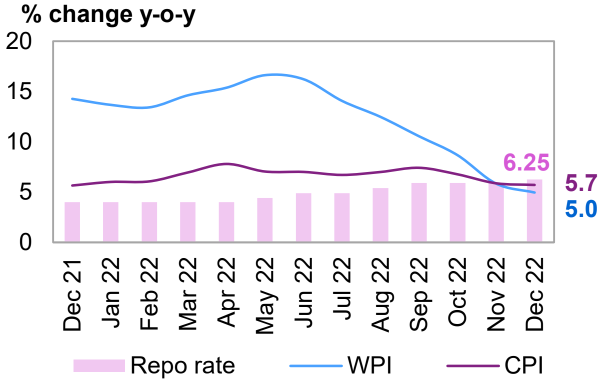


Sources: Ministry of Statistics and Program Implementation of India and Haver Analytics.

The trend in food price rises slowed sharply and in combination with base effects, helped ease annual **inflation** to 5.7% y-o-y in December, after price rises of 5.9% in November and 6.8% in October.

In the meantime, the Reserve Bank of India (RBI) hiked the **repo rate** for the sixth time this year by 35 bp to 6.25% in December. The central bank maintained its inflation forecast for FY 2023 at 6.7% – probably a too-high expectation given the current trends – while it revised down the economic growth rate to 7.0% from 7.2%.

Graph 3 - 12: Repo rate and inflation in India



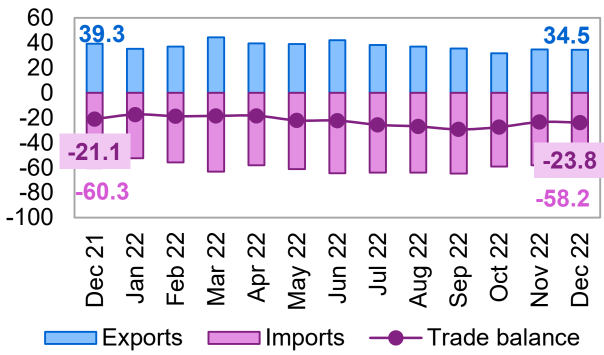
Sources: Ministry of Commerce and Industry, Reserve Bank of India and Haver Analytics.

India's December **trade balance** posted a deficit of about $23.8 billion, narrowing from a deficit of $23.4 billion in November.

Monthly **exports** decreased to $34.5 billion in December from $34.8 billion in the previous month.

Meanwhile, monthly **imports** rose marginally to $58.2 billion in December.

Graph 3 - 13: India's trade balance



Sources: Ministry of Commerce and Industry and Haver Analytics.

Near-term expectations

Sentiment indicators point in the direction of **continued growth,** but at a gradually slowing pace compared with the average momentum seen in the first three quarters of 2022. Also, the RBI is expected to lift interest rates very gradually in 2023 as inflation has already eased substantially, another factor that is expected to support domestic demand. The repo rate has already been lifted by 2.25 pp in 2022 and hence another interest rate hike of only 25 bp in 1H23 is likely to be the main monetary action that is currently anticipated. If the situation improves further, then even monetary easing could be expected towards the end of the year.

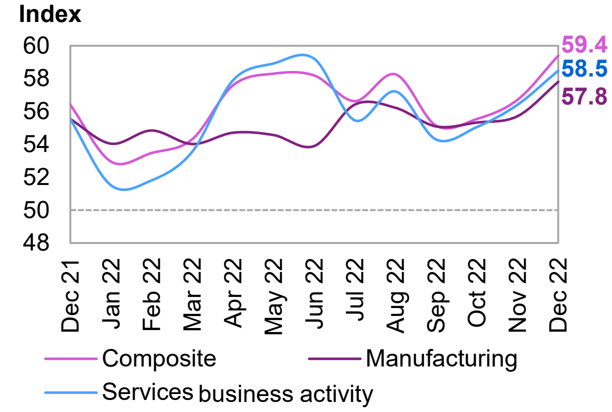
A key factor affecting further growth is the important domestic **services sector** and whether it is able to compensate for the expected decline in manufacturing and thus sustain the current upswing in demand. It is currently anticipated that economic growth will slow as the recovery supported by private consumption and investment growth slows due to generally high inflation, less accommodative monetary conditions and a less strong base effect – as was the case in 2022. Household consumption will continue to grow, supported primarily by pent-up demand for high-contact activities, but likely at a lower rate.

Growth was recorded at high levels in the first three quarters: 4.1% y-o-y in 1Q22, 13.5% y-o-y in 2Q22 and 6.3% y-o-y in 3Q22. Growth in 4Q22 is forecast at 4.5% y-o-y.

The S&P Global manufacturing **PMI** picked up further in December, rising to 57.8 from 55.7 in November and 55.3 in September. The December reading marked the 17th straight month of rising factory activity amid demand resilience that boosted growth. This comes despite the latest softening in GDP-related manufacturing numbers.

Likewise, the **services PMI** rose to 58.5 in December from 56.4 in November and 55.1 in October, supported by a sharp expansion in the contact-intensive services sector.

Graph 3 - 14: India's PMIs



Sources: IHS Markit and Haver Analytics.

India's **2022 and 2023 GDP growth** forecasts were revised up to 6.8%, compared with the previous assessment of 6.5%.

Growth for 2023 remains unchanged at 5.6%. Upside may come from further fiscal support, while downward pressures could arise from COVID-19, continued inflationary challenges and less pronounced growth in trading partners' economies, notably China.

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

	India
2022	**6.8**
Change from previous month	0.3
2023	**5.6**
Change from previous month	0.0

*Note: * 2022 = Estimate and 2023 = Forecast.*

Source: OPEC.

Latin America

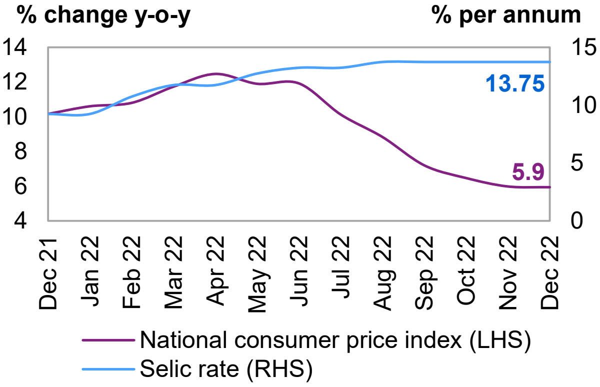
Brazil

Update on latest developments

Throughout most of 2022, **Brazil's economic activity** has surprised on the upside, supported partly by pre-election fiscal measures and higher commodity prices. However, 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 in 4Q22. It also remains to be seen to which extent the higher interest rates regime has impacted 4Q22 consumption.

Key policy rates were kept unchanged at 13.75% as **inflation** slowed to 5.9% in December from 6.0% in November and 6.5% in October.

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



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

Brazil's **real GDP** grew 3.6% y-o-y in 3Q22, following an upwardly revised 3.7% in 2Q22. Growth in 3Q22 was mainly supported by an increase in private consumption, while it slowed compared with 2Q22 and grew at 4.6% y-o-y in 3Q22, after 5.7% y-o-y in 2Q22. Government spending rose by 1.0% y-o-y, up from 0.9% y-o-y in 2Q22. Gross fixed capital formation surged 5.0% 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.

Economic activity seems to have decelerated recently, indicating slower growth as the tightening in financial conditions triggered by double-digit interest rates and volatile asset prices could impact household spending and investment. 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. Meanwhile, consumer confidence rose in 4Q22 to stand at an index level of 87.4, compared with 84 in 3Q22, as measured by the institute Fundação Getulio Vargas.

Near-term expectations

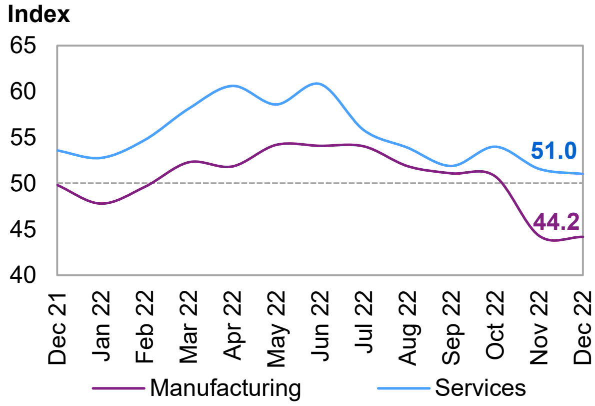
Brazil's economy has been forecast to face a **slowdown in 2023** following relatively stronger growth in 2022. The reason is manifold: the tightening fiscal situation and less room for fiscal stimulus; strong monetary tightening and the high interest rates; elevated inflation; a retraction of commodity prices: and a general global slowdown. While most of these core assumptions remain valid, the economic policies of the new administration will need to be reviewed carefully. It is possible that the new administration will seek to stimulate the economy fiscally, but as net public debt has almost doubled over the last 10 years from slightly more than 30% to almost 60% of GDP, the fiscal space appears limited. Social welfare initiatives have been announced but it remains to be seen how they will be financed. Another challenge could emerge if higher fiscal spending triggers a surge in inflation that could force the central bank to maintain high interest rates or lift them further – very likely with the consequence of dampening the economic activity. The current monetary and fiscal situation is well under control, but given the global slowdown and the many other challenges that the economy is facing in 2023 and beyond, fiscal developments will need to be closely monitored. Upside to the economy and some relief may come from the solid agricultural sector and further opportunities in exports in light of the Eastern European conflict. Crop and livestock production accounts for almost 10% of the economy and when including processing and distribution, this share would rise even higher. Finally, a possible finalization of the EU-Mercosur trade deal could lift investments and trading opportunities for the economy as well.

Growth was relatively strong in the first three quarters: 2.4% y-o-y in 1Q22, 3.7% y-o-y in 2Q22 and 3.6% in 3Q22. The momentum is estimated to have slowed in 4Q22, with growth forecast at 1.5% y-o-y.

Recent PMI indices indicated this slowing trend. The **manufacturing PMI** stood at 44.2 in December, compared with 44.3 in November 2022 and 50.8 in October. The index was down for the seventh consecutive month and stood below the growth indicating level of 50 for the second month in a row.

The **services PMI** fell to 51 in December, compared with 51.6 in November and 54 in October, the slowest pace of growth in 18 months, and pressured by heightened market uncertainty amid high interest rates and the political transition.

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 2.8% from 2.4% in the previous MOMR.

The GDP forecast for **2023** remains unchanged from last month at 1.0%. Potentially higher growth in the coming year might come in the form of lower inflation, looser monetary policy, stronger asset market conditions, and optimistic business confidence. However, given the uncertainties about the near-term fiscal developments, the uncertainties remain high.

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

	Brazil
2022	**2.8**
Change from previous month	0.4
2023	**1.0**
Change from previous month	0.0

*Note: * 2022 = Estimate and 2023 = Forecast.*

Source: OPEC.

Concerns about heavier spending, which could lead to tighter monetary policy, may weigh on the outlook for private investment and could keep Brazil's overall growth rates below these expectations.

Africa

South Africa

Update on the latest developments

South Africa's economy performed better than previously expected throughout most of 2022, despite ongoing power-supply issues, domestic political challenges and rising key policy rates amid high inflation. The economy expanded by a considerable 4.1% y-o-y in 3Q22, following growth of 0.2% y-o-y in the prior quarter. Most of the supply-side activities expanded on a seasonally adjusted q-o-q basis. On a sectoral level, eight out of ten sectors provided positive growth on a quarterly basis. The agricultural sector expanded the most in 3Q22 growth, growing by 19.2% q-o-q. Significant growth of 3.7% q-o-q was also seen in transportation. With sound levels of business and consumer confidence, the economy could have seen ongoing good growth in 4Q22.

In November, **manufacturing production** fell by 1.4% y-o-y, after a rise of 1.9% y-o-y in October and 2.7% y-o-y in September. Electricity production declined by 1.6% y-o-y in November, the 15th straight month of decline, highlighting also the sectorial issues the economy is dealing with. Mining production fell by 9.9% y-o-y in October, with only January showing an expansion of the sector in 2022. Hence, despite the current difficulties in certain key sectors, the economy managed to counterbalance this dampening impact.

The quarterly **Labour Force Survey** (QLFS) indicated that the jobless rate eased to 32.9% in 3Q22 from 33.9% in 2Q22, marking the lowest jobless rate since 2Q21, albeit this is above the pre-pandemic level. 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. Consequently, consumer confidence picked up recently again, showing a rise to an index level of -8 in 4Q22 from -20 in 3Q22 and -25 in 2Q22.

Near-term expectations

The **outlook for South Africa's economy** has improved slightly. However, it may be too early to take the upside into consideration as domestic challenges remain and the global economic environment remains uncertain as well. Elevated concerns about the energy crisis in the country and the challenging political environment will continue to play a role.

The 2022 **growth pattern** for the first three quarters was sound at 2.7% y-o-y in 1Q22, 0.2% y-o-y in 2Q22 and 4.1% y-o-y in 3Q22, but it is expected to slow in 4Q22 to 0.4% y-o-y.

Despite the worrisome trends, the forward-looking seasonally adjusted composite **Purchasing Managers' Index** as provided by S&P Global remained at an almost unchanged level of 50.2in December, compared with 50.6 in November.

South Africa's **2022 and 2023 real GDP** was kept unchanged from the last assessment at 1.8% and 1.1%. More downside risks in 2023 could surface, depending on domestic and global economic developments over the short-term horizon. However, with reference to the latest better-than-expected GDP outcome, some of the strong 2H22 momentum may also fuel solid growth in 1H23, providing some upside to this year's economic growth forecast.

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 = Estimate and 2023 = Forecast.*

Source: OPEC.

Russia and Central Asia

Russia

Update on the latest developments

Russia managed unexpectedly well the external pressure on its economy after the beginning of the Eastern Europe conflict in February last year. A well-managed central bank policy, a prospective administration of state finances and sound commodities markets have helped to shield the economy from more severe effects. Russia's GDP contracted by 3.7% y-o-y in 3Q22, according to the latest release by Russia's State Statistics Service. This follows a contraction of 4.1% y-o-y in 2Q22. Household consumption declined by 2.9% y-o-y, after a decline of 5.5% y-o-y in 2Q22. Support came from gross capital formation, which increased by 7.3% y-o-y in 3Q22, after a decline of 13.8% y-o-y in 2Q22. Retail sales in value terms continued to rise, growing by 4.2% y-o-y in November, compared with 2.6% y-o-y in October.

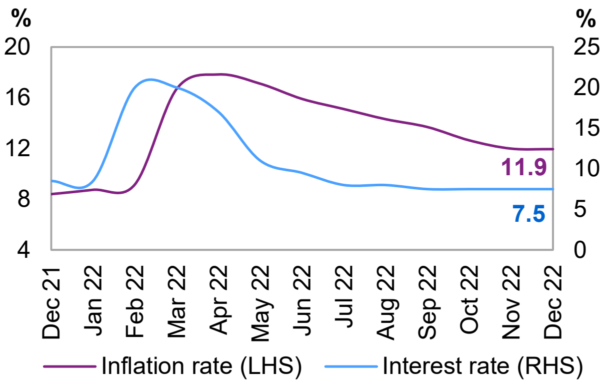
The **industrial production** contraction eased to 1.8% y-o-y in November from declines of 2.6% y-o-y in October and 3.1% y-o-y in September. November's results marked the eighth consecutive monthly decline in industrial activity. On a seasonally adjusted monthly basis, industrial production jumped 0.7% in November, the same as in October.

Consumer inflationary pressures eased as the CPI fell to 11.9% y-o-y in December, compared with 12% in November y-o-y and 12.6% y-o-y in October.

Producer price growth declined by 1.7% y-o-y in November, after rising by 1.4% y-o-y in October.

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** fell to 3.7% in October from 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.

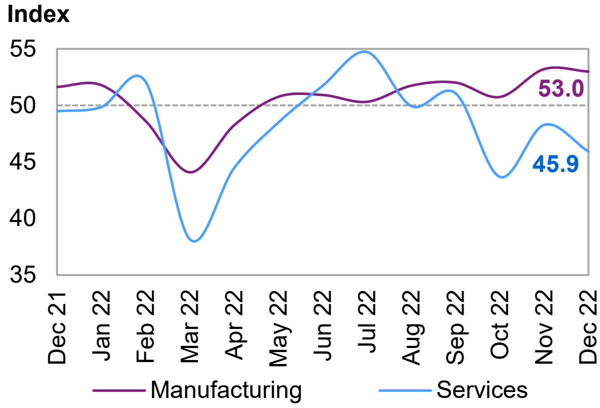
Near-term expectations

The Russian economy remains **impacted by a variety of domestically and externally driven factors**, which make forecasting economic growth and near-term developments relatively challenging. However, it is clear that the economy will be dampened by sanctions, a general global economic slowdown and – as it seems – a softening environment in the commodities sector. This combination of factors makes a continuation of the decline witnessed towards the end of 2022 relatively likely.

Quarterly growth stood 3.5% y-o-y in 1Q22, but the GDP started to decline by 2Q22, when it fell by 4.1% y-o-y and by 3.7% y-o-y in 3Q22. The GDP is forecast to decline by a further 9.9% y-o-y in 4Q22, amid widespread sanctions and the implementation of the EU ban on Russian crude seaborne imports. This is, however, is better than previously expected and very much better than most observers foresaw earlier last year, pointing to the ability of the Russian economy so far to counterbalance some of the dampening effects. In this respect, public spending is expected to continue to provide economic support. Moreover, the large domestic market, high production, strong energy export revenues, robust commodity prices, and a perceptive management of the monetary flows by the Russian central bank and the finance ministry have so far helped the economy to withstand a significant negative impact from the external pressures.

PMI indices reflected the recent trends in both the manufacturing and services sectors. The December S&P Global's Manufacturing PMI was almost unchanged at 53 in December, compared with 53.2 in November and 50.7 in October. The services PMI fell to 45.9 in December, compared with 48.3 in November and October's reading of 43.7.

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 4.0% in 2022, an upward revision from a contraction of 5%.

The **2023** GDP growth is forecast to decline by 0.5%, compared with the previous month's forecast of 0.2% growth. These forecasts are still surrounded by high levels of uncertainty amid the ongoing geopolitical tensions and the global economic environment.

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

	Russia
2022	**-4.0**
Change from previous month	1.0
2023	**-0.5**
Change from previous month	-0.7

*Note: * 2022 = Estimate and 2023 = Forecast.*

Source: OPEC.

OPEC Member Countries

Saudi Arabia

The **Saudi Arabian economy's** strong growth in the first three quarters of 2022 is forecast to continue at the end of the year. This dynamic is expected to carry over into 2023, albeit at a slower momentum, given the expected slowdown in the global economy and the consequent effects this may have on export revenues. The economy grew by 8.8% y-o-y in 3Q22, its strongest performance since 4Q11. Activity was driven primarily by a 15.6% y-o-y rise in oil activity and 5.9% y-o-y growth in non-oil activity. This strong 3Q22 economic growth follows an expansion of a 12.2% y-o-y in 2Q22 and 9.9% in 1Q22. Household consumption remained strong, expanding by 5.5% y-o-y in 3Q22, following growth of 6.7% in 2Q22. The latest purchasing managers' index (PMI) reading, 56.9 in December, points to continued strong growth in 4Q22. This compared with an even higher November number of 58.5. While domestic activity remains strong, the latest key policy rate increases by the Saudi Central Bank may dampen economic activity going forward. The central bank lifted interest rates by 50 bp in December to 5%, mirroring the US-dollar interest rate regime.

Nigeria

Nigeria's economy expanded by 2.4% y-o-y in 3Q22, decelerating from the growth of 3.4% y-o-y in 2Q22. The slowdown was due to some softening factors in oil-related income, inflationary challenges and rising economic uncertainty, which impacted investment. Household consumption remained strong, rising by 17.6% y-o-y, compared with 6.9% y-o-y in 2Q22 and 7.3% y-o-y in 1Q22. The non-oil sector has been the key growth engine in 2022, with private-sector growth, strong services sector production and high household spending being the main support factors for growth in 2022. The 4Q22 data indicates a sharp rise in inflation accompanied by higher interest rates, slowing private-sector momentum and leading to a slowdown in household consumption. The inflation rate accelerated to its highest level in 17 years in November as localized food and fuel shortages increased the headline inflation rate to 21.5% y-o-y from 21.1% y-o-y in October. Yet, on a monthly basis, CPI inflation stood at 1.4% m-o-m in November, compared with 1.2% m-o-m in October. However, the PMI for the total economy points to an ongoing expansion as the Stanbic IBTC Bank's total economy PMI rose to 54.6 in December, compared to 54.3 in November and 53.6 in October, recording the fastest expansion in private-sector activity since May 2022.

The United Arab Emirates (UAE)

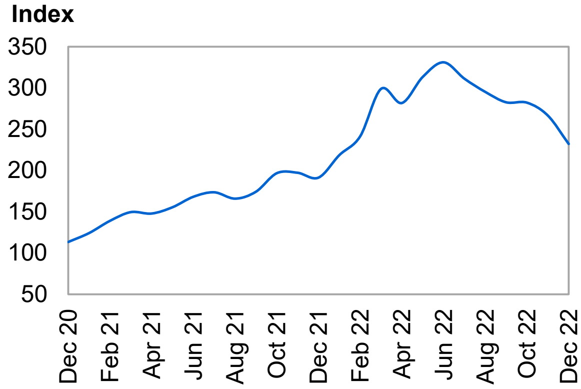
The most recent indicators available for the **UAE economy** point to continued robust growth in both the hydrocarbons sector and non-oil-related activities. The S&P Global UAE PMI for December was almost unchanged at 54.2, compared with an index level of 54.4 in November and 56.6 in October. This gradually slowing momentum may carry over into 2023. Further support to the 2023 growth dynamic may not only come from the hydrocarbons sector, but also from government policies that aim to increase foreign direct investment through eight comprehensive economic and trade agreements it expects to sign in the near term. Another important support factor will come from investments into renewable energy. The UAE had installed non-hydropower renewables capacity of about 3.3 gigawatts by the end of 2022, and another 4.2 gigawatts of power is being provided by Abu Dhabi's Al Barakah nuclear plant, following the commissioning of the third of its four reactors in October, according to the Economist Intelligence Unit. With a strong US-dollar pegged currency, the economy's growth dynamic could, however, be impacted by an increase in interest rates, which will likely slow the expansion in credit to the private sector. The higher interest rates and the effect they have on rising capital cost will mainly have an impact on the UAE's real estate sector.

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

The **US dollar (USD) index** declined for the second consecutive month, falling by 3.3% m-o-m. Major central banks, particularly **from developed market (DM)** economies, have stepped up interventions in an effort to reduce inflationary pressures and to reduce currency depreciation. In DM currencies, the USD fell against the euro by 3.8% m-o-m, and by 5.2% and 4.2% against the yen and the pound sterling, respectively, in the same period.

In terms of **emerging market (EM)** currencies, the USD rose by 0.6% m-o-m against the rupee, thus recovering from the previous month's decline. Meanwhile, the USD fell for the second consecutive month against the yuan, declining by 2.8% m-o-m, and was down 0.5% against the real in the same period.

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



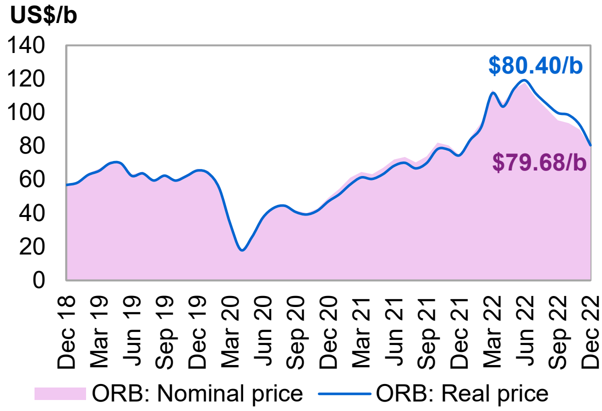
Sources: IMF and OPEC.

The differential between nominal and real **ORB** prices narrowed amid a weaker USD and lower crude oil prices in December. In absolute terms**, inflation** (nominal price minus real price) went from $2.89/b in November to $0.75/b in December, a 75.1% decline m-o-m.

In **nominal terms**, accounting for inflation, the ORB price declined for the sixth consecutive month, going from $89.73/b in November to $79.68/b in December, an 11.2% decline m-o-m.

In **real terms** (excluding inflation), the ORB went from $92.62/b in November to $80.40/b in December, a 13.2% 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

The forecast for 2022 world oil demand growth remains unchanged from last month at 2.5 mb/d. Oil demand was adjusted downward mostly in 3Q22, amid data showing a drop in China's oil demand, due to reduced mobility and manufacturing activity as a result of the zero COVID-19 policy restrictions as well as some slight slowdown in OECD countries towards the end of the year. In contrast, non-OECD countries outside of China were revised higher, due to improvements in economic activity in some countries. Total world oil demand is expected to average 99.6 mb/d in 2022.

For 2023, the forecast for world oil demand growth is also the same as in the previous month's assessment at 2.2 mb/d, with the OECD increasing by 0.3 mb/d and non-OECD growth at 1.9 mb/d. Minor upward adjustments were made due to the expected better performance in China's economy on the back of its reopening from COVID-19 restrictions, while other regions are expected to see slight declines, due to economic challenges that are likely to weigh on oil demand. Accordingly, in 1Q23, oil demand is expected to rise by 1.7 mb/d y-o-y. Total world oil demand is anticipated to reach 101.8 mb/d in 2023. However, this forecast is subject to many uncertainties, including global economic developments, shifts in COVID-19 policies, and ongoing geopolitical tensions.

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

							Change 2022/21	
World oil demand	**2021**	**1Q22**	**2Q22**	**3Q22**	**4Q22**	**2022**	**Growth**	**%**
Americas	24.32	24.77	24.98	25.34	25.19	25.07	0.76	3.12
of which US	*20.03*	*20.38*	*20.41*	*20.62*	*20.64*	*20.51*	*0.48*	*2.38*
Europe	13.13	13.19	13.42	14.07	13.90	13.65	0.52	3.96
Asia Pacific	7.38	7.85	6.99	7.22	7.81	7.47	0.08	1.15
Total OECD	**44.83**	**45.81**	**45.39**	**46.63**	**46.91**	**46.19**	**1.36**	**3.04**
China	14.97	14.74	14.42	14.64	15.24	14.76	-0.21	-1.39
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	6.45	6.42	0.19	3.11
Middle East	7.79	8.06	8.13	8.50	8.22	8.23	0.44	5.60
Africa	4.22	4.51	4.15	4.25	4.58	4.37	0.15	3.54
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**	**52.79**	**54.27**	**53.36**	**1.18**	**2.26**
Total World	**97.01**	**99.38**	**98.20**	**99.43**	**101.18**	**99.55**	**2.54**	**2.62**
Previous Estimate	97.01	99.35	98.21	99.54	101.11	99.56	2.55	2.62
Revision	0.00	0.04	-0.01	-0.11	0.07	0.00	0.00	0.00

*Note: * 2022 = Estimate. 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	25.07	24.95	25.26	25.68	25.45	25.34	0.26	1.05
of which US	*20.51*	*20.46*	*20.54*	*20.88*	*20.77*	*20.66*	*0.15*	*0.74*
Europe	13.65	13.22	13.45	14.10	13.95	13.68	0.03	0.24
Asia Pacific	7.47	7.88	7.04	7.27	7.83	7.50	0.04	0.49
Total OECD	**46.19**	**46.06**	**45.74**	**47.04**	**47.23**	**46.52**	**0.33**	**0.72**
China	14.76	14.90	15.20	15.20	15.78	15.27	0.51	3.48
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	6.42	6.44	6.49	6.71	6.61	6.57	0.15	2.29
Middle East	8.23	8.45	8.46	8.84	8.51	8.56	0.33	4.05
Africa	4.37	4.71	4.34	4.43	4.77	4.56	0.19	4.35
Russia	3.53	3.63	3.45	3.59	3.75	3.61	0.08	2.17
Other Eurasia	1.15	1.21	1.16	1.02	1.22	1.15	0.01	0.51
Other Europe	0.77	0.80	0.76	0.75	0.82	0.78	0.02	2.32
Total Non-OECD	**53.36**	**54.98**	**54.90**	**54.86**	**56.24**	**55.25**	**1.89**	**3.53**
Total World	**99.55**	**101.04**	**100.65**	**101.90**	**103.47**	**101.77**	**2.22**	**2.23**
Previous Estimate	99.56	100.87	100.74	102.04	103.41	101.77	2.22	2.23
Revision	0.00	0.16	-0.10	-0.14	0.06	0.00	0.00	0.00

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

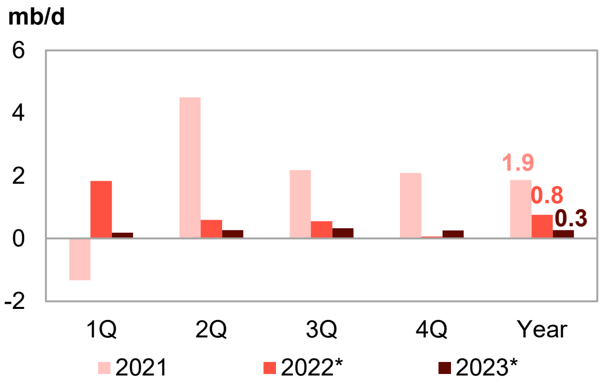
OECD

OECD Americas

Update on the latest developments

Oil demand in OECD Americas posted y-o-y growth of 0.2 mb/d in October, driven by increased requirements in Mexico, and following strong y-o-y growth of 0.7 mb/d in September. Diesel posted growth of 0.2 mb/d. Jet fuel remained firm, with y-o-y growth of 90 tb/d. On the negative side, gasoline declined by 0.1 mb/d, while naphtha fell y-o-y by 10 tb/d, residual fuels were down by 20 tb/d and the "other products" category was down by 0.1 mb/d y-o-y.

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



*Note: * 2022 = Estimate and 2023 = Forecast.*
Source: OPEC.

US oil demand weakened to growth of 40 tb/d y-o-y in October, from 0.3 mb/d y-o-y growth in September. The US economy has been facing headwinds from rising inflation and other macroeconomic challenges weighing on October oil demand. US CPI inflation in October was at 7.8%, much higher than the Fed's 2% target. The manufacturing PMI was at 50.2, down from 50.9 in September, according to ISM, while the services PMI was at 54.4, down from 56.7 in September. Further, data from the US Federal Highways Administration shows that October traffic volume trends remained below pre-pandemic levels. However, IATA Air Passenger Market Analysis indicates that US airline activity has stayed resilient, with October at about 90% of pre-crisis levels.

LPG took the lead in October's oil demand growth at 0.2 mb/d y-o-y, up from 0.1 mb/d growth in September. Diesel recovered from a y-o-y decline of 10 tb/d in September to slight growth of 0.1 mb/d in October. Jet fuel increased by 51 tb/d y-o-y in October, from growth of 61 tb/d in September. The uptick in jet fuel demand was due to the continued air travel recovery.

With Americans making fewer car journeys, gasoline weakened further y-o-y in October by 0.2 mb/d, from an annual decline of 0.1 mb/d in September. Residual fuels recorded a y-o-y decline of 75 tb/d in October, and naphtha remained weak due to low demand from the petrochemical sector.

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

By product	Oct 21	Oct 22	Change Oct 22/Oct 21 Growth	%
LPG	3.41	3.60	0.19	5.5
Naphtha	0.15	0.12	-0.03	-20.9
Gasoline	9.03	8.83	-0.20	-2.2
Jet/kerosene	1.48	1.53	0.05	3.4
Diesel	3.97	4.10	0.13	3.3
Fuel oil	0.36	0.28	-0.08	-21.0
Other products	2.28	2.25	-0.03	-1.2
Total	**20.67**	**20.71**	**0.04**	**0.2**

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

Near-term expectations

In 1Q23, **US GDP** is set to remain positive, albeit marginally. Ongoing elevated inflation levels in addition to seasonal softening of mobility in winter months is expected to dampen demand for transportation fuels. Accordingly, in 1Q23, US oil demand is projected to grow y-o-y by 80 tb/d. The 1Q23 oil demand growth is expected to come mostly from jet fuel and diesel, with slight improvements in petrochemical feedstock demand as well. Gasoline demand is anticipated to be relatively weak.

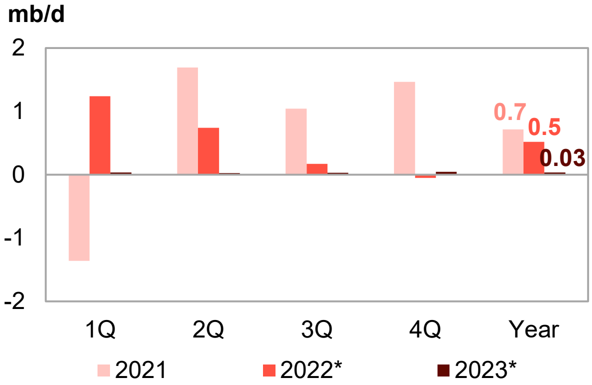
In 2Q23, US GDP is projected to improve slightly and inflation is expected to continue to decline in response to US monetary tightening. Furthermore, improving airline activity, combined with an uptick in road mobility, will likely support oil demand in the quarter. Accordingly, US oil demand is set to expand by 0.13 mb/d y-o-y in 2Q23.

OECD Europe

Update on the latest developments

Oil demand in OECD Europe remained depressed in October 2022. It posted a further y-o-y decline of 0.1 mb/d, compared to a drop of 90 tb/d y-o-y in September. The demand decline was due to rising inflation, as well as slowing economic and industrial activity in the region. According to data from Haver Analytics and the Statistical Office of European Communities, the Euro area's annual inflation was 10.7% in October, up from 9.9% in September. Additionally, the services PMI was down to 48.6 in October, compared to 48.8 in September, and the manufacturing PMI was down from 48.4 points in September to 46.4 points in October. However, airline activity showed some signs of improvement, with a report from IATA Air Passenger Market Analysis indicating that air traffic within the region in October 2022 stood at 80.9% of October 2019 levels.

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



*Note: * 2022 = Estimate and 2023 = Forecast.*
Source: OPEC.

In terms of specific oil products, jet/kerosene remained strong at 0.3 mb/d y-o-y growth, supported by air travel activity in the region. Residual fuels grew by 0.16 mb/d y-o-y in October, compared to 90 tb/d expansion in September, supported by gas-to-oil switching. LPG also remained in the positive, at slight 10 tb/d y-o-y growth.

On the negative side, naphtha softened by 0.25 mb/d y-o-y, mostly affected by slow demand from blending activities due to weak gasoline and other petrochemical feedstock markets in Europe. Similarly, diesel softened by 0.24 mb/d y-o-y, mostly due to weaker manufacturing activity and a slowdown in trucking activity. Gasoline weakened by 30 tb/d y-o-y, mostly due to lower driving activity in the region.

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

By product	Oct 21	Oct 22	Change Growth	Oct 22/Oct 21 %
LPG	0.38	0.33	-0.05	-12.9
Naphtha	0.61	0.45	-0.16	-26.2
Gasoline	1.17	1.14	-0.03	-2.5
Jet/kerosene	0.56	0.74	0.18	32.8
Diesel	3.41	3.11	-0.30	-8.7
Fuel oil	0.16	0.22	0.06	40.1
Other products	0.50	0.47	-0.03	-6.0
Total	**6.79**	**6.47**	**-0.32**	**-4.7**

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

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

Near-term expectations

The region's GDP is projected to soften in 1Q23. In addition, persistent inflationary pressures raise the risk of recession in the region, and supply chain bottlenecks due to ongoing geopolitical developments continue to be a challenge. The region's petrochemical industry has also been relatively weak. Nevertheless, sustained growth in air travel activity and ongoing gas-to-oil switching are expected to support oil demand in the near future. Accordingly, in 1Q23, oil demand in OECD Europe is projected to rise marginally y-o-y by 30 tb/d. Demand is expected to be supported by jet fuel, fuel oil and diesel.

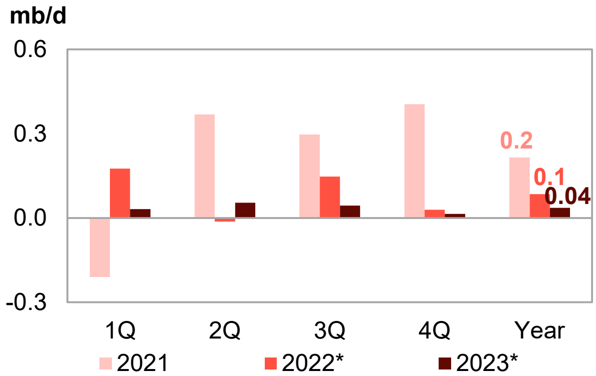
In 2Q23, oil demand growth is projected to also grow by a marginal 30 tb/d y-o-y. Second quarter oil demand is expected to be backed by rising demand for air travel, as well as anticipated improvements in road mobility. Accordingly, jet fuel and gasoline are set to be the main oil demand drivers in the second quarter.

OECD Asia Pacific

Update on the latest developments

Oil demand in OECD Asia Pacific recovered by 0.1 mb/d y-o-y in October from a decline of 0.1 mb/d in September. Most of the oil demand growth came from Australia. From the perspective of products, gasoline was the main driver in October, expanding y-o-y by 0.15 mb/d, compared to 63 tb/d growth in September. Airlines based in Asia Pacific continued to see y-o-y activity improvements, standing at 69.8% of pre-pandemic levels at the end of October, with jet/kerosene demand growing by 0.1 mb/d y-o-y. Rising natural gas prices also led to oil-to-gas switching, enabling the "other products" category to expand by 60 tb/d y-o-y. Residual fuels also benefitted from gas-to-oil switching to grow by 50 tb/d y-o-y. Diesel demand saw a marginal improvement, from a y-o-y decline of 30 tb/d in September to 30 tb/d growth in October.

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



*Note: * 2022 = Estimate and 2023 = Forecast.*
Source: OPEC.

Naphtha posted an annual y-o-y decline of 0.3 mb/d, with the region's naphtha demand slow due to weak margins to produce plastic derivatives. Naphtha demand was also subdued due to China's zero-COVID policy that impacted the petrochemical industry in Japan and South Korea.

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

By product	Nov 21	Nov 22	Change Nov 22/Nov 21 Growth	%
LPG	0.40	0.37	-0.03	-6.8
Naphtha	0.75	0.67	-0.09	-11.5
Gasoline	0.70	0.71	0.01	2.1
Jet/kerosene	0.40	0.41	0.01	3.4
Diesel	0.75	0.75	0.00	-0.4
Fuel oil	0.26	0.27	0.00	0.8
Other products	0.24	0.25	0.01	3.8
Total	**3.51**	**3.43**	**-0.08**	**-2.2**

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

Near-term expectations

The region's GDP is projected to grow in 2023. However, the economies of the two major oil consuming countries in the region, Japan and South Korea, have witnessed some slowing momentum and inflation levels in both are on a rising trend. At the same time, air travel activity remains on a recovery path. Accordingly, the region's oil demand is projected to grow y-o-y by a slight 30 tb/d in 1Q23. By 2Q23, oil demand growth is projected to marginally improve further at 50 tb/d y-o-y.

Non-OECD

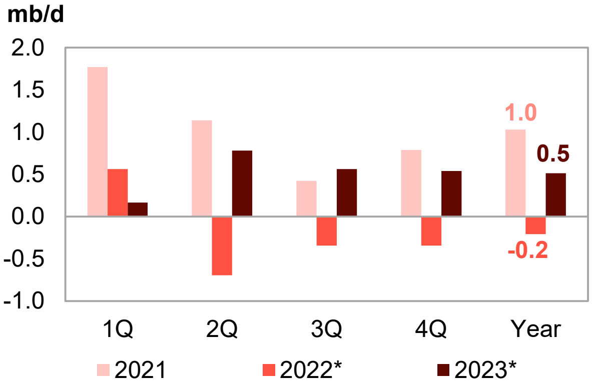
China

Update on the latest developments

COVID-19 lockdowns in **China** continued to constrain economic activity and oil demand. The latter decelerated further from a y-o-y decline of 0.2 mb/d in October to a drop of 0.25 mb/d in November.

On the positive side, China's petrochemical industry remained resilient as demand for feedstock from independent refineries in China's Shandong region was firm in November, supporting naphtha growth of 0.3 mb/d, y-o-y. Further, demand for diesel remained relatively resilient at 0.2 mb/d y-o-y growth. However, this is lower than 0.7 mb/d y-o-y growth posted in October. Softening demand can be attributed to weak manufacturing activity due to the COVID-19 lockdowns, which is evidenced in China's manufacturing PMI that stood at 49.4 points in November, marking a contraction for the fourth straight month. On the back of household requirements, LPG posted y-o-y growth of 88 tb/d, and there was an improvement in jet/kerosene at 94 tb/d y-o-y, compared to a 0.3 mb/d decline in October.

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



*Note: * 2022 = Estimate and 2023 = Forecast.*
Source: OPEC.

As lockdowns continued to depress mobility in China, gasoline declined by 0.7 mb/d y-o-y in November, from an annual decline of 0.4 mb/d the previous month. The "other fuels" category recorded an improvement from an annual decline of 0.45 mb/d in October to a 0.23 mb/d y-o-y decline in November.

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

By product	Nov 21	Nov 22	Change Nov 22/Nov 21 Growth	%
LPG	2.30	2.39	0.09	3.8
Naphtha	1.65	1.94	0.29	17.8
Gasoline	3.30	2.57	-0.73	-22.2
Jet/kerosene	0.65	0.74	0.09	14.4
Diesel	3.70	3.95	0.25	6.6
Fuel oil	0.50	0.49	-0.01	-1.5
Other products	1.75	1.52	-0.23	-13.0
Total	**13.85**	**13.60**	**-0.25**	**-1.8**

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

Near-term expectations

Chinese oil demand is on course to rebound due to the recent relaxation of the country's zero-COVID-19 measures, with the country's GDP projected to grow by 4.8% in 2023. In addition, China's plans to expand fiscal spending to aid the economic recovery is likely to support oil demand in manufacturing, construction and mobility. The manufacturing sector is expected to start recovering relatively quickly, and the aviation sector is expected to see significant increases in both local and international travel given pent-up demand. Furthermore, the performance of the resilient petrochemical sector is also projected to improve further.

China's 1Q23 oil demand is set to rebound from an annual decline of 0.3 mb/d y-o-y in 4Q22 to modest 0.2 mb/d y-o-y growth. The quarter also sees the Lunar New Year holiday, traditionally a time when Chinese people head home for family reunions, with many traveling from cities to rural areas, accelerating demand for mobility and air travel. In addition, manufacturing and construction activity are expected to pick up, and feedstock consumption from independent refineries in China's Shandong region may find some support. However, there are a number of uncertainties regarding the impacts of the spread of COVID-19 after the opening up, particularly, in the first quarter.

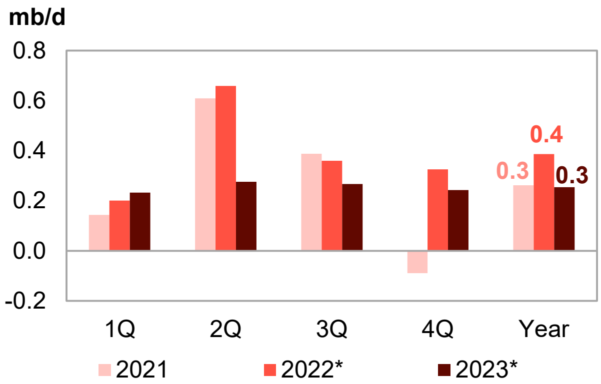
In 2Q23, manufacturing and construction activity are set to accelerate further, and it is envisaged there will be expanding requirements for the petrochemical industry. This would boost demand and output for middle and light distillate products. Accordingly, China's oil demand is projected to accelerate further to reach y-o-y growth of 0.8 mb/d.

India

Update on the latest developments

India recorded bullish y-o-y **oil demand** growth of 0.43 mb/d in November, up from 0.1 mb/d growth in October. The November oil demand expansion was driven by diesel, which posted y-o-y growth of 0.3 mb/d. Diesel consumption surpassed a three-year high, rising 19% y-o-y in November. Demand for diesel was supported by strong manufacturing activity as indicated by November's Manufacturing PMI that rose to 55.7 points from 55.3 points in October. In addition, the Services PMI also increased from 55.1 points in October to 56.4 points in November. India's inflation rate is also on a declining trend, dropping from 6.8% in October to 5.7% in November. It is now trending towards the pre-pandemic level of 5.4% in 2019. These factors provide evidence of healthy economic activity in India.

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



*Note: * 2022 = Estimate and 2023 = Forecast.*
Source: OPEC.

Requirements for irrigation and transportation activities in the farm sector, combined with progress in construction activity, supported demand for diesel. The "other products" category posted growth of 70 tb/d y-o-y, with bitumen consumption providing strong support with the continued significant expansion in road construction projects in India.

Further, on the back of increased economic activity as well as travel on occasion of seasonal festivities, gasoline posted y-o-y growth of 60 tb/d. LPG recovered with y-o-y growth of 47 tb/d, compared with an annual decline of 30 tb/d in October. Indian airline activity continues to steadily recover from the pandemic. Air Passenger Market Analysis reports that October's revenue passenger-kilometres (RPKs) are now only 12.2% short of 2019 levels. In November, jet/kerosene showed a slight 7 tb/d y-o-y growth, from roughly the same growth seen in October. However, naphtha remained weak, declining by 63 tb/d, y-o-y. In India, naphtha is mostly used for gasoline blending and its by-products are channelled into the domestic petrochemical sector as feedstock for naphtha-fed steam crackers.

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

By product	Nov 21	Nov 22	Change Nov 22/Nov 21 Growth	%
LPG	0.91	0.96	0.05	5.1
Naphtha	0.35	0.29	-0.06	-18.2
Gasoline	0.75	0.81	0.06	8.1
Jet/kerosene	0.16	0.17	0.01	4.6
Diesel	1.59	1.88	0.30	18.8
Fuel oil	0.11	0.12	0.01	8.3
Other products	0.66	0.73	0.07	10.1
Total	**4.53**	**4.96**	**0.43**	**9.4**

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 forward, India's GDP growth is expected to continue healthy in 2023. Furthermore, India's manufacturing and service PMIs have been on rising trends, while inflation is on the decline. Accordingly, economic and social activity is expected to continue to accelerate. India's oil demand is projected to rise by 0.2 mb/d y-o-y in 1Q23. India's gasoline demand is expected to expand due to rising vehicle sales and overall steady economic growth. Similarly, middle distillates (diesel and jet/kerosene) are also set to show healthy growth due to economic development and ongoing strong airline travel activities. Demand for transportation fuel is anticipated to lead product demand.

With projected continued healthy GDP growth, India's oil demand is forecast to expand y-o-y by 0.3 mb/d in 2Q23.

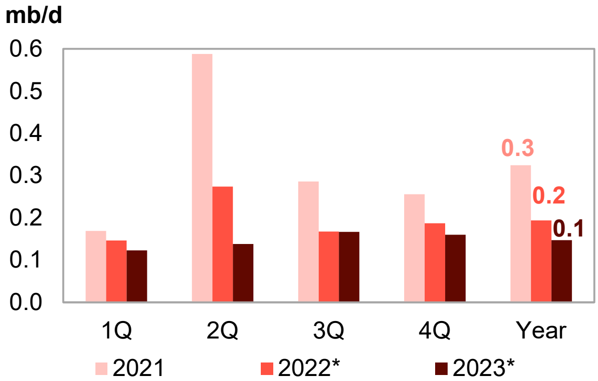
Latin America

Update on the latest developments

In October, **oil demand in Latin America** remained firm at 0.2 mb/d y-o-y growth. This was the same as posted in September. Oil demand growth was driven by demand from Brazil and Venezuela. Economic activity in the region is currently positive, reflecting improvements in the services sector and employment. The services PMI in Brazil was at 50.8 in October. Airline activity in the region also continued to improve in October, and is now at 84.9% of pre-pandemic levels.

Oil demand in Latin America was supported by y-o-y growth of 77 tb/d in gasoline, up from y-o-y growth of 69 tb/d in September. On the back of healthy aviation sector activity, jet fuel posted y-o-y growth of 50 tb/d.

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



*Note: * 2022 = Estimate and 2023 = Forecast.*
Source: OPEC.

Similarly, "other fuels" grew y-o-y by 50 tb/d. Residual fuels posted a y-o-y gain of 30 tb/d in October, against a decline of 35 tb/d in September. However, weak petrochemical activity weighed on naphtha, which softened by 10 tb/d y-o-y.

Near-term expectations

GDP growth for the region in 2023 is projected to slow, albeit remaining positive at 1.5%. Oil demand is projected to grow y-o-y by 0.1 mb/d in 1Q23. Mobility and manufacturing activity should support demand for gasoline and distillates. Similarly, further air travel recovery is expected to aid jet/ kerosene demand.

In 2Q23, oil demand is projected to remain steady at 0.1 mb/d y-o-y growth. The outlook for oil demand growth sees Brazil in the lead, followed by Argentina. In terms of product demand, transportation fuels are expected to grow the most, supported by the continuing recovery in mobility and air travel.

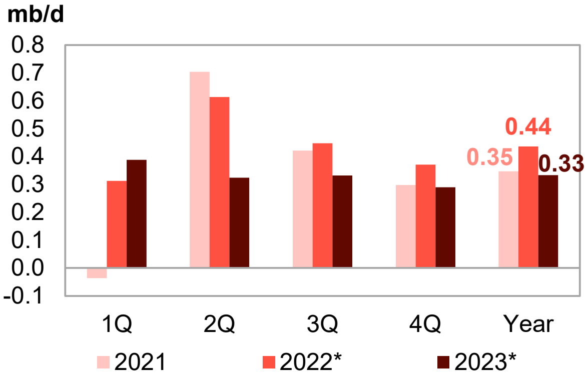
Middle East

Update on the latest developments

Oil demand in the Middle East continued strong at 0.5 mb/d growth y-o-y in October, slightly up from 0.4 mb/d growth in September. The economies of Middle East countries remain robust and supportive of oil demand. Saudi Arabia posted a composite PMI of 57 points in October while inflation seems to be on a declining trend. The UAE recorded a composite PMI of 56.6 points in October, according to S&P Global and also saw low inflation in October.

Oil demand in the Middle East was mostly supported by strong requirements for the "other products" category, with y-o-y growth of 0.25 mb/d, driven by requirements for electricity generation, particularly in Iraq and Saudi Arabia. Diesel grew by 0.2 mb/d y-o-y, from 0.1 mb/d growth in September.

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



*Note: * 2022 = Estimate and 2023 = Forecast.*
Source: OPEC.

Gasoline posted y-o-y growth of 50 tb/d, up from 30 tb/d growth in September. The petrochemical industry and household requirements boosted LPG, which expanded by 30 tb/d y-o-y, compared to 20 tb/d y-o-y growth in September. Further, healthy airline activity supported jet/kerosene demand that grew y-o-y by 30 tb/d, as Middle East carriers saw growth in international traffic. Nevertheless, airline activity was 20.3% below pre-COVID-19 levels in October. However, residual fuels and naphtha saw y-o-y declines of 90 tb/d and 10 tb/d, respectively.

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

			Change Nov 22/Nov 21	
By product	**Nov 21**	**Nov 22**	**Growth**	**%**
LPG	0.05	0.05	0.00	9.1
Gasoline	0.48	0.51	0.03	5.3
Jet/kerosene	0.04	0.07	0.03	68.2
Diesel	0.50	0.59	0.09	18.2
Fuel oil	0.64	0.64	0.00	0.6
Other products	0.42	0.52	0.10	23.0
Total	**2.13**	**2.38**	**0.25**	**11.8**

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

Sources: JODI and OPEC.

Near-term expectations

Strong economic activity in the region is set to continue to support oil demand in the near future.The region's healthy economic growth outlook is expected to support consumer spending and accelerate mobility and construction activity. These factors should support demand for both gasoline and diesel. Moreover, infrastructure project developments and an uptick in power generation requirements should also support the upside oil demand momentum. Hence, demand for residual and fuel oil is expected to continue to accelerate. Similarly, as air travel recovery persists, jet/kerosene demand will further support oil demand growth. Accordingly, in 1Q23, oil demand in the Middle East is projected to expand y-o-y by 0.4 mb/d.

In 2Q23, oil demand growth momentum is set to continue, albeit at an anticipated slightly slower pace. Oil demand in the second quarter is projected to grow y-o-y by 0.3 mb/d. Gasoline, transportation diesel and jet/kerosene are expected to lead oil demand growth, with fuel oil demand further supporting the expansion.

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, broadly unchanged from the previous month's assessment. Upward revisions to liquids production in Russia and OECD Americas were largely offset by downward revisions to OECD Europe and OECD Asia Pacific.

In the US, oil drilling activity has recovered to near pre-pandemic levels. However, producers are still challenged by high cost inflation and supply chain issues, with many operators experiencing longer-than-usual wait times for supplies and equipment in the oil patch. US liquids production rose in October on the back of higher crude and biofuel production, with steady growth expected in November, while output is projected to slump in December due to winter blizzards and freezing weather across the northern US. Accordingly, the US liquids supply growth forecast for 2022 has been revised up slightly to average 1.2 mb/d. The production forecast for Canada was revised down, due to unplanned maintenance and lower-than-anticipated output in 2H22. Extended maintenance on UK offshore platforms, along with output underperformance in Norway, reduced 4Q22 projections in the North Sea region. On the other hand, Russian production was higher than expected in December. The main drivers of liquids supply growth for 2022 are expected to be the US, Russia, Canada, Guyana, China and Brazil, while production is expected to see the largest declines in Norway and Thailand.

Non-OPEC liquids production growth in 2023 is forecast to grow by 1.5 mb/d to average 67.2 mb/d, unchanged from last month. The 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 over the impact of ongoing geopolitical developments in Eastern Europe, and US shale output prospects in 2023.

OPEC NGLs and non-conventional liquids production in 2022 is forecast to grow by 0.1 mb/d to average 5.4 mb/d and increase by 50 tb/d to average 5.4 mb/d in 2023. OPEC-13 crude oil production in December increased by 91 tb/d m-o-m to average 28.97 mb/d, according to available secondary sources.

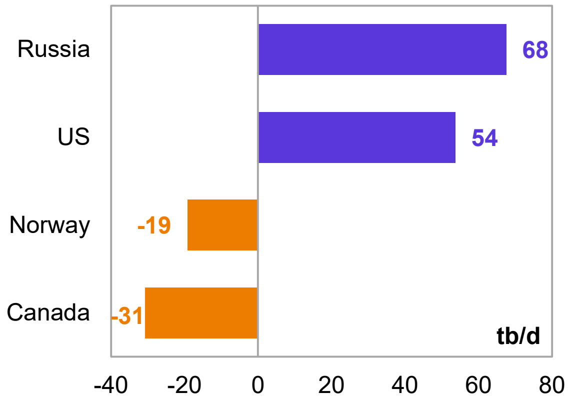
Non-OPEC liquids production in December, including OPEC NGLs, is estimated to have increased m-o-m by 0.2 mb/d to average 72.8 mb/d, up by 2.8 mb/d y-o-y. As a result, preliminary data indicates that December's global oil supply increased by 0.3 mb/d m-o-m to average 101.7 mb/d, up by 3.8 mb/d y-o-y.

The **non-OPEC liquids supply forecast for 2022** was revised slightly up by 43 tb/d to average 65.6 mb/d. Y-o-y growth averaged 1.9 mb/d, revised up slightly by 42 tb/d compared with the previous month.

The overall **OECD** supply growth estimate for 2022 has remained quite steady. While OECD Europe and OECD Asia Pacific saw downward revisions, OECD Americas was revised up from the previous month's assessment.

The **non-OECD** supply growth forecast for 2022 was revised up by 48 tb/d. Minor downward revisions to Other Asia and Africa were more than offset by upward revisions to Russia.

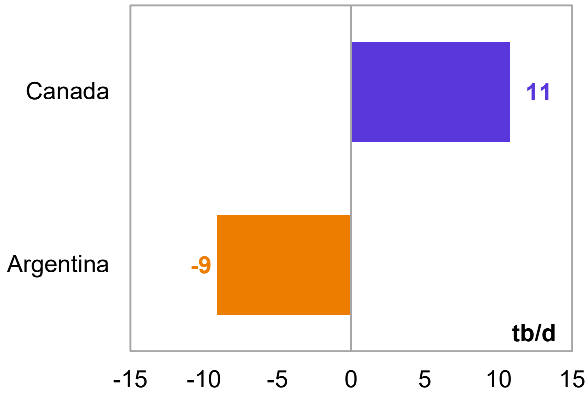
Graph 5 - 1: Major revisions to annual supply change forecast in 2022*, MOMR Jan 23/Dec 22



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

Non-OPEC liquids production growth in 2023 is forecast to remain unchanged compared with the previous month's assessment, despite some minor up and down revisions for some countries.

Graph 5 - 2: Major revisions to annual supply change forecast in 2023*, MOMR Jan 23/Dec 22

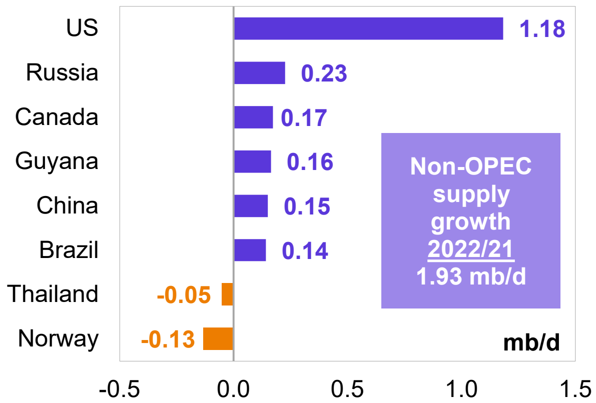


*Note: * 2023 = Forecast. Source: OPEC.*

Key drivers of growth and decline

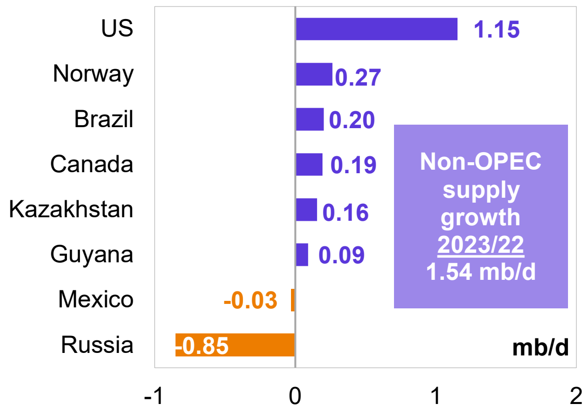
The **key drivers of non-OPEC liquids supply growth in 2022** are projected to be the US, Russia, Canada, Guyana, China and Brazil, while oil production is expected to see the largest declines in Norway and Thailand.

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



*Note: * 2022 = Estimate. 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	27.01	27.49	26.66	1.41	5.59
of which US	*17.85*	*18.27*	*18.83*	*19.32*	*19.69*	*19.03*	*1.18*	*6.63*
Europe	3.76	3.73	3.43	3.49	3.65	3.57	-0.18	-4.82
Asia Pacific	0.51	0.49	0.51	0.43	0.51	0.48	-0.03	-5.29
Total OECD	**29.52**	**30.08**	**30.22**	**30.94**	**31.64**	**30.72**	**1.20**	**4.08**
China	4.31	4.51	4.52	4.38	4.43	4.46	0.15	3.51
India	0.78	0.78	0.77	0.76	0.76	0.77	-0.01	-1.44
Other Asia	2.41	2.35	2.30	2.24	2.31	2.30	-0.11	-4.44
Latin America	5.95	6.11	6.18	6.45	6.62	6.34	0.39	6.49
Middle East	3.24	3.29	3.33	3.36	3.35	3.33	0.09	2.89
Africa	1.35	1.33	1.31	1.32	1.30	1.32	-0.03	-2.34
Russia	10.80	11.33	10.63	11.01	11.15	11.03	0.23	2.10
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**	**32.23**	**32.96**	**32.49**	**0.62**	**1.94**
Total Non-OPEC production	61.39	62.93	62.14	63.17	64.60	63.21	1.82	2.97
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**	**65.57**	**67.00**	**65.61**	**1.93**	**3.04**
Previous estimate	63.68	65.33	64.54	65.61	66.79	65.57	1.89	2.97
Revision	0.00	0.00	0.00	-0.04	0.21	0.04	0.04	0.07

*Note: * 2022 = Estimate. 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	26.66	27.64	27.73	28.09	28.46	27.98	1.32	4.95
of which US	*19.03*	*19.80*	*20.10*	*20.30*	*20.53*	*20.19*	*1.15*	*6.06*
Europe	3.57	3.93	3.91	3.80	3.93	3.89	0.32	8.90
Asia Pacific	0.48	0.50	0.48	0.50	0.48	0.49	0.00	0.99
Total OECD	**30.72**	**32.07**	**32.12**	**32.39**	**32.88**	**32.37**	**1.64**	**5.34**
China	4.46	4.51	4.50	4.47	4.47	4.49	0.03	0.64
India	0.77	0.79	0.78	0.77	0.76	0.78	0.01	1.15
Other Asia	2.30	2.37	2.36	2.33	2.35	2.35	0.05	2.37
Latin America	6.34	6.49	6.67	6.71	6.78	6.67	0.32	5.10
Middle East	3.33	3.34	3.36	3.39	3.39	3.37	0.04	1.08
Africa	1.32	1.32	1.33	1.35	1.34	1.33	0.02	1.42
Russia	11.03	10.21	10.08	10.18	10.23	10.18	-0.85	-7.71
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	**32.49**	**32.21**	**32.25**	**32.32**	**32.50**	**32.32**	**-0.17**	**-0.53**
Total Non-OPEC production	63.21	64.28	64.36	64.71	65.37	64.69	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	**65.61**	**66.75**	**66.83**	**67.18**	**67.84**	**67.16**	**1.54**	**2.35**
Previous estimate	65.57	66.50	66.86	67.19	67.88	67.11	1.54	2.35
Revision	0.04	0.25	-0.02	-0.01	-0.04	0.04	0.00	0.00

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

OECD

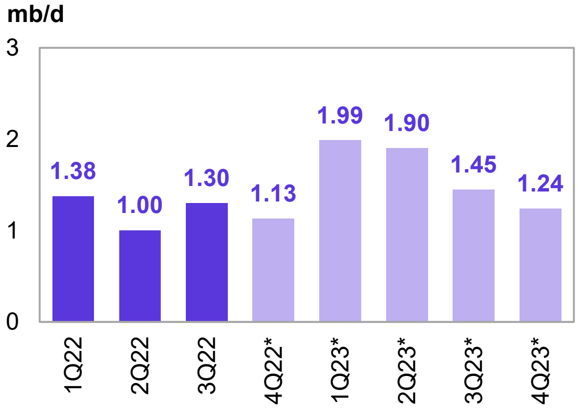
OECD liquids production in 2022 is estimated to increase y-o-y by 1.2 mb/d to average 30.7 mb/d. This remains broadly unchanged compared with a month earlier, as upward revisions for OECD America were offset by downward revisions in OECD Europe.

OECD Americas was revised up by 25 tb/d compared with last month's assessment. It is now expected to grow by 1.4 mb/d to average 26.7 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 27 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 28.0 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

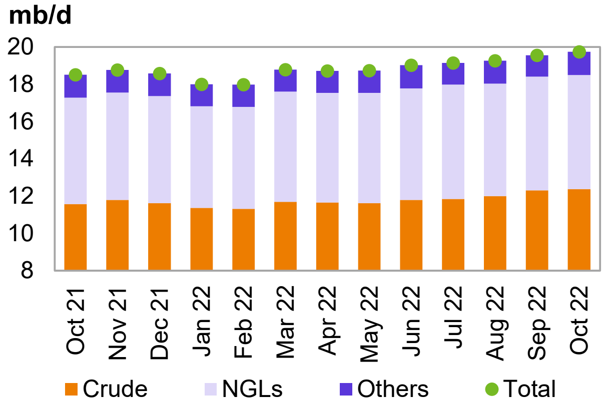
US

US liquids production increased m-o-m by 182 tb/d in **October 2022** to average 19.7 mb/d. This was up by 1.2 mb/d compared with October 2021.

Crude oil and condensate production rose m-o-m by 69 tb/d in **October 2022** to average 12.4 mb/d, up by 0.8 mb/d y-o-y.

In terms of **crude and condensate production breakdown by region (PADDs)**, production increased mainly in the US Gulf Coast (USGC), where it was up by 53 tb/d to average 8.9 mb/d. Production in the Rocky Mountain and West Coast regions rose by a minor 6 tb/d, while the Midwest and East Coast remained broadly unchanged m-o-m. Production growth in the main regions was primarily driven by higher completion and fracking activities and normal production levels in the Gulf of Mexico (GoM).

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



Source: OPEC.

NGLs production was up by 22 tb/d m-o-m to average 6.1 mb/d in October. This was higher y-o-y by 0.4 mb/d. Production of **non-conventional liquids** (mainly ethanol) jumped by 91 tb/d m-o-m to average 1.2 mb/d in October, according to the US Department of Energy (DoE). Preliminary estimates see non-conventional liquids averaging 1.3 mb/d in November 2022, up by 23 tb/d compared with the previous month.

GoM production declined m-o-m by a minor 5 tb/d in October to average 1.8 mb/d, with quite stable production seen on Gulf Coast offshore platforms. In the **onshore Lower 48**, crude and condensate production increased m-o-m by 69 tb/d to average 10.1 mb/d in October.

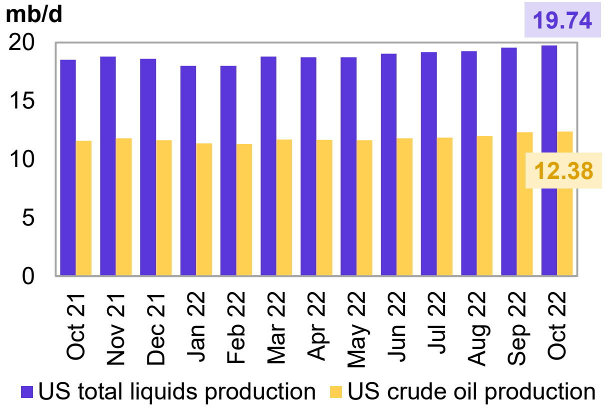
Looking at **individual states**, New Mexico's oil production increased m-o-m by 41 tb/d to average 1.7 mb/d, which is 347 tb/d higher than a year ago. Texas production was up by 11 tb/d to average 5.2 mb/d, which is 229 tb/d higher than a year ago. In the Midwest, North Dakota's production decreased m-o-m by a minor 5 tb/d to average 1.1 mb/d, remaining steady y-o-y, while Oklahoma's production was broadly unchanged at an average of 0.4 mb/d. Alaska's output was up by a minor 5 tb/d m-o-m, and in Colorado, production declined slightly by 7 tb/d.

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

State	Oct 21	Sep 22	Oct 22	Change m-o-m	Change y-o-y
Texas	4,967	5,185	5,196	*11*	*229*
Gulf of Mexico (GOM)	1,678	1,847	1,842	*-5*	*164*
New Mexico	1,380	1,686	1,727	*41*	*347*
North Dakota	1,101	1,108	1,103	*-5*	*2*
Alaska	437	430	435	*5*	*-2*
Colorado	460	434	427	*-7*	*-33*
Oklahoma	403	416	420	*4*	*17*
Total	**11,569**	**12,312**	**12,381**	***69***	***812***

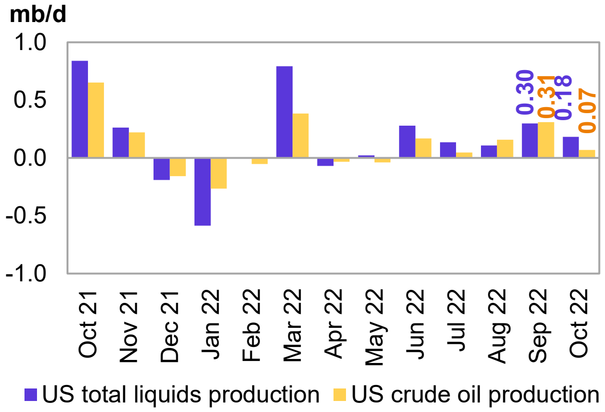
Sources: EIA and OPEC.

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



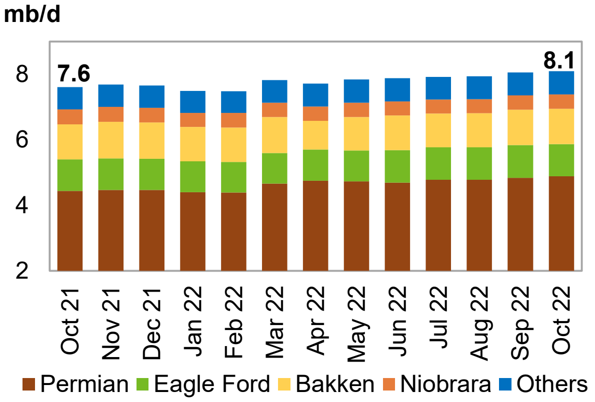
Sources: EIA and OPEC.

US tight crude output in **October 2022** is estimated to have risen by 37 tb/d m-o-m to average 8.1 mb/d, according to the latest estimation by the US Energy Information Administration (EIA). This was 0.5 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 output by 46 tb/d to average 4.9 mb/d. This was up by 0.4 mb/d y-o-y.

In the Williston Basin, Bakken shale production remained chiefly unchanged, averaging 1.1 mb/d. This is up by a minor 8 tb/d y-o-y. Tight crude output at Eagle Ford in Texas fell by 15 tb/d to average 0.9 mb/d. This is up by 22 tb/d y-o-y. Production in Niobrara-Codell in Colorado and Wyoming was unchanged at an average of 0.4 mb/d.

Graph 5 - 9: US tight crude output breakdown



Sources: EIA, Rystad Energy and OPEC.

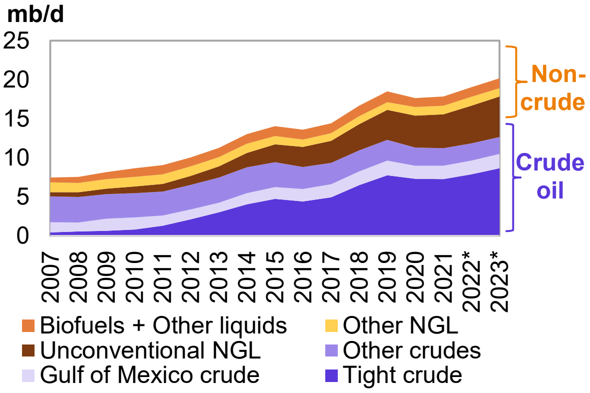
US liquids production in 2022, excluding processing gains, is forecast to expand y-o-y by 1.2 mb/d to average 19.0 mb/d. This is an upward revision of 54 tb/d compared with the previous assessment due to higher-than-expected output in September and October reported by the EIA and an upward revision to 4Q22. 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 25 tb/d in conventional onshore 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 11.9 mb/d in 2022. This forecast assumes continuing capital discipline, inflation rate pressure, ongoing supply chain issues and oil field service constraints (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 20.2 mb/d, unchanged from the previous assessment. Greater drilling activity 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 12.7 mb/d. Average tight crude output in 2023 is forecast at 8.7 mb/d, up by 0.8 mb/d y-o-y.

At the same time, NGLs production and non-conventional liquids, particularly ethanol, are forecast to increase y-o-y by 0.33 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



*Note: * 2022 = Estimate and 2023 = Forecast.*
Source: OPEC.

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

US liquids	2021	Change 2021/20	2022*	Change 2022/21	2023*	Change 2023/22
Tight crude	7.28	-0.03	7.90	0.62	8.68	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	2.24	-0.03	2.15	-0.09
Total crude	**11.25**	**-0.06**	**11.87**	**0.62**	**12.65**	**0.78**
Unconventional NGLs	4.31	0.23	4.81	0.50	5.20	0.39
Conventional NGLs	1.12	0.02	1.15	0.03	1.09	-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**	**19.03**	**1.18**	**20.18**	**1.15**

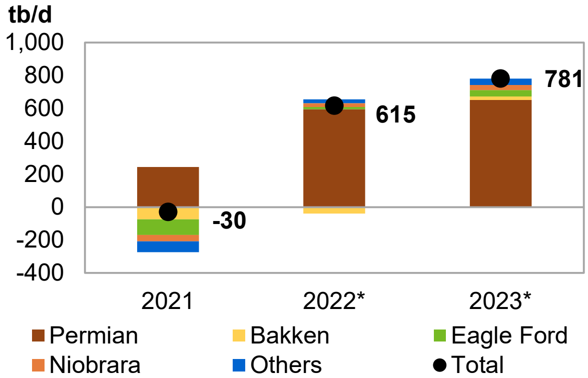
*Note: * 2022 = Estimate and 2023 = Forecast. Sources: EIA, OPEC and Rystad Energy.*

US tight crude production in the **Permian** in 2022 is estimated to increase y-o-y by 0.6 mb/d to 4.7 mb/d. It is then forecast to grow by 0.6 mb/d y-o-y to average 5.4 mb/d in 2023.

The **Bakken** shale production decline that occurred in 2020 and 2021 is expected to continue in 2022. Tight crude production in the Bakken is estimated to drop by 39 tb/d in 2022 to average 1.0 mb/d. This is lower than the pre-pandemic average output of 1.4 mb/d. Drilling activity in North Dakota and available DUC wells are lower than the levels required 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 an output of 1.2 mb/d in 2019, which declined in 2020 and 2021. It is estimated to rise by 13 tb/d 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.

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



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

Niobrara production is estimated to grow y-o-y by 24 tb/d in 2022 and then forecast to increase by 30 tb/d in 2023 to average 437 tb/d and 467 tb/d, respectively. Other shale plays are expected to show marginal increases totalling 22 tb/d and 40 tb/d in 2022 and 2023, given current drilling and completion activities.

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

US tight oil	2021	Change 2021/20	2022*	Change 2022/21	2023*	Change 2023/22
Permian tight	4.15	0.24	4.75	0.59	5.40	0.65
Bakken shale	1.08	-0.07	1.04	-0.04	1.06	0.02
Eagle Ford shale	0.96	-0.09	0.97	0.01	1.01	0.04
Niobrara shale	0.41	-0.04	0.44	0.02	0.47	0.03
Other tight plays	0.67	-0.07	0.70	0.02	0.74	0.04
Total	**7.28**	**-0.03**	**7.90**	**0.62**	**8.68**	**0.78**

*Note: * 2022 = Estimate and 2023 = Forecast. Source: OPEC.*

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

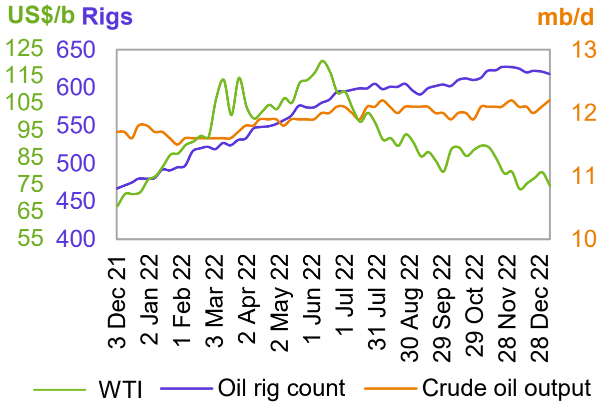
Total **active US drilling rigs** decreased by seven to 772 in the week ending January 6, 2023. This was up by 184 rigs compared with a year ago. The number of active offshore rigs rose w-o-w to 16, an increase of one. This is unchanged from the same month a year earlier. Onshore oil and gas rigs decreased by eight w-o-w to stand at 754 rigs, up by 184 rigs y-o-y, with two rigs in inland waters.

The **US horizontal rig count** fell by six w-o-w to 700, compared with 532 horizontal rigs a year ago. The number of drilling rigs for oil fell by three w-o-w to 618. At the same time, gas-drilling rig counts were down by four to 152.

The Permian's rig count remained unchanged w-o-w at 353 rigs. At the same time, rig counts remained steady in Eagle Ford, Williston and DJ-Niobrara at 71, 42 and 17, respectively. The rig count also stayed unaffected w-o-w in Cana Woodford at 26.

Three operating oil rigs remained in the Barnett basin, unchanged w-o-w.

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



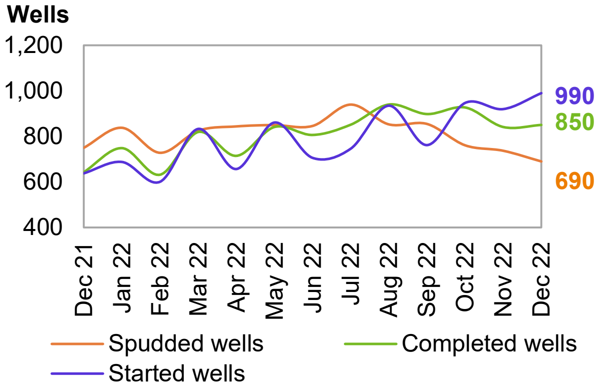
Sources: Baker Hughes, EIA and OPEC.

Drilling and completion (D&C) activities for spudded, completed and started oil-producing wells in all US shale plays, based on EIA-DPR regions, included 737 horizontal wells spudded in November 2022 (as per preliminary data). This is down by 24 m-o-m, and 5% lower than in November 2021.

November 2022 preliminary data indicates a lower number of completed wells at 841. However, this is up 24% y-o-y. Moreover, the number of started wells was estimated at 920, which is 37% higher than a year earlier.

Preliminary data for December 2022 estimates 690 spudded, 850 completed and 990 started wells, according to Rystad Energy.

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

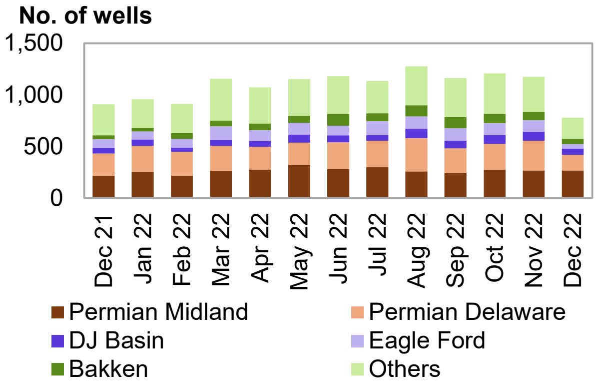


Note: Nov 22-Dec 22 = Preliminary data.
Sources: Rystad Energy and OPEC.

In terms of identified **US oil and gas fracking operations by region**, Rystad Energy reported that 1,207 wells were fracked in October 2022. In November and December, it stated that 1,173 and 780 wells started fracking, respectively. Preliminary numbers are based on analysis of high-frequency satellite data.

Preliminary November data showed that 266 and 289 wells were fracked in the Permian Midland and Permian Delaware, respectively. Compared with October, there was a jump of 38 in Delaware and a decline of eight wells fracked in the Midland, according to preliminary data. Data also indicated that 86 wells were fracked in the DJ Basin, 113 in Eagle Ford and 78 in Bakken during November.

Graph 5 - 14: Fracked wells count per month



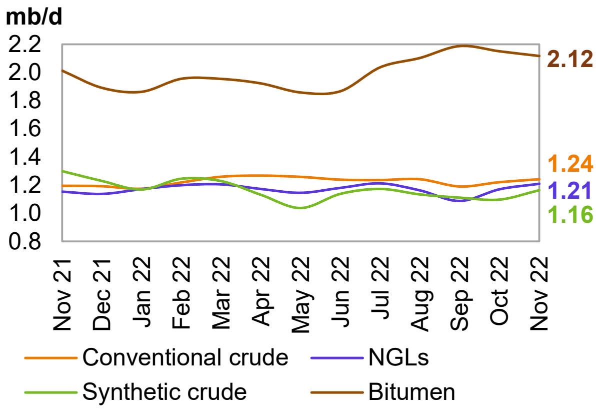
Note: Nov 22-Dec 22 = Preliminary data.
Sources: Rystad Energy Shale Well Cube and OPEC.

Canada

Canada's liquids production in **November** is estimated to have increased m-o-m by 94 tb/d to average 5.8 mb/d, largely as the Hibernia field came back online after October maintenance and gains were seen in upgraded crude. It represents the highest Canadian production on record.

Conventional crude production increased m-o-m by 21 tb/d to average 1.2 mb/d and NGLs output rose m-o-m by 39 tb/d to average 1.2 mb/d. At the same time, crude bitumen production output fell m-o-m by 33 tb/d in November, while synthetic crude rose by 67 tb/d. Taken together, crude bitumen and synthetic crude production increased by 34 tb/d to 3.3 mb/d.

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

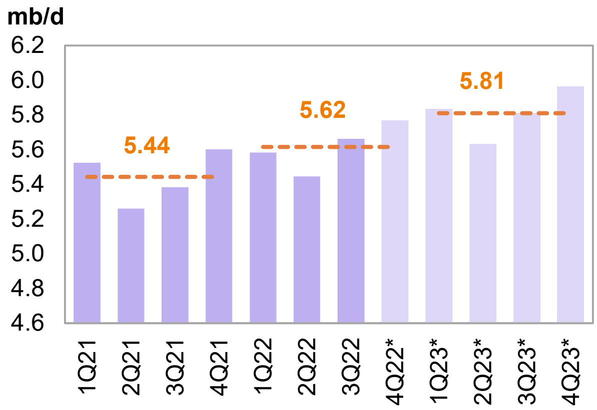


Sources: National Energy Board and OPEC.

Canada's liquids supply in **2022** is estimated to grow by 0.2 mb/d to average 5.6 mb/d, down by 31 tb/d from the previous assessment due to national source downward revisions in 3Q22 and lower-than-anticipated output in 4Q22. Oil sands output, mainly from Alberta's projects, saw an average of 3.1 mb/d from January to November 2022.

Canada's production is estimated to grow in 4Q22 by 0.1 mb/d q-o-q, as upgraders returned from maintenance. However, disruptions related to a short closure of the Canada-to-US Keystone crude pipeline and maintenance provide downside risks to the 4Q22 forecast.

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



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

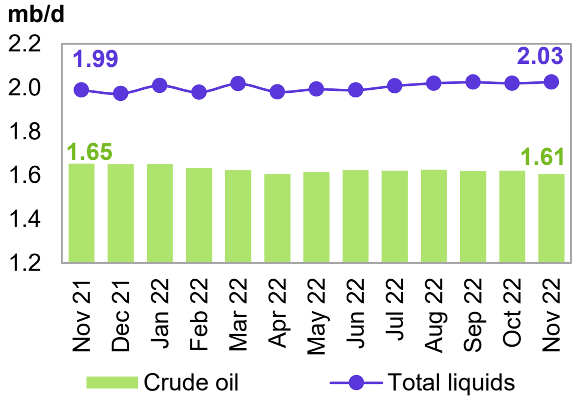
For **2023**, Canada's liquids production is forecast to increase at a pace similar to 2022, rising by 0.2 mb/d to average 5.8 mb/d. Incremental production will come through oil sand project ramp-ups and debottlenecks, alongside conventional growth. Moreover, the Terra Nova Floating Production Storage and Offloading (FPSO) platform is expected to resume production in 1Q23.

Mexico

Mexico's crude output decreased by 14 tb/d m-o-m in **November** to average 1.6 mb/d, while NGLs output rose by 20 tb/d, driven by the ramp-up of the Quesqui condensate field. This saw Mexico's total November liquids output remain broadly unchanged m-o-m at an average of 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. Growth of 50 tb/d 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.

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, mainly from Mexico's foreign-operated fields.

OECD Europe

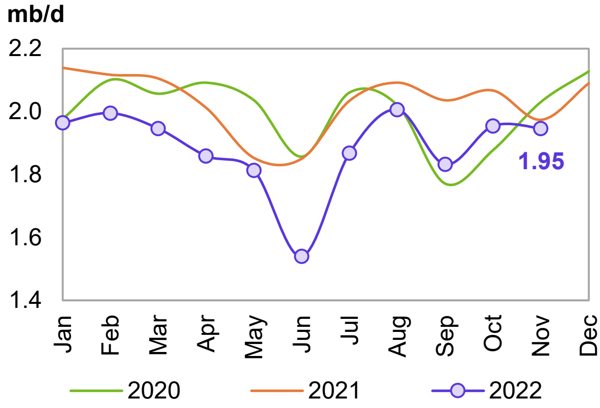
Norway

Norwegian liquids production in **November** decreased by a minor 8 tb/d m-o-m to average 1.9 mb/d. This reflects ongoing underperformance in Norwegian fields.

Norway's crude production declined by 10 tb/d m-o-m in November to average 1.7 mb/d, broadly unchanged y-o-y. Monthly oil production was 8.7% lower than the Norwegian Petroleum Directorate's (NPD) forecast.

At the same time, the production of NGLs and condensates remained chiefly unchanged m-o-m, averaging 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 has been revised down by 19 tb/d y-o-y to average 1.9 mb/d. This is mainly due to downward revisions in 4Q22 output on the back of lower-than-anticipated November production.

According to Equinor, the start-up of giant Johan Sverdrup's Phase 2 took place on December 15. The two phases now account for around one-third of the country's oil production and add a heavier, sour crude to the North Sea's predominantly light sweet flows. It is expected that the field's total export will be stepped up gradually as further commissioning and testing of systems are ongoing. In addition, the Njord field is back online after a multi-year modification process and has been upgraded for future tie-back developments by the Fenja and Bauge fields.

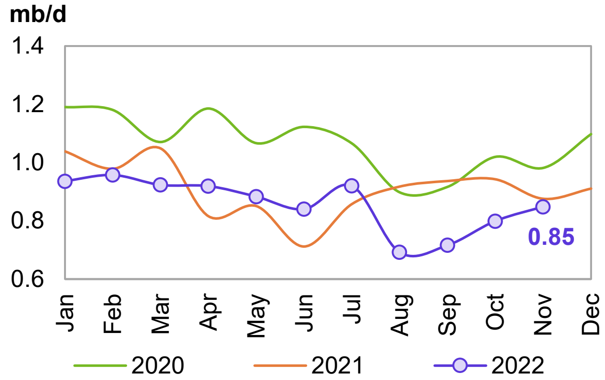
For **2023**, Norwegian liquids production is forecast to grow by 0.3 mb/d, broadly unchanged compared with the previous month, to average 2.2 mb/d. A number of small-to-large projects are scheduled to ramp up in 2023. The continuing Johan Sverdrup Phase 2 ramp-up is projected to be the main source of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

UK

UK liquids production increased m-o-m in **November** by 49 tb/d to average 0.8 mb/d. Crude oil output increased by 47 tb/d m-o-m to average 0.7 mb/d, according to official data, though this was lower by 28 tb/d y-o-y. NGLs output remained broadly unchanged at an average of 90 tb/d. UK liquids output in November was down by 3% from the same month a year earlier, mainly due to extended maintenance and natural declines.

For **2022**, UK liquids production is forecast to decline by 47 tb/d to average 0.9 mb/d. This is a downward revision by a minor 5 tb/d from the previous assessment, owing to lower-than-expected November production.

Graph 5 - 19: UK monthly liquids production development



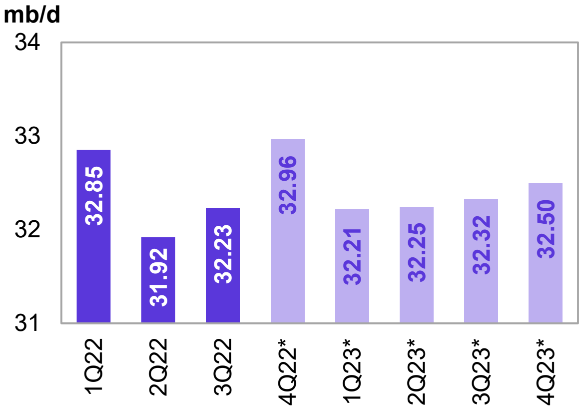
Sources: Department of Energy & Climate Change and OPEC.

For **2023**, UK liquids production is forecast to increase by 48 tb/d to average 0.9 mb/d. The Shell Penguins FPSO set off for its UK North Sea destination on December 5. Penguins is the redevelopment of a former tie-back field to the Brent Charlie hub and is expected to reach 45 tboe/d at peak.

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 UK authorities announced plans to raise the Energy Profits Levy (EPL) on oil and gas companies by ten percentage points to 35%, yielding a total tax rate of 75%, one of the highest in the world, effective from January 2023.

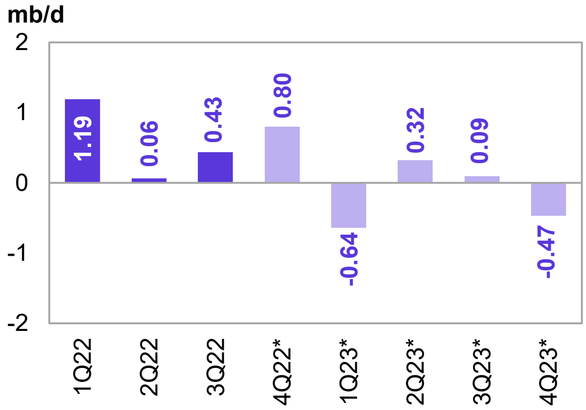
Non-OECD

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

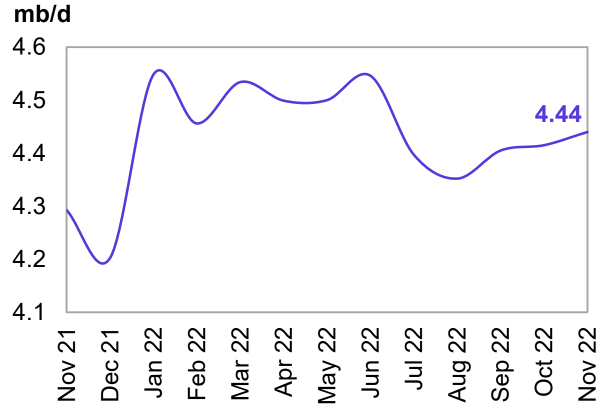


*Note: * 4Q22-4Q23 = Forecast. Source: OPEC.*

China

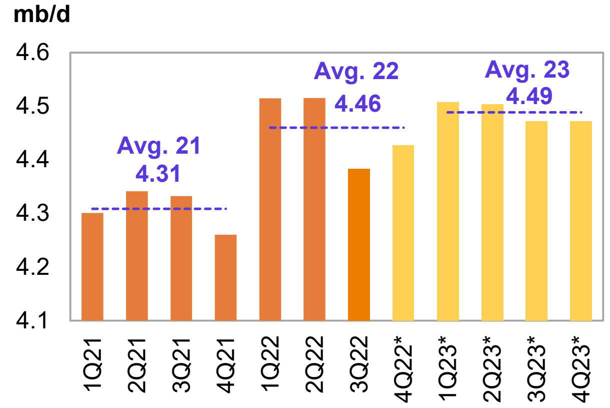
China's liquids production increased m-o-m in **November** by 25 tb/d to average 4.4 mb/d, which is a rise of 147 tb/d y-o-y, according to official data. Crude oil output in November averaged 4.0 mb/d, up by 27 tb/d compared with the previous month, and higher y-o-y by 114 tb/d. Liquids production over January–November 2022 averaged 4.5 mb/d, higher by 3.3% compared with the same period the previous 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. China National Offshore Oil Corporation (CNOOC) has started production from the Kenli 6-1 oilfield, part of the block's development project in the southern Bohai Sea offshore eastern China. The development covers the main area of Kenli 6-1, China's first large-scale shallow oilfield project, according to Offshore Magazine.

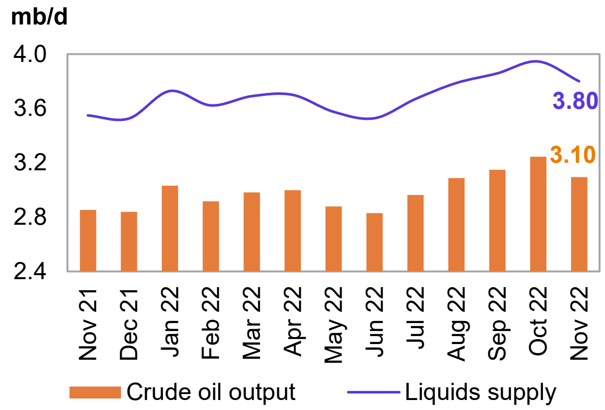
For **2023**, y-o-y growth of 30 tb/d is forecast for an average of 4.5 m/d, unchanged from last month's assessment. New offshore discoveries, the development of remote onshore basins and more investment in advanced enhanced oil recovery projects are expected to offset the declining output of mature fields.

Latin America

Brazil

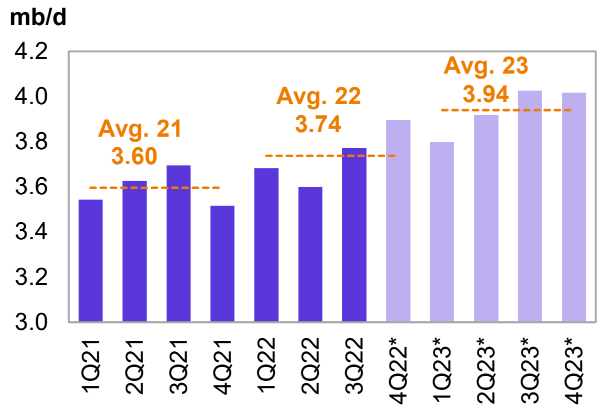
Brazil's crude output in **November** decreased m-o-m by 149 tb/d to average 3.1 mb/d. NGLs production was largely unchanged at an average of 93 tb/d and is expected to remain flat in December. Biofuels output (mainly ethanol) was flat in November at an average of 612 tb/d, with preliminary data also showing a flat trend in December. Total liquids production decreased by 147 tb/d in November to average 3.8 mb/d, after the highest production rate on record of 3.9 mb/d was seen in October. However, this is a rise of 0.3 mb/d y-o-y. The output reduction was mainly due to some issues at Tupi field installations.

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.*

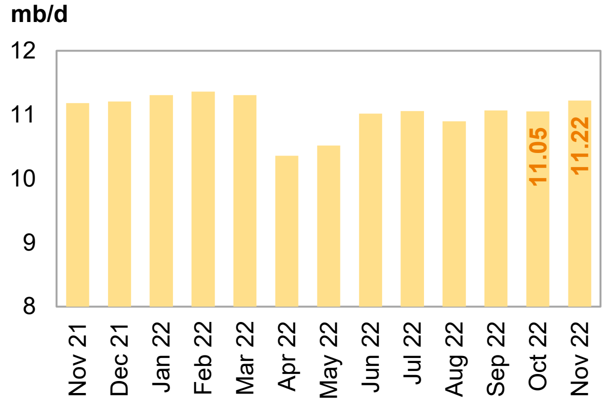
For **2022,** Brazil's liquids supply, including biofuels, is forecast to increase by 0.1 mb/d y-o-y to average 3.7 mb/d. This is down by a minor 7 tb/d from the previous month's assessment due to lower-than-expected production in November. Equinor's Peregrino Phase 2 (Platform C) started production in October and is ramping 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. Petrobras has started operations at the FPSO P-71 on the Itapu Field in the presalt Santos Basin. The vessel is designed to process up to 150 tb/d of oil and 6 MMcm/d of gas, and can store up to 1.6 MMbbl of oil. The startup was ahead of the original schedule, according to Petrobras.

Russia

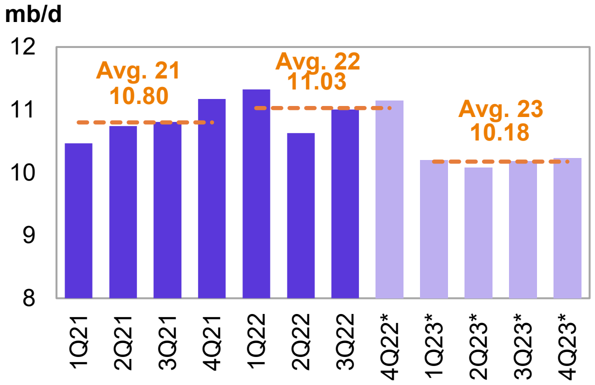
Russia's liquids production in November jumped m-o-m by 173 tb/d to average 11.2 mb/d. This includes 9.8 mb/d of crude oil and 1.4 mb/d of NGLs and condensate. A preliminary estimate of Russia's crude production in December 2022 shows a m-o-m decrease of 53 tb/d to average 9.8 mb/d, while stable output is seen 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 0.2 mb/d to average 11.0 mb/d. This is revised up by 68 tb/d from the previous month's assessment, mainly due to higher November output and higher-than-expected preliminary production data in December.

For **2023**, Russian liquids production is forecast to drop by 0.85 mb/d to average 10.2 mb/d. The annual growth 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 372 tb/d to average 2.0 mb/d in **November**. Crude production was up by 233 tb/d m-o-m to average 1.7 mb/d, and NGLs increased by 139 tb/d to average 0.4 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.

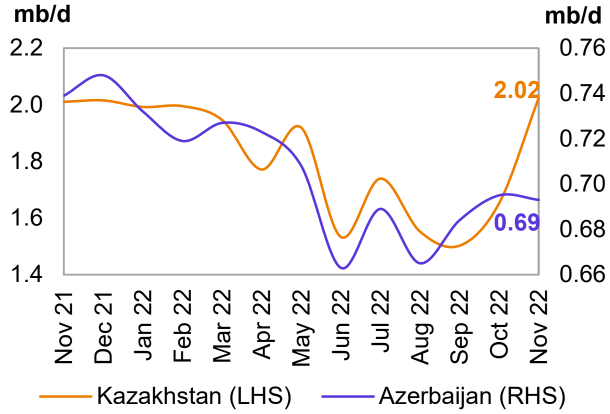
Kazakhstan's liquids supply for **2022** is now forecast to decline by 35 tb/d y-o-y to average 1.8 mb/d. This is broadly unchanged compared with the previous month's assessment. Crude production at the Kashagan field recovered to a nominal capacity of around 400 tb/d in the second week of November. At the same time, the two required Single Point Moorings (SPM) have been operational at a crude terminal on Russia's Black Sea coast since November.

For **2023**, the liquids supply is forecast to increase by 157 tb/d, unchanged compared with the previous forecast. 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 November remained unchanged m-o-m, averaging 0.7 mb/d, although this is a drop of 46 tb/d y-o-y. Crude production averaged 553 tb/d, with NGLs output at 140 tb/d, according to official sources.

For **2022**, the liquids supply in Azerbaijan is estimated to decline y-o-y by 34 tb/d to average 0.7 mb/d. This is a downward revision by a minor 7 tb/d due to lower-than-expected production in major oil fields in November. 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 gas condensate field, which 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 60 tb/d to average 0.8 mb/d, according to 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 flank project in 2023.

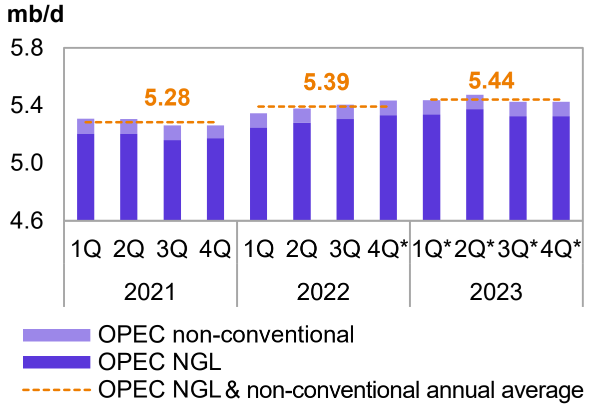
OPEC NGLs and non-conventional oils

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 November, according to preliminary data.

OPEC NGLs and non-conventional liquids are forecast to expand by around 50 tb/d in **2023** to average 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-coventional oils	2021	Change 21/20	2022	Change 22/21	1Q23	2Q23	3Q23	4Q23	2023	Change 23/22
OPEC NGL	**5.18**	*0.12*	**5.29**	*0.11*	5.34	5.37	5.33	5.33	**5.34**	*0.05*
OPEC non-conventional	**0.10**	*0.00*	**0.10**	*0.00*	0.10	0.10	0.10	0.10	**0.10**	*0.00*
Total	**5.28**	***0.12***	**5.39**	***0.11***	**5.44**	**5.47**	**5.43**	**5.43**	**5.44**	***0.05***

Note: 2022 = Estimate and 2023 = Forecast. Source: OPEC.

OPEC crude oil production

According to secondary sources, total **OPEC-13 crude oil production** averaged 28.97 mb/d in December 2022, higher by 91 tb/d m-o-m. Crude oil output increased mainly in Nigeria, Angola, Libya and Venezuela, while production in Kuwait, Congo and Algeria declined.

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

Secondary sources	2021	2022	2Q22	3Q22	4Q22	Oct 22	Nov 22	Dec 22	*Change Dec/Nov*
Algeria	913	1,017	1,015	1,040	1,030	1,050	1,026	1,015	*-11*
Angola	1,117	1,142	1,171	1,151	1,093	1,054	1,092	1,134	*42*
Congo	265	263	268	266	255	261	261	243	*-18*
Equatorial Guinea	97	84	90	90	66	70	65	64	*-1*
Gabon	182	197	190	201	199	205	199	193	*-6*
IR Iran	2,392	2,554	2,555	2,565	2,565	2,557	2,565	2,574	*9*
Iraq	4,049	4,448	4,440	4,542	4,519	4,593	4,484	4,480	*-4*
Kuwait	2,419	2,705	2,690	2,801	2,713	2,806	2,684	2,649	*-35*
Libya	1,143	991	751	992	1,156	1,166	1,142	1,159	*17*
Nigeria	1,372	1,203	1,209	1,063	1,169	1,066	1,175	1,267	*91*
Saudi Arabia	9,114	10,531	10,450	10,894	10,606	10,861	10,474	10,478	*4*
UAE	2,727	3,065	3,045	3,168	3,091	3,187	3,047	3,039	*-9*
Venezuela	553	685	714	667	674	681	664	676	*13*
Total OPEC	**26,343**	**28,885**	**28,587**	**29,440**	**29,139**	**29,558**	**28,879**	**28,971**	***91***

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	2021	2022	2Q22	3Q22	4Q22	Oct 22	Nov 22	Dec 22	*Change Dec/Nov*
Algeria	911	1,020	1,016	1,050	1,030	1,060	1,021	1,009	*-12*
Angola	1,124	1,140	1,173	1,151	1,076	1,051	1,088	1,088	*0*
Congo	267	262	258	261	261	267	260	257	*-3*
Equatorial Guinea	93	81	91	83	56	57	56	54	*-1*
Gabon	181	191	184	198	183	170	191	189	*-2*
IR Iran	..	..	..	..	..	..	..	..	*..*
Iraq	3,971	4,450	4,472	4,632	4,505	4,651	4,430	4,431	*1*
Kuwait	2,415	2,707	2,694	2,799	2,721	2,811	2,676	2,676	*0*
Libya	1,207	..	..	..	..	..	..	..	*..*
Nigeria	1,323	1,143	1,133	999	1,145	1,014	1,186	1,235	*50*
Saudi Arabia	9,125	10,591	10,542	10,968	10,622	10,957	10,468	10,435	*-32*
UAE	2,718	3,064	3,042	3,170	3,093	3,188	3,047	3,043	*-4*
Venezuela	636	716	745	673	693	717	693	669	*-23*
Total OPEC	**..**	**..**	**..**	**..**	**..**	**..**	**..**	**..**	***..***

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

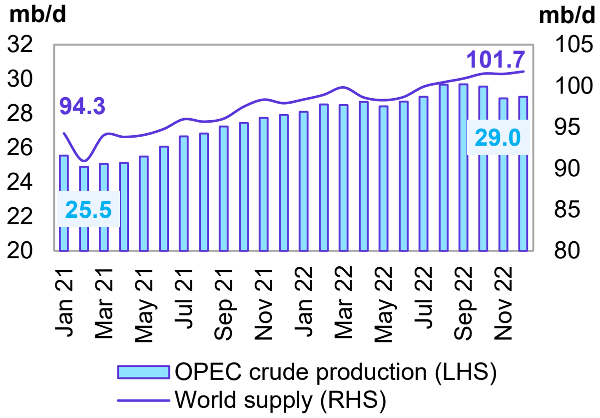
World oil supply

Preliminary data indicates that **global liquids production in December** increased by 0.3 mb/d to average 101.7 mb/d compared with the previous month.

Non-OPEC liquids production (including OPEC NGLs) is estimated to have increased m-o-m in December by 0.2 mb/d to average 72.8 mb/d. This was higher by 2.8 mb/d y-o-y. Preliminary estimated production increases in December were mainly driven by OECD Europe, Latin America and Other Eurasia and partially offset by declines in the US and Russia.

The **share of OPEC crude oil in total global production** remained unchanged at 28.5% in December, 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.

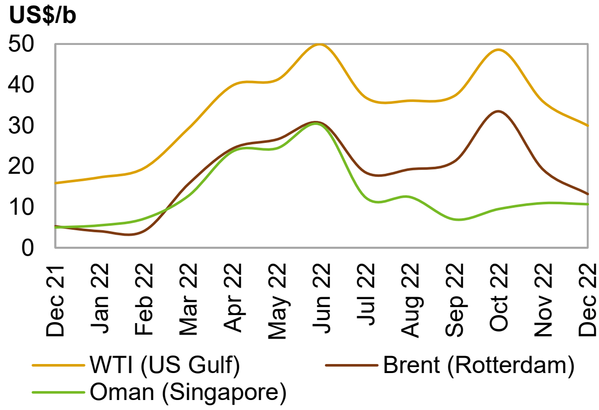
Product Markets and Refinery Operations

In December, refinery margins weakened in all main trading hubs with greater losses registered in the West, as product availability continued to rise, with most of the losses coming from transport fuels, particularly at the middle section of the barrel, reflecting easing tightness. Similarly, in Asia, margins were pressured by elevated refinery runs and fuel supplies, which weighed on regional gasoil and jet/kero markets, despite relaxation of the zero COVID-19 policies in China and positive regional gasoline and residual fuel performance. Over the month, global refinery processing rates continued to rise, and gained nearly 700 tb/d as refineries ramped up in line with seasonal trends, to re-stock for the next maintenance season. In the coming month, refinery intakes are expected to remain strong, as returning capacity from the recent winter storm in the US will likely offset the slight rise in offline capacity elsewhere.

Refinery margins

USGC refining margins against WTI extended the downward trend to show solid loss affected by the negative performance at the top and middle sections of the barrel. This, in turn, was a reflection of rising product inventory levels as refiners continued to ramp up processing rates following the most recent heavy maintenance season. A winter storm affected operations in over 20 refineries in the US Gulf and in the Midwest causing the loss of nearly 6 mb/d of refining capacity. The disruption in operations was quickly restored in most refineries, however, the monthly refinery throughput was significantly affected, although most product inventories showed growth.

Graph 6 - 1: Refining margins



Sources: Argus and OPEC.

According to preliminary estimates, refinery intake in the US reversed the trend in December and lost 300 tb/d m-o-m to average 16.62 mb/d in December. Going forward, intakes are expected to remain elevated although a pick-up in maintenance interventions may lead to a small decline. USGC margins against WTI averaged $30.00/b in December, down by $5.84 m-o-m and $14.11 y-o-y.

Refinery margins in Rotterdam against Brent declined for the second consecutive month with weakness manifested all across the barrel. Weak product exports, seasonally suppressed demand amid high inflation and weaker fuel requirements from the manufacturing sector, all combined to weigh on European fuel markets and refining margins, while product supply rose. Refinery throughput in Europe increased by 370 tb/d to average 10.16 mb/d according to preliminary data. Refinery margins against Brent in Europe averaged $13.18/b in December, down by $5.94/b compared with a month earlier but were higher by $7.94 y-o-y.

Singapore refining margins against Oman suffered a modest downturn following the positive performance registered in the two previous months. The relaxation of the stringent COVID-19 related quarantine requirements and mandatory testing in China contributed to stronger mobility activities over the month, and a more positive product market sentiment which contributed to support product margins. However, strong refinery runs within the region and consequently a widening product balance exerted pressure on Asian product markets. In addition, the ongoing rise in refinery throughput since the end of the most recent heavy refinery maintenance season in October, led to lower product requirements from the West, which contributed to the weakness in Asian refining economics. Regional refinery run rates increased by 400 tb/d in December relative to the previous month and averaged 26.30 mb/d, according to preliminary data. Refinery margins against Oman in Asia lost 27¢/b m-o-m to average $10.70/b, and higher by $5.69 y-o-y.

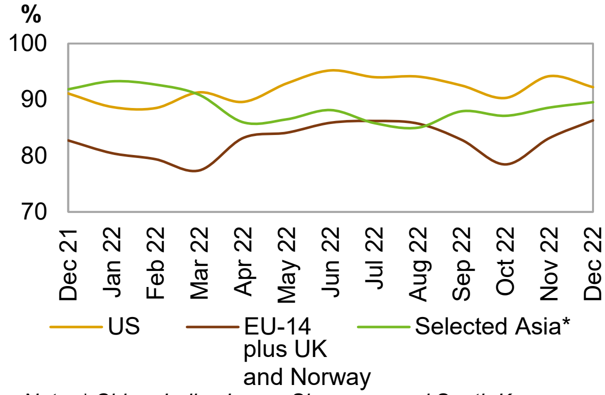
Refinery operations

US refinery utilization rates decreased in December to average 92.2%, which corresponds to a throughput of 16.62 mb/d. This represented a drop of 2.0 pp and 300 tb/d, respectively, compared with November. Y-o-y, the December refinery utilization rate was up by 1.1 pp, with throughput showing a rise of 310 tb/d.

European refinery utilization averaged 86.3% in December, corresponding to a throughput of 10.16 mb/d. This is an m-o-m rise of 3.2 pp or 370 tb/d. On a y-o-y basis, utilization rates were up by 3.6 pp, while throughput was higher by 420 tb/d.

In **Selected Asia** – comprising Japan, China, India, Singapore and South Korea – refinery utilization rates increased to average 89.5% in December, corresponding to a throughput of 26.30 mb/d. Compared with the previous month, utilization rates were up by 1.0 pp, and throughput was higher by 400 tb/d. However, y-o-y utilization rates were lower by 2.3 pp, and throughput was up by 107 tb/d.

Graph 6 - 2: Refinery utilization rates



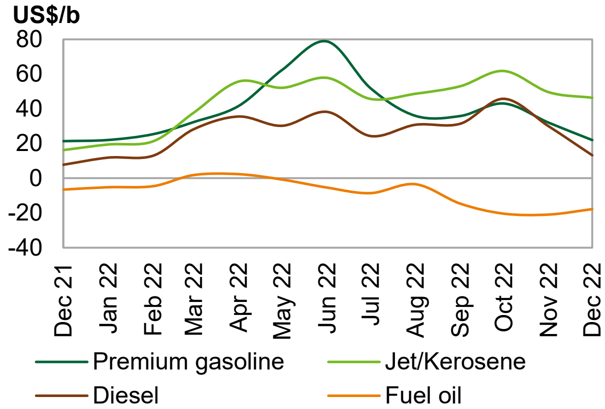
*Note: * China, India, Japan, Singapore and South Korea.*
Sources: Argus, EIA, Euroilstock, PAJ and OPEC.

Product markets

US market

The **USGC gasoline crack spread** continued to trend downwards as seasonality continued to weigh on gasoline performance. Total US gasoline inventory registered significant growth in the first three weeks of December as gasoline balances in the country widened amid subdued consumption levels. Although gasoline supplies experienced a slow down towards the end of the month in the aftermath of the weather-related disruption, the decline in stock levels towards the end of the month was largely offset by the gains registered in the three first weeks of the month, signalling that the country remained well supplied in December. Road travel activities experienced a mild pick-up around the year-end holiday. However this supportive factor was rather short lived and insufficient to avert the overall winter-related gasoline weakness.

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



Sources: Argus and OPEC.

In December, wholesale gasoline 93 prices reversed trends and decreased by $17.65 m-o-m to average $98.39/b, however, they were $5.25 higher compared to the same month a year earlier. The USGC gasoline crack spread lost $10.00 m-o-m to average $21.89/b in December, but was up by 62¢ y-o-y.

The **USGC jet/kerosene crack spread** lost some ground 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 $10.85/b over the month to average $122.84/b and retained their position as the highest-priced product in the USGC market in December as inventories for the fuel remain below the 5-year average and availability remains relatively tight. The US jet/kerosene crack spread against WTI averaged $46.34/b, down by $3.20 m-o-m but higher by $30.06 y-o-y.

The **USGC gasoil crack spread** suffered pressure following a solid stock build over the month. US gasoil inventories increased to settle at a significantly higher level relative to what was recorded in the previous month, although they remain below the five-year average. Gasoil prices averaged $89.75/b in December, down by $24.26 relative to November. The US gasoil crack spread against WTI averaged $13.25/b, down by $16.61 m-o-m but was up by $5.45 y-o-y.

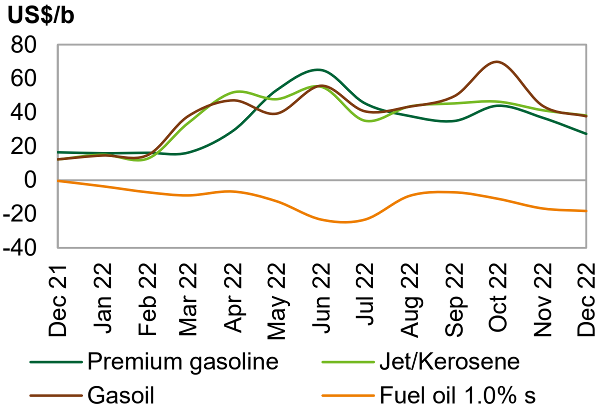
The **USGC fuel oil crack spread** against WTI reversed trends to show a recovery following the loss seen in the previous month. This upturn was mostly attributed to the strong hydrocracking margins which led to more intensive fuel oil destruction due to favourable conversion economics. Consequently, the rise in conversion units intakes resulted in a tighter high sulphur balances, which exerted upward pressure on fuel oil crack spreads. In December, the US fuel oil crack spread against WTI averaged minus $17.74/b, higher by $3.10/b m-o-m but lower by $11.20 y-o-y.

European market

Gasoline crack spreads weakened to show the strongest monthly loss across the barrel in Europe affected by supply-side pressure as refinery output levels for the same product rose. The gasoline crack spread against Brent averaged $27.30/b in December, down by $9.49 m-o-m but up by $10.91 y-o-y.

In December, jet/kerosene crack spreads decreased in line with the adverse supply-side dynamics. A strong revival in airline activities reported around the end of the month is expected to lead to an improvement in fuel oi performance in the coming month. The Rotterdam jet/kerosene crack spread against Brent averaged $38.09/b, down by $3.07 m-o-m but up by $25.99 y-o-y.

Graph 6 - 4: Rotterdam crack spreads vs. Brent



Sources: Argus and OPEC.

Gasoil 10 ppm crack spreads showed the second strongest negative performance across the European barrel following gasoline. Strong inflation amid subdued manufacturing activities in the Eurozone had a negative impact on gasoil markets. Moreover, high supplies from Russia, and strong gasoil buying interest ahead of the 5 February 2023 embargo on Russian oil products further contributed to a well-supplied region. Apart from the pressures caused by the economic environment, high diesel output and refinery runs in Europe, as refiners seek to profit from lucrative margins, should continue to support diesel inventory levels going forward. The gasoil crack spread against Brent averaged $37.69b, down by $6.14 m-o-m but up by $25.41 y-o-y.

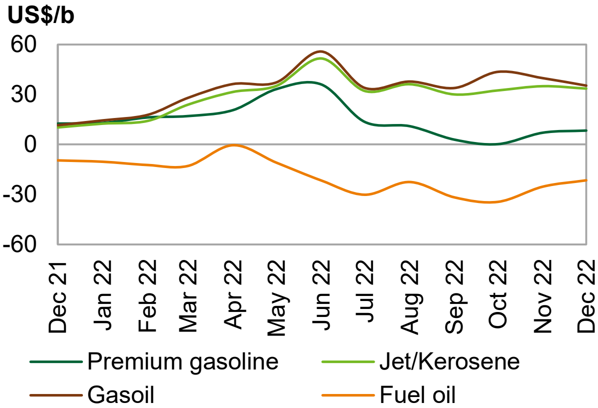
At the bottom of the barrel, **fuel oil 1.0% crack spreads** extended their downward trend for the third consecutive month, pressured by the economic slowdown, and stronger gasoil/diesel supplies from Russia and the East-of-Suez. In terms of prices, fuel oil 1.0% lost some value m-o-m and averaged $64.77/b, which was $9.55 lower relative to the previous month. In Europe, fuel oil cracks averaged minus $18.26/b in December, having lost $1.48 m-o-m and $17.80 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-19 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 December averaged $8.27/b, up by $1.28 m-o-m but down by $4.21 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. The Singapore naphtha crack spread against Oman averaged minus $10.68/b, increasing by $1.22 m-o-m but dropping by $15.19 y-o-y.

In the middle of the barrel, **jet/kerosene crack spreads** saw a loss as the overall jet/kerosene balance lengthened amid strong refinery output levels. The Singapore jet/kerosene crack spread against Oman averaged $33.45/b, down by $1.44 m-o-m but up by $23.29 y-o-y.

The Singapore **gasoil crack spread** represented the strongest negative performer across the barrel in December. This was a reflection of rising gasoil availability while export requirements to the West eased due to stronger refinery runs and ample product supply in the US and Europe. This, coupled with a surge in gasoil exports from China in the previous month resulted in higher gasoil availability in the Singapore trading hub. The Singapore gasoil crack spread against Oman averaged $35.32/b, down by $4.47 m-o-m but up by $23.69 y-o-y.

The Singapore **fuel oil 3.5% crack spread** continued to rise benefitting from a pickup in bunker fuel demand and favourable coking economics and tighter balance in the region. Singapore fuel oil cracks against Oman averaged minus $21.53/b, up by $3.81 m-o-m but down by $11.97 y-o-y.

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

Event	Time frame	Asia	Europe	US	Observations
Chinese New Year celebration	Jan 23–Feb 23	↑ Support on product crack spreads	-	-	The approaching celebrations amid the recent relaxation of the stringent COVID-19 lockdowns and mandatory quarantine will most likely strengthen product markets in China in the coming weeks.
Feb 5 Russian product embargo	Feb 23	-	↑ Support on product crack spreads	-	The embargo is expected to lead to flow adjustments. Concerns over the effectiveness of this sanction point to a softer impact on the mid- and long-term.
Chinese product export quotas	Jan 23–Feb 23	↓ Pressure on product markets	↓ Pressure on product markets	↓ Pressure on product markets	The release of the first batch of Chinese product export quotas and the most recent surge in crude acquisition by the independents may support fuel exports going forward.

Source: OPEC.

Table 6 - 2: Refinery operations in selected OECD countries

	Refinery throughput, mb/d				Refinery utilization, %			
	Oct 22	Nov 22	Dec 22	Change Dec/Nov	Oct 22	Nov 22	Dec 22	Change Dec/Nov
US	**16.27**	**16.92**	**16.62**	**-0.30**	**90.30**	**94.18**	**92.22**	**-2.0 pp**
Euro-14, plus UK and Norway	**9.24**	**9.79**	**10.16**	**0.37**	**78.43**	**83.11**	**86.27**	**3.2 pp**
France	0.45	0.84	0.95	0.11	38.75	73.03	82.44	9.4 pp
Germany	1.88	1.84	1.85	0.01	91.45	89.80	90.39	0.6 pp
Italy	1.34	1.34	1.40	0.07	70.26	70.42	73.90	3.5 pp
UK	1.05	1.04	1.06	0.02	89.77	88.66	90.28	1.6 pp
Selected Asia*	**25.47**	**25.90**	**26.30**	**0.40**	**87.09**	**88.56**	**89.52**	**1.0 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	1Q22	2Q22	3Q22	4Q22
OECD Americas	**19.04**	**16.59**	**17.79**	**18.35**	**18.74**	**19.00**	**18.89**
of which US	*16.99*	*14.72*	*15.66*	*16.06*	*16.61*	*16.82*	*16.60*
OECD Europe	**12.13**	**10.65**	**10.92**	**10.99**	**11.57**	**11.78**	**11.38**
of which:							
France	*1.00*	*0.67*	*0.69*	*0.79*	*0.84*	*0.96*	*0.75*
Germany	*1.78*	*1.72*	*1.72*	*1.75*	*1.87*	*1.83*	*1.86*
Italy	*1.35*	*1.11*	*1.23*	*1.16*	*1.42*	*1.41*	*1.36*
UK	*1.08*	*0.92*	*0.92*	*1.04*	*1.06*	*1.02*	*1.05*
OECD Asia Pacific	**6.79**	**5.87**	**5.76**	**6.21**	**5.83**	**6.17**	**6.12**
of which Japan	*3.02*	*2.48*	*2.49*	*2.80*	*2.60*	*2.73*	*2.82*
Total OECD	**37.96**	**33.12**	**34.47**	**35.55**	**36.14**	**36.95**	**36.39**
Latin America	**3.81**	**3.20**	**3.50**	**3.38**	**3.65**	**3.65**	**3.62**
Middle East	**6.95**	**6.07**	**6.78**	**7.21**	**7.34**	**7.50**	**7.78**
Africa	**2.00**	**1.79**	**1.78**	**1.79**	**1.82**	**1.79**	**1.87**
India	**5.04**	**4.42**	**4.73**	**5.18**	**5.22**	**4.69**	**4.75**
China	**13.02**	**13.48**	**14.07**	**13.96**	**12.89**	**13.00**	**13.98**
Other Asia	**5.08**	**4.72**	**4.81**	**5.07**	**5.43**	**5.37**	**5.45**
Russia	**5.70**	**5.39**	**5.61**	**5.71**	**5.04**	**5.50**	**5.52**
Other Eurasia	**1.21**	**1.10**	**1.27**	**1.26**	**1.27**	**1.30**	**1.37**
Other Europe	**0.55**	**0.43**	**0.41**	**0.42**	**0.51**	**0.55**	**0.56**
Total Non-OECD	**43.35**	**40.61**	**42.96**	**43.98**	**43.18**	**43.35**	**44.89**
Total world	**81.31**	**73.73**	**77.43**	**79.54**	**79.32**	**80.30**	**81.27**

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

		Nov 22	Dec 22	Change Dec/Nov	Annual average 2021	2022
US Gulf (Cargoes FOB)						
Naphtha*		75.03	69.40	-5.63	70.70	89.24
Premium gasoline	(unleaded 93)	116.04	98.39	-17.65	91.41	134.59
Regular gasoline	(unleaded 87)	102.84	91.04	-11.80	86.72	123.34
Jet/Kerosene		133.69	122.84	-10.85	78.32	140.17
Gasoil	(0.2% S)	114.01	89.75	-24.26	73.94	122.10
Fuel oil	(3.0% S)	59.44	54.18	-5.26	59.84	76.84
Rotterdam (Barges FoB)						
Naphtha		73.87	65.57	-8.30	70.15	85.08
Premium gasoline	(unleaded 98)	127.89	110.33	-17.56	85.89	136.26
Jet/Kerosene		132.26	121.12	-11.14	77.17	139.86
Gasoil/Diesel	(10 ppm)	134.93	120.72	-14.21	78.31	142.32
Fuel oil	(1.0% S)	74.32	64.77	-9.55	69.12	88.77
Fuel oil	(3.5% S)	61.28	56.87	-4.41	61.38	78.86
Mediterranean (Cargoes FOB)						
Naphtha		70.34	60.68	-9.66	69.40	82.26
Premium gasoline**		112.50	89.82	-22.68	80.46	120.04
Jet/Kerosene		127.05	114.74	-12.31	75.06	135.36
Diesel		129.87	112.15	-17.72	77.73	135.91
Fuel oil	(1.0% S)	80.64	71.36	-9.28	70.51	94.51
Fuel oil	(3.5% S)	57.73	52.97	-4.76	58.98	72.30
Singapore (Cargoes FOB)						
Naphtha		74.22	66.41	-7.81	70.83	83.91
Premium gasoline	(unleaded 95)	98.27	89.40	-8.87	80.28	115.05
Regular gasoline	(unleaded 92)	93.11	85.36	-7.75	78.28	111.02
Jet/Kerosene		121.01	110.54	-10.47	75.10	126.76
Gasoil/Diesel	(50 ppm)	127.11	113.53	-13.58	77.36	134.94
Fuel oil	(180 cst)	125.41	110.54	-14.87	75.71	129.75
Fuel oil	(380 cst 3.5% S)	60.78	55.56	-5.22	62.07	76.63

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

Sources: Argus and OPEC.

Tanker Market

Dirty freight rates in December fell from elevated levels as activities slowed ahead of seasonal holidays, with losses on almost all monitored routes. VLCCs showed the biggest decline on average, with spot freight rates on the Middle East-to-East route falling 31% m-o-m. In the Suezmax class, dirty spot freight rates declined 22% on the US Gulf Coast-to-Europe route. Aframax rates saw the smallest decline, slipping around 3% on the inter-Mediterranean route. The decline in dirty spot freight rates came as sanctions on Russian maritime crude flows took effect in December, implying that the tanker market has sufficiently adjusted so far to trade dislocations.

Clean rates remained robust, up 50% on the Middle East-to-East route and around 25% higher in the Mediterranean. Continued tonnage demand amid impending sanctions on Russian refined product flows and lengthening voyages kept tanker availability tight.

Spot fixtures

The latest estimates show **global spot fixtures** declined from elevated levels in December to average 10.3 mb/d. Fixtures fell by 6.3 mb/d, or almost 38% m-o-m. Compared with the previous year, spot fixtures declined by 3.4 mb/d or around 25%.

Table 7 - 1: Spot fixtures, mb/d

Spot fixtures	Oct 22	Nov 22	Dec 22	*Change* Dec 22/Nov 22
All areas	14.02	16.52	10.26	-6.26
OPEC	9.56	12.18	7.41	-4.77
Middle East/East	5.63	7.31	4.50	-2.81
Middle East/West	1.43	1.26	0.93	-0.33
Outside Middle East	2.50	3.61	1.98	-1.63

Sources: Oil Movements and OPEC.

OPEC spot fixtures declined in December to average 7.4 mb/d. This represents a m-o-m decline of 4.8 mb/d, or 39%. In comparison with the same month in 2021, fixtures decreased by 2.0 mb/d, or more than 21%.

Middle East-to-East fixtures fell by 2.8 mb/d, or more than 38%, to average 4.5 mb/d. Compared with the same month the previous year, eastward flows from the Middle East declined 1.2 mb/d, or almost 21%, higher.

Spot fixtures from the **Middle East-to-West** showed a decline in December, down by around 0.3 mb/d, or 26% m-o-m, to average around 0.9 mb/d. However, y-o-y, rates were 0.3 mb/d, or almost 58%, higher.

Outside the Middle East, fixtures averaged just under 2.0 mb/d. This represents a decline of 1.6 mb/d, or 45% m-o-m, and a drop of 1.2 mb/d, or around 37%, y-o-y.

Sailings and arrivals

OPEC sailings fell 0.2 mb/d, or less than 1% m-o-m in December, to average 22.9 mb/d. This was close to 0.8 mb/d, or about 3%, lower compared with the same month a year ago.

Middle East sailings edged down marginally to average 16.9 mb/d. Y-o-y, sailings from the region declined about 0.9 mb/d, or around 5%, compared with December 2021.

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

Sailings	Oct 22	Nov 22	Dec 22	*Change* Dec 22/Nov 22
OPEC	22.14	23.10	22.91	-0.19
Middle East	17.55	16.99	16.90	-0.09
Arrivals				
North America	9.07	9.31	9.00	-0.31
Europe	12.63	11.51	12.71	1.20
Far East	15.23	17.26	16.97	-0.29
West Asia	8.56	7.34	9.42	2.08

Sources: Oil Movements and OPEC.

Crude arrivals saw a mixed performance in December. Arrivals in North America declined around 0.3 mb/d, or about 3% m-o-m, to average 9.0 mb/d. They were marginally higher y-o-y. Arrivals in Europe increased 1.2 mb/d, or more than 10%, to average 12.7 mb/d. European arrivals were broadly in line with the same month of the previous year.

Arrivals in the Far East declined 0.3 mb/d, or about 2%, to average just under 17 mb/d. Y-o-y they were around 2.2 mb/d, or almost 15%, higher. West Asian arrivals saw the biggest m-o-m increase, gaining 2.1 mb/d, or 28%, to average 9.4 mb/d. Y-o-y, arrivals in the region rose 0.5 mb/d, or about 5%.

Dirty tanker freight rates

Very large crude carriers (VLCCs)

VLCC spot rates in December gave back some of the gains achieved over the previous months, declining 28% on average m-o-m. However, compared to the same month in the previous year, VLCC rates were up 100% on average.

On the **Middle East-to-East** route, rates fell 31% m-o-m to average WS77 points. This was still 93% higher y-o-y. Rates on the **Middle East-to-West** route lost 15% m-o-m to average WS58 points. Y-o-y, rates on the route were down by 142%.

West Africa-to-East spot rates declined 31% m-o-m to average WS77 points in December. Compared with the same month of the previous year, rates were 88% higher.

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

VLCC	Size *1,000 DWT*	Oct 22	Nov 22	Dec 22	*Change* Dec 22/Nov 22
Middle East/East	230-280	93	112	77	-35
Middle East/West	270-285	54	68	58	-10
West Africa/East	260	95	111	77	-34

Sources: Argus and OPEC.

Suezmax

Suezmax rates also gave up most of the previous month's gains in December, falling 19% m-o-m. Compared with the same month previous year, they were still up 139%.

Rates on the **West Africa-to-US Gulf Coast (USGC)** route declined 17% to average WS161 points. Compared with the same month previous year, they were 160% higher.

Spot freight rates on the **USGC-to-Europe** route fell 22% compared with the previous month to average WS135 points. Y-o-y, rates were 118% higher.

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

Suezmax	Size *1,000 DWT*	Oct 22	Nov 22	Dec 22	*Change* Dec 22/Nov 22
West Africa/US Gulf Coast	130-135	149	194	161	-33
US Gulf Coast/ Europe	150	131	172	135	-37

Sources: Argus and OPEC.

Aframax

Aframax spot freight rates held up better than the other tanker classes. On average, spot Aframax rates fell 14% m-o-m. Compared with the same month previous year, rates were 167% higher.

This was helped by the **Indonesia-to-East** route, which saw the only increase among the monitored routes. Rates rose 18% to average WS306 points. Y-o-y, rates on the route were up 197%.

Spot rates on the **Caribbean-to-US East Coast (USEC)** route fell 44% m-o-m to average WS263 points. Y-o-y, they dropped 96%.

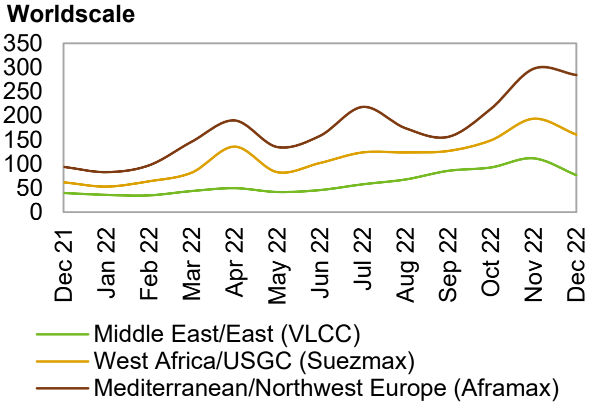
Table 7 - 5: Dirty Aframax spot tanker freight rates, WS

Aframax	Size *1,000 DWT*	Oct 22	Nov 22	Dec 22	*Change* Dec 22/Nov 22
Indonesia/East	80-85	202	260	306	46
Caribbean/US East Coast	80-85	287	466	263	-203
Mediterranean/Mediterranean	80-85	228	325	314	-11
Mediterranean/Northwest Europe	80-85	214	297	284	-13

Sources: Argus and OPEC.

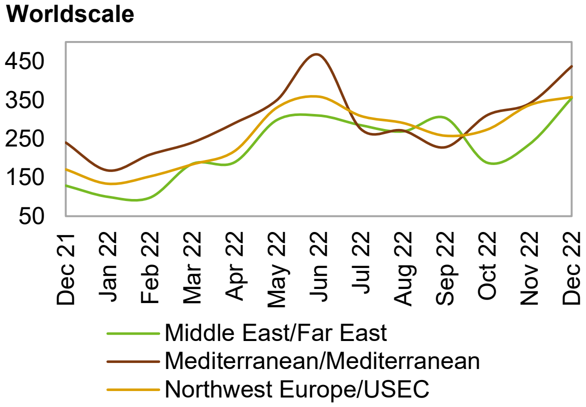
Cross-Med spot freight rates slipped 3% m-o-m to average WS314 points. They were 199% higher y-o-y. On the **Mediterranean-to-Northwest Europe (NWE)** route, rates edged down 4% m-o-m to average WS284 points. Compared with the same month previous year, they were around 202% higher.

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 December. On average, rates increased 23% m-o-m and were up 114% compared with December levels previous year.

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

East of Suez	Size *1,000 DWT*	Oct 22	Nov 22	Dec 22	*Change* Dec 22/Nov 22
Middle East/East	30-35	188	236	355	119
Singapore/East	30-35	319	337	382	45
West of Suez					
Northwest Europe/US East Coast	33-37	274	337	358	21
Mediterranean/Mediterranean	30-35	311	341	437	96
Mediterranean/Northwest Europe	30-35	325	351	444	93

Sources: Argus and OPEC.

Rates on the **Middle East-to-East** route rose 50% in December to average WS355. Y-o-y, rates were up 175%. Freight rates on the **Singapore-to-East** route rose 13% m-o-m to average WS382 and were 175% higher compared with the same month previous year.

Spot freight rates on the **NWE-to-USEC** route increased 6% m-o-m to average WS358 points in December. They were 109% higher y-o-y. Rates for the **Cross-Med** route rose 28% to average WS437 points, while rates on the **Med-to-NWE** route gained 26% to average WS444 points. Compared with the same month previous year, rates on the Med routes were 82% and 78% higher, respectively.

Crude and Refined Products Trade

US crude imports followed seasonal trends, falling to an eight-month low of 6.2 mb/d in December. Meanwhile, US crude exports remained above 4 mb/d for the third consecutive month. Product flows were broadly steady, despite a cold wave that shut-in US refineries and disrupted travel.

China's crude imports continued to recover in November, averaging 11.4 mb/d. The country's product imports reached the second highest on record while product exports jumped to their highest since June 2020. Preliminary customs data shows China's crude imports held steady at high levels in December, averaging 11.4 mb/d, while refined product exports remained strong.

India's crude imports continued to recover from an 11-month low reached in September, with an average of 4.6 mb/d seen in November. Product imports rose to a seven-month high, driven by LPG flows which were the highest on record. Product exports picked up from a two year low in the previous month, with gasoline leading gains.

Japan's crude imports fell to a five-month low in November, averaging 2.6 mb/d and marking the first y-o-y decline in 15 months. Product imports, including LPG, hit a nine-month high, driven by LPG and kerosene.

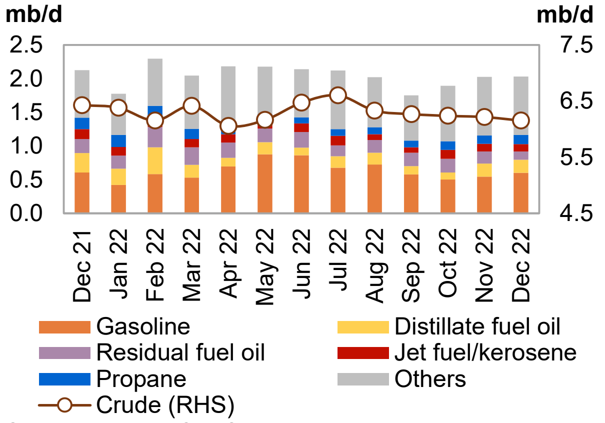
Preliminary figures show crude imports into OECD Europe remained at healthy levels through to the end of the year, despite imports of Russian crude falling to near zero with the exception of Turkey. OECD Europe product inflows are also seen to be higher in anticipation of impending February sanctions.

US

Preliminary data shows US crude imports in **December** falling to an eight-month low of 6.2 mb/d. Crude imports rose by 64 tb/d, or about 1% m-o-m. Compared with the same month in 2021, inflows fell by about 0.3 mb/d, or around 4%.

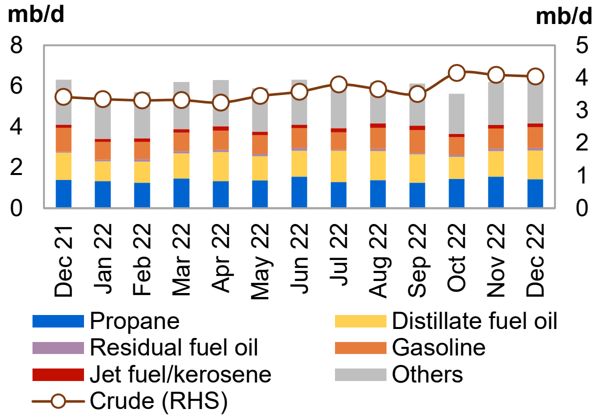
Canada remained the **top supplier of crude** in December, although its share slipped slightly to 60%. Mexico was second with a share of 11% and Saudi Arabia third with a share of 7%.

Graph 8 - 1: US imports of crude and products



Sources: EIA and OPEC.

Graph 8 - 2: US exports of crude and products



Sources: EIA and OPEC.

US crude exports in December averaged 4.0 mb/d, remaining at or above the 4 mb/d mark for the third month in a row.This represents a slight m-o-m gain of 43 tb/d, or about 1%. However, outflows increased y-o-y by 0.6 mb/d, or around 19%.

According to the latest US Energy Information Administration (EIA) monthly data, India was the top **destination** for **US crude exports** in **October** with a share of 12%, followed by South Korea, the Netherlands and the UK with around 10% each.

Based on weekly data, **US net crude imports** averaged 2.1 mb/d in **December** compared with 2.1 mb/d in November and 3.0 mb/d in the same month of the previous year.

On the **products** side, **imports** were broadly steady for the second month, averaging 2.0 mb/d in December. Offsetting movements were seen in gasoline and fuel oil. Compared with the same month of the previous year, product imports declined by 92 tb/d, or around 4%.

Product exports picked up slightly in December, averaging 6.2 mb/d, despite refinery outages due to a winter storm. Distillates led gains, which were partly offset by propane outflows. Compared with December 2021, product exports declined marginally, falling by less than 1%.

As a result, preliminary data saw **US net product exports** averaging 4.2 mb/d in December, broadly unchanged from the previous month and compared with 4.2 mb/d in the same month of 2021.

Preliminary data indicates that US **net crude and product exports** averaged 2.1 mb/d in December, compared with 2.0 mb/d the month before and just 1.2 mb/d in December 2021.

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

US	Oct 22	Nov 22	Dec 22	Change Dec 22/Nov 22
Crude oil	2.09	2.13	2.11	-0.02
Total products	-3.72	-4.17	-4.21	-0.04
Total crude and products	**-1.63**	**-2.04**	**-2.10**	**-0.06**

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

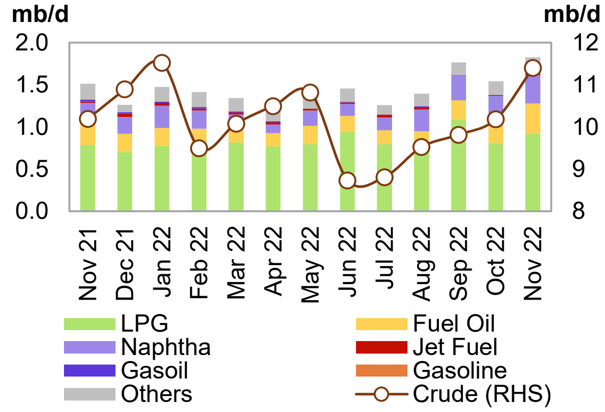
Sources: EIA and OPEC.

Looking ahead, US crude imports are likely to be supported by strength in the product export sector amid trade dislocations. Meanwhile, US crude exports are likely to remain close to current levels, supported by domestic production volumes, along with European and Asian demand.

China

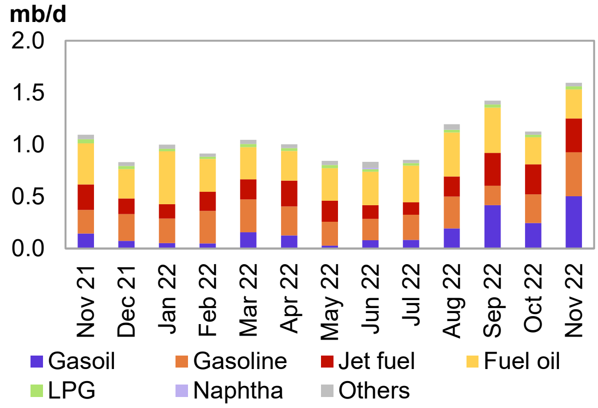
China's crude imports continued to recover in **November**, averaging 11.4 mb/d. Compared with the previous month, they rose by close to 12%, or 1.2 mb/d and saw a similar increase versus the same month of the previous year. Preliminary customs data shows China's crude oil imports held steady at high levels in **December**, averaging 11.4 mb/d.

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**, Russia claimed the top spot in **November**, with average inflows of about 1.9 mb/d. Saudi Arabia came in a close second at 1.6 mb/d. Iraq was third, with close to 1.4 mb/d, followed by the UAE with 1.2 mb/d. Malaysia and Brazil saw a sharp jump in Chinese arrivals.

Product imports were the second-highest on record, averaging 1.8 mb/d, following m-o-m growth of 0.3 mb/d or almost 19%. Gains were supported by strong inflows of naphtha and LPG. Compared with the same month of the previous year, imports increased by 0.3 mb/d, or around 21%.

Meanwhile, **product exports** jumped to their highest point since June 2020, averaging 1.1 mb/d in November, representing a m-o-m increase of almost 0.5 mb/d or 42%. Diesel and gasoline outflows were sharply higher, offsetting a strong drop in fuel oil. Y-o-y, product exports rose by almost 46%, or 0.5 mb/d.

As a result, China's **net product imports** averaged 231 tb/d in November, compared with 441 tb/d the month before and 416 tb/d in the same month of 2021.

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

China	Sep 22	Oct 22	Nov 22	*Change* Nov 22/Oct 22
Crude oil	9.64	10.14	11.40	1.26
Total products	0.34	0.41	0.23	-0.18
Total crude and products	**9.98**	**10.55**	**11.64**	**1.08**

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

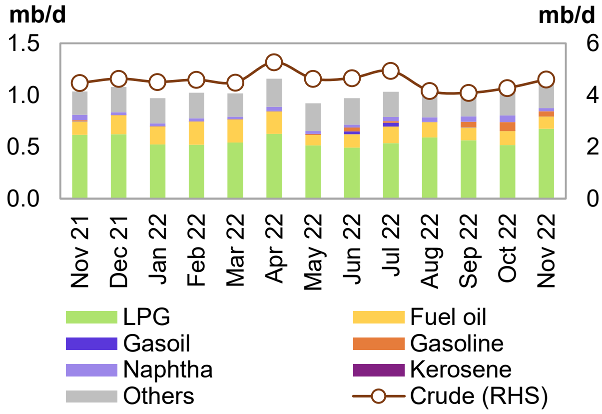
Looking ahead, China's crude imports are expected to be supported by the availability of crude import quotas. Product exports are expected to remain strong amid a policy shift towards supporting product outflows. However, they may temporarily slow in January if consumption picks up during the Lunar New Year travel season.

India

India's crude imports continued to recover from an 11-month low reached in September, averaging 4.6 mb/d in **November**. Crude inflows rose by about 8%, or 0.3 mb/d, m-o-m. Y-o-y, crude inflows were 3%, or over 0.1 mb/d, higher.

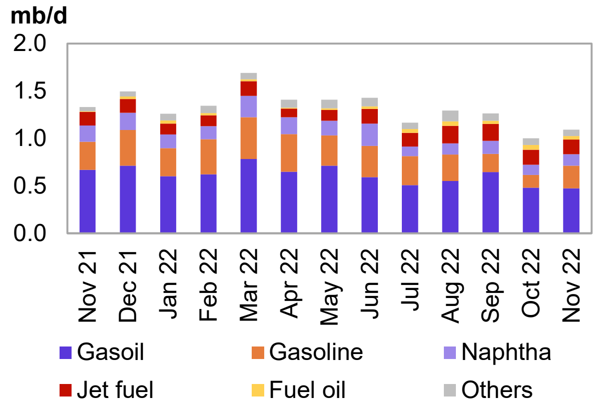
In terms of **crude imports by source**, Kpler data shows Russia was the top supplier of crude to India in November for the sixth month in a row with a share of 24%, as refiners continued to bring in discounted barrels. Saudi Arabia was second with 20%, followed by Iraq with 15%.

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



Sources: PPAC and OPEC.

Graph 8 - 6: India's exports of products



Sources: PPAC and OPEC.

In terms of **products**, **imports** rose by 8% or 80 tb/d in November to a seven-month high of 1.1 mb/d. Gains were primarily due to LPG inflows, which were the highest on record. Compared with the same month in 2021, inflows increased by 9%, or 96 tb/d.

Product exports recovered from a two-year low in the previous month to average 1.1 mb/d. Product outflows rose 92 tb/d, or almost 9%. Gains were seen primarily in gasoline. Y-o-y, product exports fell by 0.2 mb/d, or just under 18%.

As a result, India saw net product imports for the second time since February 2021, averaging 40 tb/d in November. Typically, India is a net product exporter. This compares to net product imports of 52 tb/d in October and net product exports of 293 tb/d in the same month of 2021.

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

India	Sep 22	Oct 22	Nov 22	*Change* Nov 22/Oct 22
Crude oil	4.09	4.28	4.61	0.33
Total products	-0.22	0.05	0.04	-0.01
Total crude and products	**3.88**	**4.33**	**4.65**	**0.32**

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.

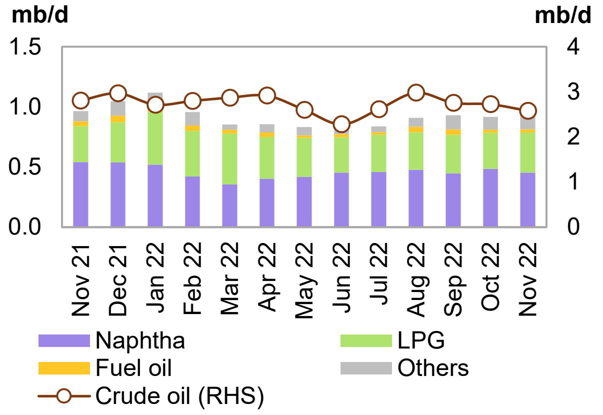
Looking ahead, crude imports are expected to rise, with higher inflows from Russia. Product exports are expected to strengthen in December amid higher availability.

Japan

Japan's crude imports hit a five-month low in November, averaging 2.6 mb/d and marking the first y-o-y decline in 15 months. Inflows declined by 0.1 mb/d, or 5%, m-o-m. Compared with the same month of the previous year, imports fell by 0.2 mb/d, or 8%.

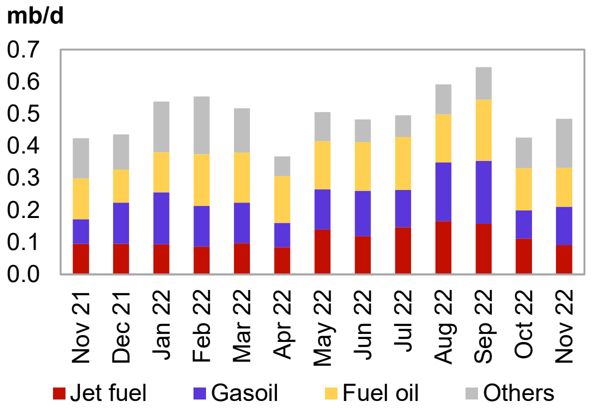
In terms of **crude imports by source**, the United Arab Emirates remained in the top spot during November, with a share of almost 42%. Saudi Arabia was second with 36%, followed by Kuwait with around 9%.

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, recorded a nine-month high in November, averaging 946 tb/d. M-o-m, inflows rose by 30 tb/d or 3%. LPG and kerosene drove gains, while jet fuel inflow was also higher. Y-o-y, imports slipped by about 19 tb/d or 2%.

Product exports recovered some of the previous month's decline, rising by 59 tb/d or about 14% to average 485 tb/d. Increases were seen in kerosene, gasoil, and gasoline, partly offset by declines in jet fuel and fuel oil. Y-o-y, product outflows were 60 tb/d or 14% higher.

As a consequence, Japan's **net product imports** averaged 461 tb/d in November. This compares with 490 tb/d the month before and 541 tb/d in November 2021.

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

Japan	Sep 22	Oct 22	Nov 22	*Change* Nov 22/Oct 22
Crude oil	2.76	2.72	2.58	-0.14
Total products	0.28	0.49	0.46	-0.03
Total crude and products	**3.04**	**3.21**	**3.04**	**-0.17**

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

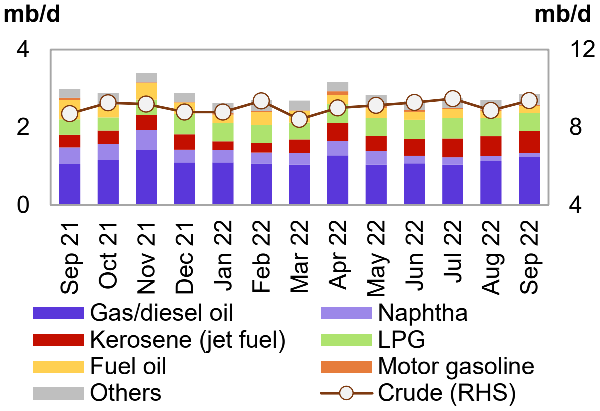
Looking ahead, Japan's crude imports are seen remaining steady in December in preparation for winter demand.

OECD Europe

The latest regional data shows **OECD Europe** crude imports rebounded in September to average 9.4 mb/d, the second-highest figure in over two years. M-o-m, crude inflows were up by 6%, or 0.5 mb/d. Y-o-y, crude imports were 8%, or 0.7 mb/d, higher.

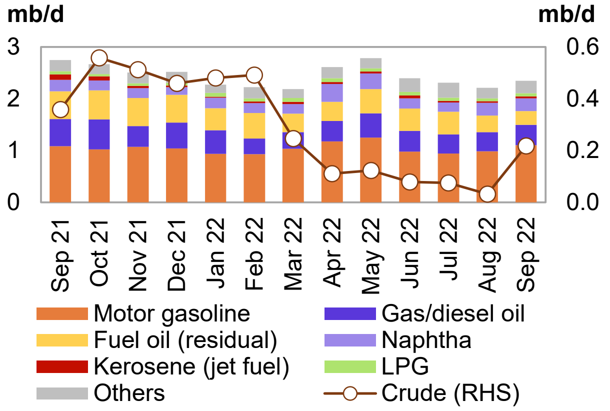
In terms of **import sources** from outside the region, Russia remained the top supplier in September with 2.0 mb/d. Norway came in second with 1.4 mb/d, followed by the US with 1.3 mb/d.

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



Sources: IEA and OPEC.

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



Sources: IEA and OPEC.

Crude exports averaged 218 tb/d in September amid renewed flows to China. This was up from an eight-year low of 33 tb/d the month before and compared with 359 tb/d in the same month of 2021.

China was the top **destination** outside the region in September, taking in around 137 tb/d, followed by the US with around 37 tb/d.

Net crude imports averaged 9.2 mb/d in September, compared with 8.8 mb/d in August and 8.3 mb/d in the same month of the previous year.

Regarding **products**, **imports** rose by 6% in September to average 2.9 mb/d, mainly due to gains in gasoil and jet kerosene. Compared with the same month of the previous year, they were 4%, or 116 tb/d, higher.

Product exports recovered the previous month's losses, up by 137 tb/d, or 6% m-o-m, to average 2.3 mb/d. M-o-m gains were driven by higher outflows of gasoline. Y-o-y, exports were 14%, or 0.4 mb/d, lower.

Net product imports averaged 516 tb/d in September, compared with net imports of 484 tb/d in the month before and 231 tb/d in September 2021.

Combined, **net crude and product imports** averaged 9.7 mb/d in September. This compares with 9.3 mb/d the month before and 8.6 mb/d in September 2021.

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

OECD Europe	Jul 22	Aug 22	Sep 22	*Change* Sep 22/Aug 22
Crude oil	9.40	8.83	9.16	0.33
Total products	0.44	0.48	0.52	0.03
Total crude and products	**9.83**	**9.31**	**9.67**	**0.36**

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

Sources: IEA and OPEC.

Looking ahead, preliminary figures show crude imports remaining at healthy levels through the end of the year. North Sea crudes are expected to primarily serve regional demand. 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 November to average 6.1 mb/d, with strong declines on the Transneft system offset by higher flows from the CPC terminal in Novorossiysk. Compared with the same month in 2021, total crude exports from the Eurasian region fell by 5%, or 0.3 mb/d.

Crude exports through the **Transneft system** fell on most outlets in November, though primarily on the Druzhba pipeline. Outflows were 661 tb/d, or 16%, lower, averaging 3.5 mb/d. Compared with the same month of the previous year, exports were down by 0.3 mb/d, or 8%. Shipments from the **Black Sea** port of Novorossiysk declined by 119 tb/d, or 21%, to average 457 tb/d. In contrast, exports from the **Baltic Sea** edged up 27 tb/d m-o-m, or by almost 2%, to average 1.4 mb/d. Flows from Ust-Luga were up by 25 tb/d, or about 4%, to average 678 tb/d, while exports from Primorsk were broadly stable at 763 tb/d.

Shipments via the **Druzhba** pipeline experienced a strong drop, down 575 tb/d, or about 84% m-o-m, to average 108 tb/d. In contrast, exports to China via the **ESPO pipeline** edged up 30 tb/d to average 626 tb/d in November. Flows to the Pacific port of **Kozmino** slipped 20 tb/d, or about 2% m-o-m, to average 840 tb/d.

In the **Lukoil system**, exports via the Varandey offshore platform in the Barents Sea averaged 104 tb/d in November, down by around 12% m-o-m. Exports from the Kaliningrad terminal were at zero, falling from neglible levels.

On other routes, **Russia's Far East** exports jumped by 68%, or 49 tb/d, to 121 tb/d on average in November. This was still a 63% or 208 tb/d declined compared to the volumes shipped in November 2021.

Central Asian exports averaged 229 tb/d in November, representing a gain of more than 2% compared with the month before and 3% higher y-o-y.

Black Sea total exports from the **CPC terminal** were sharply higher, up by almost 50%, to average 1.5 mb/d in November. This was a gain of 5% compared with the same month in 2021. There were no exports via the Supsa pipeline in November, compared with 75 tb/d in the same month of the previous year. Exports via the **Baku-Tbilisi-Ceyhan (BTC) pipeline** rose by 5%, or 36 tb/d, in November to average 705 tb/d.

Total product exports from Russia and Central Asia rose by 10%, or 270 tb/d m-o-m, to average 2.9 mb/d in November. M-o-m gains were driven primarily by gasoil, gasoline and naphtha and partly offset by a strong decline in fuel oil. Y-o-y, total product exports were 1%, or 25 tb/d, lower in November, with losses fuelled by fuel oil and offset by higher outflows of gasoline.

Commercial Stock Movements

Preliminary November data sees total OECD commercial oil stocks up m-o-m by 2.7 mb. At 2,768 mb, they were 26 mb higher than the same time one year ago, 137 mb lower than the latest five-year average and 173 mb below the 2015–2019 average. Within the components, crude stocks fell by 25.8 mb, while product stocks rose m-o-m by 28.5 mb.

At 1,343 mb, OECD crude stocks were 22 mb higher than the same time a year ago, but 73 mb lower than the latest five-year average and 108 mb lower than the 2015–2019 average.

OECD product stocks stood at 1,425 mb, representing a surplus of 4 mb from the same time a year ago, but 63 mb lower than the latest five-year average and 65 mb below the 2015–2019 average.

In terms of days of forward cover, OECD commercial stocks rose m-o-m by 0.1 day in November to stand at 59.5 days. This is 0.3 days above November 2021 levels, but 3.5 days less than the latest five-year average and 2.6 days lower than the 2015–2019 average.

Preliminary data for December showed that total US commercial oil stocks fell by 11.9 mb m-o-m to stand at 1,205 mb. This is 6.6 mb lower than the same month in 2021 but 57.1 mb below the latest five-year average. Crude stocks rose by 6.7 mb, while product stocks fell by 18.7 mb.

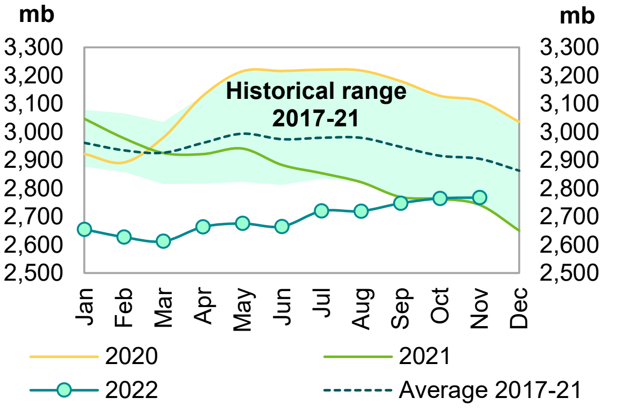
OECD

Preliminary **November** data sees **total OECD commercial oil stocks** up m-o-m by 2.7 mb. At 2,768 mb, they were 26 mb higer than the same time one year ago, but 137 mb lower than the latest five-year average and 173 mb below the 2015–2019 average.

Within the components, crude stocks fell by 25.8 mb, while product stocks rose m-o-m by 28.5 mb. Total commercial oil stocks in November rose in OECD Europe, while they fell in OECD Americas and OECD Asia Pacific.

OECD commercial **crude stocks** stood at 1,343 mb in November. This is 22 mb higher than the same time a year ago, but 73 mb lower than the latest five-year average and 108 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 Americas saw a stock draw of 25.5 mb, OECD Asia Pacific stocks fell by 4.4 mb, while stocks in OECD Europe increased by 4.2 mb.

Total product inventories stood at 1,425 mb in November. This is 4.3 mb above the same time a year ago; 63 mb lower than the latest five-year average and 65 mb below the 2015–2019 average. Product stocks rose in all OECD regions.

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

OECD stocks	Nov 21	Sep 22	Oct 22	Nov 22	*Change Nov 22/Oct 22*
Crude oil	1,321	1,348	1,368	1,343	*-25.8*
Products	1,421	1,400	1,397	1,425	*28.5*
Total	**2,742**	**2,748**	**2,765**	**2,768**	***2.7***
Days of forward cover	**59.2**	**58.6**	**59.4**	**59.5**	***0.1***

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 0.1 days in November to stand at 59.5 days. This is 0.3 days above November 2021 levels, but 3.5 days less than the latest five-year average and 2.6 days lower than the 2015–2019 average.

All three OECD regions were below the latest five-year average: the Americas by 4.5 days at 58.8 days; Asia Pacific by 2.2 days at 45.5 days; and Europe by 2.9 days at 69.3 days.

OECD Americas

OECD Americas total commercial stocks fell by 4.3 mb m-o-m in November to settle at 1,469 mb. This is 40 mb less than the same month in 2021 and 79 mb lower than the latest five-year average.

Commercial **crude oil stocks** in OECD Americas fell m-o-m by 25.5 mb in November to stand at 725 mb, which is 39 mb lower than in November 2021 and 52 mb less than the latest five-year average. The monthly drop in crude oil stocks can be attributed to higher US crude runs, which rose by 0.65 mb/d to 16.92 mb/d.

By contrast, **total product stocks** in OECD Americas rose m-o-m by 21.2 mb in November to stand at 744 mb. Nevertheless, this was 0.9 mb lower than the same month in 2021 and 27 mb below the latest five-year average. Lower consumption in the region was behind the product stock build.

OECD Europe

OECD Europe total commercial stocks rose m-o-m by 7.6 mb in November to settle at 929 mb. This is 42 mb higher than the same month in 2021, but 30 mb below the latest five-year average.

OECD Europe's **commercial crude stocks** rose by 4.2 mb m-o-m to end the month of November at 428 mb, which is 42 mb higher than one year ago and 6 mb above the latest five-year average. The build in crude oil inventories came despite higher m-o-m refinery throughput in the EU-14, plus the UK and Norway, which increased by 550 tb/d to 9.79 mb/d.

Europe's **product stocks** also rose m-o-m by 3.4 mb to end November at 501 mb. This is 0.1 mb less than a year ago and 36 mb below the latest five-year average.

OECD Asia Pacific

OECD Asia Pacific's total commercial oil stocks fell m-o-m by 0.6 mb in November to stand at 370 mb. This is 25 mb higher than a year ago, but 27 mb below the latest five-year average.

OECD Asia Pacific's **crude inventories** dropped by 4.4 mb m-o-m to end November at 190 mb, which is 20 mb higher than one year ago, but 27 mb below the latest five-year average.

By contrast, OECD Asia Pacific's **total product inventories** rose m-o-m by 3.9 mb to end November at 180 mb. This is 5 mb higher than the same time a year ago but 0.1 mb below the latest five-year average.

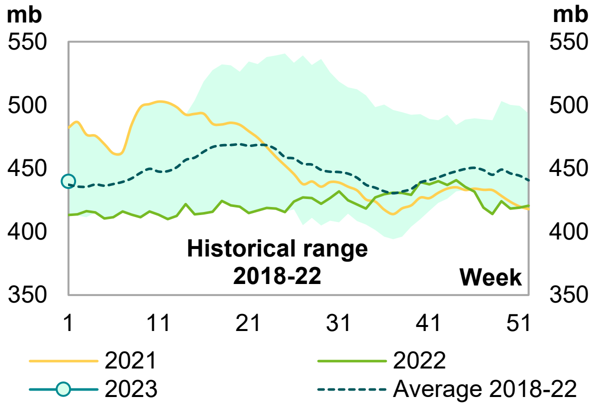
US

Preliminary data for December showed that **total US commercial oil stocks** fell by 11.9 mb m-o-m to stand at 1,205 mb. This is 6.6 mb, or 0.6%, higher than the same month in 2021 but 57.1 mb, or 4.5%, below the latest five-year average. Crude stocks rose by 6.7 mb, while product stocks fell by 18.7 mb.

US commercial crude stocks in November stood at 420.6 mb. This is 0.5 mb, or 0.1%, below the same month of the previous year, and 20.1 mb, or 4.6%, below the latest five-year average. The monthly build in crude oil stocks can be attributed to lower crude runs, which dropped by around 300 tb/d to 16.62 mb/d.

In contrast, **total product stocks** fell in December to stand at 784.6 mb. This is 7.2 mb, or 0.9%, higher than December 2021 levels but 37.1 mb, or 4.5%, lower than the latest five-year average. The stock drop could be attributed to higher product consumption.

Graph 9 - 2: US weekly commercial crude oil inventories



Sources: EIA and OPEC.

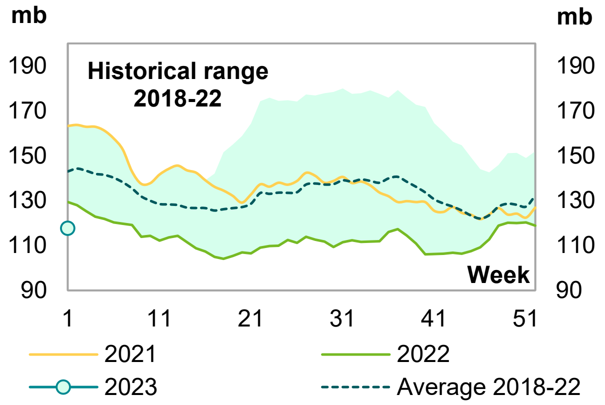
Gasoline stocks rose m-o-m by 3.6 mb to settle at 222.7 mb. This is 9.5 mb, or 4.1% lower than in the same month in 2021 and 19.9 mb, or 8.2%, lower than the latest five-year average.

Residual fuel oil stocks also rose by 1.0 mb m-o-m in December. At 30.0 mb, this was 4.3 mb, or 16.5%, higher than a year earlier, and 1.2 mb, or 4.2%, above the latest five-year average.

By contrast, **jet fuel stocks** fell m-o-m by 3.8 mb, ending December at 34.1 mb. This is 1.7 mb, or 4.7%, lower than the same month in 2021, and 5.4 mb, or 13.7%, below the latest five-year average.

Meanwhile, **distillate stocks** remained unchanged m-o-m in December to stand at 118.8 mb. This is 11.3 mb, or 8.7%, lower than the same month of the previous year and 24.6 mb, or 17.2%, below the latest five-year average.

Graph 9 - 3: US weekly distillate inventories



Sources: EIA and OPEC.

Table 9 - 2: US commercial petroleum stocks, mb

US stocks	Dec 21	Oct 22	Nov 22	Dec 22	*Change Dec 22/Nov 22*
Crude oil	**421.2**	**439.4**	**413.9**	**420.6**	***6.7***
Gasoline	232.2	211.0	219.1	222.7	*3.6*
Distillate fuel	130.0	110.5	118.8	118.8	*0.0*
Residual fuel oil	25.8	29.8	29.0	30.0	*1.0*
Jet fuel	35.8	36.6	38.0	34.1	*-3.8*
Total products	**777.4**	**791.3**	**803.3**	**784.6**	***-18.7***
Total	**1,198.6**	**1,230.7**	**1,217.2**	**1,205.2**	***-11.9***
SPR	**593.7**	**398.6**	**387.0**	**372.4**	***-14.6***

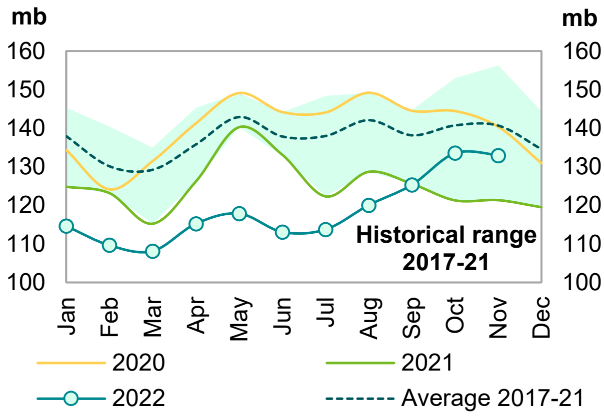
Sources: EIA and OPEC.

Japan

In **Japan**, **total commercial oil stocks** in November fell m-o-m by 0.6 mb to settle at 132.9 mb. This is 11.6 mb, or 9.5%, higher than the same month in 2021 but 7.7 mb, or 5.5%, below the latest five-year average. Crude stocks fell by 4.4 mb, while product stocks rose m-o-m by 3.9 mb.

Japanese **commercial crude oil stocks** fell in November to stand at 67.1 mb. This is 8.4 mb, or 14.4% higher than the same month of the previous year, but 7.6 mb, or 10.1%, lower than the latest five-year average. This stock draw came on the back of lower crude imports, which declined m-o-m by 144 tb/d, or 5.3%, to stand at 2.58 mb/d.

Graph 9 - 4: Japan's commercial oil stocks



Sources: METI and OPEC.

In contrast, Japan's **total product inventories** rose m-o-m by 3.9 mb to end November at 65.8 mb. This is 3.1 mb, or 5.0%, higher than the same month in 2021, but 0.1 mb, or 0.2%, below the latest five-year average.

Gasoline stocks rose m-o-m by 1.3 mb to stand at 11.1 mb in November. This was 0.7 mb, or 6.3% higher than a year earlier and in line with the latest five-year average. The build came on higher gasoline production, amounting to 3.1% m-o-m. Lower domestic sales, which declined by 6.0 % also supported the build in gasoline stocks.

Distillate stocks also rose m-o-m by 2.3 mb to end November at 32.1 mb. This is in line with the same month in 2021 and 0.5 mb, or 1.4%, below the latest five-year average. Within distillate components, kerosene, jet fuel and gasoil stocks went up by 11.3%, 6.1% and 2.2%, respectively.

Total residual fuel oil stocks rose m-o-m by 0.2 mb to end November at 12.6 mb. This is 0.9 mb, or 7.7%, higher than in the same month of the previous year but 0.4 mb, or 3.1%, below the latest five-year average. Within the components, fuel oil A stocks rose by 5.2 %, while fuel oil B.C stocks fell by 0.5 % m-o-m.

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

Japan's stocks	Nov 21	Sep 22	Oct 22	Nov 22	*Change* Nov 22/Oct 22
Crude oil	**58.7**	**67.5**	**71.6**	**67.1**	***-4.4***
Gasoline	10.5	9.8	9.8	11.1	*1.3*
Naphtha	8.5	9.5	9.9	10.0	*0.1*
Middle distillates	32.1	27.0	29.8	32.1	*2.3*
Residual fuel oil	11.7	11.5	12.4	12.6	*0.2*
Total products	**62.7**	**57.8**	**61.9**	**65.8**	***3.9***
Total**	**121.4**	**125.3**	**133.5**	**132.9**	***-0.6***

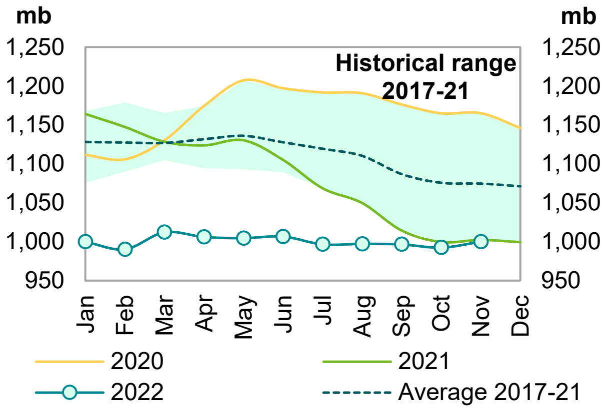
*Note: * At the end of the month. ** Includes crude oil and main products only.*
Sources: METI and OPEC.

EU-14 plus UK and Norway

Preliminary data for November showed that **total European commercial oil stocks** rose m-o-m by 7.6 mb to stand at 1000.1 mb. At this level, they were 2.2 mb, or 0.2%, below the same month a year earlier and 74.3 mb, or 6.9% lower than the latest five-year average. Crude and product stocks rose m-o-m by 4.2 mb and 3.4 mb, respectively.

European **crude inventories** rose in November to stand at 439.7 mb. This is 14.7 mb, or 3.4%, higher than the same month in 2021 but 28.1 mb, or 6.0%, below the latest five-year average. The build in crude oil inventories came despite higher m-o-m refinery throughput in the EU-14, plus the UK and Norway, which increased by 550 tb/d to 9.79 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 3.4 mb to end November at 560.4 mb. This is 16.8 mb, or 2.9%, lower than the same month of the previous year and 46.2 mb, or 7.6%, below the latest five-year average.

Gasoline stocks rose m-o-m by 0.3 mb in November to stand at 105.4 mb. At this level, they were 3.1 mb, or 2.8%, lower than the same time a year earlier, and 7.3 mb/d, or 6.5%, below the latest five-year average.

Distillate stocks also rose m-o-m by 2.4 mb in November to stand at 361.9 mb. This is 24.0 mb, or 6.2%, below the same month in 2021 and 42.2 mb, or 10.4%, less than the latest five-year average.

Residual fuel stocks rose m-o-m by 0.3 mb in November to stand at 61.9 mb. This is 3.9 mb, or 6.7%, higher than the same month in 2021, but 0.8 mb, or 1.3%, below the latest five-year average.

Naphtha stocks also rose by 0.4 mb in November, ending the month at 31.2 mb. This is 6.4 mb, or 25.8%, higher than November 2021 levels and 4.1 mb, or 15.3%, higher than the latest five-year average.

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

EU stocks	Nov 21	Sep 22	Oct 22	Nov 22	*Change* Nov 22/Oct 22
Crude oil	**425.0**	**431.9**	**435.5**	**439.7**	***4.2***
Gasoline	108.5	106.0	105.1	105.4	*0.3*
Naphtha	24.8	30.6	30.8	31.2	*0.4*
Middle distillates	385.9	368.3	359.5	361.9	*2.4*
Fuel oils	58.0	59.7	61.6	61.9	*0.3*
Total products	**577.2**	**564.6**	**557.0**	**560.4**	***3.4***
Total	**1,002.2**	**996.6**	**992.5**	**1,000.1**	***7.6***

Sources: Argus, Euroilstock and OPEC.

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

Singapore

In November, **total product stocks in Singapore** rose m-o-m by 1.1 mb to 42.3 mb. This is 1.9 mb, or 4.6%, higher than the same month in 2021, but 3.3 mb or 7.2% below the latest five-year average.

Light distillate stocks fell m-o-m by 0.1 mb in November to stand at 14.6 mb. This is 2.5 mb, or 21.1%, higher than the same month of the previous year and 2.3 mb or 18.8% above the latest five-year average.

In contrast, **middle distillate stocks** rose m-o-m by 0.9 mb in November, to stand at 7.8 mb. This is 0.3 mb, or 3.9%, lower than a year earlier and 3.5 mb or 31.4% lower than the latest five-year average.

Residual fuel oil stocks also rose m-o-m by 0.3 mb, ending November at 19.9 mb. This is 0.4 mb, or 1.8%, lower than November 2021 and 2.1 mb or 9.4% below the latest five-year average.

ARA

Total product stocks in ARA rose m-o-m in November by 1.1 mb. At 40.7 mb, they were 3.6 mb, or 9.7%, higher than the same month in 2021 and 1.5 mb or 3.9% higher than the latest five-year average.

Gasoline stocks in November rose by 1.0 mb m-o-m to stand at 11.5 mb, which is 4.3 mb, or 59.3%, higher than the same month of the previous year and 3.4 mb or 41.4% above the latest five-year average.

Jet oil stocks also rose by 0.3 mb m-o-m to stand at 6.9 mb. This is 0.6 mb, or 8.9%, higher than levels seen in November 2021 and 1.0 mb or 15.9% above the latest five-year average. .

In contrast, **gasoil stocks** dropped by 0.1 mb m-o-m, ending November at 12.9 mb. This is 0.5 mb, or 3.4%, lower than November 2021 and 3.1 mb or 19.3 % below the latest five-year average.

Fuel oil stocks also fell by 0.5 mb m-o-m in November to stand at 6.6 mb, which is 1.4 mb, or 17.2%, less than in November 2021 and 0.4 mb or 5.4% below the latest five-year average.

Fujairah

During the week ending 2 January 2023, **total oil product stocks in Fujairah** fell w-o-w by 0.32 mb to stand at 20.35 mb, according to data from Fed Com and S&P Global Platts. At this level, total oil stocks were 3.83 mb higher than at the same time a year ago.

Light distillate stocks fell by 0.64 mb to stand at 6.83 mb, which is 2.08 mb higher than a year ago. By contrast, **middle distillate stocks** rose w-o-w by 0.03 mb to stand at 3.12 mb, which is 1.47 mb higher than the same time last year. **Heavy distillate stocks** also rose by 0.29 mb w-o-w to stand at 10.40 mb in the week to 2 January 2023, which is 0.28 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 28.5 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 0.3 mb/d higher than demand for OPEC crude. In 3Q22, OPEC crude oil production averaged 29.4 mb/d, which is 1.0 mb/d higher than demand for OPEC crude. In 4Q22, OPEC crude oil production averaged 29.1 mb/d, which is 0.4 mb/d higher than demand for OPEC crude. For the whole year 2022, OPEC crude oil production averaged 28.9 mb/d, which is 0.3 mb/d higher than demand for OPEC crude.

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

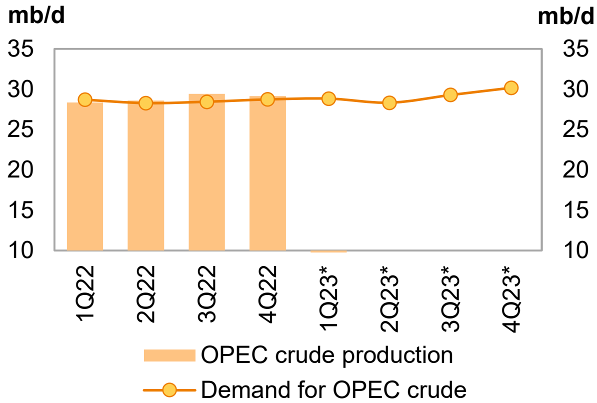
Balance of supply and demand in 2022

Demand for OPEC crude in 2022 remains unchanged from the previous MOMR to stand at 28.5 mb/d. This is around 0.5 mb/d higher than in 2021.

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

Compared with the same quarters in 2021, demand for OPEC crude in 1Q22 and 2Q22 is estimated to be higher by 2.5 mb/d and 1.3 mb/d, respectively, while 3Q22 and 4Q22 are expected to be lower by 0.2 mb/d and 1.5 mb/d, respectively.

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



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

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 0.3 mb/d higher than demand for OPEC crude. In 3Q22, OPEC crude oil production averaged 29.4 mb/d, which is 1.0 mb/d higher than demand for OPEC crude. In 4Q22, OPEC crude oil production averaged 29.1 mb/d, which is 0.4 mb/d higher than demand for OPEC crude. For the whole year 2022, OPEC crude oil production averaged 28.9 mb/d, which is 0.3 mb/d higher than demand for OPEC crude.

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**	**99.38**	**98.20**	**99.43**	**101.18**	**99.55**	***2.54***
Non-OPEC liquids production	63.68	65.33	64.54	65.57	67.00	65.61	*1.93*
OPEC NGL and non-conventionals	5.28	5.35	5.38	5.41	5.43	5.39	*0.11*
(b) Total non-OPEC liquids production and OPEC NGLs	**68.96**	**70.68**	**69.92**	**70.97**	**72.43**	**71.01**	***2.04***
Difference (a-b)	**28.05**	**28.70**	**28.28**	**28.46**	**28.75**	**28.55**	***0.50***
OPEC crude oil production	**26.34**	**28.36**	**28.59**	**29.44**	**29.14**	**28.88**	***2.54***
Balance	**-1.70**	**-0.35**	**0.30**	**0.98**	**0.39**	**0.34**	***2.04***

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

Balance of supply and demand in 2023

Demand for OPEC crude in 2023 remained also 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, 2Q23 and 3Q23 were revised down by 0.1 mb/d each, while 4Q23 was revised up by 0.1 mb/d.

Compared with the same quarters in 2022, demand for OPEC crude in both 1Q23 and 2Q23 are forecast to be higher by 0.1 mb/d each, while 3Q23 and 4Q23 are expected to be 0.8 mb/d and 1.5 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	**99.55**	**101.04**	**100.65**	**101.90**	**103.47**	**101.77**	***2.22***
Non-OPEC liquids production	65.61	66.75	66.83	67.18	67.84	67.16	*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	**71.01**	**72.19**	**72.31**	**72.61**	**73.27**	**72.60**	***1.59***
Difference (a-b)	**28.55**	**28.85**	**28.34**	**29.30**	**30.20**	**29.17**	***0.63***

*Note: * 2022 = Estimate and 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	25.34	25.19	25.07	24.95	25.26	25.68	25.45	25.34
of which US	*20.58*	*18.35*	*20.03*	*20.38*	*20.41*	*20.62*	*20.64*	*20.51*	*20.46*	*20.54*	*20.88*	*20.77*	*20.66*
Europe	14.31	12.41	13.13	13.19	13.42	14.07	13.90	13.65	13.22	13.45	14.10	13.95	13.68
Asia Pacific	7.95	7.17	7.38	7.85	6.99	7.22	7.81	7.47	7.88	7.04	7.27	7.83	7.50
Total OECD	**47.66**	**42.03**	**44.83**	**45.81**	**45.39**	**46.63**	**46.91**	**46.19**	**46.06**	**45.74**	**47.04**	**47.23**	**46.52**
China	13.81	13.94	14.97	14.74	14.42	14.64	15.24	14.76	14.90	15.20	15.20	15.78	15.27
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	6.45	6.42	6.44	6.49	6.71	6.61	6.57
Middle East	8.20	7.45	7.79	8.06	8.13	8.50	8.22	8.23	8.45	8.46	8.84	8.51	8.56
Africa	4.44	4.08	4.22	4.51	4.15	4.25	4.58	4.37	4.71	4.34	4.43	4.77	4.56
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	**52.62**	**49.16**	**52.18**	**53.58**	**52.81**	**52.79**	**54.27**	**53.36**	**54.98**	**54.90**	**54.86**	**56.24**	**55.25**
(a) Total world demand	**100.27**	**91.19**	**97.01**	**99.38**	**98.20**	**99.43**	**101.18**	**99.55**	**101.04**	**100.65**	**101.90**	**103.47**	**101.77**
Y-o-y change	***1.08***	***-9.09***	***5.82***	***5.18***	***2.55***	***1.77***	***0.74***	***2.54***	***1.65***	***2.44***	***2.47***	***2.29***	***2.22***
Non-OPEC liquids production													
Americas	25.84	24.75	25.25	25.86	26.27	27.01	27.49	26.66	27.64	27.73	28.09	28.46	27.98
of which US	*18.49*	*17.64*	*17.85*	*18.27*	*18.83*	*19.32*	*19.69*	*19.03*	*19.80*	*20.10*	*20.30*	*20.53*	*20.19*
Europe	3.70	3.89	3.76	3.73	3.43	3.49	3.65	3.57	3.93	3.91	3.80	3.93	3.89
Asia Pacific	0.52	0.52	0.51	0.49	0.51	0.43	0.51	0.48	0.50	0.48	0.50	0.48	0.49
Total OECD	**30.07**	**29.16**	**29.52**	**30.08**	**30.22**	**30.94**	**31.64**	**30.72**	**32.07**	**32.12**	**32.39**	**32.88**	**32.37**
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	0.76	0.77	0.79	0.78	0.77	0.76	0.78
Other Asia	2.72	2.51	2.41	2.35	2.30	2.24	2.31	2.30	2.37	2.36	2.33	2.35	2.35
Latin America	6.08	6.03	5.95	6.11	6.18	6.45	6.62	6.34	6.49	6.67	6.71	6.78	6.67
Middle East	3.19	3.19	3.24	3.29	3.33	3.36	3.35	3.33	3.34	3.36	3.39	3.39	3.37
Africa	1.51	1.41	1.35	1.33	1.31	1.32	1.30	1.32	1.32	1.33	1.35	1.34	1.33
Russia	11.51	10.54	10.80	11.33	10.63	11.01	11.15	11.03	10.21	10.08	10.18	10.23	10.18
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**	**32.23**	**32.96**	**32.49**	**32.21**	**32.25**	**32.32**	**32.50**	**32.32**
Total Non-OPEC production	63.16	60.83	61.39	62.93	62.14	63.17	64.60	63.21	64.28	64.36	64.71	65.37	64.69
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**	**65.57**	**67.00**	**65.61**	**66.75**	**66.83**	**67.18**	**67.84**	**67.16**
OPEC NGL + non-conventional oils	5.21	5.17	5.28	5.35	5.38	5.41	5.43	5.39	5.44	5.47	5.43	5.43	5.44
(b) Total non-OPEC liquids production and OPEC NGLs	**70.74**	**68.15**	**68.96**	**70.68**	**69.92**	**70.97**	**72.43**	**71.01**	**72.19**	**72.31**	**72.61**	**73.27**	**72.60**
Y-o-y change	***2.18***	***-2.60***	***0.82***	***2.72***	***1.25***	***1.99***	***2.22***	***2.04***	***1.51***	***2.39***	***1.63***	***0.84***	***1.59***
OPEC crude oil production (secondary sources)	29.36	25.71	26.34	28.36	28.59	29.44	29.14	28.88					
Total liquids production	100.11	93.86	95.31	99.04	98.51	100.41	101.57	99.89					
Balance (stock change and miscellaneous)	-0.17	2.67	-1.70	-0.35	0.30	0.98	0.39	0.34					
OECD closing stock levels, *mb*													
Commercial	2,894	3,037	2,651	2,613	2,666	2,748							
SPR	1,535	1,541	1,484	1,442	1,343	1,245							
Total	**4,429**	**4,578**	**4,134**	**4,055**	**4,009**	**3,993**							
Oil-on-water	1,033	1,148	1,202	1,222	1,290	1,386							
Days of forward consumption in OECD, *days*													
Commercial onland stocks	69	68	57	58	57	59							
SPR	37	34	32	32	29	27							
Total	**105**	**102**	**90**	**89**	**86**	**85**							
Memo items													
(a) - (b)	**29.53**	**23.04**	**28.05**	**28.70**	**28.28**	**28.46**	**28.75**	**28.55**	**28.85**	**28.34**	**29.30**	**30.20**	**29.17**

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

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

World oil demand and supply balance	2019	2020	2021	1Q22	2Q22	3Q22	4Q22	2022	1Q23	2Q23	3Q23	4Q23	2023
World demand													
Americas	-	-	-	-	-	-0.01	-	-	-0.05	0.02	0.02	-	-
of which US	*-*	*-*	*-*	*-*	*-*	*-*	*-0.10*	*-0.02*	*-0.05*	*0.02*	*0.03*	*-0.10*	*-0.02*
Europe	-	-	-	0.04	-0.01	-0.02	-	-	0.04	-0.01	-0.02	-	-
Asia Pacific	-	-	-	-	-	-0.03	-	-0.01	-	-	-0.03	-	-0.01
Total OECD	**-**	**-**	**-**	**0.04**	**-0.01**	**-0.06**	**-**	**-0.01**	**-0.02**	**0.01**	**-0.03**	**-**	**-0.01**
China	-	-	-	-	-	-0.05	-0.08	-0.03	0.22	-0.12	-0.12	-0.11	-0.03
India	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Asia	-	-	-	-	-	-	-	-	-	-	-	-	-
Latin America	-	-	-	-	-	-	0.05	0.01	-0.04	0.01	0.01	0.07	0.01
Middle East	-	-	-	-	-	-	0.05	0.01	-	-	-	0.05	0.01
Africa	0.10	0.03	-	-	-	-	0.05	0.01	-	-	-	0.05	0.01
Russia	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Eurasia	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Europe	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Non-OECD	**0.10**	**0.03**	**-**	**-**	**-**	**-0.05**	**0.07**	**0.01**	**0.18**	**-0.11**	**-0.11**	**0.06**	**0.01**
(a) Total world demand	**0.10**	**0.03**	**-**	**0.04**	**-0.01**	**-0.11**	**0.07**	**-**	**0.16**	**-0.10**	**-0.14**	**0.06**	**-**
Y-o-y change	***0.10***	***-0.07***	***-0.03***	***0.04***	***-0.01***	***-0.11***	***0.07***	***-***	***0.13***	***-0.09***	***-0.03***	***-0.01***	***-***
Non-OPEC liquids production													
Americas	-	-	-	-	-	-0.03	0.13	0.02	0.04	0.04	0.04	0.04	0.03
of which US	*-*	*-*	*-*	*-*	*-*	*0.03*	*0.19*	*0.05*	*0.05*	*0.05*	*0.05*	*0.05*	*0.05*
Europe	-	-	-	-	-	-	-0.10	-0.02	-0.02	-0.02	-0.02	-0.02	-0.02
Asia Pacific	-	-	-	-	-	-	-0.02	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01
Total OECD	**-**	**-**	**-**	**-**	**-**	**-0.03**	**0.01**	**-0.01**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**
China	-	-	-	-	-	-	-	-	-	-	-	-	-
India	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Asia	-	-	-	-	-	-0.01	-0.02	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01
Latin America	-	-	-	-	-	-	-0.01	-	-	-	-0.02	-0.02	-0.01
Middle East	-	-	-	-	-	-	-0.02	-	-	-	-	-	-
Africa	-	-	-	-	-	-	-0.02	-0.01	-	-0.01	-	-0.03	-0.01
Russia	-	-	-	-	-	-	0.27	0.07	0.26	-0.01	0.01	0.02	0.07
Other Eurasia	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Europe	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Non-OECD	**-**	**-**	**-**	**-**	**-**	**-0.01**	**0.20**	**0.05**	**0.24**	**-0.03**	**-0.02**	**-0.05**	**0.03**
Total Non-OPEC production	-	-	-	-	-	-0.04	0.21	0.04	0.25	-0.02	-0.01	-0.04	0.04
Processing gains	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Non-OPEC liquids production	**-**	**-**	**-**	**-**	**-**	**-0.04**	**0.21**	**0.04**	**0.25**	**-0.02**	**-0.01**	**-0.04**	**0.04**
OPEC NGL + non-conventional oils	-	-	-	-	-	-	-	-	-	-	-	-	-
(b) Total non-OPEC liquids production and OPEC NGLs	**-**	**-**	**-**	**-**	**-**	**-0.04**	**0.21**	**0.04**	**0.25**	**-0.02**	**-0.01**	**-0.04**	**0.04**
Y-o-y change	***-***	***-***	***-***	***-***	***-***	***-0.04***	***0.21***	***0.04***	***0.25***	***-0.02***	***0.03***	***-0.25***	***-***
OPEC crude oil production (secondary sources)	-	-	-	-	-	-	29.14	28.88					
Total liquids production	-	-	-	-	-	-0.04	101.57	99.89					
Balance (stock change and miscellaneous)	-0.09	-0.03	-	-0.04	-	0.06	0.39	0.34					
mb													
Commercial	-	-	-	-	-	23							
SPR	-	-	-	-	-	-2							
Total	**-**	**-**	**-**	**-**	**-**	**20**							
Oil-on-water	-	-	-	-	-	-							
Days of forward consumption in OECD, *days*													
Commercial onland stocks	-	-	-	-	-	-							
SPR	-	-	-	-	-	-							
Total	**-**	**-**	**-**	**-**	**-**	**-**							
Memo items													
(a) - (b)	**0.10**	**0.03**	**0.00**	**0.04**	**-0.01**	**-0.07**	**-0.14**	**-0.05**	**-0.08**	**-0.07**	**-0.13**	**0.10**	**-0.05**

*Note: * This compares Table 11 - 1 in this issue of the MOMR with Table 11 - 1 in the December 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	**3,037**	**2,651**	**3,217**	**3,181**	**3,037**	**2,926**	**2,884**	**2,770**	**2,651**	**2,613**	**2,666**	**2,748**
Americas	1,613	1,470	1,719	1,690	1,613	1,578	1,553	1,523	1,470	1,407	1,436	1,472
Europe	1,043	857	1,098	1,079	1,043	1,002	973	891	857	890	912	918
Asia Pacific	380	324	400	411	380	346	357	355	324	316	318	358
OECD SPR	**1,541**	**1,484**	**1,561**	**1,551**	**1,541**	**1,546**	**1,524**	**1,513**	**1,484**	**1,442**	**1,343**	**1,245**
Americas	640	596	658	644	640	640	623	620	596	568	495	418
Europe	487	479	487	490	487	493	487	485	479	468	452	447
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**	**3,993**
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**	**59**
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	66
Asia Pacific	51	43	59	56	50	49	51	46	41	45	44	46
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	2019	2020	2021	3Q22	4Q22	2022	Change 22/21	1Q23	2Q23	3Q23	4Q23	2023	Change 23/22
US	18.5	17.6	17.8	19.3	19.7	19.0	1.2	19.8	20.1	20.3	20.5	20.2	1.2
Canada	5.4	5.2	5.4	5.7	5.8	5.6	0.2	5.8	5.6	5.8	6.0	5.8	0.2
Mexico	1.9	1.9	2.0	2.0	2.0	2.0	0.1	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**	**27.5**	**26.7**	**1.4**	**27.6**	**27.7**	**28.1**	**28.5**	**28.0**	**1.3**
Norway	1.7	2.0	2.0	1.9	2.0	1.9	-0.1	2.2	2.1	2.1	2.2	2.2	0.3
UK	1.1	1.1	0.9	0.8	0.8	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**	**3.6**	**3.6**	**-0.2**	**3.9**	**3.9**	**3.8**	**3.9**	**3.9**	**0.3**
Australia	0.5	0.5	0.4	0.4	0.4	0.4	0.0	0.4	0.4	0.4	0.4	0.4	0.0
Other Asia Pacific	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.0
OECD Asia Pacific	**0.5**	**0.5**	**0.5**	**0.4**	**0.5**	**0.5**	**0.0**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.0**
Total OECD	**30.1**	**29.2**	**29.5**	**30.9**	**31.6**	**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	0.0
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	0.1	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**	**3.3**	**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**	**1.3**	**1.3**	**1.3**	**0.0**
Russia	**11.5**	**10.5**	**10.8**	**11.0**	**11.1**	**11.0**	**0.2**	**10.2**	**10.1**	**10.2**	**10.2**	**10.2**	**-0.9**
Kazakhstan	1.9	1.8	1.8	1.6	1.9	1.8	0.0	2.0	2.0	1.9	2.0	2.0	0.2
Azerbaijan	0.8	0.7	0.7	0.7	0.7	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**	**33.0**	**32.5**	**0.6**	**32.2**	**32.2**	**32.3**	**32.5**	**32.3**	**-0.2**
Non-OPEC	63.2	60.8	61.4	63.2	64.6	63.2	1.8	64.3	64.4	64.7	65.4	64.7	1.5
Processing gains	2.4	2.2	2.3	2.4	2.4	2.4	0.1	2.5	2.5	2.5	2.5	2.5	0.1
Non-OPEC liquids production	**65.5**	**63.0**	**63.7**	**65.6**	**67.0**	**65.6**	**1.9**	**66.8**	**66.8**	**67.2**	**67.8**	**67.2**	**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**	**72.4**	**71.0**	**2.0**	**72.2**	**72.3**	**72.6**	**73.3**	**72.6**	**1.6**

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

Table 11 - 5: World rig count, units

World rig count	2020	2021	2022	*Change* 2022/21	2Q22	3Q22	4Q22	Nov 22	Dec 22	*Change* Dec/Nov
US	436	475	722	247	718	761	775	780	779	-1
Canada	90	133	174	41	114	202	186	200	145	-55
Mexico	41	45	47	2	44	48	50	50	47	-3
OECD Americas	**567**	**654**	**945**	**291**	**878**	**1,013**	**1,014**	**1,032**	**973**	**-59**
Norway	16	17	17	0	18	18	17	16	17	1
UK	6	8	10	2	10	13	10	10	10	0
OECD Europe	**59**	**58**	**65**	**7**	**65**	**70**	**67**	**63**	**70**	**7**
OECD Asia Pacific	**22**	**23**	**24**	**1**	**22**	**26**	**25**	**25**	**24**	**-1**
Total OECD	**648**	**735**	**1,034**	**299**	**966**	**1,109**	**1,106**	**1,120**	**1,067**	**-53**
Other Asia*	187	174	186	12	184	185	188	189	184	-5
Latin America	58	91	119	28	113	122	130	133	124	-9
Middle East	57	57	62	5	62	61	65	67	63	-4
Africa	43	42	57	15	55	58	60	62	60	-2
Other Europe	12	9	10	1	9	10	13	13	13	0
Total Non-OECD	**357**	**373**	**434**	**61**	**423**	**436**	**456**	**464**	**444**	**-20**
Non-OPEC rig count	**1,005**	**1,108**	**1,468**	**360**	**1,389**	**1,545**	**1,562**	**1,584**	**1,511**	**-73**
Algeria	31	26	32	6	32	33	33	32	34	2
Angola	3	4	7	3	6	6	9	9	9	0
Congo	1	0	1	1	0	1	1	1	1	0
Equatorial Guinea**	0	0	0	0	0	0	0	0	0	0
Gabon	3	2	3	1	3	2	3	3	2	-1
Iran**	117	117	117	0	117	117	117	117	117	0
Iraq	47	39	51	12	50	54	55	55	55	0
Kuwait	45	25	27	2	27	27	28	29	26	-3
Libya	12	13	7	-6	4	3	8	8	9	1
Nigeria	11	7	10	3	11	9	10	10	12	2
Saudi Arabia	93	62	73	11	71	71	80	81	80	-1
UAE	54	42	47	5	48	49	52	51	52	1
Venezuela	15	6	3	-3	3	3	3	3	3	0
OPEC rig count	**432**	**343**	**377**	**34**	**371**	**376**	**398**	**399**	**400**	**1**
World rig count* **	**1,437**	**1,451**	**1,845**	**394**	**1,760**	**1,921**	**1,959**	**1,983**	**1,911**	**-72**
of which:										
Oil	1,116	1,143	1,462	319	1,392	1,522	1,552	1,577	1,509	-68
Gas	275	275	352	77	337	365	374	372	368	-4
Others	46	33	31	-2	31	33	33	34	34	0

*Note: * Other Asia includes India and offshore rigs for China.*
*** Estimated data when Baker Hughes Incorporated did not reported the data.*
**** Data excludes onshore China as well as Russia and other Eurasia.*
Totals may not add up due to independent rounding.
Sources: Baker Hughes and OPEC.

Glossary of Terms

Abbreviations

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

Acronyms

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

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

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

OPEC Basket average price

US$/b

down 10.05 in December

December 2022	79.68
November 2022	89.73
Annual average	**100.08**

December OPEC crude production

mb/d, according to secondary sources

up 0.09 in December

December 2022	28.97
November 2022	28.88

Economic growth rate

per cent

	World	OECD	US	Euro–zone	Japan	China	India
2022	3.0	2.6	2.0	3.2	1.2	3.1	6.8
2023	2.5	0.9	1.0	0.4	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	67.2	1.5
OPEC NGLs	5.4	0.1	OPEC NGLs	5.4	0.0
Difference	**28.5**	**0.5**	**Difference**	**29.2**	**0.6**

OECD commercial stocks

mb

	Sep 22	Oct 22	Nov 22	Nov 22/Oct 22
Crude oil	1,348	1,368	1,343	–25.8
Products	1,400	1,397	1,425	28.5
Total	**2,748**	**2,765**	**2,768**	**2.7**
Days of forward cover	58.6	59.4	59.5	0.1

Next report to be issued on 14 February 2023.