



Organization of the Petroleum Exporting Countries

OPEC Monthly Oil Market Report

11 May 2023

Feature article:
Non-OPEC oil supply development

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Oil Market Highlights

Crude Oil Price Movements

In April, the OPEC Reference Basket (ORB) increased by \$5.68, or 7.2%, m-o-m to average \$84.13/b. The ICE Brent front-month contract rose by \$4.16, or 5.3%, m-o-m to \$83.37/b, and the NYMEX WTI front-month contract increased by \$6.07, or 8.3%, m-o-m to average \$79.44/b. The DME Oman front-month contract rose by \$5.13, or 6.5%, m-o-m to settle at \$83.47/b. The front-month ICE Brent/NYMEX WTI spread narrowed by \$1.91 m-o-m to average \$3.93/b. The futures forward curves of ICE Brent, NYMEX WTI and DME Oman strengthened across the month. Hedge funds and other money managers raised bullish positions in ICE Brent and NYMEX WTI in April.

World Economy

World economic growth is estimated at 3.3% for 2022 and forecast at 2.6% for 2023, both unchanged from the previous month's assessment. The global economy continues to navigate through challenges including high inflation, higher interest rates in the US and the Euro-zone, and high debt levels in many regions. The US economic growth forecast for 2023 remains unchanged at 1.2%, following growth of 2.1% for 2022. The Euro-zone's economic growth forecast for 2023 remains at 0.8%, after growth of 3.5% for 2022. Japan's economic growth forecast for 2022 remains at 1.0% for both 2022 and 2023. China's economic growth forecast remains at 5.2% for 2023, compared with 3% for 2022. India's 2022 economic growth estimate is unchanged at 6.7%, and the forecast for 2023 remains at 5.6%. Brazil's economic growth estimates for 2022 and 2023 are unchanged at 2.9% and 1.0%, respectively. Russia's growth is also unchanged across both years, with an estimated contraction of 2.1% for 2022 and a smaller forecast contraction of 0.5% for 2023.

World Oil Demand

The world oil demand estimate for 2022 remains unchanged from last month's assessment, with a growth of 2.5 mb/d y-o-y. In the OECD, oil demand was adjusted slightly downward in the 4Q22, amid data showing a demand decline in OECD Americas. This was entirely offset by a slight upward revision to the estimation for non-OECD countries. For 2023, the forecast for world oil demand growth remains broadly unchanged at 2.3 mb/d, with the OECD projected to grow by almost 0.1 mb/d and the non-OECD expected to grow by about 2.3 mb/d. Within the regions, slight downward adjustments in 1Q23 for the OECD were offset by upward revisions to the non-OECD.

World Oil Supply

Non-OPEC liquids supply is estimated to have grown by 1.9 mb/d in 2022, broadly unchanged from the previous month's assessment. The main drivers of liquids supply growth for 2022 were the US, Russia, Canada, Guyana, China and Brazil, while the largest declines were seen in Norway and Thailand. For 2023, the forecast for non-OPEC liquids production growth also remained unchanged from last month's assessment, at 1.4 mb/d, y-o-y. The main drivers of liquids supply growth are expected to be the US, Brazil, Norway, Canada, Kazakhstan and Guyana, while declines are expected primarily in Russia. Uncertainties remain, primarily related to the potential of US shale oil output and unplanned field maintenance in 2023. OPEC NGLs and non-conventional liquids are estimated to have grown by 0.1 mb/d in 2022, to average 5.39 mb/d, and are forecast to grow by 50 tb/d to average 5.44 mb/d in 2023. OPEC-13 crude oil production in April decreased by 191 tb/d m-o-m to average 28.60 mb/d, according to available secondary sources.

Product Markets and Refining Operations

Refinery margins dropped to their lowest level to date in April, following mild gains in the previous month. Product output in the Atlantic Basin rose as refinery runs recovered and the peak maintenance season approached an end. Moreover, weaker US diesel export opportunities, amid expectations of ample middle distillate arrivals into Europe, weighed on product markets and crack spreads. In Asia, softening product exports contributed to weakness across the barrel except for residual fuel, which benefitted from firm domestic requirements and lower imports. Global refinery processing rates recovered in April, gaining 918 tb/d, according to preliminary estimates.

Tanker Market

Dirty freight rates experienced a correction in April across all reported routes. Aframax saw the sharpest downturn, falling by as much as 66% on the Caribbean-to-US East Coast route. Suezmax spot freight rates were next, with rates on the US Gulf Coast-to-Europe route down 36%. VLCC rates also declined, down 24% on the Middle East-to-East route and 23% lower on the West Africa-to-East route. Clean spot freight rates showed a mix performance, with a weaker market West of Suez outweighing the strong performance East of Suez.

Crude and Refined Products Trade

Preliminary data shows US crude imports increased to 6.3 mb/d in April amid preparations for the summer driving season. US crude exports fell back from a record high to average a still strong 4.2 mb/d. In March, China's crude imports surged to a new record high of 12.4 mb/d following a wave of buying by Chinese refiners, including from long-haul sources. China's product exports declined in March from high levels to an average of 1.3 mb/d, with declines across light and middle distillates. India's crude imports fell from a 10-month high, averaging just under 4.9 mb/d in March. India's product exports strengthened further, averaging 1.5 mb/d. Japan's crude imports were 8% lower in March, averaging 2.5 mb/d. Japan's product exports, including LPG, came off a strong performance the month before to average 567 tb/d in March. Preliminary estimates for April show OECD Europe crude imports were seasonally lower, while product imports picked up from lower levels in February and March, led by diesel.

Commercial Stock Movements

Preliminary March 2023 data shows total OECD commercial oil stocks fell m-o-m by 31.7 mb. At 2,808 mb, they were 195 mb higher than the same time one year ago, but 34 mb lower than the latest five-year average and 105 mb below the 2015–2019 average. Within components, crude and product stocks decreased m-o-m by 4.9 mb and 26.8 mb, respectively. At 1,402 mb, OECD crude stocks were 119 mb higher than the same time a year ago and 2 mb higher than the latest five-year average. However, at this level, they were 60 mb lower than the 2015–2019 average. OECD product stocks stood at 1,406 mb, representing a surplus of 76 mb from the same time a year ago. Nonetheless, this was 36 mb lower than the latest five-year average and 45 mb below the 2015–2019 average. In terms of days of forward cover, OECD commercial stocks fell m-o-m by 0.6 days in March to stand at 61.7 days. This is 4.1 days above the March 2022 level, but 3.2 days less than the latest five-year average and 0.8 days lower than the 2015–2019 average.

Balance of Supply and Demand

Demand for OPEC crude in 2022 remains unchanged from last month's assessment at 28.4 mb/d. This is around 0.5 mb/d higher than in 2021. Demand for OPEC crude in 2023 also remains unchanged from the previous assessment to stand at 29.3 mb/d. This is around 0.8 mb/d higher than in 2022.

Feature Article

Non-OPEC oil supply development

In 2022, non-OPEC supply is estimated to have increased by 1.9 mb/d y-o-y. Out of this, US liquids production increased by 1.2 mb/d, mainly on the back of light tight oil production and increased NGLs output from non-conventional basins. US light tight crude production increased by 0.5 mb/d, with the Permian constituting the main source of growth, increasing by 0.6 mb/d, supported by a relatively lower breakeven price and higher drilling rig activities, while output in the Bakken and Eagle Ford declined. Liquids supply in Russia rose by around 230 tb/d. Canada, Guyana, China, Brazil and Oman also contributed to production growth in 2022. These developments were partially offset by supply declines totalling around 0.5 mb/d, mainly from Norway, Thailand and the UK.

Capital spending for oil and gas exploration and production (E&P) in non-OPEC countries increased by US\$72 bn y-o-y in 2022 to US\$431 bn. It is expected to rise by around 10% y-o-y in 2023. On a country level, E&P spending for 2023 is forecast to increase in Norway, Brazil, the US and Canada by 26%, 15%, 12%, and 8%, y-o-y, respectively.

The year 2022 proved to be an extraordinary period for the energy market, with most oil and gas companies witnessing healthy profits. However, the ratio of investment to cash from operations was exceedingly low, since many international oil companies continue to focus on capital discipline to improve their balance sheets. Overall investment levels for non-OPEC supply in 2023 are expected to be just above pre-pandemic levels. However, this is still significantly below the high of US\$747 bn in 2014.

For 2023, non-OPEC liquids supply is forecast to grow by 1.4 mb/d y-o-y. There remains substantial uncertainty, however, regarding geopolitical developments in Eastern Europe and the potential impact on Russian oil supply. Moreover, US liquids supply developments will continue to hinge on the degree of capital discipline employed by companies and the extent to which cost inflation impacts oil production.

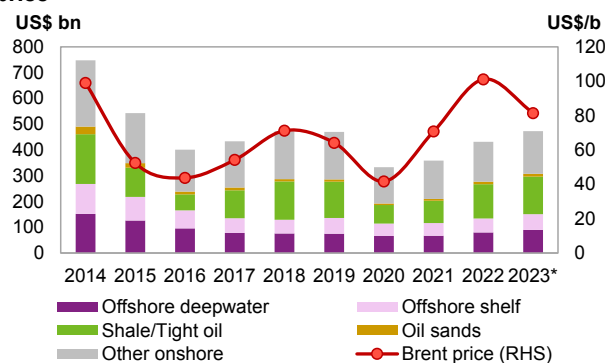
Liquids' output in the OECD is expected to increase by 1.5 mb/d y-o-y in 2023, mainly on the back of production increases in the US, Norway and Canada. US crude oil and condensate production is anticipated to grow by 0.7 mb/d, with NGLs and biofuel production also expected to rise. In the US, the oil rig count has rebounded from 490 units in January 2022 to 591 units in the last week of April 2023. Moreover, US core oil frac operations continue to stay above 1,000, on a monthly basis.

Canadian oil production, particularly Alberta's oil sands, is forecast to grow by 0.2 mb/d y-o-y in 2023. Production growth in the North Sea and OECD Europe countries is also projected at around 0.2 mb/d, mainly supported by the ramp-up of the second phase of Norway's Johan Sverdrup field development.

In the non-OECD region, Latin America is forecast to be the key driver for liquids supply. Output in the region is set to increase by 0.4 mb/d y-o-y in 2023, mainly from five offshore startups in Brazil and stable production at the Liza FPSOs in Guyana. Liquids output in Kazakhstan and China is also expected to rise y-o-y, by around 110 tb/d and 70 tb/d, respectively.

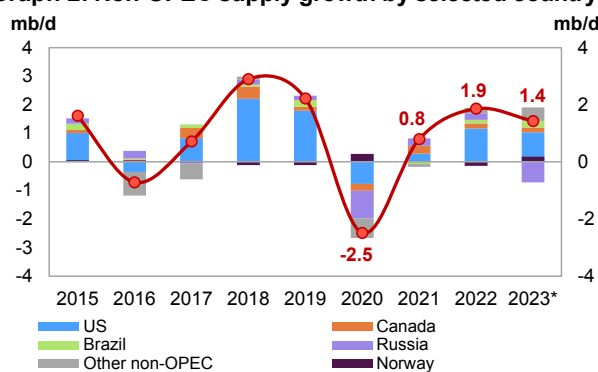
Uncertainties to the forecast remain large, especially given ongoing geopolitical developments in Eastern Europe. Moreover, high inflation levels, coupled with supply chain issues and monetary tightening by major central banks may also impact the cost of oil production and upstream sector investment levels. Given the uncertainties ahead, OPEC Member Countries and countries participating in the Declaration of Cooperation (DoC) will continue to closely monitor market developments over the remainder of the year, to help safeguard a stable and balanced market for the benefit of both consumers and producers.

Graph 1: Non-OPEC investment in oil and gas vs. crude price



Note: * 2023 = Forecast; Oil price average Jan 23-Apr 23.
Sources: OPEC and Rystad Energy.

Graph 2: Non-OPEC supply growth by selected country



Note: * 2023 = Forecast. Source: OPEC.

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Crude Oil Price Movements

The OPEC Reference Basket (ORB) was higher on average m-o-m in April. This was amid firm gains in related crude benchmarks and higher official selling prices (OSP) of all medium and heavy components exported to Asia and Europe markets. In April, the ORB increased by \$5.68, or 7.2%, to settle at \$84.13/b.

Crude oil futures prices rebounded in April from the low levels seen in March as the heavy selloffs in futures markets eased and market confidence improved. Short covering from money managers that rushed to cover their bearish positions also contributed to pushing oil prices higher.

On a monthly average, the ICE Brent first-month contract rose m-o-m by \$4.16 in April, or 5.3%, to stand at \$83.37/b, and the NYMEX WTI first-month contract increased m-o-m by \$6.07, or 8.3%, to \$79.44/b. DME Oman crude oil futures prices rose m-o-m in April by \$5.13, or 6.5%, to settle at \$83.47/b.

Hedge funds and other money managers recovered a large part of their combined futures and options net long positions in April, after significantly cutting their bullish positions in March, mirroring a change in market sentiment and a U-turn in speculators' strategy. The improving global oil market outlook and an increase in oil prices in April prompted money managers to rush to cover short positions built in the previous month.

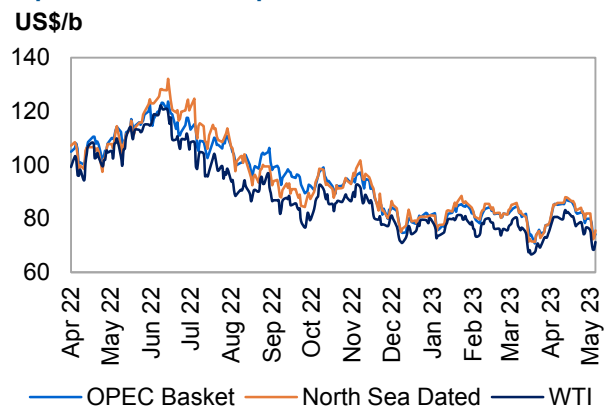
The market structure strengthened in the first half of April on an improving supply/demand outlook in the short term, which supported the value of the nearest month's contracts. The decline in US crude stocks contributed to a strengthening of the NYMEX WTI structure with the nearest month-spreads flipping into backwardation from contango for the first time since November 2022.

The global crude oil market saw a continued narrowing of the sweet/sour crude differentials in the US Gulf Coast (USGC) and Europe for the fifth month in April, although they widened slightly in Asia. This is due to the further narrowing of the spread between light/medium distillate compared to heavy distillate product margins, particularly the diesel-HSFO spread. The narrowing of sweet/sour crude differentials is also attributed to the high supply availability of light sweet crude, including from the US. However, the spread between sweet and sour crude widened in Asia on softer demand from Asia Pacific refiners and the high supply availability of sour crude in the East of Suez market.

Crude spot prices

Crude spot prices were higher on average m-o-m in April because of rising futures prices and easing selloffs in futures markets. The rise in spot prices was driven by the sharp rebound of North Sea Dated, which rose by 8.4% m-o-m. North Sea Dated was buoyed by the prospect of a reduction of prompt loading supplies in Europe amid renewed crude demand after French refinery and port strikes ended, which allowed crude cargoes to start unloading. Moreover, a large drop in US crude oil stocks and the persistent disruption of some crude exports from the port of Ceyhan that limited supply availability added support to spot prices.

Graph 1 - 1: Crude oil price movements



Sources: Argus, OPEC and Platts.

The strength of the physical market was reflected in the performance of spot prices that were priced at a premium against futures prices. The value of North Sea Dated against ICE Brent's first-month contract in April rose strongly m-o-m by \$2.45, flipping from a discount of 92¢/b in March to a premium of \$1.53/b in April.

There was some downward pressure on spot prices in the second half of April, however, including a sharp drop in refining margins in all major hubs, such as North West Europe, Singapore and the USGC. This drop in refining margins was driven by a sharp decline in light and middle distillates, specifically diesel margins. Additionally, there were mixed signals from petroleum product markets amid rising supplies from refineries and signs of a well-supplied crude market. Softening buying interest from refiners in Asia Pacific was also observed, in addition to the high availability of light sweet crude amid robust US crude export levels.

Crude Oil Price Movements

In April, the North Sea Dated first month increased the most among other major benchmarks, rising m-o-m by \$6.61, or 8.4%, to settle at \$84.90/b. WTI and Dubai's first month rose m-o-m by \$6.07 and \$4.98, respectively, or 8.3% and 6.4%, to settle at \$79.44/b and \$83.40/b.

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

OPEC Reference Basket (ORB)	Mar 23	Apr 23	Change		Year-to-date	
			Apr 23/Mar 23	%	2022	2023
ORB	78.45	84.13	5.68	7.2	99.90	81.38
Arab Light	80.26	85.65	5.39	6.7	100.35	83.19
Basrah Medium	75.33	81.75	6.42	8.5	98.59	78.15
Bonny Light	79.24	85.94	6.70	8.5	103.60	82.44
Djeno	70.84	77.45	6.61	9.3	94.90	74.53
Es Sider	77.39	84.00	6.61	8.5	102.03	80.80
Girassol	80.31	87.01	6.70	8.3	104.42	83.19
Iran Heavy	78.80	84.58	5.78	7.3	99.63	81.56
Kuwait Export	79.86	85.49	5.63	7.0	100.51	82.73
Merey	57.25	62.58	5.33	9.3	76.79	60.74
Murban	79.55	84.11	4.56	5.7	99.38	82.26
Rabi Light	77.83	84.44	6.61	8.5	101.89	81.52
Sahara Blend	80.29	85.40	5.11	6.4	105.42	83.25
Zafiro	79.29	85.90	6.61	8.3	103.68	82.02
Other Crudes						
North Sea Dated	78.29	84.90	6.61	8.4	102.35	81.98
Dubai	78.42	83.40	4.98	6.4	97.52	81.02
Isthmus	65.13	70.91	5.78	8.9	94.56	68.14
LLS	76.03	81.29	5.26	6.9	98.73	79.47
Mars	72.83	78.30	5.47	7.5	94.94	75.22
Minas	77.10	81.36	4.26	5.5	97.79	80.27
Urals	49.74	59.97	10.23	20.6	86.79	53.23
WTI	73.37	79.44	6.07	8.3	96.57	76.81
Differentials						
North Sea Dated/WTI	4.92	5.46	0.54	-	5.79	5.17
North Sea Dated/LLS	2.26	3.61	1.35	-	3.63	2.51
North Sea Dated/Dubai	-0.13	1.50	1.63	-	4.83	0.95

Sources: Argus, Direct Communication, OPEC and Platts.

Crude oil differentials were mixed again in April amid signs of a well-supplied crude market for the May trading cycle and a sharp drop in refining margins in all regions. Prospects of lower crude supplies in some major grades from May were largely offset by uncertainty about the strength of demand growth in the coming months, which likely reduced the buying appetite of refiners.

North Sea crude differentials strengthened m-o-m in April supported by firm demand from European refiners that was boosted by renewed demand from French refineries following the end of strikes. However, weaker light and middle distillates margins and a well-supplied crude market of light sweet crude in the Atlantic Basin amid sustained strong US crude to Europe limited the gains. Forties and Ekofisk crude differentials against North Sea Dated rose m-o-m in April by 57¢ and 36¢, respectively, to settle at premiums of \$1.20/b and \$2.26/b.

The value of light and medium sweet crude differentials weakened in the **West African** market on softer demand and higher competitiveness from similar crudes in the Atlantic Basin. This is in addition to the sharp drop in middle distillate margins, specifically diesel margins. On a monthly average, Bonny Light, Forcados and Qua Iboe crude differentials to North Sea Dated fell in April by \$1.27, 96¢ and 78¢, respectively, to stand at a discount of \$1.80/b, and premiums of 59¢/b and 28¢/b. However, the opening of the west-to-east arbitrage and demand from China supported the value of Cabinda crude differentials that increased m-o-m by 28¢ to stand at a premium of \$1.58/b against North Sea Dated.

In the **Mediterranean** and the **Caspian**, crude differentials were mixed in April. Azeri Light and CPC Blend crude differentials to North Sea Dated increased m-o-m by 32¢ and 29¢, respectively, to stand at a premium of \$3.38/b and a discount of \$2.72/b. However, the crude differential of light sweet crude Saharan Blend fell by \$1.97 to stand on average at a discount of 93¢/b.

In the **USGC**, crude differentials weakened in April on high crude availability and a narrowing of the Brent-WTI futures spread to below \$4/b, which offset supportive factors including the decline in crude oil stocks in the US PADD3 and higher demand from domestic refineries. Light Louisiana Sweet (LLS) weakened by 80¢ m-o-m to stand at a premium of \$1.86/b to the WTI benchmark, and Mars sour crude differentials declined by 60¢ to an average discount of \$1.14/b.

A decline in refining margins and softer demand from Asia Pacific refiners in the second half of April weighed on the value of some spot crude values in the **Middle East**. The value of the Oman crude differential to Dubai fell slightly m-o-m by 3¢ to a premium of \$1.63/b.

OPEC Reference Basket (ORB)

The **ORB** averaged higher m-o-m in April. This was amid firm gains in related crude benchmarks and higher official selling prices (OSP) of all medium and heavy components exported to Asia and Europe markets, despite a mixed movement of lighter crude OSPs. In April, the ORB increased by \$5.68, or 7.2%, to settle at \$84.13/b. On a yearly average, however, the ORB was down by \$18.52, or 18.5%, to \$81.38/b.

All **ORB component values** increased in April, with West and North African Basket components – Bonny Light, Djeno, Es Sider, Girassol, Rabi Light, Sahara Blend and Zafiro – rising by \$6.42, or 8.2%, m-o-m on average to \$84.31/b. Multiple region destination grades – Arab Light, Basrah Light, Iran Heavy and Kuwait Export – increased by \$5.81, or 7.4%, m-o-m on average, to settle at \$84.37/b. The Murban crude value rose by \$4.56, or 5.7% m-o-m on average, to settle at \$84.11/b. Meroy crude increased by \$5.33, or 9.3% m-o-m on average, to settle at \$62.58/b.

Dated Brent and North Sea Dated methodology updates

Platts price reporting agency (PRA), part of S&P Global Commodity Insights, has initiated significant updates on the methodology of the assessment of its flagship crude benchmark Dated Brent from 2 May 2023.

Platts has introduced a sixth grade in the Brent basket after the inclusion of WTI Midland, a light sweet crude produced in US shale basins. This will be added to the five grades of Brent, Forties, Oseberg, Ekofisk and Trol (BFOET). WTI Midland indications for cargo deliveries from June 2023 in the Platts Market on Close assessment process will be accepted and reflected in the assessment of the Dated Brent benchmark. This will mark the first inclusion of crude oil produced outside of the North Sea into the Dated Brent basket.

The Platts update is focused on addressing the critically low trading activity issue in the Window, as a result of the depletion of mature oilfields in the North Sea. In recent years, the Platts Window has frequently registered very low trading activity. In fact, on occasions no trading activity and no bids, offers or deals was registered for several consecutive sessions. According to Platts data, the evolving liquidity pool for Dated Brent reflecting BFOET volumes has declined sharply in recent years to well below 700 tb/d.

By adding WTI Midland to the assessment, the volume of the liquidity pool for Dated Brent is expected to double in the coming years, amid rising US WTI Midland production and exports to Europe. The volume of WTI Midland in the Dated Brent pool is expected to become the largest in the basket, meaning that it will probably play a major role in the assessment of Dated Brent.

Similarly, the Argus price-reporting agency has reported that it would include Midland-quality WTI in the basket of its six eligible crude grades for its North Sea Dated assessment from 2 May 2023, which is expected to improve market transparency.

The oil futures market

Crude oil futures prices rebounded in April from the low levels seen in March as the heavy selloffs in futures markets eased and market confidence improved. Following the large selling of an equivalent of more than 210 mb in three weeks in March, along with a rise in short positions, money managers rushed to square their bearish positions, contributing to pushing oil prices higher. In April, ICE Brent and NYMEX WTI were higher m-o-m on average by \$4.16 and \$6.07, or 5.3% and 8.3%, respectively.

Oil futures prices were also supported by a large drop in US crude oil stocks of more than 21 mb between the weeks of 17 March and 28 April. Furthermore, the temporary suspension of some crude oil exports from Turkey's Ceyhan port tightened the supply outlook, adding further support to prices.

Market sentiment improved further after the release of positive reports from major forecasting agencies indicating improved supply/demand fundamentals in the 2H23, and data showing a surge in China's crude oil exports in March that reached a 33-month high. The easing of inflation, as shown in US consumer price data for March, raised optimism in early April that the US Federal Reserve may ease its monetary policy tightening.

However, oil futures prices turned lower in the second half of April amid a drop in wider financial markets as market sentiment weakened due to renewed worries about an economic slowdown and re-emerging concerns about the US banking sector. Additionally, weakening refining margins, including in Asia Pacific, a drop in the global diesel market, and uncertainty regarding the strength of China's demand recovery, added downward pressure on oil prices.

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

Crude oil futures	Mar 23	Apr 23	Change		Year-to-date	
			Apr 23/Mar 23	%	2022	2023
NYMEX WTI	73.37	79.44	6.07	8.3	96.63	76.80
ICE Brent	79.21	83.37	4.16	5.3	99.81	82.39
DME Oman	78.34	83.47	5.13	6.5	97.73	81.00
Spread						
ICE Brent-NYMEX WTI	5.84	3.93	-1.91	-32.7	3.18	5.59

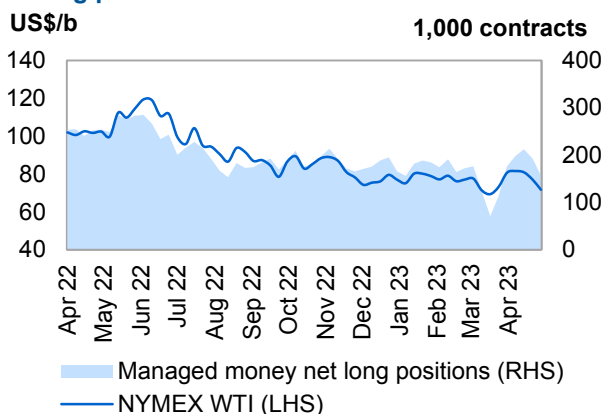
Note: Totals may not add up due to independent rounding. Sources: CME, DME, ICE and OPEC.

On a monthly average, the ICE Brent first-month contract rose m-o-m by \$4.16 in April, or 5.3%, to stand at \$83.37/b. The NYMEX WTI first-month contract increased m-o-m by \$6.07, or 8.3%, to an average of \$79.44/b. Y-t-d, ICE Brent was \$17.42, or 17.5%, lower at \$82.39/b, and NYMEX WTI was lower by \$19.83, or 20.5%, at \$76.80/b, compared with the same month a year earlier. DME Oman crude oil futures prices rose m-o-m in April by \$5.13, or 6.5%, to settle at \$83.47/b. Y-t-d, DME Oman was lower by \$16.73, or 17.1%, at \$81.00/b.

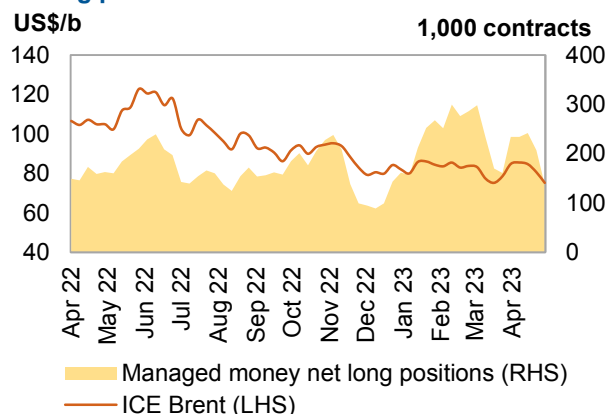
The **ICE Brent–NYMEX WTI first-month spread** narrowed significantly m-o-m in April falling below \$4/b, as the NYMEX WTI contract rebound was stronger than ICE Brent. The WTI crude benchmark was supported by demand recovery in US refinery operations as gross inputs into refineries rose by 1.0 mb/d between the weeks of 3 March and 21 April, according to EIA weekly data. The decline in US crude oil stocks in April, including at Cushing Oklahoma, added support to the NYMEX WTI price. The rebound of financial flows into the NYMEX WTI contract was higher compared to ICE Brent, which contributed to a narrowing of the spread between the two contracts.

Between the weeks of 21 March and 18 April, NYMEX WTI net long positions in futures and options jumped 198%, while net long positions related to ICE Brent rose only 42% during the same period. The ICE Brent–NYMEX WTI first month spread contracted by \$1.91 in April compared to the March average to stand at \$3.93/b. The spread between North Sea Dated and WTI Houston widened last month, however, as crude in the USGC was under pressure from lower demand for exports amid high supply availability in the Atlantic Basin, specifically light sweet crude. Meanwhile, the value of North Sea crudes strengthened on renewed demand from refineries in France as strikes were lifted gradually.

After significantly cutting their bullish positions in March, **hedge funds and other money managers** recovered a large part of their combined futures and options net long positions in April, mirroring a change in market sentiment and a U-turn in speculators' strategy. The improving global oil market outlook and an oil price correction from the lower levels of March prompted money managers to rush to cover short positions built in the previous month, which contributed to pushing oil futures prices higher.

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.

Speculators sharply raised their net long positions in the first three weeks of April in the two major futures contracts, ICE Brent and NYMEX WTI. They were buyers of a net of around 180 mb between the weeks of 28 March and 18 April in both contracts. Meanwhile, the total combined futures and options open interest rose by 2.4%. This followed money managers' selling in futures and options net long positions in ICE Brent and NYMEX WTI of an equivalent of 217 mb. However, the rise in NYMEX WTI was more pronounced. Between the weeks 28 March and 18 April, NYMEX WTI net long positions in futures and options jumped 87.5%, while net long positions related to ICE Brent rose by 50.2% over the same period.

Money managers sharply raised bullish NYMEX WTI positions in April, with net long positions in the week of 18 April at their highest point since November 2022. Between the weeks of 28 March and 25 April, NYMEX WTI futures and options net long positions increased by 79,640 lots, or 70.3%, to stand at 192,916 contracts, according to the US Commodity Futures Trading Commission (CFTC). During the same period, gross short positions dropped by 48,269 lots, or 60.4%, to 31,589 contracts, while gross long positions rose by 31,371 lots, or 16.2%, to 224,505 contracts.

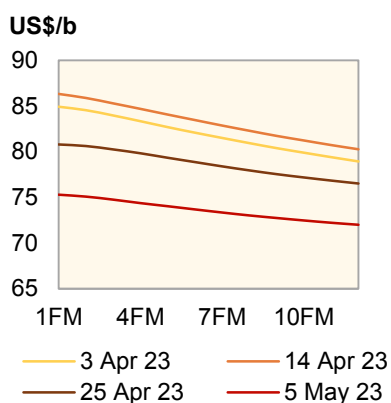
Money managers also raised net long positions in futures and options related to the ICE Brent contract in April. They were buyers of a net equivalent to about 46 mb. Combined futures and options net long positions rose by 46,126 contracts, or 28.6%, to stand at 207,233 lots in the week of 25 April, according to the ICE Exchange. This is a combination of an increase in long positions and a cut in short positions. Gross short positions declined by 17,058 lots, or 26.7%, to stand at 46,895 contracts, while gross long positions rose by 29,068 lots, or 12.9%, to 254,128 contracts.

The **long-to-short ratio** of speculative positions in ICE Brent contracts rose in the week of 18 April to 8:1, compared with 4:1 in late March, but the ratio declined to 5:1 in the week of 25 April. The NYMEX WTI long-to-short ratio rose to about 11:1 in the week of 18 April, compared with 2:1 in late March, but the ratio declined to 7:1 in the week of 25 April. Total futures and options open interest volumes on the two exchanges rose in the first three weeks of April, increasing by 2.4%, or 126,955 contracts, to stand at 5.3 million contracts in the week ending 18 April. However, the volume declined to 5.1 million contracts in the week ending 25 April.

The futures market structure

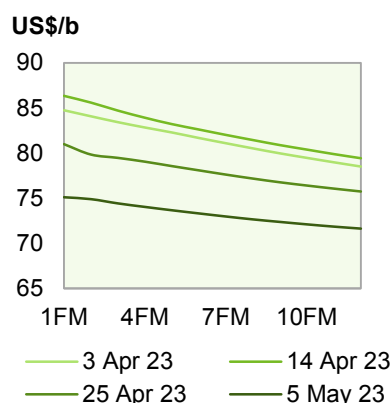
The **market structure** strengthened in the first half of April on an improving supply/demand balance outlook. The decline in US crude stocks contributed to a strengthening of the structure of NYMEX WTI with the nearest month-spreads flipping into backwardation from contango for the first time since November 2022. The sharp rise in bullish positions likely supported more prompt-month prices compared to forward-month contracts. However, although the price structure of major crude benchmarks, including Brent, WTI and Dubai, was in backwardation, the front of the forward curve flattened in the second half of April due to a deteriorating oil demand outlook and renewed concerns about the health of the global economy.

Graph 1 - 4: ICE Brent forward curves



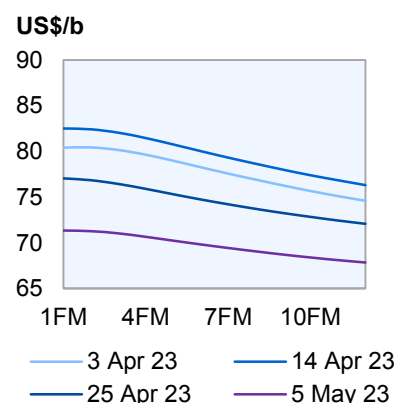
Sources: ICE and OPEC.

Graph 1 - 5: DME Oman forward curves



Sources: DME and OPEC.

Graph 1 - 6: NYMEX WTI forward curves



Sources: CME and OPEC.

The backwardation structure of **Brent futures** strengthened last month as the improving short-term supply/demand outlook provided more support to the value of prompt-month prices compared to forward contracts. Prompt prices were also buoyed by the prospect of a crude demand recovery in Europe, as refineries in France resumed operations after employees ended refinery and port strikes. This is expected to reduce the crude supply overhang in this region. However, the Brent backwardation structure weakened in the second half of April. The ICE Brent first-month premium to the third month widened m-o-m by 6¢ to a backwardation of 76¢/b. Similarly, ICE Brent's M1/M6 backwardation strengthened last month by 67¢ to settle at \$2.39 on average, compared with a backwardation of \$1.72 in March.

The front end of **NYMEX WTI** strengthened last month and flipped into backwardation for the first time since November 2022. Short covering in NYMEX WTI contracts, higher demand from US refineries and a large drop in US crude oil stocks, including at Cushing, supported the value of the first-month contract. The NYMEX WTI M1/M3-month spread flipped from a contango of 16¢/b on average in March, to a backwardation of 39¢ in April, rising by 55¢ m-o-m.

DME Oman price backwardation also strengthened in the first half of April, but prompt-month prices came under downward pressure in the second half of the month on softer demand from Asian refiners and weaker refining margins. Improving west-to-east arbitrage opportunities that should increase crude inflows from the Atlantic Basin also weighed on the value of Dubai-linked grades. On a monthly average, the DME Oman M1/M3 spread widened by 6¢ m-o-m to a backwardation of \$1.21/b.

In terms of the **M1/M3 structure**, the North Sea Brent M1/M3 spread widened further in April by 29¢ to a backwardation of \$1.04/b, compared with 75¢/b in March. The Dubai M1/M3 spread expanded on average by 16¢ to a backwardation of \$1.75/b. In the US, the WTI M1/M3 spread rose m-o-m by 50¢, flipping from a contango of 17¢ in March to a backwardation of 33¢/b in April.

Crude spreads

The global crude oil market saw a continued narrowing of **sweet/sour crude differentials** in the USGC and Europe for the fifth month in April, although they widened slightly in Asia. This is due to a further narrowing of the spread between light/medium distillate compared to heavy distillate product margins, particularly the diesel-HSFO spread. The narrowing of the sweet/sour crude differentials is also attributed to the high supply availability of light sweet crude, including from the US. However, the spread between sweet and sour crude widened in Asia, despite a wider EFS Dubai that usually raises the west-to-east flow of light sweet crude. Softer demand from Asia Pacific refiners and the high supply availability of sour crude in the East of Suez market, partly the result of a surge in Urals exports, weighed on the value of sour crudes, thereby widening the spread between sweet and sour.

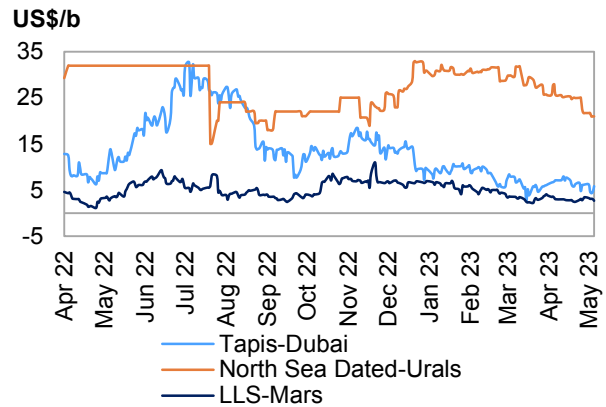
In **Europe**, some recovery in the value of Urals crude differentials resulted in a narrowing differential between the value of Urals and North Sea Dated. The spread narrowed by \$3.62/b, although overall it remained wide at a discount of \$24.93/b. Sustained Urals flows to Asia also supported the value of Urals crude differentials in Northwest Europe. These rose in April by \$3.84 m-o-m to stand at a discount of \$26.85/b.

Moreover, the high supply availability of light sweet crude in the Atlantic Basin and a well-supplied market in Northwest Europe resulted in a narrowing spread between the values of light sweet crude Ekofisk against Johan Sverdrup by 82¢. It stands at a \$2.28/b premium on average in April.

In the **USGC**, the LLS premium over medium sour Mars narrowed in April by 20¢/b m-o-m to \$2.99/b. A narrower spread between light and heavy distillate margins, including the diesel-fuel oil spread, and the high availability of light sweet crude in the Atlantic Basin contributed to the narrowing LLS and Mars spread. Meanwhile, the value of sour crude was buoyed by demand from China buyers.

In **Asia**, however, sweet-sour crude differentials widened last month on stronger light sweet values like Tapis, compared to sour crude. The Tapis/Dubai spread widened by 54¢ in April to \$6.58/b from a \$6.05/b premium the previous month. The high availability of sour crude in the East of Suez market was boosted by higher Urals crude exports to Asia, and softer sour crude demand from Asia Pacific refiners along with a sharp drop in refining margins. A stronger value of the North Sea Dated Benchmark also lent support to the value of light sweet crude in the Asia Pacific region. The North Sea Dated–Dubai spread widened by \$1.63, flipping from a discount of 13¢/b in March to a \$1.50/b premium in April.

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



Sources: Argus, OPEC and Platts.

Commodity Markets

Selected commodity price indices rose across the board m-o-m. The energy price index advanced after seven consecutive months of decline; however, movement within components was mixed. The base metal index also experienced mixed movement within its components, but it partially recovered from its previous monthly decline. Meanwhile, the precious metal index advanced for the second consecutive month.

In the futures markets, sentiment remained mixed and skewed towards the upside m-o-m. Money managers increased their net length for the second consecutive month and total open interest rose for the fourth consecutive month.

Some commodity prices experienced gains m-o-m supported by weakness in the US dollar and industrial activity improvements in some OECD countries. However, selected commodities prices remained challenged by global macroeconomic headwinds, particularly from China.

Trends in selected commodity markets

The **energy** price index turned around after seven consecutive months of decline. The index rose m-o-m by 5.7%, driven by an increase in average crude oil and coal prices, but these were partially offset by a decline in natural gas prices in both Europe and the US. The index was still on a downward trajectory y-o-y, exhibiting a decline of 28.6%.

The **non-energy** index partially recovered from the previous month's decline, increasing by 1.1% m-o-m. The index rose amid prospects of tight agricultural supplies in the US, and recent weakness in fertilizer and other agricultural commodity prices that prompted increased buying activity as traders looked for bargains. The index was down y-o-y by 17.2%.

Table 2 - 1: Commodity prices

Commodity	Unit	Monthly averages			% Change Apr 23/Mar 23	Year-to-date	
		Feb 23	Mar 23	Apr 23		2022	2023
Energy*	Index	110.5	103.5	109.4	5.7	143.6	110.7
Coal, Australia	US\$/mt	207.5	187.2	194.3	3.8	260.4	226.7
Crude oil, average	US\$/b	80.3	76.5	82.5	7.8	98.3	79.9
Natural gas, US	US\$/mmbtu	2.4	2.3	2.2	-6.2	5.1	2.5
Natural gas, Europe	US\$/mmbtu	16.5	13.8	13.5	-2.1	32.5	16.0
Non-energy*	Index	117.3	114.6	115.8	1.1	133.8	116.3
Base metal*	Index	117.8	113.1	113.6	0.4	142.0	116.4
Precious metals*	Index	140.3	144.1	152.7	5.9	144.7	145.5

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

Sources: World Bank and OPEC.

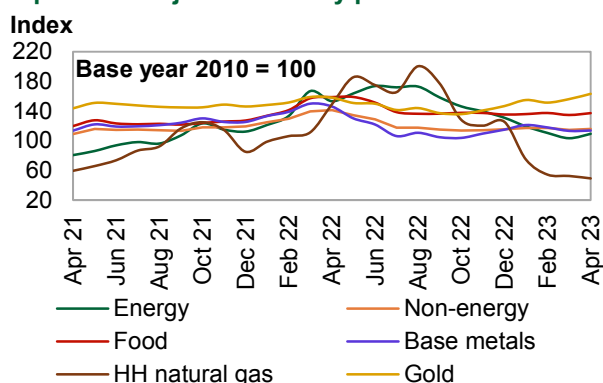
Average **crude oil** prices rose m-o-m by 7.8% in April. Global macroeconomic headwinds remained a drag on prices throughout the month. Nonetheless, prices advanced on the back of strong market fundamentals. Y-o-y, prices remained down by 20.3%.

Henry Hub's natural gas prices dropped for the fourth consecutive month, falling by 6.2% m-o-m. The ongoing decline of European and Asian natural gas prices continued to weigh on demand for US LNG. Additionally, US underground storage saw a build-up amid robust production. According to data from the Energy Information Administration (EIA), underground storage is reported to be over 20% above the five-year average. The combination of these factors put downward pressure on prices. Y-o-y, prices were down by 66.9%.

Natural gas prices in Europe declined for the fourth consecutive month. The average Title Transfer Facility (TTF) price went from \$13.8/mmbtu in March to \$13.5/mmbtu in April, a 2.1% decline m-o-m. Data from Gas Infrastructure Europe showed EU gas storage at 59.68% as of April, up from 55.66% at the end of March. The increase in storage levels is indicative of the ongoing injection session. It should be noted, however, that the price decline was less severe compared with the three previous months. This underscores resilient demand, particularly for industrial activity. Prices were down y-o-y by 58.0%.

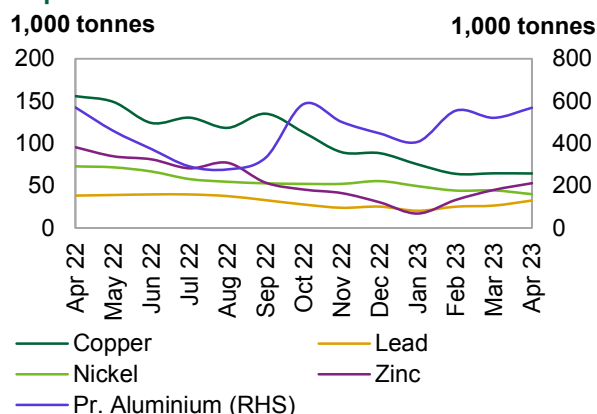
Australian thermal coal prices rose in April after three consecutive months of decline, increasing by 3.8% m-o-m. Prices rose amid buying interest ahead of the expiration of China's import-tariff exemption on 1 May. Moreover, with the winter now over, demand in some Asia Pacific countries is shifting towards power generation for residential cooling ahead of the summer season. Y-o-y, prices were down by 42.3%.

Graph 2 - 1: Major commodity price indices



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

Graph 2 - 2: Inventories at the LME



Sources: LME, Thomson Reuters and OPEC.

The **base metal** index increased m-o-m by 0.4% in April. Movement within the index components was mixed, but US dollar weakness prompted increased buying interest in some metals amid bargain hunting. However, weak industrial activity in China remained a drag on base metal prices as the country's industrial manufacturing PMI fell for the second consecutive month from 51.9 in March to 49.2 in April, which is below the expansion level. The index was down by 22.2% y-o-y.

Aluminium prices rose after two consecutive months of decline. Prices increased by 2.0% m-o-m following reports of inventory declines in some regions in China. Outside of China, the London Metal Exchange (LME) warehouses reported an increase in inventory levels of 9.1% m-o-m, but prices did not react to this development. Prices were down by 27.8% y-o-y.

Average monthly **copper** prices fell for the third consecutive month, declining by 0.5% m-o-m in April. Prices remained under pressure from weaker Chinese demand amid ongoing property and construction challenges. Outside of China, prices received support late in the month from increased buying interest amid a weaker US dollar. The LME reported a slight decline in inventory levels, which fell by 0.3% m-o-m. However, this was not enough to counter the m-o-m price decline. Y-o-y, prices were down by 13.4%.

Lead prices rose for the second consecutive month, increasing m-o-m by 1.6% in April. Stronger sales of electric vehicles (EVs) in some OECD countries continued to underpin prices, in addition to increased EV production in Indonesia. Prices were down by 9.7% y-o-y.

The movement of both **nickel** and **zinc** prices was mixed m-o-m. Nickel prices rose by 2.6% in April, while zinc prices fell for the third consecutive month, declining by 6.7%. Meanwhile, iron ore prices fell by 8.6% m-o-m in April, erasing gains from the previous month. Iron ore prices receded following China's announcement that it will increase regularity oversight on price speculation. Y-o-y, nickel prices were down by 27.9%, while those for zinc were down by 36.5%.

The **precious metals** index advanced for the second consecutive month, increasing by 5.9% m-o-m in April. All index components advanced m-o-m, led by silver. Precious metals rose on the back of expectations of lower interest rate hikes by the US Federal Reserve and a weaker US dollar, as well as lingering concerns over the health of the global banking sector. Gold prices rose by 4.6% m-o-m, while silver and platinum rose by 13.8% and 8.3%, respectively. Y-o-y, the index reversed its downward trend and was up by 3.1%. Gold was up by 3.2%, silver by 1.9% and platinum by 8.9%, y-o-y.

Investment flows into commodities

Total **money managers' net length** rose for the second consecutive month, increasing sharply m-o-m by 65.7% in April. Copper led the gains in net length, followed by crude oil and gold, but these were partially offset by a drop in natural gas. At the same time, total open interest rose for the fourth consecutive month, increasing by 5.9% m-o-m. Gold led the gains in open interests for the second consecutive month, followed by crude oil and natural gas, but this was partially offset by a decline in copper.

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

Selected commodity	Open interest		Net length			
	Mar 23	Apr 23	Mar 23	% OI	Apr 23	% OI
Crude oil	2,256	2,402	121	5	195	8
Natural gas	1,277	1,344	-13	-1	-20	-1
Gold	681	734	87	13	137	19
Copper	233	230	-3	-1	5	2

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

Sources: CFTC and OPEC.

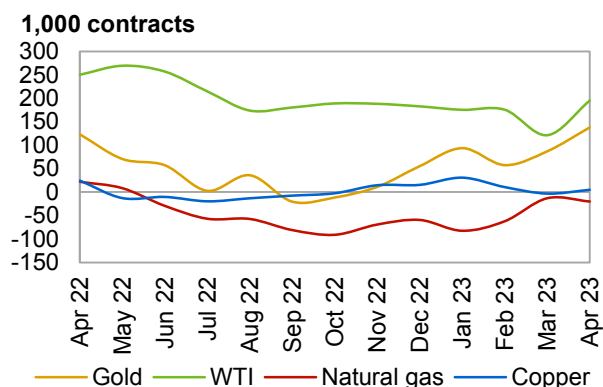
Total **crude oil (WTI)'s open interest (OI)** increased for the fourth consecutive month, rising by 6.5% m-o-m. Money managers' net length also rose by 61.0% over the same period. Money managers turned bullish in April amid a m-o-m recovery in crude oil prices.

Total Henry Hub **natural gas' OI** rose for the seventh consecutive month, increasing by 5.3% m-o-m. Meanwhile, money managers reduced the net length by 53.6% over the same period. The increase in OI combined with the decline in net length was driven by a sharp increase in short positions amid weaker prices.

Gold's OI rose for the second consecutive month, increasing by 7.9% m-o-m in April. Money managers also increased their net length for the second consecutive month, rising by 58.6% m-o-m. Money managers remained bullish on gold, amid lingering concerns over the health of the global banking sector.

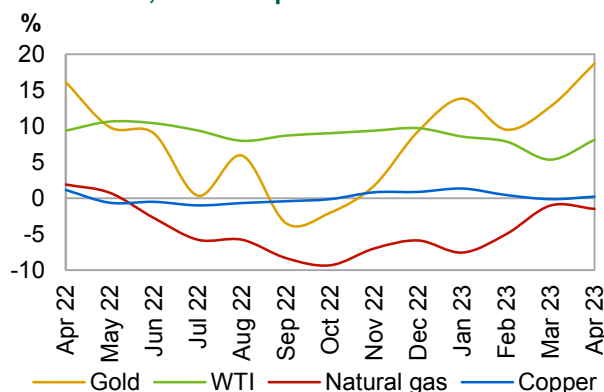
Copper's OI decreased for the second consecutive month, falling m-o-m by 1.1% in April. Meanwhile, money managers increased their net length sharply in April, rising by 247.2% m-o-m. Money managers reduced their short positions amid increased buying interest from traders m-o-m.

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



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

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



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

World Economy

The global GDP growth forecast remains unchanged to stand at 2.6% for 2023, following estimated growth of 3.3% in 2022. As expected, growth in 1Q23 was confirmed to have been steady in the US and the Euro-zone, while the positive effects of China's reopening, and a firm economic growth trend in India and Other Asia, continue supporting global economic growth. OECD growth is forecast to slow down in 2023. In the emerging markets, China's reopening has led to accelerated growth since the beginning of the year, while India's momentum so far in 1H23 has been strong, helped by government-led spending plans and income tax cuts, among other measures. In recent weeks, banking sector turbulence in the US and Europe has stoked worries in capital markets, raising questions about financial stability in light of the inflation-driven monetary tightening cycle. While US banking sector-related uncertainties remain. Yet, further challenges in other areas of the financial sector may arise. Moreover, sovereign debt stands at record high levels in many economies. Indebted private households in numerous advanced economies are starting to feel the pressure of mounting debt repayments and highly indebted corporations will need to manage their balance sheets more actively at this time of increasing interest rates. As further debt-related challenges may arise, geopolitical uncertainties persist and inflation continues. In addition, the US debt ceiling issue has so far not been resolved, a matter that could have economic consequences. Upside potential may come from less accentuated inflation, providing central banks with room for accommodative monetary policy towards the end of the year. In emerging Asia, an even stronger-than-anticipated rebound in China after the reopening of its economy may be another possibility, while India could surprise to the upside, with domestic demand accelerating further.

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

	World	OECD	US	Euro-zone	UK	Japan	China	India	Brazil	Russia
2022	3.3	2.9	2.1	3.5	4.0	1.0	3.0	6.7	2.9	-2.1
Change from previous month	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2023	2.6	1.1	1.2	0.8	0.0	1.0	5.2	5.6	1.0	-0.5
Change from previous month	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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

Source: OPEC.

Update on the latest global developments

The latest data from the start of this year indicated that **1Q23 GDP growth** in OECD economies stood at a steady level. China's economic activity was recovering, following the reopening of the economy at the end of last year. Also, India seems to enjoy ongoing steady growth in 1Q23, supported by a strong services sector. US GDP was announced to have reached a growth of 1.1% q-o-q seasonally adjusted annualised rate (SAAR) in 1Q23. This steady, but relatively low level of growth was already anticipated in the Secretariat's forecast. The Euro-zone's 1Q23 GDP growth stood at 0.3% q-o-q SAAR, following a decline of 0.2% q-o-q SAAR in 4Q22. In Japan, 1Q23 growth appears to have picked up from an almost stagnant 4Q22. However, the global growth pace has been slowing since the beginning of the year, and the continued turbulence in the US banking sector highlights that rapidly rising interest rates can lead to unexpected challenges.

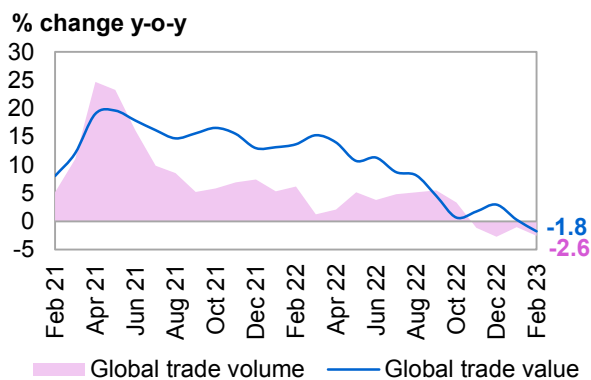
Inflation remains high in most advanced economies, according to the latest available data. In the US, inflation stood at 5% y-o-y in March and 6% y-o-y in January. Euro-zone inflation stood at 7% in April and 6.9% y-o-y in March. As indicated by leaders of both the US Federal Reserve (US Fed) and the European Central Bank (ECB), continued high inflation – accompanied by tight labour markets and solid underlying consumption and investments – will lead central banks in these major OECD regions to continue tight monetary policies, particularly as core inflation remains high.

Global trade fell in February in both volume and value terms. Global trade in **value terms**, declined by 1.8% y-o-y, after a rise of 0.3% y-o-y in January, based on the CPB World Trade Monitor Index provided by the CPB Netherlands Bureau for Economic Policy Analysis.

Trade in volume terms declined by 2.6% y-o-y, after a decline of 1% y-o-y in January.

The decline in both volume and value was impacted by a continued y-o-y decline in China’s exports, albeit exports started to show some m-o-m improvement from February onwards. Chinese export volumes declined by 5.5% y-o-y in February, after falling by 6.3% y-o-y in January. The relative decline in commodity prices and the continued weakening of the US dollar were other influential factors.

Graph 3 - 1: Global trade



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

Near-term global expectations

Key economies have shown **steady economic growth since the start of the year**, but numerous uncertainties remain. Although global inflation has decreased in the past few months, it remains high and core inflation has remained elevated, as well. This has prompted key central banks to continue tightening their monetary policies. The implications of this inflation-interest rate cycle were evident in the continued turbulence experienced by small and medium-sized US banks, which in March spilled over into the European banking sector. This was an additional indication that the debt-driven growth trend of the past decade was encountering challenges. Therefore, the short-term global growth outlook will depend largely on inflation levels, the resulting monetary policies in key economies, particularly the US, and the potential impact of more than 12 months of rapid monetary tightening on global economic growth.

Following low 1Q23 growth in the US, the low growth trend is forecast to continue, amid high interest rates and an ongoing tight labour market. China, the second largest economy in the world, seems to have improved further after its reopening efforts and growth in 1H23 appears to be well supported. India is enjoying steady growth, as indicated by the latest lead indicators, like PMIs. This dynamic is well supported by both the services sector as well as the industrial side of the economy. The Euro-zone and Japan are forecast to show low growth in 2023.

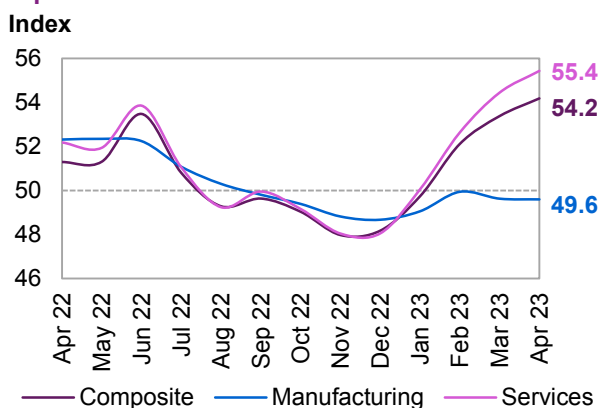
While upside potential exists, downside risks, including debt-related challenges, geopolitical uncertainties and inflation. In addition, the US debt ceiling issue has so far not been resolved, a matter that could have significant economic consequences, as well.

Global purchasing managers’ indices (PMIs) in April reflect the continuing deceleration in manufacturing and the improvements in the services sectors of major economies.

The global **manufacturing PMI** remained unchanged to stand at 49.6 in April.

The **global services sector PMI** increased to 55.4 in April, following 54.4 in March and compared with 52.6 in February.

Graph 3 - 2: Global PMI



Sources: JP Morgan, S&P Global and Haver Analytics.

The latest GDP data for 2H22 confirms the annual **2022 GDP growth** forecast of 3.3% from the previous monthly assessment.

The **growth forecast for 2023** remains unchanged as well to stand at 2.6%. Although projected to slow down from 2022, growth is still robust, given the current global economic obstacles. These include the sharp rise in interest rates due to persistently high inflation and its potential impact on the world's high debt levels, as well as the challenges in the US and the Euro-zone banking sector.

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

	World
2022	3.3
Change from previous month	0.0
2023	2.6
Change from previous month	0.0

Note: * 2023 = Forecast.

Source: OPEC.

OECD

OECD Americas

US

Update on the latest developments

GDP growth in 1Q23 was reported to have stood at 1.1% q-o-q SAAR, according to the first estimate provided by the Bureau of Economic Analysis. This is an obvious slowdown from the growth of 2.6% q-o-q SAAR in 4Q22 and follows the growth of 3.2% q-o-q SAAR in 3Q22. Positively, it was the volatile inventory component that provided a 2.3 percentage point (pp) drag to GDP growth, while personal consumption expenditures increased by a considerable 3.7% q-o-q SAAR, pointing to strong underlying consumer spending. However, the latest indication of gradually rising delinquencies in consumer credit-related financing will need close monitoring in the near term, as this could point to rising challenges for debt-financed consumption in the US, usually an important support factor. Moreover, the so-called debt ceiling negotiations are ongoing and the outcome remains uncertain in a divided US Congress. The debt limit of a total of \$31.4 trillion was reached on 19 January 2023, according to the Congressional Budget Office. As a result, the Treasury announced a “debt issuance suspension period” during which, under the current law, it can take well-established “extraordinary measures” to avoid breaching the debt ceiling. These emergency measures will help to avoid reaching the debt ceiling by 1 June, according to the US Treasury Department.

While general **inflation** retracted, core inflation has not changed much and remains persistently high, an indication of ongoing tight monetary policies. The general price index has now slowed for nine consecutive months to stand at 5% y-o-y in March, after reaching a level of 6% y-o-y in February. Nevertheless, core inflation rose and stood at 5.6% y-o-y in March, after reaching 5.5% y-o-y in February. The level remains elevated, and since the US Fed lifted its key policy rate again by 25 bp in May, it confirmed it would stay the course in its aim to reduce inflation, particularly core inflation, despite recent turbulence in the US banking sector. The Fed is also being steered by its guidelines, the core index of personal consumption expenditures (PCE). This index has barely changed in the past months, as it stood at 4.6% y-o-y in March, following 4.7% y-o-y in February and January and compared with 4.6% y-o-y in December. Continuing rises in wages and salaries, leading to higher prices in the services sector, are playing a role, as the PCE services price index rose by 5.5% y-o-y in March, after reaching 5.8% y-o-y in February, a level almost unchanged since 4Q22.

In the meantime, the **consumer confidence index** as reported by the Conference Board retracted slightly to stand at 101.3 in April, after reaching 104 in March. This is still slightly above pre-pandemic levels of slightly below 100 but indicates a somewhat slowing dynamic.

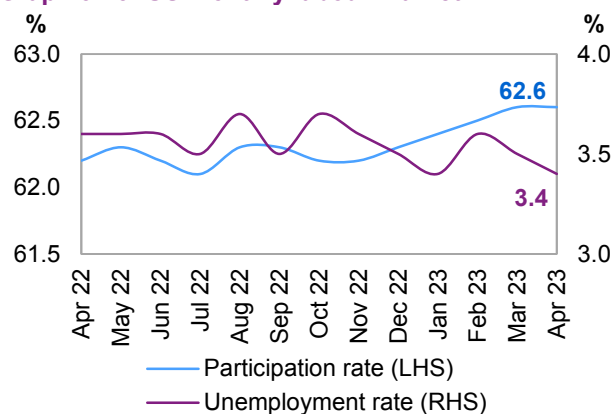
While the labour market cooled a bit in March, it remained robust in April. The **unemployment rate** fell to stand at 3.4%, compared with 3.5% in March and 3.6% in February.

The **participation rate** remained unchanged at 62.6% after it had gradually improved up to March.

Non-farm payrolls rose strongly again. There were 253,000 new jobs recorded in April, compared with a downwardly revised number of 165,000 in March and 248,000 in February. Corresponding hourly wage growth remained strong.

Hourly earnings rose by 4.4% y-o-y in April, after a rise of 4.3% y-o-y was seen in March and 4.7% y-o-y in February.

Graph 3 - 3: US monthly labour market



Sources: Bureau of Labor Statistics and Haver Analytics.

Near-term expectations

After a GDP growth slowdown in 1Q23, the growth dynamic in the US seems to continue on a decelerating trend, as indicated by the latest PMIs, manufacturing orders and labour market data, which were all below, in particular, 2H22 levels. The combination of ongoing high inflation, especially persistently high core inflation, leading to ongoing monetary tightening, with consequent dampening effects on economic growth, are all factors holding back high growth rates in the current year. After recently re-emerging US banking sector-related turbulence the expectation is that related challenges may continue. The Fed is primarily targeting reduced economic expansion to control inflation, and its success in managing a gradual deceleration is crucial, as predicted in this forecast. The required monetary tightening occurred amidst an ongoing impasse in Congress over the debt ceiling debate, which could impact business and consumer confidence, fiscal spending capacity, and cause extensive ripple effects throughout the global economy, if not solved in due course.

1Q23 GDP growth was reported at 1.1% q-o-q SAAR and the gradually softening dynamic is forecast to carry on throughout the year. Inflation will remain high in 1H23 and is forecast to slow only towards 2H23 at a more significant rate. Following core inflation of 6.1% in 2022, the forecast for 2023 is around 4.5%. Despite recent banking woes, tight monetary policies are forecast to continue, while no further interest rate hike is forecast to materialise in the remainder of the year. The key policy rate is projected to remain at the current level of an upper-band interest rate of 5.25%. To avoid a hard landing, and in case inflation declines faster than expected, a lowering of interest rates towards the end of the year is also a possibility, as central banks will aim to balance out any further upside trend in inflation and elevated downward momentum in economic growth. However, this is too early to project.

So far private household consumption remains supportive, as was also visible in strong 1Q23 consumption. However, gradually rising delinquency rates in consumer loans and other debt-related fragilities will need to be carefully monitored in the coming months. With the assumption of a soft landing and considering the deceleration in the US economy over the rest of the year, the quarterly growth pattern is projected to slow.

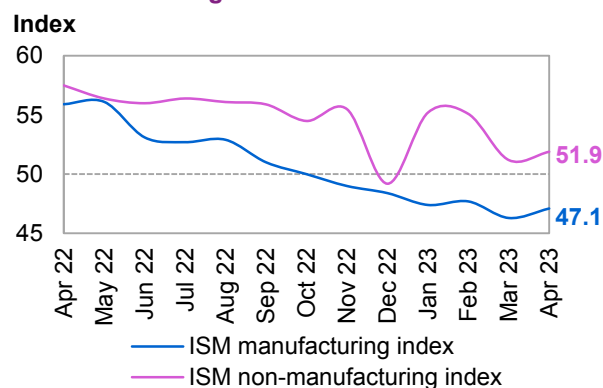
After GDP growth of 1.1% q-o-q SAAR in 1Q23, 2Q23 growth is forecast at 0.5% q-o-q SAAR. This is projected to be followed by 0.2% q-o-q SAAR in 3Q23 and 0.1% q-o-q SAAR in 4Q23.

April **PMI** levels, as provided by the Institute for Supply Management (ISM), reflect an ongoing contraction in the manufacturing sector, while the slowdown in the services sector has stabilised.

The April **manufacturing PMI** stood at 47.1, after a level of 46.3 was seen in March and 47.7 in February. It remained below the growth-indicating level of 50 for the sixth consecutive month.

The index level for the **services sector**, representing around 70% of the US economy, increased slightly in April and stood at 51.9, compared with 51.2 in March, following a level of 55.1 in February.

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



Sources: Institute for Supply Management and Haver Analytics.

Assumptions for the 2023 **GDP growth forecast** are broadly unchanged from last month, integrating sound, but slowing, momentum since the beginning of the year. Moreover, the dampening effects of monetary tightening in 2Q23 and 2H23 are considered.

Hence, the forecast for **2023** GDP growth remains at 1.2%. This follows an unchanged growth estimate of 2.1% for **2022**.

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

	US
2022	2.1
Change from previous month	0.0
2023	1.2
Change from previous month	0.0

Note: * 2023 = Forecast.

Source: OPEC.

OECD Europe

Euro-zone

Update on the latest developments

GDP growth in 1Q23 was reported to have recovered slightly to stand at 0.3% q-o-q SAAR. This comes after a GDP decline of 0.2% in 4Q22. This is the flash estimate provided by Eurostat, the European Statistical Agency, and therefore no further details are available. However, it could be concluded that the slowdown from 2H22 seems to have stabilised in 1Q23. Most available underlying measures in output and consumption were better than expected in recent months. Only some months ago, a 1Q23 GDP decline was expected, considering the consequences of monetary tightening and particularly a fallout from the tension in Eastern Europe. As it seems, and similar to the US, sufficient disposable income and ongoing high spending in the services sector were major factors supporting the Euro-zone economy since the beginning of the year. On the other side, manufacturing sector-related activity seems to have softened.

Inflation in the Euro-zone rose rather unexpectedly again in April, standing at 7% y-o-y, after reaching 6.9% y-o-y in March. Moreover, core inflation remained persistently high, a trend that has led the ECB to further tighten monetary policies at its May meeting, when the ECB lifted its key policy rate by 25 basis points to now stand at 3.75%. Core inflation stood at 7.3% y-o-y in April, following 7.5% y-o-y in March, 7.4% y-o-y in February and 7.1% y-o-y in January, having barely changed in the past months.

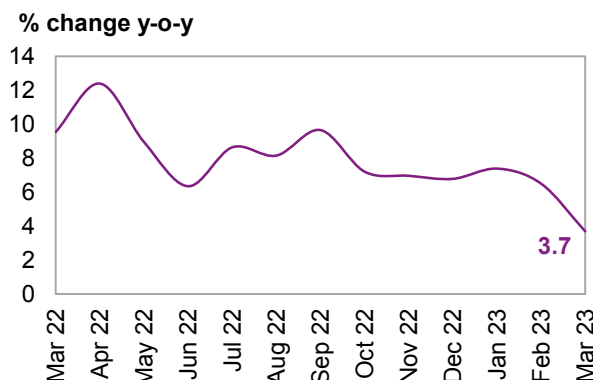
Banks constitute an important provider of liquidity, particularly to small- and medium-sized enterprises in the Euro-zone. Given the ongoing monetary tightening cycle of the ECB, lending activity slowed, rising by 3.6% y-o-y in March, following 4.1% y-o-y in February and 4.6% y-o-y in January. However, with ongoing central bank tightening measures and a likely tightening in lending standards by European banks in light of the latest banking wobbles, the flow of liquidity is expected to slow further, impacting Euro-zone growth. Growth in lending has softened since September 2022, given the impact of monetary tightening. Another aspect that will need close monitoring in the near term is ongoing turbulence in the US banking sector, with a consequent spill-over to the European banking system, as was already seen in March.

The **labour market** maintained its positive trajectory, with unemployment remaining relatively low. According to the latest numbers from Eurostat, the unemployment rate stood at 6.5% in March, following 6.6% in February, the same as in January.

Growth in **retail sales** in value terms retracted considerably in March, increasing by 3.7% y-o-y, compared with an increase of 6.5% y-o-y in February. This confirms the estimated slowdown in the Euro-zone within the most recent months.

Spending in volume terms fell further, declining by 3.6% y-o-y in March, compared with a contraction of 2.3% y-o-y in February and a decline of 1.8% y-o-y in January.

Graph 3 - 5: Euro-zone retail sales



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

Industrial production (IP) recovered further in February, pointing to ongoing improvement from the end of the previous year. After IP contracted by 2.3% y-o-y in December, it rose by 0.9% in January and 2.2% y-o-y in February. On a monthly basis, industrial activity rose by 1.5% m-o-m in February, compared with an increase of 1% m-o-m in January.

Near-term expectations

Slowing GDP growth in the Euro-zone during the second half of 2022 is projected to persist into 2023, as economic indicators such as recent PMIs, lending activity, and manufacturing orders signal a decelerating pace. On a positive note, these indicators suggest a more favourable growth trajectory than anticipated a few months earlier, when it was predicted that the Euro-zone could face a recession as the year turned. However, growth is expected to remain subdued due to the ECB's ongoing monetary tightening efforts, the Euro-zone's need to counterbalance spill-over effects from the tension in Eastern Europe, and persistently high inflation which is curtailing consumption, particularly of manufactured goods. In contrast, the services sector is performing relatively better. Overall sluggish global momentum is an additional suppressive factor, negatively impacting exports and IP.

After the ECB lifted its key policy rate by 25 basis points in May, it is forecast to continue its monetary tightening actions this year as inflation rose again in April, and core inflation, in particular, is expected to remain high in 2023. Inflation is anticipated to remain elevated at almost 5% y-o-y in 2023, compared with an inflation level of 8.4% y-o-y in 2022. The ECB is forecast to lift interest rates by a further 25 pp in 1H23, moving the main key policy rate to 4%. Consequently, strong Euro-zone lending activity – an important factor for investment and growth during the post-pandemic recovery – is forecast to slow further, with subsequent negative impacts, especially on the real estate sector and business-related investments in general. Considering high interest rates heading into 2H23 – which are dampening GDP growth – the GDP dynamic in the Euro-zone is skewed towards 1H23.

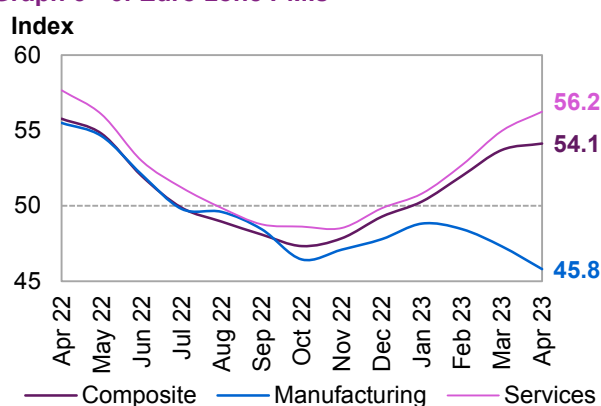
After 1Q23 GDP growth of 0.3% q-o-q SAAR, growth is forecast to pick up in 2Q23, when it is forecast to stand at 1.2% q-o-q SAAR. In 3Q23, GDP growth is forecast to decelerate to stand at 0.8% q-o-q SAAR and is projected to slow to 0.4% q-o-q SAAR in 4Q23.

The **Euro-zone's April PMI** pointed to some improvement in the services sector, while the manufacturing sector remains in contraction.

The **PMI for services**, the largest sector in the Euro-zone, rose to 56.2 in April, compared with 55 in March and 52.7 in February.

The **manufacturing PMI** remained in contractionary territory, standing at 45.8 in April, after 47.3 in March and 48.5 in February.

Graph 3 - 6: Euro-zone PMIs



Sources: S&P Global and Haver Analytics.

The **GDP growth forecast for 2023** remains unchanged at 0.8% y-o-y. This takes into consideration the impact of a variety of dampening factors, including inflation and further monetary tightening, expected ongoing energy supply constraints and other associated issues. It also anticipates some rebound from low 1Q23 growth and rising services sector activity in the summer months. The 2023 growth forecast compares with the actual **2022 GDP growth** of 3.5% y-o-y.

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

	Euro-zone
2022	3.5
Change from previous month	0.0
2023	0.8
Change from previous month	0.0

Note: * 2023 = Forecast.

Source: OPEC.

OECD Asia Pacific

Japan

Update on latest developments

Japan's economic growth dynamic has picked up since the beginning of the year, after the economy was impacted by COVID-19-related issues in 2H22 via exports, as China, in particular, was under major lockdowns up to the end of 2022. Meanwhile, Japan was impacted by lockdowns and social-distancing measures itself in 2H22. In particular, the latest data from the domestic demand side points to an improvement in 1Q23. External demand, i.e. exports, also improved in March and February, benefitting from the effects of China's reopening. The industrial sector was a weak spot, but it has picked up, with monthly improvements seen in February and March. The services sector, to a major extent supporting 1H23 momentum, may see some further support as Japan removed all major COVID-19-related border restrictions on 29 April. This will provide another supporting factor for tourism. However, this may also lead to accelerating tightness in the labour market, supporting inflation.

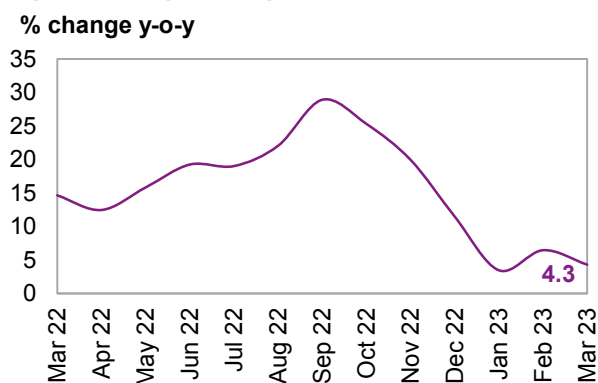
Inflation started easing lately. While it has not been an issue for the Japanese economy for a long time, it peaked at 4.3% y-o-y this year in March, but since then retracted to stand at 3.3% y-o-y in February and 3.2% y-o-y in March. Comparable with inflationary trends in other economies, core inflation – excluding food and energy – a main guideline for central bank policies, rose, reaching 2.3% y-o-y in March, after standing at 2.1% y-o-y in February and 1.9% y-o-y in January. With rising inflationary momentum, the Bank of Japan (BoJ) will likely need to respond and tighten monetary policies further. However, for the time being, the BoJ kept its interest rate unchanged in its latest rate-setting meeting at the end of April. The central bank at the end of December already 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 flexibility. However, this policy tool and more short-term overnight interest rates were kept unchanged at minus 0.1% so far, citing that the consequences of premature tightening are larger than the risk of inflation rising further. In its most recent economic outlook, the BoJ forecasts that core consumer prices will fall below its 2% target in 2023.

Similar to other major economies, **IP** in **Japan** remained weak but signalled the potential onset of an improving trend. March levels declined by 1.2% y-o-y after contracting 1.8% y-o-y in February, compared with a decline of 3.8% y-o-y in January.

Exports remained expansionary, rising by 4.3% y-o-y on a non-seasonally adjusted base in March. This compares with growth of 6.5% y-o-y in February and 3.5% y-o-y in January. Going forward, there will likely be a further pickup, given the rebound in China and steady developments in consumption in major OECD economies.

Retail sales continued their solid trend, rising by 7.1% y-o-y in March, 7.3% y-o-y in February and 5.1% y-o-y in January, compared with an already high 3.7% y-o-y in December and 2.4% y-o-y in November. The trend points to an ongoing improvement in the domestic consumption dynamic.

Graph 3 - 7: Japan's exports



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

Consumer confidence improved further, standing at 34.6 in April, after an index level of 33.5 was seen in March and compared with 30.7 in February, confirming domestic improvements in the Japanese economy towards the end of 1Q23. Moreover, the rise in consumer confidence suggests that household expenditure remained sound into April.

Near-term expectations

While the economy is forecast to see steady growth in 2023, it will face limitations due to factors such as a tight labour market, high inflation, an already high utilization rate in its industrial base, and a general global economic slowdown. However, there is the possibility of some positive effects from trade with China, which is Japan's most significant trading partner in Asia, as its economy is currently benefitting from the post-COVID-19 opening dynamic. Furthermore, there is a chance for growth in exports, due to better-than-expected consumption in major OECD economies. Also, domestic demand is forecast to remain strong throughout 2023 and is expected to recover, in particular when compared with COVID-19 impacted consumption in 2022.

Growth in Japan is expected to stay at around the same level as in 2022, but likely see a less volatile growth pattern, as 2022 was very much impacted by lock-down-related impacts. After almost stagnant growth in 4Q22, which stood at 0.1% q-o-q SAAR, growth is forecast to pick up again in 1Q23 to stand at 1.3% q-o-q SAAR. The GDP growth pattern is then forecast to remain relatively stable, with the growth of 1.5% q-o-q SAAR expected in 2Q23. This is forecast to be followed by growth of 1.6% q-o-q SAAR in 3Q23 and 1.2% q-o-q SAAR in 4Q23.

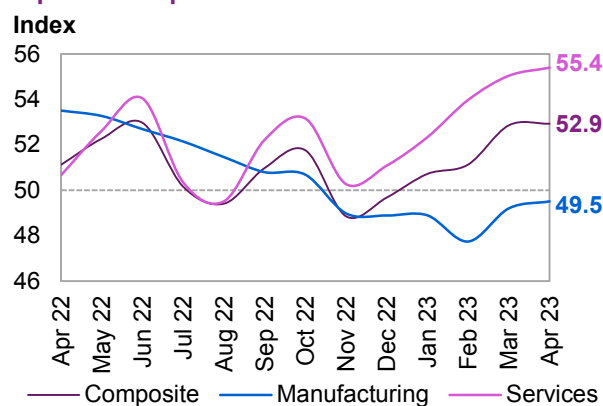
It is uncertain how the **BoJ** will address the current rise in core inflation – it may require more assertive monetary tightening measures. Although inflation is projected to average around 1.5% y-o-y in 2023 after peaking at 2.5% y-o-y in 2022, it was observed to be at nearly 3.9% y-o-y in 4Q22 and 3.2% y-o-y in March. Inflation is therefore expected to be around 3% y-o-y in 1H23, before dwindling towards the end of the year, where it may hover around only 1%.

April PMI numbers reflected an improvement in both the manufacturing and services sectors. However, while the manufacturing sector remained in contractionary territory, below the index level of 50, the services sector appears to have increased further.

The **services sector PMI**, which constitutes around two-thirds of the Japanese economy, rose to 55.4 in April, after reaching 55 in March and compared with 54 in February.

The **manufacturing PMI** rose to stand at 49.5 in April, after standing at 49.2 in March and 47.7 in February, all below the growth-indicating level of 50.

Graph 3 - 8: Japan's PMIs



Sources: S&P Global and Haver Analytics.

While there is some upside risk, given the accelerating dynamic in domestic demand, the **2023 GDP growth forecast** remains at 1%. This considers a slight pick-up in the growth dynamic on a quarterly level throughout the year, after almost stagnant growth was seen in 4Q22. Momentum is forecast to be supported by domestic demand, mainly from the services sector, and by a gradual improvement in exports. The projection for 2023 follows a growth estimate of 1% for **2022**.

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

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

Note: * 2023 = Forecast.

Source: OPEC.

Non-OECD

China

Update on the latest developments

After a slowdown in China's economy in 2022 and relatively lacklustre growth, particularly in 2H22, signposts have emerged that **China's economy is picking up as 1Q23 GDP growth was reported at 4.5%** This comes after a softening growth trend in 2022 became apparent with China's 4Q22 GDP growth standing at only 2.9% y-o-y.

In terms of sectoral contribution, the acceleration of growth in 1Q23 was primarily driven by the tertiary sector, which mainly includes services. The growth rate of this sector rebounded to 5.4% y-o-y in 1Q23, up from 2.3% y-o-y in 4Q22. However, the primary sector, which consists mainly of agriculture, and the secondary sector, encompassing manufacturing and construction, experienced a slight deceleration in 1Q23 GDP growth to 3.7% y-o-y and 3.3% y-o-y, respectively, from 4% and 3.4% in 4Q22.

Very much supported by reopening efforts, the economic dynamic picked up further towards the end of 1Q23. The ongoing dynamic is, as indicated by details regarding the 1Q23 GDP, very much supported by pent-up demand in the services sector.

The latest available data for March shows that IP activity picked up again to stand at 3.9% y-o-y. This follows a combined January and February IP pick-up of 2.4% y-o-y, after growth of only 1.3% y-o-y was seen last December.

Similarly, **retail trade** picked up as it increased by 10.6% y-o-y in March. This follows the latest Luna-year season, when retail trade rose by 3.5% y-o-y for January–February combined after a decline was seen of 1.8% y-o-y in December of last year.

Another factor that will require close monitoring is international trade, as China's economy was very much driven by exports in past years. After **export volumes** declined considerably over most of 2022 and in the first two months of the year, they recovered strongly in March, rising by 15.3% y-o-y. In January and February declines of 12.3% y-o-y and 1.3% y-o-y were recorded.

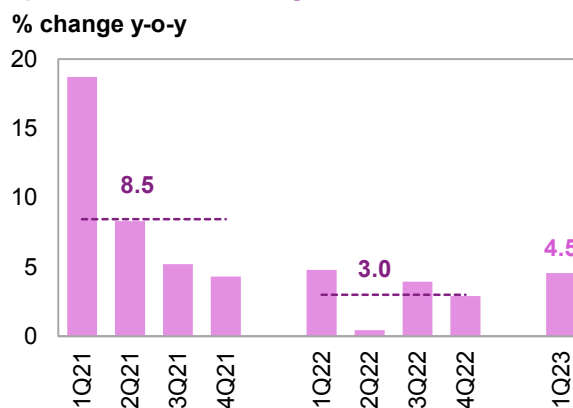
The **annual inflation rate** stood at only 0.7% y-o-y in March, following 1% in February y-o-y and 2.1% in January. Although it is expected that the effects of the economic reopening in December will cause inflation to increase, it has not been a concern for Chinese policymakers so far.

Near-term expectations

Fuelled by the growth dynamic that was unleashed by reopening effects, China's economy is forecast to considerably rebound from last year's COVID-19-impacted low growth of only 3% y-o-y. The economic rebound is forecast to remain dominated by the recovery in the services sector, while the industrial side of the economy is projected to continue with a subdued trend. Also, the easing of regulatory restrictions in the real estate sector will likely provide some support to the housing sector. In terms of monetary policy, the accommodative policy framework is forecast to continue, with authorities remaining prudent and the central bank expected to refrain from broad-based rate cuts. However, with projected inflation to remain low throughout 2023, there is some flexibility in supporting the economy via monetary and fiscal measures.

The current projections for GDP growth suggest a relatively even distribution throughout the year. After 1Q23 growth was reported at 4.5% y-o-y, 2Q23 GDP growth is forecast to pick up further and stand at 6.5% y-o-y, followed by 5% y-o-y in 3Q23 and 4.8% y-o-y in 4Q23. This will lead the Chinese economy to expand by 5.2% y-o-y in 2023. With the ongoing trend of increasing domestic consumption and external demand, there is the possibility of some additional upside potential.

Graph 3 - 9: China's GDP growth



Sources: National Bureau of Statistics and Haver Analytics.

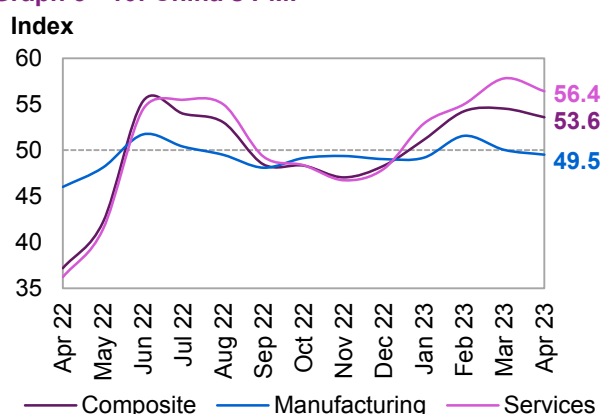
In addition to the impact of domestic consumption and the real-estate sector, the growth of exports will play a crucial role in supporting the economy. After export volumes declined considerably in most of 2022 and the first two months of this year, they recovered strongly in March, rising by 15.3% y-o-y, with the positive trend forecast to continue. Current GDP growth projections suggest that exports will continue to recover from 2Q23 onwards.

April PMI readings as provided by S&P Global show that the services sector is performing very well, while activity in the manufacturing sector is slowing.

The **manufacturing PMI** fell into contractionary territory below 50 to stand at 49.5 in April. This compares with 50 in March and 51.6 in February.

The **services sector index** has retracted somewhat, but remains high, with the April services PMI standing at 56.4, after reaching 57.8 in March and 55 in February.

Graph 3 - 10: China's PMI



Sources: Caixin, S&P Global and Haver Analytics.

The **2023 GDP growth forecast** remains at 5.2%, following GDP growth of 3% in **2022**. Expectations for supportive pent-up demand in 1H23 and additional measures undertaken by authorities to prop up economic growth have not changed and were confirmed by the latest indicators.

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

	China
2022	3.0
Change from previous month	0.0
2023	5.2
Change from previous month	0.0

Note: * 2023 = Forecast.

Source: OPEC.

Other Asia

India

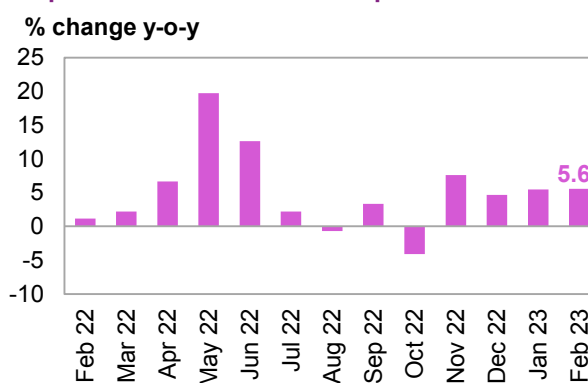
Update on the latest developments

Based on the most recent output and lead indicators, there is strong evidence supporting robust GDP growth in 1Q23, very likely surpassing the growth rate of 4.4% y-o-y seen in 4Q22, down from 6.3% y-o-y in 3Q22. Similar to other major economies, there has been a noticeable shift from the manufacturing to the services sector, which has provided significant support to overall growth. However, domestic demand remained weak in recent months and growth still lags behind pre-pandemic levels.

Monthly indicators pointed to an acceleration in **IP**, which advanced by 5.6% y-o-y in February, after reaching 5.5% y-o-y in January and following growth of 4.7% in December. This solid growth trend comes after quarterly average growth of only 2.1% y-o-y was seen for both quarters in 2H22.

The **unemployment rate** rose slightly to stand at 8.1% in April, after 7.8% in March, compared with 7.5% in February. While this trend shows some weakness in the labour market, it compares with much higher unemployment rates at the end of last year, which stood at 8.3% in December. However, the weakening of this labour market indicator will need close monitoring in the coming months.

Graph 3 - 11: India's industrial production



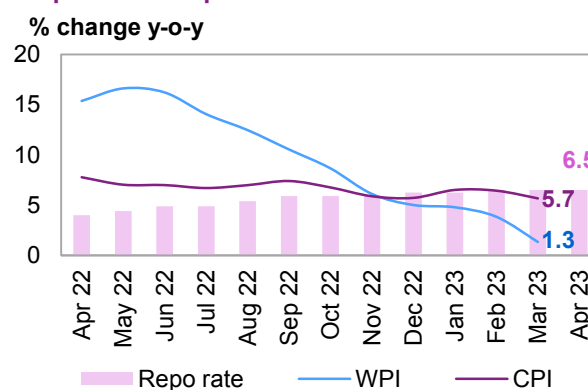
Sources: Ministry of Statistics and Program Implementation of India and Haver Analytics.

Inflation in India slowed, in line with general global inflationary trends, and the consumer price index retracted in the latest available month of March.

The **general CPI index** rose by 5.7% y-o-y in March, after reaching 6.4% y-o-y in February and compared with 6.5% y-o-y in January.

Core inflation also slowed, standing at 5.7% y-o-y in March compared with 6.1% y-o-y in February and 6.3% in January.

Graph 3 - 12: Repo rate and inflation in India



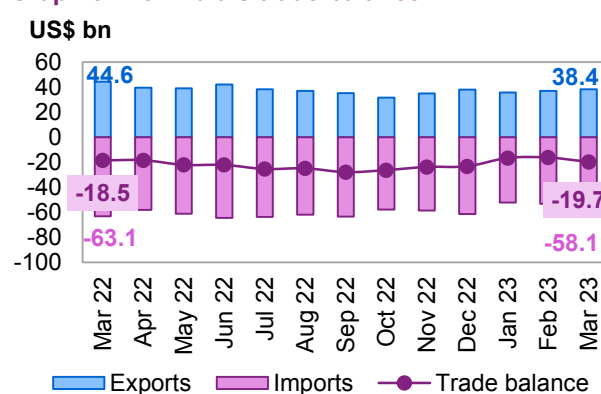
Sources: Ministry of Commerce and Industry, Reserve Bank of India and Haver Analytics.

India's **trade balance** posted a deficit of about \$19.7 billion in March, compared with a deficit of \$16.2 billion in February and \$18.5 billion in March of last year.

Monthly **exports** rose by \$38.4 billion in March from \$37 billion in February, compared with \$44.6 billion in March of last year.

Meanwhile, monthly **imports** increased to stand at \$58.1 billion in March, compared with \$53.2 billion in February, after a level of \$63.1 billion was reached in March of last year.

Graph 3 - 13: India's trade balance



Sources: Ministry of Commerce and Industry and Haver Analytics.

Near-term expectations

Output and lead indicators pointed to an acceleration of the Indian growth dynamic in 1H23, after low **GDP growth** was recorded at 4.4% y-o-y in 4Q22. Given the current improvement in output figures and leading indicators, it is anticipated that the growth rate in 1H23 will surpass that of 2H22. Furthermore, it is projected that growth will continue to accelerate towards 2H23, lifted by rising exports, a potential increase in domestic demand, and stimulus measures implemented by the government.

GDP growth is forecast to stand at 5.1% y-o-y on a quarterly average in 1H23 and accelerate to 6.1% y-o-y on a quarterly average in 2H23. The services sector is expected to remain the primary contributor to GDP growth in 2023, bolstered by strong export performance. Despite weakness in domestic demand, the manufacturing sector and construction activity could receive support from a government-initiated capex push. Nonetheless, due to the impact of the global economic slowdown, persistently high interest rates in India, and the base effect of exceptionally high GDP growth in the country in 2022, the economy is projected to experience lower growth in 2023, compared with last year.

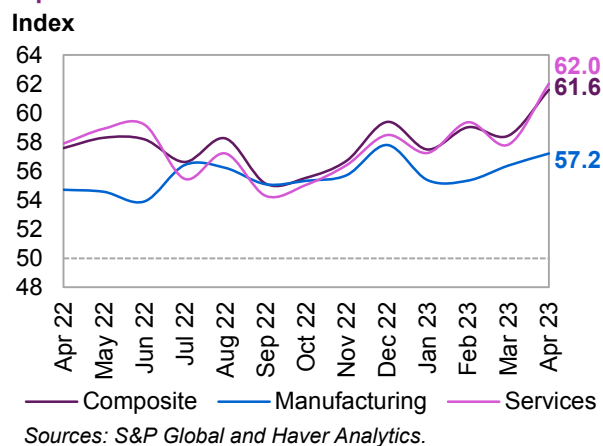
The Reserve Bank of India (RBI) kept its **key policy rate** unchanged at 6.5% at its latest meeting in April. However, with falling inflation, the RBI may have the flexibility to drop interest rates in the coming months, which could provide an additional supportive factor to the Indian economy in 2023. Further interest rate hikes are now relatively unlikely, despite inflation being forecast to remain in the RBI's upper band of around 6% in the near term. One important risk to monetary policies is the trajectory of near-term and mainly weather-related food price changes, which constitute an important inflation driver in India.

World Economy

The S&P Global **manufacturing PMI** continued to expand, reaching a strong 57.2 in April, after seeing an already high level of 56.4 in March and 55.3 in February. This highlights a further expansionary trend going into 2Q23.

The **services PMI** indicated ongoing strong momentum. It rose to 62 in April, rebounding strongly after it retracted somewhat in March, when it stood at 57.8, after reaching a level of 59.4 in February.

Graph 3 - 14: India's PMIs



Considering ongoing steady growth in 1H23 and some carry-over into 2H23, India's **2023** GDP growth is forecast to reach 5.6%, unchanged from last month. This comes after the low growth momentum India experienced in 4Q22. Considering the accelerating 1Q23 growth dynamic, the trend may speed up further into 2Q23 and beyond, potentially lifting it above the current GDP growth forecast. Growth is expected to be supported by the services sector dynamic, fiscal aid and a rebound in consumption. These projections follow a very strong **2022 GDP growth** of 6.7%.

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

	India
2022	6.7
Change from previous month	0.0
2023	5.6
Change from previous month	0.0

Note: * 2023 = Forecast.

Source: OPEC.

Latin America

Brazil

Update on latest developments

Brazil's new government is engaged in negotiations for a new fiscal framework, which must undergo a vote in Congress. One of the government's primary goals is to redefine the fiscal anchor. The government plans to present a draft legislation in the coming weeks, which seeks to ensure that real expenditures rise every year. However, this would entail the scrapping of a spending cap limit that has been an essential component of Brazil's fiscal credibility.

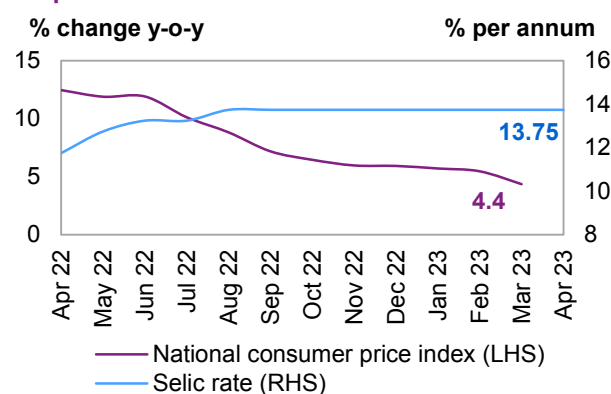
Meanwhile, the government is taking measures to eliminate the budget deficit by 2024 and achieve a primary surplus by 2025. In addition, the government intends to introduce new taxes to finance a gradual increase in social welfare-related spending. These will include measures targeting tax evasion, closing tax loopholes, and imposing duties on online gambling.

Furthermore, plans are underway to reform the tax code and the VAT framework. In the meantime, Brazil's economy continued slowing over the past months, after relatively strong, though weakening, **GDP growth** was seen in 2H22. GDP growth for 4Q22 was reported to have reached 1.9% y-o-y, the lowest quarterly growth seen over the year. 4Q22 GDP growth was even negative at -0.2% q-o-q on a seasonally adjusted (SA) quarterly level, based on data from Brazil's statistical office, the Instituto Brasileiro de Geografia e Estatística.

Positively, **inflation** retracted meaningfully in 2H22 and has continued this trend since the beginning of the year. It stood at 4.4% y-o-y in March, after reaching 5.5% y-o-y in February and compared with 5.7% in January.

The central bank kept the **key policy rate** unchanged after lifting interest rates significantly since 2021. The key policy rate was kept at 13.75% at the last rate-setting meeting in March. The central bank's inflation target stands at 3.25%. Even as a new inflation target, possibly to be set at 3%, will be defined soon, there is room for the central bank to manoeuvre and lower interest rates.

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



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

Unemployment has seen an upward trend since the beginning of the year. Based on the usual three-month moving average, Brazil's **unemployment rate** stood at 8.8% in March, after seeing 8.6% in February and compared with 8.4% in January.

Meanwhile, **consumer confidence** retracted in April to stand at 85.2, after it picked up in March to stand at 88.2, compared with 86.5 in February, as measured by the Fundação Getúlio Vargas Institute.

Near-term expectations

The Brazilian economy is expected to experience a slowdown in 2023 due to persistent high-interest rates and elevated inflation. There has also been limited fiscal space for domestic investment. Domestic consumption is projected to remain relatively low throughout the year. Moreover, the robust growth rate of 2.9% in the previous year was largely supported by government stimulus measures and subsidies which will not be available this year. Major parts of fossil fuel-related subsidies have also been phased out. However, there are sound expectations for external trade, with support from the recovery in China and envisaged domestic reforms, including fiscal restructuring. These factors could provide a good foundation for investment and consumption, resulting in at least a low level of growth in 2023.

Inflation is forecast to slow, but to remain at around 5% in 2023. This compares with the central bank's inflation target of 3.25%. However, with the inflationary trend slowing considerably up to March, a more accommodative stance towards 2H23 is possible – despite the persistence of inflation – given the strongly decelerating economy.

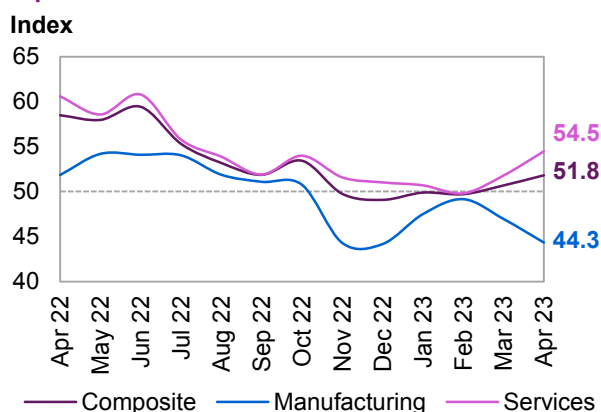
The projected GDP growth rate for 1Q23 is 1.3% y-o-y, which is lower than the growth rate of 1.9% y-o-y in 4Q22. Subsequently, the GDP growth rate is expected to slow further in 2Q23, reaching 0.8% y-o-y, before recovering slightly to 0.9% in 3Q23 and 1% in 4Q23. Despite this outlook, the agricultural sector's robust output and a potential increase in Brazil's export market share could provide an upside to the economy. The Eastern European tensions and severe drought in Argentina may improve Brazil's competitive position in global trade this year. Additionally, the possibility of more accommodative monetary policies in 2H23, coupled with expanding export opportunities, could lift growth beyond current expectations.

April PMI indices indicate a continuation of the slowing trend in the manufacturing PMI, while the services sector seem to continue recovering.

The **manufacturing PMI** dropped to 44.3 in April, after standing at 47 in March and compared with 49.2 in February. It remained below the growth-indicating level of 50 for the sixth consecutive month.

The **services PMI** recovered strongly in April, rising to 54.5, after it stood at 51.8 in March and compared with 49.8 in February.

Graph 3 - 16: Brazil's PMIs



Sources: HSBC, S&P Global and Haver Analytics.

The forecast for **GDP growth in 2023** remains unchanged from last month, with a projected growth rate of 1.0% following reported growth of 2.9% in **2022**. Despite the current challenging economic conditions, there is potential for growth to improve. A decline in inflation could lead to a more accommodative monetary policy in the second half of 2023, potentially bolstering growth towards the end of the year. Additionally, envisaged fiscal reforms may provide a supportive factor that could improve asset market conditions and increase business confidence.

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

	Brazil
2022	2.9
Change from previous month	0.0
2023	1.0
Change from previous month	0.0

Note: * 2023 = Forecast.

Source: OPEC.

Africa

South Africa

Update on the latest developments

The economic situation in South Africa continues to face significant challenges, primarily due to ongoing power supply constraints, high and rising inflation and a consequent tightening in monetary policies by the central bank, which have all impacted the already limited economic dynamic in recent months. In 4Q22, seasonally adjusted GDP declined by 1.3% q-o-q. As the contractionary momentum continued into 1Q23, the possibility of an extended decline in 1H23 GDP remains a possibility. Ongoing constraints in the power supply situation since the beginning of the year pose risks to business operations, public services, and domestic consumption. South Africa remains heavily exposed to state power supplier, Eskom, as the government has put large support measures in place to fix ongoing power supply issues. Already challenging prospects are additionally exacerbated by heavy rainfall and flooding in 1Q23.

Inflation remains high and persistent, mirroring the current global environment. Headline inflation in urban areas stood at 7.1% y-o-y in March, the same level as in February, after reaching 6.9% y-o-y in January. Corresponding core inflation stood at 5.2% y-o-y in both March and February, compared with 4.9% y-o-y in both January and December. Consequently, the **central bank** raised interest rates, as continued blackouts in South Africa complicate its aim to keep inflation under control. The South African Reserve Bank raised its key policy rate by 0.5 pp to 7.75% in April.

Near-term expectations

Due to ongoing economic challenges in South Africa, growth is expected to significantly slow in 2023. Prospects for the 1H23 GDP dynamic have worsened, and a contraction over the period is becoming increasingly likely, in a continuation of the 4Q22 dynamic. The South African economy faces further challenges, including a currently soft commodities market, ongoing domestic political issues, and the resulting rise in domestic uncertainty. The unresolved issue of power supply also remains a critical and dampening factor. Additionally, the central bank has indicated its intention to continue its monetary tightening efforts to control inflation, which could have a short-term dampening effect on the economy. In that respect, the central bank will likely lift the key policy rate by a further 25 bp to stand at 8.0% in May.

The forward-looking seasonally adjusted composite **PMI** as provided by S&P Global retracted further in anticipation of an additional deterioration in the economy. It stood at 49.6 in April, after reaching 49.7 in March and compared with 50.5 in February.

While the **2023 GDP growth forecast** remains at 1%, downside risk prevails and near-term developments will need close monitoring. A more accentuated slowdown from GDP growth of 2% in **2022** could easily materialise, given the current state of the economy. In particular, the power sector will need monitoring.

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

	South Africa
2022	2.0
Change from previous month	0.0
2023	1.0
Change from previous month	0.0

Note: * 2023 = Forecast.

Source: OPEC.

Russia and Central Asia

Russia

Update on the latest developments

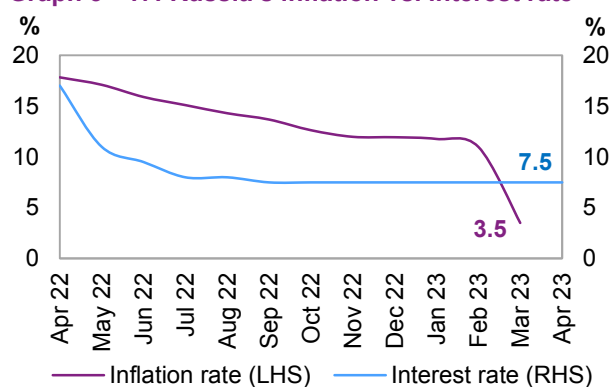
The **Russian economy** seems to be weathering ongoing challenges better than most observers anticipated. In particular, it seems Russia's revenue hit from sanctions is less than expected. This trend is a continuation of last year's developments, when the decline in GDP growth was less than expected after Russia successfully limited negative spillover from sanctions into its economy. However, GDP contracted by 2.1% in 2022, as shown in figures released by the Russian Federal State Statistic Service. The 4Q22 GDP decline was reported at 2.7% y-o-y. Household spending fell by 2.7% y-o-y in 4Q22, well counterbalanced by government spending, which expanded by 4.7% y-o-y. In March, the budget performance improved somewhat as spending moderated, resulting in a small surplus after large deficits were seen over the winter months. However, the rouble came under pressure in early April and its recent weakening has contributed to inflationary risks to some extent.

Consumer inflation retracted considerably in March to stand at 3.5% y-o-y, well below the central bank's inflation target of 4%. In February, inflation stood at 11% y-o-y, compared with 11.8% y-o-y in January. Russia's central bank held its **policy rate** at 7.5% in April.

The **contraction in IP** ended in March, when it rose by 1.2% y-o-y, after declining by 1.7% y-o-y in February and contracting by 2.4% y-o-y in January.

Russia's **jobless rate** stood at 3.5% in March, the same low level as seen in February and January, compared with 3.7% in December and November.

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



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

Near-term expectations

Similar to the 2022 growth dynamic, it is likely that the Russian economy will experience only a limited impact by external pressures on its economy this year, with only a small decline in GDP. Possible upside potential may even lift the growth dynamic into positive territory. It remains to be seen to what extent the EU embargo on imports of Russian petroleum products will have an effect, but there are indications that Russian suppliers may counterbalance the consequences relatively well. Although federal revenues will likely be lower in 2023 and household spending may be muted, government-led measures are expected to counterbalance the downside risk. Nevertheless, the range of uncertainties for near-term Russian economic growth remains wide.

The combination of downward momentum in the Russian economy during the second half of 2022 and increasing external pressure is expected to keep growth in negative territory in 2023, though at a lower level. Following a reported 4Q22 GDP decline of 2.7%, the contraction is projected to continue. In 1H23, the average quarterly decline is estimated to stand at around 2.5% y-o-y, followed by an anticipated pick-up in 2H23, with an expected expansion of around 1.5% y-o-y in average quarterly GDP growth. The government's counterbalancing measures are expected to compensate for the negative impact of external pressure to a significant extent. However, uncertainties related to the impact of sanctions and developments in the commodities sector in 2023 make it challenging to forecast economic growth in the near term. Any further developments in the commodities sector may significantly impact government revenues and, consequently, the country's GDP.

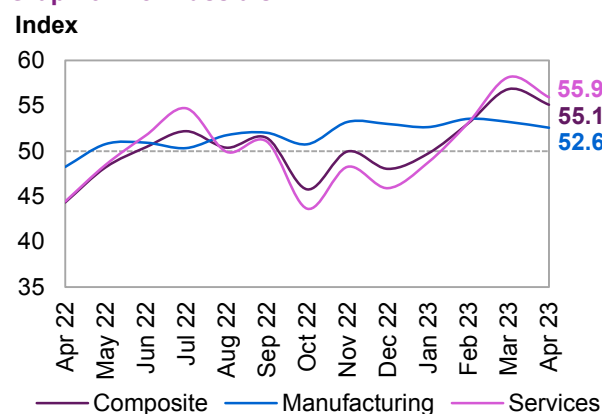
Despite the recent decline in headline inflation, the Central Bank of the Russian Federation (CBR) may consider tightening its monetary policy in the coming months, depending on the continued near-term path of inflation, which usually increases during significant rouble depreciation.

PMI indices in April reflect an ongoing expansionary trend in both the manufacturing and services sectors.

April's S&P global **manufacturing PMI** retracted slightly to stand at 52.6 in April, following 53.2 in March and compared with 53.6 in February.

The **services PMI** retracted slightly as well and stood at 55.9, after it had already risen a considerable five index points in March to reach 58.1, following 53.1 in February.

Graph 3 - 18: Russia's PMI



Sources: HSBC, S&P Global and Haver Analytics.

GDP growth in 2023 is unchanged from the previous month as it is forecast to decline by 0.5%. However, the forecast remains subject to high levels of uncertainty amid ongoing tension and the global economic environment. The small contraction forecast for 2023 follows a reported **2022** GDP decline of 2.1%.

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

	Russia
2022	-2.1
Change from previous month	0.0
2023	-0.5
Change from previous month	0.0

Note: * 2023 = Forecast.

Source: OPEC.

OPEC Member Countries

Saudi Arabia

The non-oil sector is expected to play a predominant role in driving growth this year in **Saudi Arabia**. The PMI rose further to 59.6 in April, compared with a high level of 58.7 in March, owing to improving economic conditions and stronger employment numbers. The government continues to implement diversification policies aimed at boosting the non-oil sector. Recently, four special economic zones were launched, offering incentives to attract foreign investment into manufacturing, cloud computing, medical technology and maritime sectors. Inflation eased to 2.7% y-o-y in March from 3% y-o-y in February, the slowest rate since July 2022. However, housing rents rose by 8.7% y-o-y, and utility prices increased by 7.4% y-o-y, remaining the main drivers of higher prices. This was offset by a decrease in food and beverage prices. In May, the Saudi Central Bank increased the key policy rate by 25 basis points to 5.75%, aligning with the US dollar interest rate regime. Similar to the US Fed, the central bank is expected to maintain interest rates at the current level in the coming months.

Nigeria

Nigeria's economy faced challenges in gaining momentum in 1H23, with business activity and consumer spending remaining subdued, in addition to high input-cost inflation and lower employment levels compared with the previous year. However, recent leading indicators suggest that the economy may recover in the coming months. The Nigerian government postponed the June deadline to remove fuel subsidies and has yet to announce a new date for the scheme's end. The newly-elected president will be sworn in on 29 May, and most races for the National Assembly have been called. Inflation data for March shows an ongoing acceleration, with an annual rate of 22% y-o-y, up from 21.9% y-o-y in February and 21.8% in January. Food inflation has been a key factor in this rise, reaching 24.5% y-o-y in March. The Central Bank of Nigeria has kept the policy rate unchanged at 18%, following a 50 bp hike in March and a 100 bp hike in January. Despite the challenges, April's Stanbic IBTC Bank Nigeria PMI recovered strongly to 53.8, compared with only 42.3 in March, indicating a potential near-term recovery.

The United Arab Emirates (UAE)

The non-oil sector of the **UAE economy** is expected to continue its robust growth in 2023, building on the solid growth momentum of 2022. Leading indicators and high-frequency data suggest that the expansionary trend will be maintained, with the PMI for the non-oil sector standing at 56.6 in April from 55.9 in March. The real estate market is performing well, with Dubai property sales reaching a ten-year high. Furthermore, the tourism industry is also continuing to expand, contributing about 16% to UAE GDP. However, tighter global bank credit conditions may lead to a slight easing in non-oil sector growth. The rise in key policy rates over the past year and in 2023 is also weighing on consumption and private investment, potentially affecting the UAE's economy.

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

The **US dollar (USD) index** receded in April, falling by 1.9% m-o-m. The USD slowed as concerns of a widespread banking sector crisis eased, following intervention from regulators. The USD was further pressured by expectations of lower interest rate hikes by the Fed, amid signs that inflationary forces were easing. The ongoing hawkish stand by other major central banks also weighed on the USD. Y-o-y, the index was up by 1.1%.

The USD fell in April against major developed market (DM) currencies. M-o-m, it fell against the euro by 2.4%, by 0.4% against the yen and by 2.5% against the pound. Meanwhile, the USD remained up against major DM currencies compared with the previous year. Against the euro, it was up by 1.4% y-o-y, and by 5.6% against the yen and 3.9% against the pound, respectively, in the same period.

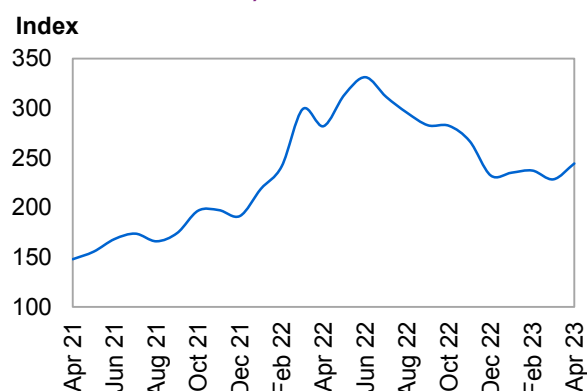
The USD also declined in April against major emerging market (EM) currencies. It receded for the second consecutive month against the rupee, falling by 0.3% m-o-m. It fell by 0.1% and 3.7% m-o-m against the yuan and the real, respectively, in the same period. Meanwhile, the USD remained up against major EM currencies compared with the previous year. It was up by 7.7% y-o-y against the rupee, and by 7.1% and 5.4% against the yuan and the real, respectively, in the same period.

The differential between **nominal and real ORB prices** widened m-o-m amid a recovery in crude oil prices, while the USD weakened over the same period. Inflation (the nominal price minus the real price) went from \$1.28/b in March to \$2.12/b in April, a 65.6% increase m-o-m.

In **nominal terms**, accounting for inflation, the ORB price rose, going from \$78.45/b in March to \$84.13/b in April, a 7.2% increase m-o-m. Meanwhile, the ORB is down by 20.4% y-o-y in nominal terms.

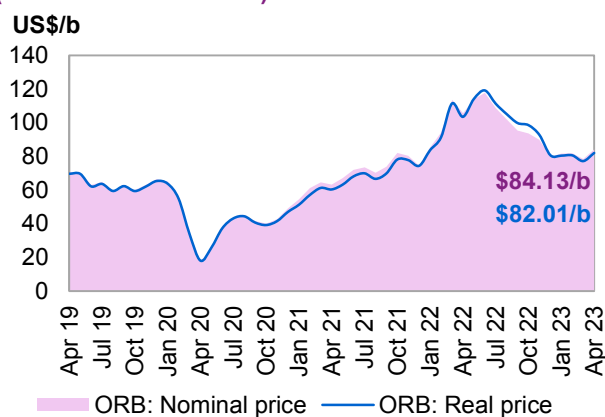
In **real terms** (excluding inflation), the ORB went from \$77.17/b in March to \$82.01/b in April, a 6.3% decrease m-o-m. Y-o-y, the ORB is down by 20.8% in real terms.

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



Sources: IMF and OPEC.

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. Most of the downward adjustment in oil demand occurred in 4Q22, amid a slight slowdown in OECD countries towards the end of the year. This was almost entirely offset by an upward revision to oil demand growth in non-OECD countries, 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 2.3 mb/d, with the OECD increasing by 0.07 mb/d and non-OECD growth at close to 2.3 mb/d. Minor upward adjustments were made due to the better-than-expected performance in China's economy, 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 2.13 mb/d y-o-y. Total world oil demand is anticipated to reach 101.9 mb/d in 2023. However, this forecast is subject to many uncertainties, including global economic developments and ongoing geopolitical tensions.

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

World oil demand	2021	1Q22	2Q22	3Q22	4Q22	2022	Change 2022/21	
							Growth	%
Americas	24.32	24.77	24.98	25.33	24.95	25.01	0.69	2.86
of which US	20.03	20.38	20.41	20.62	20.32	20.43	0.40	1.98
Europe	13.13	13.19	13.43	14.07	13.34	13.51	0.38	2.90
Asia Pacific	7.38	7.85	6.99	7.22	7.68	7.43	0.05	0.70
Total OECD	44.82	45.81	45.39	46.62	45.97	45.95	1.13	2.51
China	15.00	14.77	14.45	14.67	15.51	14.85	-0.15	-0.98
India	4.77	5.18	5.16	4.95	5.26	5.14	0.37	7.66
Other Asia	8.67	9.13	9.31	8.77	8.89	9.02	0.36	4.11
Latin America	6.23	6.32	6.36	6.55	6.52	6.44	0.21	3.38
Middle East	7.79	8.06	8.15	8.53	8.44	8.29	0.50	6.45
Africa	4.22	4.51	4.15	4.25	4.69	4.40	0.18	4.21
Russia	3.61	3.67	3.42	3.45	3.71	3.56	-0.05	-1.48
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	1.75
Total Non-OECD	52.25	53.65	52.90	52.89	55.03	53.62	1.36	2.61
Total World	97.08	99.45	98.29	99.51	101.00	99.57	2.49	2.57
Previous Estimate	97.08	99.45	98.29	99.51	101.02	99.57	2.50	2.57
Revision	0.00	0.00	0.00	0.00	-0.03	-0.01	-0.01	-0.01

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

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

World oil demand	2022	1Q23	2Q23	3Q23	4Q23	2023	Change 2023/22	
							Growth	%
Americas	25.01	24.61	25.14	25.51	25.09	25.09	0.08	0.31
of which US	20.43	20.16	20.43	20.75	20.37	20.43	0.00	-0.01
Europe	13.51	12.99	13.36	14.10	13.37	13.46	-0.05	-0.37
Asia Pacific	7.43	7.89	7.05	7.27	7.70	7.47	0.04	0.55
Total OECD	45.95	45.50	45.55	46.87	46.15	46.02	0.07	0.15
China	14.85	15.63	15.40	15.43	16.16	15.66	0.80	5.42
India	5.14	5.40	5.44	5.21	5.50	5.39	0.25	4.89
Other Asia	9.02	9.43	9.65	9.14	9.24	9.36	0.34	3.75
Latin America	6.44	6.56	6.49	6.71	6.68	6.61	0.18	2.75
Middle East	8.29	8.59	8.47	8.86	8.73	8.66	0.37	4.43
Africa	4.40	4.71	4.34	4.43	4.88	4.59	0.19	4.32
Russia	3.56	3.68	3.45	3.59	3.87	3.65	0.09	2.49
Other Eurasia	1.15	1.24	1.16	1.02	1.22	1.16	0.01	1.15
Other Europe	0.77	0.84	0.76	0.75	0.83	0.80	0.03	3.61
Total Non-OECD	53.62	56.09	55.16	55.16	57.10	55.88	2.26	4.21
Total World	99.57	101.58	100.70	102.03	103.25	101.90	2.33	2.34
Previous Estimate	99.57	101.55	100.70	102.03	103.27	101.89	2.32	2.33
Revision	-0.01	0.04	0.00	0.00	-0.03	0.00	0.01	0.01

Note: * 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** declined in February by 0.5 mb/d y-o-y. This is down from a lesser decline of around 50 tb/d y-o-y in January, and follows a 0.9 mb/d y-o-y drop in December.

In the **US**, **February** data indicates a decline by 0.4 mb/d y-o-y, compared to an annual decline of 0.2 mb/d, as seen in January 2023.

The ISM manufacturing PMI for February remained well in contraction territory at 47.4 points following a similar reading in January, for the fifth consecutive month.

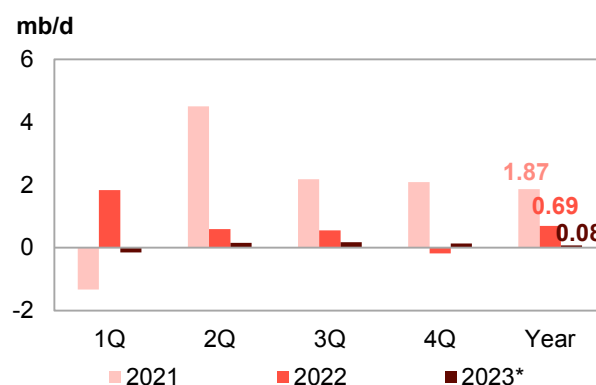
With regard to mobility, the US Federal Highway Administration reported that the seasonally adjusted vehicle miles travelled declined slightly m-o-m by 0.6% in February, but showed an increase of 1.5% y-o-y over February 2022.

At the same time, the International Air Transport Association's (IATA) Air Passenger Market Analysis reported that domestic airline activity increased by 10.6% y-o-y in February and remained above pre-pandemic levels for the second consecutive month, with traffic growing 1.2% over February 2019.

Demand for petrochemical feedstock remained subdued due to low demand and weak margins. LPG weakened by 0.3 mb/d, y-o-y, in February and January, following a y-o-y plunge of 0.5 mb/d in December. Similarly, naphtha demand remained in negative territory, for the eleventh month in a row. Diesel decelerated further by 0.2 mb/d, as weak manufacturing activity continued to weigh on diesel demand. Similarly, the 'other products' category dropped y-o-y by 0.2 mb/d. Residual fuels were unchanged y-o-y, albeit showing a slight improvement compared to the y-o-y decline of 0.1 mb/d in January.

On a positive note, on the back of improved mobility, gasoline posted y-o-y growth of 0.1 mb/d, albeit this being down from a strong 0.3 mb/d y-o-y growth recorded in January. Jet/kerosene also increased by 0.1 mb/d, y-o-y, and the same growth as was seen in January.

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



Note: * 2023 = Forecast.
Source: OPEC.

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

By product	Feb 22	Feb 23	Change Feb 23/Feb 22	
			Growth	%
LPG	4.00	3.66	-0.34	-8.5
Naphtha	0.14	0.11	-0.03	-18.2
Gasoline	8.60	8.72	0.12	1.4
Jet/kerosene	1.40	1.54	0.14	9.6
Diesel	4.18	4.02	-0.16	-3.8
Fuel oil	0.36	0.37	0.00	0.6
Other products	2.05	1.88	-0.17	-8.2
Total	20.73	20.29	-0.44	-2.1

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

Near-term expectations

In **2Q23**, US GDP is set to improve from the first quarter. However, continued weakening of manufacturing activity is likely to impact demand for industrial fuels. In this quarter, US oil demand is projected to grow marginally y-o-y by 20 tb/d, with jet fuel expected to be the major driver of oil demand growth. Gasoline is expected to start recovering towards the end of the quarter, on the back of the start of the driving season in May, while diesel is anticipated to remain relatively weak, due to anticipated weaker manufacturing sector activity.

In **3Q23**, inflation is expected to continue to decline, likely to support oil demand during the driving season. Similarly, overall airline activity – domestic and international flights - is approaching pre-pandemic levels, which is projected to support oil demand to improved and grow above 0.1 mb/d y-o-y in 3Q23. Transportation fuels, namely jet/kerosene and gasoline are expected to drive oil demand growth. However, the risks are still skewed to the downside, with a focus on the macroeconomic development of the US economy.

OECD Europe

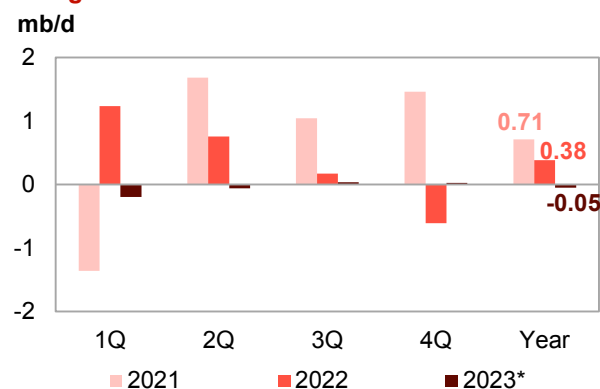
Update on the latest developments

Oil demand in OECD Europe retracted in February by 0.2 mb/d y-o-y. This compares with a similar decline in January y-o-y by 0.2 mb/d, and follows a 0.5 mb/d y-o-y plunge in December.

The region is still facing some macroeconomic headwinds, including high inflation and weak manufacturing activity. The consumer price inflation in the Euro-zone stood at 8.5% in February, marginally down from 8.6% a month earlier. The Euro-zone’s February PMI pointed to some improvement, particularly in the services sector, while manufacturing remained in contraction. The PMI for services was at 52.7 in February, up from 50.8 points in January and 49.8 points recorded in December. Meanwhile, however, the manufacturing PMI, contracted further to 48.5 points in February compared to 48.8 in January.

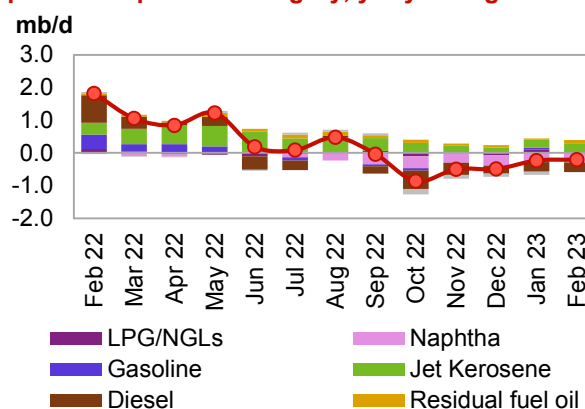
The IATA reported that the region’s airlines grew domestic revenue passenger-kilometres (RPK’s) by 24.4% y-o-y and kept passenger traffic 12.5% above February 2019 levels.

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



Note: * 2023 = Forecast. Source: OPEC.

Graph 4 - 3: OECD Europe’s oil demand by main petroleum product category, y-o-y change



Sources: IEA, JODI, OPEC and national sources.

Diesel/gasoil sustained a sixth consecutive monthly decline by 0.3 mb/d y-o-y, similar to a y-o-y decline of 0.3 mb/d in January. Likewise, demand for naphtha contracted by 0.3 mb/d, y-o-y, pressured by weak demand in the ethylene market, thin margins and volatile energy costs. LPG demand also softened by 20 tb/d y-o-y in February, down from an increase of 103 tb/d, y-o-y in January. The “other products” category also softened by 10 tb/d, y-o-y.

On the positive side, continued improvements in airline activity supported jet/kerosene to lead oil demand growth in the month by almost 0.3 mb/d, y-o-y compared to y-o-y growth of 0.2 mb/d posted in January and more than 0.1 y-o-y growth seen in December.

Residual fuels increased y-o-y by 0.1 mb/d, up from a y-o-y increase of 40 tb/d in January. Finally, gasoline saw slight y-o-y growth of 20 tb/d, down from an increase of 60 tb/d y-o-y, in January.

Near-term expectations

In **2Q23**, GDP of the region is projected to slow down from 1Q23, but is expected to remain positive. Oil demand growth in the quarter is anticipated to soften by 60 tb/d compared to the same quarter a year earlier, albeit showing an improvement from the y-o-y decline seen in 1Q23. Transportation fuels, most notably jet fuel, are expected to support oil demand improvements in the second quarter.

By **3Q23**, the oil demand in the region is expected to improve to show growth of 30 tb/d, y-o-y. This is projected to be mainly supported by jet fuel and gasoline requirements. The risks, however, are skewed to the downside, hinging on geopolitical developments and the possibility of an economic recession in the region.

OECD Asia Pacific

Update on the latest developments

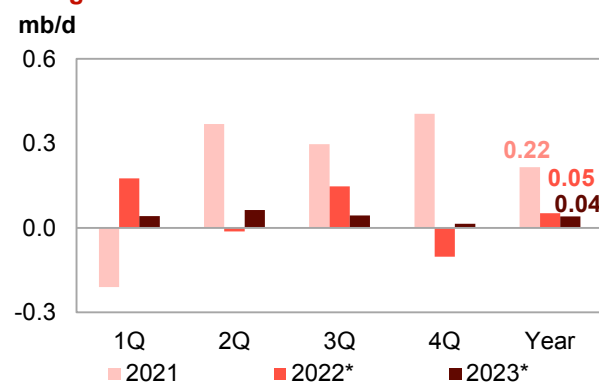
Oil demand in OECD Asia Pacific saw y-o-y growth of over 0.1 mb/d in February, up from a minor decline of 20 tb/d y-o-y in January. Oil demand was mostly driven by requirements from Australia, as the two largest oil-consuming countries of the region - Japan and South Korea - are challenged with weak macroeconomic performances and continued low manufacturing activity in the two countries. The manufacturing PMIs for both Japan and South Korea were below the expansion threshold in February.

In **Japan**, the manufacturing PMI declined to 47.7 in February, down from 48.9 points in January. The South Korean manufacturing PMI in February also stood in contraction territory at 48.5 points, level from the previous month. Nevertheless, the services sector PMI has improved further to 54 points in February. Furthermore, the annual inflation rate in Japan fell to 3.3% in February from January's 4.3%, although still a high level for the country and with the likelihood of monetary tightening by the Bank of Japan increasing.

In **South Korea**, the consumer price index rose by 4.8% in February from a year ago, decelerating from January's 5.2%.

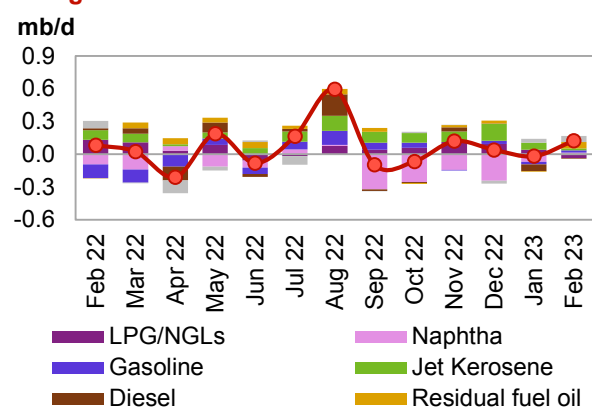
Airline activity in the **OECD Asia Pacific** region remains healthy, according to a report from the IATA, with the recovery momentum continuing in March, and approaching pre-pandemic levels.

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



Note: * 2023 = Forecast.
Source: OPEC.

Graph 4 - 5: OECD Asia Pacific oil demand, y-o-y change



Sources: IEA, JODI, METI and OPEC.

Looking at **oil products**, residual fuels led overall demand by y-o-y growth of 60 tb/d, and the “other products” category saw y-o-y growth of 50 tb/d. Naphtha recorded y-o-y growth of 20 tb/d, showing an improvement from the y-o-y decline of 70 tb/d, in January.

World Oil Demand

Improvements in demand for naphtha can be attributed to the reopening of China. Demand for the naphtha has been volatile since February 2022, as average run rates at the major naphtha cracking centres have been declining due to the slowdown in the manufacturing and construction sectors that typically drive demand for various petrochemical products. Furthermore, on the back of improvement in mobility and air travel activity in the region, gasoline and jet kerosene saw y-o-y growth of 20 tb/d each.

Diesel demand has been hit hard by the weak manufacturing activity weighing on industrial diesel consumption in the region as Japan and South Korea's February diesel demand falls by 20 tb/d each, albeit showing a slight improvement from the previous month's larger y-o-y declines.

Near-term expectations

The region's GDP is projected to remain positive in 2023, supporting services and manufacturing activity. Furthermore, petrochemical feedstock requirements are likely to get a boost from the opening of the Chinese economy which will also support the petrochemical industry of the entire region. On the back of these expected developments, the region's oil demand is projected to grow y-o-y by 60 tb/d in **2Q23**.

By **3Q23**, oil demand growth is projected to grow by 40 tb/d y-o-y, mainly driven by jet fuel, and supported by requirements for gasoline and petrochemical feedstock.

Non-OECD

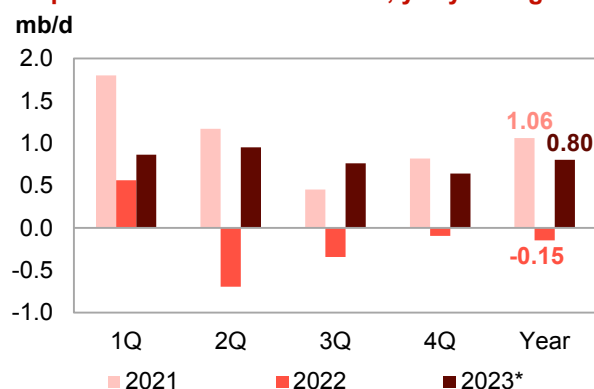
China

Update on the latest developments

China's oil demand growth surged by 1.4 mb/d y-o-y in March, up from the healthy growth of 0.9 mb/d y-o-y seen in February. The strong rebound in economic and social activity amid feedstock requirements for the petrochemical sector supported oil product demand.

The March PMI shows that the manufacturing sector declined slightly, but is still within the expansionary trajectory at 50 points, slightly below 51.56 points in February. Similarly, the March services PMI shows that the services sector is performing very well, moving up to 57.8 points in March, from 55 in February and reflecting the reopening of the country from lockdown.

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



Note: * 2023 = Forecast.
Source: OPEC.

The mobility statistics from various government agencies shows a strong rebound of mobility in China as the airline industry's total passenger volume for domestic routes increased by 192%, y-o-y from 36% y-o-y in February and a 33.7% y-o-y increase in January. Similarly, passenger volumes for international routes rose by over 998.6% in March, up from 760% in February and about 380% in January. Furthermore, the China Association of Automobile Manufacturers (CAAM) statistics show that new vehicle sales in China increased by almost 10% to 2,451,000 units in March 2023, up from 2,234,000 in the same month of last year. Similarly, transport and communication statistics indicate that cross-border vehicle traffic in March hiked by 71.2% y-o-y to 573,022 trips, of which light automobile trips (533,227) surged by 77.2%.

In terms of oil products, naphtha was the main driver of oil demand, which increased y-o-y by a bullish 0.5 mb/d due to considerable petrochemical sector requirements. Furthermore, on the back of increasing construction and trucking activity combined with agricultural sector requirements, diesel posted y-o-y growth of 0.3 mb/d, up, from a marginal increase of 10 tb/d y-o-y in February. Strong air activity supported jet fuel to post y-o-y growth of 0.2 mb/d. The 'residual fuels' and 'other products' categories grew by 0.2 mb/d and 0.1 mb/d y-o-y. Finally, gasoline saw y-o-y growth of 0.1 mb/d, compared with an increase of 0.2 mb/d y-o-y in February.

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

By product	Mar 22	Mar 23	Change Mar 23/Mar 22	
			Growth	%
LPG	2.30	2.26	-0.03	-1.4
Naphtha	1.43	1.90	0.47	33.0
Gasoline	3.02	3.12	0.10	3.3
Jet/kerosene	0.53	0.71	0.17	32.0
Diesel	3.33	3.63	0.30	9.0
Fuel oil	0.59	0.83	0.24	39.7
Other products	2.38	2.52	0.14	6.0
Total	13.58	14.97	1.39	10.2

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

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

Near-term expectations

Looking ahead, oil demand for most products in China has been increasing. Domestic mobility and air travel are close to 80% of pre-pandemic levels. China's GDP is forecast to remain firm at 5.2% in 2023, supporting projected oil demand growth of 0.8 mb/d y-o-y.

In **2Q23**, oil demand is set to see y-o-y growth of 1.0 mb/d. Domestic and international airline activity is expected to rise as the increase in international business and tourism combines with pent-up demand. This is also providing support for the jet fuel demand to spur oil demand growth. Gasoline demand is forecast to improve, driven by a strong rebound in mobility. Similarly, the petrochemical industry has continued to operate at around full capacity. Stable demand will boost feedstock demand for light distillates. Fiscal stimulus, along with infrastructure expansion in 2023, will set the stage for a robust diesel consumption recovery.

In **3Q23**, oil demand is expected to increase y-o-y by a solid 0.8 mb/d. Jet fuel will again drive oil demand growth in this quarter as well, with millions of air passengers expected to support air travel activity for local and business travellers from and into China. Light distillates are also expected to continue rising, with the continued expansion of petrochemical industries. Increased mobility and rising construction activity will boost demand for gasoline and diesel.

India

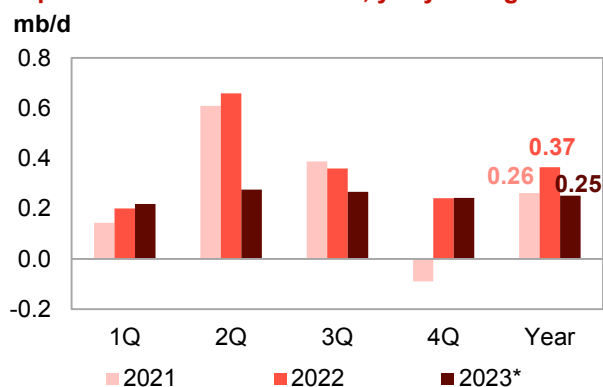
Update on the latest developments

Oil demand in India saw y-o-y growth of 0.2 mb/d in March, down slightly from around 0.3 mb/d y-o-y growth recorded in February. Healthy manufacturing and services activity supported oil demand in March.

The manufacturing PMI in India continued to expand, reaching a strong 56.4 in March, compared with 55.3 in February. Similarly, the services PMI indicated ongoing strong momentum at 57.8 in March, while it retracted somewhat from the high level reached in February, when it stood at 59.4. In addition, annual consumer inflation eased to 5.6% in March, from 6.4% in February.

According to the automotive content creator autopundit.com, vehicles sales in the Indian market in March 2023 increased by over 4% when compared to March 2022, and the industry marginally increased by 0.5% in comparison to February 2023.

Looking at products, the "Other products" category was the main driver of oil demand in March, as the product saw y-o-y growth of 0.15 mb/d. Sales of bitumen, one of the components of the "other products" category, jumped 16.5% m-o-m from February, due to increased construction activity.

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

Note: * 2023 = Forecast.
Source: OPEC.

World Oil Demand

On the back of healthy mobility, gasoline grew y-o-y by 50 tb/d. Stable manufacturing and agricultural activity supported diesel to see a y-o-y increase of 20 tb/d. As India's overall air passenger traffic inches closer to pre-COVID-19 levels, jet/kerosene increased y-o-y by 20 tb/d.

However, petrochemical feedstock demand remained weak, as naphtha was yet to recover from soft feedstock demand from naphtha-fed steam crackers in the wake of poor production margins. LPG also declined by 20 tb/d.

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

By product	Mar 22	Mar 23	Change Mar 23/Mar 22	
			Growth	%
LPG	0.95	0.93	-0.02	-2.6
Naphtha	0.32	0.33	0.00	1.4
Gasoline	0.82	0.87	0.05	6.7
Jet/kerosene	0.19	0.21	0.02	8.1
Diesel	1.88	1.90	0.02	1.3
Fuel oil	0.17	0.17	0.00	-0.7
Other products	1.02	1.17	0.15	14.9
Total	5.34	5.57	0.22	4.2

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

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

Near-term expectations

Looking forward, with anticipated healthy economic activity and ongoing air travel recovery, India's demand for oil products is anticipated to remain strong in 2023.

In **2Q23**, oil demand is projected to rise by 0.3 mb/d y-o-y. The government's proposed increase in capital spending is expected to support consumer's purchasing power and boost the momentum of economic activity as construction and manufacturing activity accelerates. These factors, combined with a steady rise in airline activity, will support healthy oil demand growth.

In **3Q23**, oil demand is expected to remain solid at 0.3 mb/d, with transportation fuels, notably gasoline, transportation diesel and jet/kerosene expected to drive oil demand growth. Agricultural and construction activity are expected to add further support. However, in 3Q23, oil demand is anticipated to be somewhat lower due to the impact of the monsoon season from July to September.

Latin America

Update on the latest developments

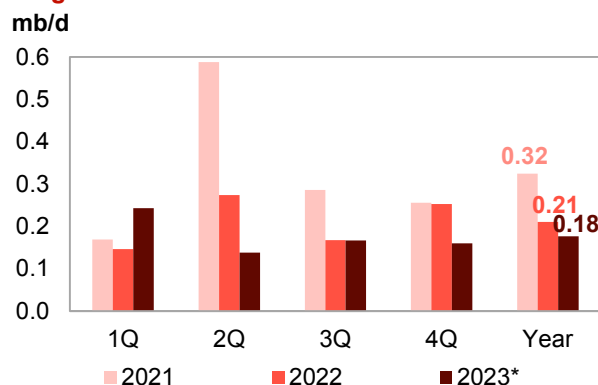
Latin America's oil demand saw a y-o-y increase of 0.3 mb/d in February, up from 0.2 mb/d y-o-y growth seen in January. Within countries of the region, oil demand in February was mostly supported by requirements from Brazil and Venezuela.

For the second consecutive month, gasoline remained the main driver of oil demand in the region, supported by a recovery in mobility.

Inflation in **Brazil** resumed its downward trend in February at 5.6%, down from January's 5.8%, but it remained above the Central Bank's 3.25% target. However, Brazil's manufacturing PMI index in February still stands in contraction territory at 49.2 points, albeit up from 47.5 points in January and 44.2 points seen in December. The services PMI declined from 50.7 points in January to 49.8 points in February.

Airline activity in **Latin America** continued to improve. According to the IATA's monthly statistics, airline activity in the region grew by 44.1% y-o-y, with domestic revenue-passenger kilometres (RPKs) in February standing at 0.2% above levels in 2019.

Graph 4 - 8: Latin America's oil demand, y-o-y change



Note: * 2023 = Forecast.
Source: OPEC.

Latin America's oil demand in February was mainly driven by gasoline and residual fuels, which increased by more than 0.1 mb/d y-o-y, each. Jet/kerosene saw y-o-y growth of 40 tb/d, following a similar y-o-y increase in January. The "other products" category recorded y-o-y growth of 60 tb/d. However, diesel demand saw a further decline by 20 tb/d, down from 10 tb/d y-o-y contraction in January. In terms of petrochemical feedstock, LPG was unchanged y-o-y, while weak petrochemical activity continued to weigh on naphtha, which showed only marginal y-o-y growth in February.

Near-term expectations

In the near term, oil demand is anticipated to see y-o-y growth by more than 0.1 mb/d in **2Q23**, as GDP growth for the region in 2023 is anticipated to remain positive. Projected further mobility improvements are expected to support transportation fuels demand. Accordingly, jet fuel and gasoline are forecast to be the main drivers for oil demand growth in the quarter. Additionally, expected manufacturing activity improvements and petrochemical feedstock requirements should support demand for distillates.

In **3Q23**, the dynamics of the previous quarter are expected to continue with greater momentum to show y-o-y growth of almost 0.2 mb/d y-o-y. The outlook for oil demand growth sees transportation fuels to grow the most, supported by the continuing recovery in mobility and air travel.

Middle East

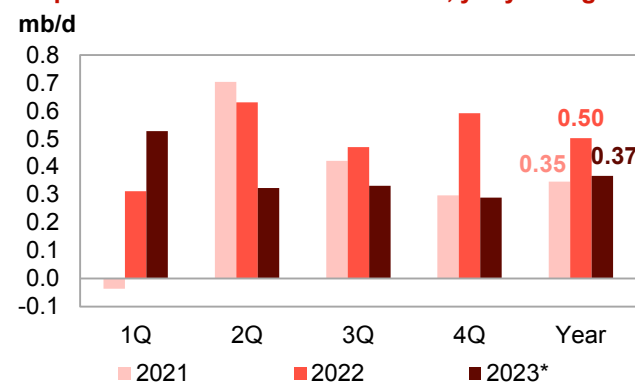
Update on the latest developments

The **Middle East** again posted strong 0.6 mb/d, y-o-y growth in February, the same as growth seen in January. Saudi Arabia and Iraq were the main drivers of oil demand in February in the region.

The purchasing managers' indices (PMIs) for February reflect the continuing acceleration in composite PMIs in the major economies of the region, suggesting strong manufacturing and services sectors. Saudi Arabia's composite PMI rose from 58.2 points in January to a near eight-year record high of 59.8 in February, and the UAE posted a strong composite PMI at above 54 points in the two consecutive months of January and February.

IATA reported that domestic airline traffic within the Middle East grew 1.0% y-o-y and continued to increase towards pre-pandemic RPKs at 95.4% of February 2019 levels. In addition, international RPKs in the region grew by 75.0% y-o-y in February, reaching 93.7% of pre pandemic levels.

Graph 4 - 9: Middle East's oil demand, y-o-y change



Note: * 2023 = Forecast.
Source: OPEC.

Looking at oil products, all categories saw y-o-y increases in February. The largest increase of 0.25 mb/d was recorded in the "other products" category, on the back of electricity generation and industrial sector requirements. In addition, diesel posted y-o-y growth of 0.2 mb/d, at broadly the same rate for the fifth consecutive month. Steady airline activity recovery in the Middle East region boosted jet/kerosene demand to grow by 0.1 mb/d for the second consecutive month in February. Gasoline grew by 10 tb/d, down from 60 tb/d, y-o-y, as seen in January. Residual fuels also increased by 50 tb/d. Furthermore, petrochemical feedstock, LPG and naphtha, saw y-o-y growth of 60 tb/d, and 10 tb/d, y-o-y respectively.

Table 4 - 6: Saudi Arabia's oil demand, mb/d

By product	Mar 22	Mar 23	Change Mar 23/Mar 22	
			Growth	%
LPG	0.05	0.06	0.01	12.8
Gasoline	0.51	0.51	0.00	0.2
Jet/kerosene	0.07	0.14	0.07	102.1
Diesel	0.55	0.60	0.06	10.2
Fuel oil	0.46	0.55	0.08	17.7
Other products	0.42	0.43	0.01	2.3
Total	2.06	2.28	0.23	11.0

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

Sources: JODI and OPEC.

Near-term expectations

Healthy economic and industrial activity observed in the region in 1Q23 is set to continue to support oil demand into **2Q23** and **3Q23**. In support of the expected solid economic growth, the composite PMI in Saudi Arabia shows strong momentum of 58.7 points and 59.6 points in March and April, respectively. Similarly, the UAE PMI indicator also shows a similar trend at 55.88 and 56.56 points in March and April, respectively. Furthermore, airline activity continues on a strong rebound. Accordingly, oil demand is projected to increase by 0.3 mb/d, y-o-y in both 2Q23 and 3Q23. Moreover, demand growth in the region is expected to be supported by fuel oil for electricity generation in Iraq and Saudi Arabia, particularly in the hot summer months.

World Oil Supply

Non-OPEC liquids supply in 2022 (including processing gains) is estimated to have grown by 1.9 mb/d y-o-y to average 65.8 mb/d, largely unchanged from the previous month's assessment. Total US liquids production is estimated to have increased by 1.2 mb/d y-o-y to average 19.2 mb/d in 2022. The largest increases for the year were in the US, followed by Russia, Canada, Guyana and China, which are estimated to have grown by around 0.2 mb/d y-o-y each. At the same time, production is estimated to see the largest declines in Norway and Thailand.

Non-OPEC liquids production in 2023 is forecast to grow by 1.4 mb/d y-o-y to average 67.2 mb/d, unchanged from last month. Minor downward revisions to Other Eurasia and some other countries were offset by upward revisions to liquids production in OECD Americas.

US liquids production has largely recovered after a considerable drop was seen in December 2022. US oil and gas drilling activities have been primarily stable since February 2023, remaining fundamentally above maintenance requirements. Gradual and steady growth is expected for US shale oil production throughout the year. Accordingly, the US liquids supply growth forecast for 2023 remained broadly unchanged at 1.0 mb/d. Output growth in the North Sea region remains unchanged following scheduled production ramp-ups in Norway. The main growth drivers for 2023 are anticipated to be the US, Brazil, Norway, Canada, Kazakhstan and Guyana, whereas oil production is forecast to decline primarily in Russia. Nonetheless, there are still uncertainties related to US shale oil output potential and unplanned maintenance in 2023.

OPEC NGLs and non-conventional liquids production in 2022 is forecast to have grown by 0.1 mb/d to average 5.4 mb/d, and is expected to increase by 50 tb/d to average 5.4 mb/d in 2023. OPEC-13 crude oil production in April decreased by 191 tb/d m-o-m to average 28.60 mb/d, according to available secondary sources.

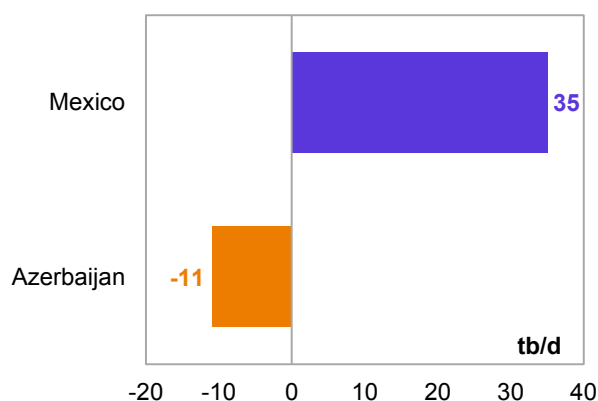
Non-OPEC liquids production in April, including OPEC NGLs, is estimated to have declined m-o-m by 0.3 mb/d to average 72.7 mb/d, but is up by 2.5 mb/d y-o-y. As a result, preliminary data indicates that April's global oil supply decreased by 0.5 mb/d m-o-m to average 101.3 mb/d, up by 2.4 mb/d y-o-y.

The **non-OPEC liquids supply estimation for 2022** remained broadly unchanged at an average of 65.8 mb/d, showing y-o-y growth of 1.9 mb/d. **Graph 5 - 1: Major revisions to annual supply change forecast in 2023*, MOMR May 23/Apr 23**

Non-OPEC liquids production in 2023 is forecast to grow by 1.4 mb/d, remained broadly unchanged compared with the previous month's assessment, following some up and down revisions in a handful of countries.

The overall **OECD supply growth** expectation for 2023 has risen slightly. While OECD Asia Pacific saw minor downward revisions, OECD Americas was slightly revised up. However, OECD Europe was broadly unchanged from the previous month's assessment.

Meanwhile, the **non-OECD supply growth** projection for 2023 has been revised down marginally and is now expected to decline by around 0.1 mb/d y-o-y in 2023.

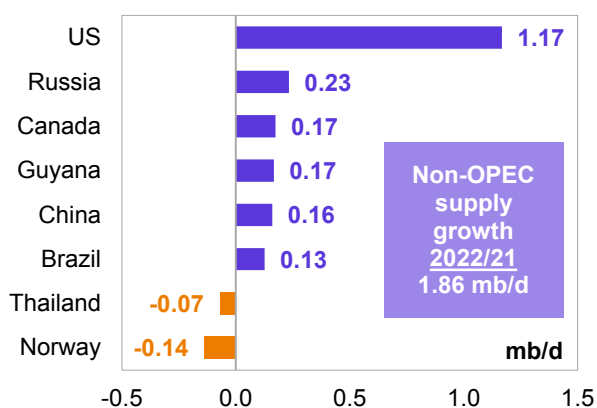


Note: * 2023 = Forecast. Source: OPEC.

Key drivers of growth and decline

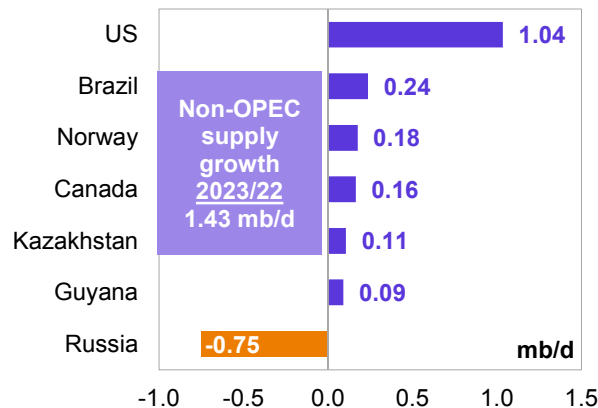
The **key drivers of non-OPEC liquids supply growth in 2022** are estimated to be the US, Russia, Canada, Guyana, China and Brazil, while oil production is expected to see the largest declines in Norway and Thailand.

Graph 5 - 2: Annual liquids production changes y-o-y for selected countries in 2022



Source: OPEC.

Graph 5 - 3: Annual liquids production changes y-o-y 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, Brazil, Norway, Canada, Kazakhstan and Guyana, while oil production is projected to see the largest decline in Russia.

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	25.45	26.09	26.50	27.26	27.50	26.84	1.40	5.48
of which US	18.04	18.51	19.07	19.57	19.68	19.21	1.17	6.47
Europe	3.79	3.72	3.46	3.51	3.59	3.57	-0.22	-5.79
Asia Pacific	0.51	0.49	0.51	0.43	0.49	0.48	-0.03	-6.23
Total OECD	29.75	30.30	30.48	31.20	31.58	30.89	1.14	3.85
China	4.32	4.54	4.54	4.42	4.42	4.48	0.16	3.70
India	0.78	0.79	0.78	0.76	0.76	0.77	-0.01	-0.80
Other Asia	2.42	2.37	2.32	2.24	2.31	2.31	-0.11	-4.74
Latin America	5.96	6.11	6.18	6.46	6.59	6.34	0.38	6.35
Middle East	3.20	3.25	3.29	3.32	3.30	3.29	0.09	2.85
Africa	1.35	1.33	1.31	1.32	1.29	1.31	-0.03	-2.49
Russia	10.80	11.33	10.63	11.01	11.17	11.03	0.23	2.15
Other Eurasia	2.93	3.04	2.76	2.59	2.92	2.83	-0.10	-3.34
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	32.87	32.47	0.60	1.89
Total Non-OPEC production	61.62	63.15	62.40	63.44	64.45	63.36	1.75	2.84
Processing gains	2.29	2.40	2.40	2.40	2.40	2.40	0.11	4.90
Total Non-OPEC liquids production	63.90	65.55	64.80	65.83	66.85	65.76	1.86	2.91
Previous estimate	63.90	65.57	64.81	65.83	66.82	65.76	1.86	2.90
Revision	0.00	-0.02	-0.01	0.00	0.04	0.00	0.00	0.00

Note: 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	26.84	27.72	27.89	28.23	28.52	28.09	1.25	4.66
of which US	19.21	19.87	20.18	20.36	20.56	20.24	1.04	5.39
Europe	3.57	3.68	3.74	3.79	3.92	3.78	0.21	5.88
Asia Pacific	0.48	0.45	0.49	0.49	0.48	0.48	0.00	-0.78
Total OECD	30.89	31.85	32.12	32.51	32.91	32.35	1.46	4.71
China	4.48	4.62	4.61	4.49	4.49	4.55	0.07	1.62
India	0.77	0.76	0.78	0.78	0.78	0.78	0.00	0.52
Other Asia	2.31	2.34	2.39	2.34	2.37	2.36	0.05	2.21
Latin America	6.34	6.70	6.66	6.70	6.79	6.71	0.37	5.91
Middle East	3.29	3.26	3.29	3.30	3.31	3.29	0.00	0.02
Africa	1.31	1.30	1.33	1.34	1.33	1.33	0.01	0.84
Russia	11.03	11.23	10.18	9.85	9.90	10.28	-0.75	-6.81
Other Eurasia	2.83	3.00	2.97	2.94	2.98	2.97	0.14	5.04
Other Europe	0.11	0.10	0.10	0.10	0.10	0.10	0.00	-2.83
Total Non-OECD	32.47	33.31	32.30	31.85	32.05	32.37	-0.10	-0.30
Total Non-OPEC production	63.36	65.15	64.43	64.35	64.97	64.72	1.36	2.14
Processing gains	2.40	2.47	2.47	2.47	2.47	2.47	0.07	2.96
Total Non-OPEC liquids production	65.76	67.62	66.90	66.82	67.44	67.19	1.43	2.17
Previous estimate	65.76	67.58	66.71	66.90	67.57	67.19	1.43	2.17
Revision	0.00	0.04	0.18	-0.08	-0.13	0.00	0.00	0.00

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

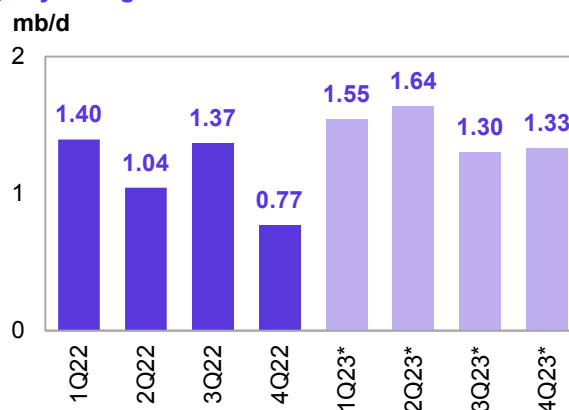
OECD

OECD liquids production in 2022 is estimated to have increased y-o-y by 1.1 mb/d to average 30.9 mb/d. This is primarily unchanged compared with a month earlier.

For **2023**, oil production in the OECD region is forecast to grow by 1.5 mb/d to average 32.4 mb/d. This was revised up by 29 tb/d, mainly due to changes in OECD Americas.

Growth is expected to be led by OECD Americas, which will expand by 1.2 mb/d to average 28.1 mb/d. This was revised up by 36 tb/d compared with last month's assessment, due to higher expected growth in Mexico. Yearly liquids production in OECD Europe is anticipated to grow by 0.2 mb/d to average 3.8 mb/d, steady compared with the previous month. OECD Asia Pacific is expected to remain largely unchanged to average 0.5 mb/d.

Graph 5 - 4: OECD quarterly liquids supply, y-o-y changes



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

OECD Americas

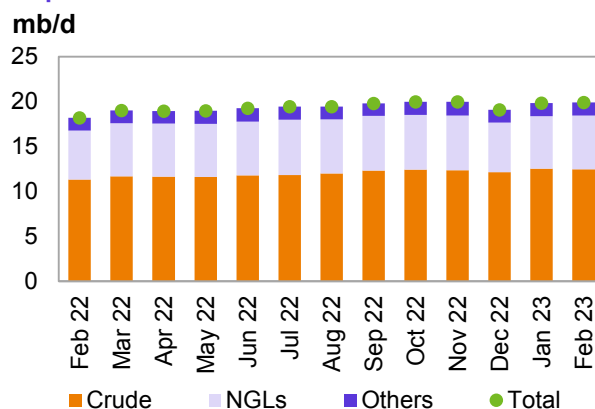
US

US liquids production in **February** jumped m-o-m by 57 tb/d to average 19.9 mb/d, following a recovery from disruptions that took place in December 2022. It was up by 1.7 mb/d compared with February 2022.

Crude oil and condensate production declined m-o-m by 53 tb/d in **February 2023** to average 12.5 mb/d, up by 1.2 mb/d y-o-y.

In terms of **crude and condensate production breakdown by region (PADDs)**, production increased mainly in the Midwest, rising by 71 tb/d to average 1.8 mb/d. On the other hand, production in the US Gulf Coast (USGC) region fell by 104 tb/d to 9.1 mb/d. While the East Coast remained broadly unchanged m-o-m, output in the Rocky Mountain and West Coast areas declined by 10 tb/d. Onshore production growth in the main regions was primarily driven by a strong recovery after weather-related issues affected production in December 2022, mainly in North Dakota.

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



Sources: EIA and OPEC.

NGLs production was up by 111 tb/d m-o-m to average 6.0 mb/d in February. This was higher by 0.5 mb/d y-o-y. Production of **non-conventional liquids** (mainly ethanol) remained chiefly unchanged m-o-m at an average of 1.5 mb/d, according to the US Department of Energy (DoE). Preliminary estimates see non-conventional liquids averaging around 1.5 mb/d in March, roughly unchanged compared with the previous month.

GoM production dropped m-o-m by 79 tb/d in February to average 1.8 mb/d, with normal production seen in most Gulf Coast offshore platforms, except for a reduction in Mars due to Vito oil field tie-in processes. In the **onshore Lower 48**, crude and condensate production increased m-o-m by 28 tb/d to average 10.2 mb/d in February.

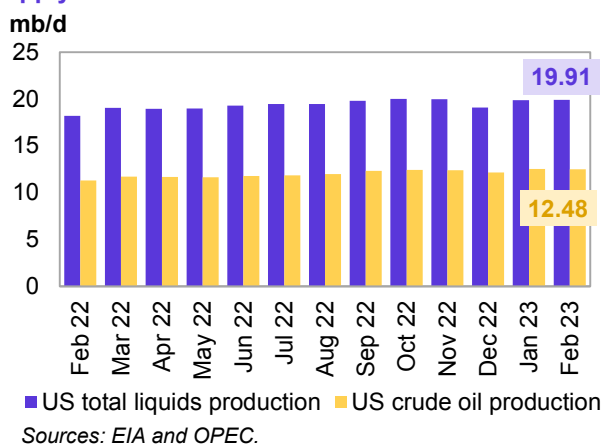
Table 5 - 3: US crude oil production by selected state and region, tb/d

State	Feb 22	Jan 23	Feb 23	Change	
				m-o-m	y-o-y
Texas	4,821	5,289	5,264	-25	443
Gulf of Mexico (GOM)	1,615	1,911	1,832	-79	217
New Mexico	1,401	1,808	1,807	-1	406
North Dakota	1,074	1,047	1,124	77	50
Alaska	450	448	446	-2	-4
Oklahoma	387	432	421	-11	34
Colorado	430	418	407	-11	-23
Total	11,316	12,536	12,483	-53	1,167

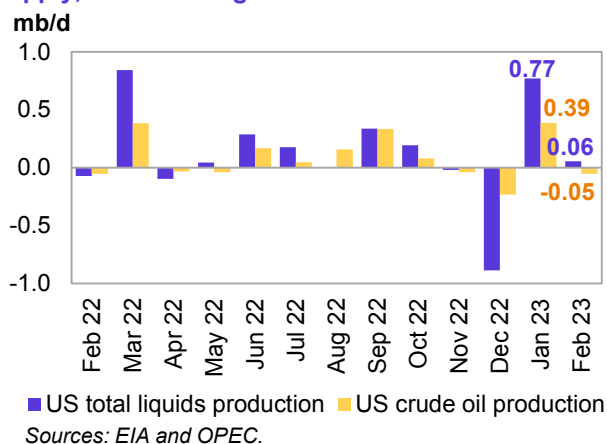
Sources: EIA and OPEC.

Looking at **individual states**, New Mexico's oil production remained steady, averaging 1.8 tb/d, which is 406 tb/d higher than a year ago. Production from Texas was down by 25 tb/d to average 5.3 mb/d, which is 443 tb/d higher than a year ago. In the Midwest, North Dakota's production jumped m-o-m by 77 tb/d to average 1.1 mb/d, up by 50 tb/d y-o-y, but Oklahoma's production was down m-o-m by 11 tb/d to average 0.4 mb/d. Production in Alaska remained broadly stable, while output in Colorado declined by 11 tb/d, m-o-m.

Graph 5 - 6: US monthly crude oil and total liquids supply



Graph 5 - 7: US monthly crude oil and total liquids supply, m-o-m changes

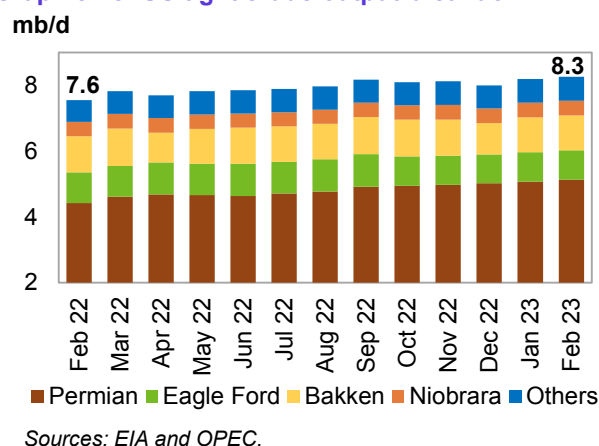


US tight crude output in February is estimated to have risen by 63 tb/d m-o-m to average 8.3 mb/d, according to the latest estimate by the US Energy Information Administration (EIA). This was 0.7 mb/d higher than in the same month of the previous year.

The m-o-m increase from shale and tight formations using horizontal wells came mainly from Permian shale production in Texas and New Mexico, where output rose by 50 tb/d to average 5.1 mb/d. This was up by 705 tb/d y-o-y.

In North Dakota, Bakken shale oil output was broadly stable m-o-m, averaging 1.1 mb/d. This is still down by 38 tb/d y-o-y. Tight crude output at Eagle Ford in Texas increased by a minor 9 tb/d to average 0.9 mb/d, which is down by 36 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 - 8: US tight crude output breakdown



US liquids production in 2022, excluding processing gains, is estimated to have expanded y-o-y by 1.2 mb/d to average 19.2 mb/d. This is broadly unchanged from the previous assessment. Tight crude is assessed to have grown by 0.5 mb/d in 2022 to average 7.9 mb/d. In addition, NGLs (mainly from unconventional basins) are estimated to have grown by 0.5 mb/d to average 5.9 mb/d, and production in the Gulf of Mexico (GoM) is estimated to have increased by a minor 36 tb/d. Non-conventional liquids and crude from conventional reservoirs are assessed to have expanded by 76 tb/d to average 1.4 mb/d and by 59 tb/d to average 2.3 mb/d, respectively.

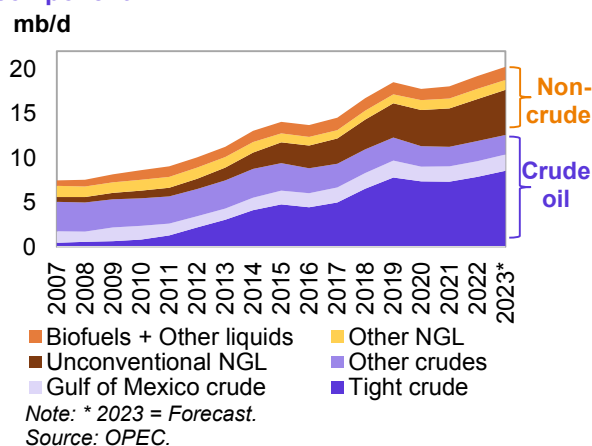
US crude oil and condensate production is estimated to grow by 0.6 mb/d y-o-y to average 11.9 mb/d in 2022.

US liquids production in 2023, excluding processing gains, is forecast to expand y-o-y by 1.0 mb/d to average 20.2 mb/d, largely unchanged from the previous assessment. Higher-than-expected output anticipated in the first quarter was compensated by a lower forecast for the rest of the year. Better drilling activity and fewer supply chain/logistical issues in the prolific Permian, Eagle Ford and Bakken shale sites are still assumed for the rest of 2023.

Given a sound level of oil field drilling and well completions, crude oil output is anticipated to increase by 0.7 mb/d y-o-y to average 12.6 mb/d.

Average tight crude output in 2023 is forecast at 8.6 mb/d, up by 0.7 mb/d y-o-y.

Graph 5 - 9: US liquids supply developments by component



At the same time, NGLs production and non-conventional liquids, particularly ethanol, are forecast to increase y-o-y by 0.3 mb/d and 40 tb/d, to average 6.2 mb/d and 1.5 mb/d, respectively.

The 2023 forecast assumes ongoing capital discipline, less inflationary pressure, as well as moderate supply chain issues and oil field service constraints (labour and equipment). Tightness in the hydraulic fracking and professional labour market is expected to remain a challenge for US upstream producers this year.

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

US liquids	Change		Change		2023*	Change
	2021	2021/20	2022	2022/21		
Tight crude	7.34	-0.02	7.88	0.54	8.57	0.69
Gulf of Mexico crude	1.71	0.04	1.74	0.04	1.83	0.09
Conventional crude oil	2.20	-0.09	2.26	0.06	2.17	-0.09
Total crude	11.25	-0.06	11.89	0.63	12.57	0.69
Unconventional NGLs	4.31	0.23	4.74	0.43	5.10	0.36
Conventional NGLs	1.12	0.02	1.14	0.02	1.09	-0.05
Total NGLs	5.42	0.25	5.88	0.46	6.19	0.30
Biofuels + Other liquids	1.36	0.10	1.44	0.08	1.48	0.04
US total supply	18.04	0.28	19.21	1.17	20.24	1.04

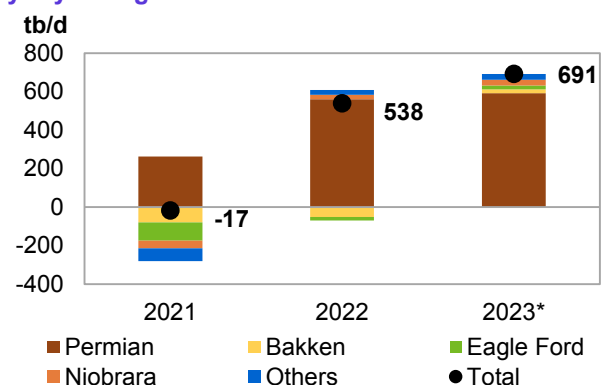
Note: * 2023 = Forecast. Sources: EIA, OPEC and Rystad Energy.

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

The **Bakken** shale production decline that occurred in 2020 and 2021 continued in 2022. Tight crude production in the Bakken is estimated to have dropped by 50 tb/d in 2022 to average 1.1 mb/d. This is much lower than the pre-pandemic average output of 1.4 mb/d.

In addition to several weather-related outages, drilling activity in **North Dakota** is expected to be lower than levels required to substantially revive output. In 2023, growth is forecast to resume at just 21 tb/d to average 1.1 mb/d.

Graph 5 - 10: US tight crude output by shale play, y-o-y changes



Note: * 2023 = Forecast. Sources: EIA and OPEC.

The **Eagle Ford** in Texas saw output of 1.2 mb/d in 2019, followed by declines in 2020, 2021 and 2022, when it fell by an estimated 20 tb/d to average 0.94 mb/d. Growth of around 19 tb/d is forecast for 2023, to average just under 0.96 mb/d.

Niobrara production is estimated to have grown y-o-y by 24 tb/d in 2022 to average 437 tb/d and is forecast to increase by 30 tb/d in 2023 to average 466 tb/d. Other shale plays are expected to show marginal increases of 24 tb/d and 30 tb/d in 2022 and 2023, respectively, given current drilling and completion activities.

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

US tight oil	Change		Change		2023*	Change
	2021	2021/20	2022	2022/21		
Permian tight	4.18	0.26	4.74	0.56	5.33	0.59
Bakken shale	1.12	-0.08	1.07	-0.05	1.09	0.02
Eagle Ford shale	0.96	-0.10	0.94	-0.02	0.96	0.02
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	0.73	0.03
Total	7.34	-0.02	7.88	0.54	8.57	0.69

Note: * 2023 = Forecast. Source: OPEC.

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

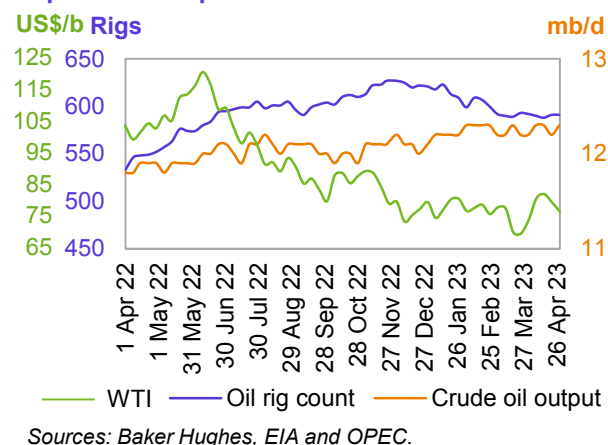
Total **active US drilling rigs** rose by two to 755 in the week ending 28 April 2023, according to Baker Hughes. This was up by 57 rigs compared with a year ago. The number of active offshore rigs remained steady w-o-w at 20. This was higher by six compared with the same month a year earlier. Onshore oil and gas rigs were higher by one w-o-w to stand at 733 rigs, up by 49 rigs y-o-y, with two rigs in inland waters.

The **US horizontal rig count** fell by two w-o-w to 685, compared with 643 horizontal rigs a year ago. The number of drilling rigs for oil remained unchanged w-o-w at 591. At the same time, gas-drilling rigs were up by two to 161.

The Permian's rig count rose by three w-o-w to 361 rigs. However, rig counts dropped by one in Eagle Ford and Williston to 67 and 40, respectively. The rig count fell by two w-o-w in Cana Woodford to 31 and remained steady in DJ-Niobrara at 17.

Two operating oil rigs remained in the Barnett basin since 6 April 2023, unchanged w-o-w.

Graph 5 - 11: US weekly rig count vs. US crude oil output and WTI price

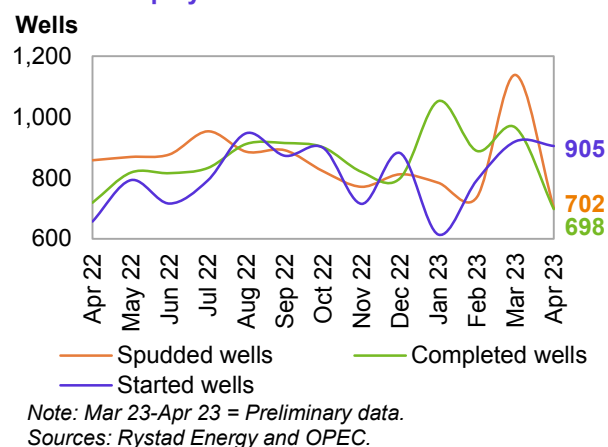


Drilling and completion (D&C) activities for spudded, completed and started oil-producing wells in all US shale plays, based on EIA-DPR regions, included 1,138 horizontal wells spudded in March (as per preliminary data). This is up by 400 m-o-m, and 38% higher than in March 2022.

March preliminary data indicates a higher number of completed wells at 966, which is up by 21% y-o-y. Moreover, the number of started wells was estimated at 920, which is 8% higher than a year earlier.

Preliminary data for April 2023 estimates 702 spudded, 698 completed and 905 started wells, according to Rystad Energy.

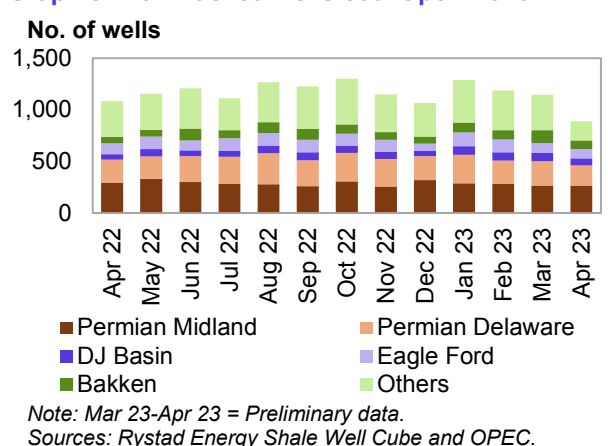
Graph 5 - 12: Spudded, completed and started wells in US shale plays



In terms of identified **US oil and gas fracking operations by region**, Rystad Energy reported that 1,186 wells were fracked in February 2023. In March and April, it stated that 1,146 and 889 wells began fracking, respectively. Preliminary numbers are based on analysis of high-frequency satellite data.

Preliminary March data showed that 268 and 234 wells were fracked in the Permian Midland and Permian Delaware, respectively. Compared with February, there was a decline of 14 wells in the Midland and a jump of 9 in the Delaware. Data also indicated that 84 wells were fracked in the DJ Basin, 94 in Eagle Ford and 123 in Bakken over March.

Graph 5 - 13: Fracked wells count per month

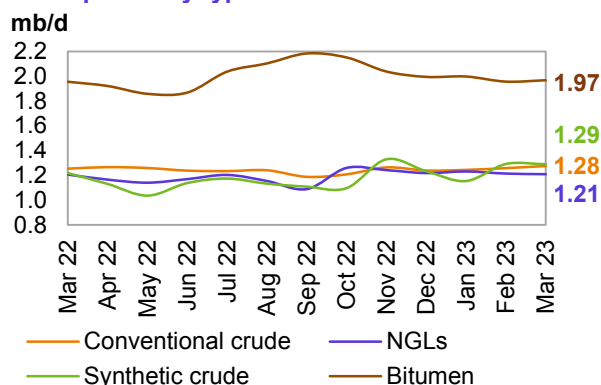


Canada

Canada's liquids production in March is estimated to have risen m-o-m by 21 tb/d to average 5.8 mb/d, the highest output seen since December 2022, driven by a recovery in oil sand basins.

Conventional crude production increased m-o-m by 17 tb/d to average 1.3 mb/d, while NGLs output decreased marginally by 5 tb/d to average 1.2 mb/d. Crude bitumen production output rose m-o-m by 11 tb/d in March, while synthetic crude remained basically unchanged. Taken together, crude bitumen and synthetic crude production increased by a minor 9 tb/d to 3.3 mb/d.

Graph 5 - 14: Canada's monthly liquids production development by type



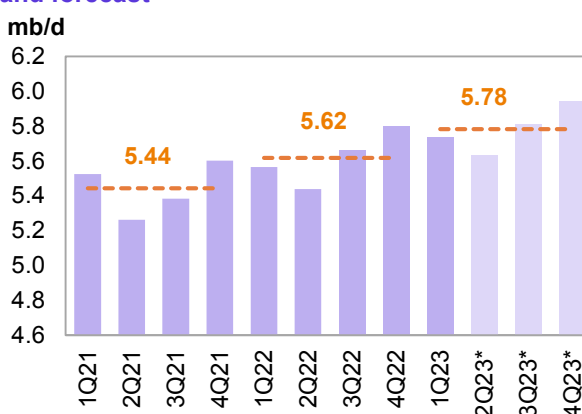
Sources: Statistics Canada, Alberta Energy Regulator and OPEC.

Canada's liquids supply in **2022** is estimated to have expanded by 0.2 mb/d to average 5.6 mb/d, broadly unchanged from the previous assessment. Oil sands output, mainly from Alberta, saw growth of 60 tb/d y-o-y to average 3.2 mb/d in 2022.

Canada's production in 1Q23, especially in January, was under pressure due to freezing weather and lower synthetic crude oil production.

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. This is broadly unchanged compared with the previous assessment. Incremental production will come through oil sand project ramp-ups and debottlenecks, alongside conventional growth.

Graph 5 - 15: Canada's quarterly liquids production and forecast



Note: * 2Q23-4Q23 = Forecast. Source: OPEC.

Scheduled maintenance programmes during 2Q23 to 3Q23 are expected to soften output, however oil sands are projected to be the main driver of Canada's production through to the end of the year, driven by Kearn debottlenecking and CNRL Horizon optimization. Additionally, the Terra Nova Floating Production Storage and Offloading unit (FPSO) is expected to restart production in mid-2023.

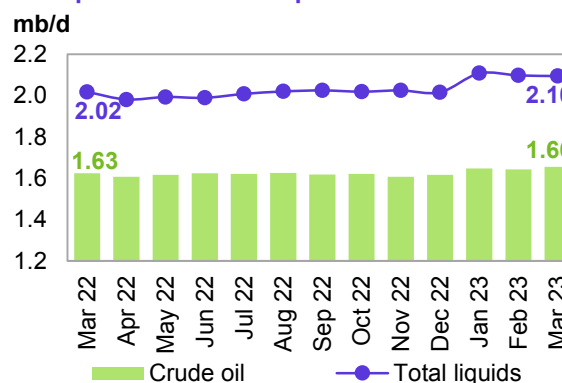
Mexico

Mexico's crude output increased by 12 tb/d m-o-m in **March** to average 1.7 mb/d, while NGLs output dropped by 15 tb/d. Mexico's total March liquids m-o-m output remained broadly unchanged at an average of 2.1 mb/d, according to the Comisión Nacional de Hidrocarburos (CNH). This was higher than expected, mainly due to the quick ramp-up of Pemex's priority fields.

For **2022**, Mexico's liquids production is estimated to have averaged 2.0 mb/d, broadly unchanged from the previous month's assessment. Growth of 50 tb/d is estimated for 2022.

For **2023**, liquids production is now forecast to rise by 50 tb/d to average 2.1 mb/d, which is up by 35 tb/d from the previous assessment, due to higher output in 1Q23 and better expectations for the rest of the year.

Graph 5 - 16: Mexico's monthly liquids and crude production development



Sources: Mexico Comisión Nacional de Hidrocarburos (CNH) and OPEC

In its latest investor presentation, Pemex highlighted the importance of its priority fields (mainly condensate and light crude) to achieve its production goal. However, it is expected that declines from mature fields could start offsetting monthly gains from new fields again starting in 2Q23. Moreover, foreign-operated crude production started to grow again after stagnating for the past several months.

OECD Europe

Norway

Norwegian liquids production in March increased by 66 tb/d m-o-m to average 2.1 mb/d, quite in line with Johan Sverdrup phase-2 ramp-up expectations.

Norway's crude production rose by 52 tb/d m-o-m in March to average 1.8 mb/d, higher by 84 tb/d y-o-y. Monthly oil production was 0.1% higher than the Norwegian Petroleum Directorate's (NPD) forecast.

At the same time, production of NGLs and condensates rose by 14 tb/d m-o-m to average 0.2 mb/d, according to NPD data.

For **2022**, production in the Norwegian Continental Shelf is estimated to have declined by around 140 tb/d y-o-y to average 1.9 mb/d, reflecting poor performance in Norwegian fields.

For **2023**, Norwegian liquids production is forecast to expand by 0.2 mb/d, remaining unchanged compared with the previous month, averaging 2.1 mb/d.

A number of small-to-large projects are scheduled to begin in 2023. The Johan Sverdrup ramp-up is projected to be the main source of growth following its Phase 2 start-up in December 2022. However, it seems that field underperformance will remain an issue throughout the year. Equinor announced that Bauge reached first oil this month. The Bauge satellite project, targeting 50 million barrels equivalent of mostly recoverable oil, came onstream 8 April, after more than a year of delays. The field is tied back to the Njord complex. Hyme, another tie-back to the Njord, has been also shut in since 2016, but resumed operations this month.

UK

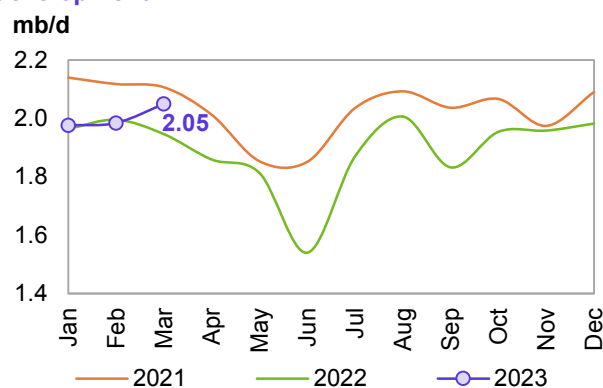
UK liquids production fell m-o-m in March by 43 tb/d to average 0.9 mb/d. Crude oil output dropped by 49 tb/d m-o-m to average 0.7 mb/d, which was lower by 55 tb/d y-o-y, according to official data. NGLs output increased by a minor 6 tb/d to an average of 85 tb/d. UK liquids output in March was down by 6.6% from the same month a year earlier, mainly due to natural declines and other outages.

For **2022**, UK liquids production is estimated to have dropped by 51 tb/d to average 0.9 mb/d. This is chiefly unchanged from the previous assessment.

For **2023**, UK liquids production is forecast to increase by 28 tb/d to average 0.9 mb/d, also broadly unchanged from the previous assessment.

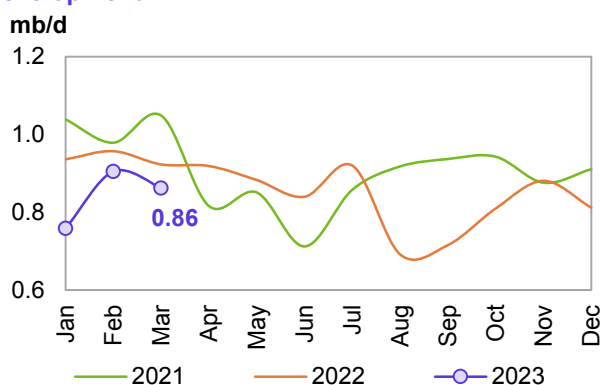
A number of new fields, including Seagull, the Penguins Redevelopment, Captain EOR and Saturn Banks phase 1 will help offset base declines in 2023. However, project sanctioning will be essential to maintain future oil and gas output, as UK production has been in long-term decline. In addition, UK offshore workers demanding better pay and conditions voted in favour of a series of short strikes over the coming months. While the impact to production remains unclear, it is likely that the involved companies and unions will reach a deal before output is interrupted.

Graph 5 - 17: Norway's monthly liquids production development



Sources: The Norwegian Petroleum Directorate (NPD) and OPEC.

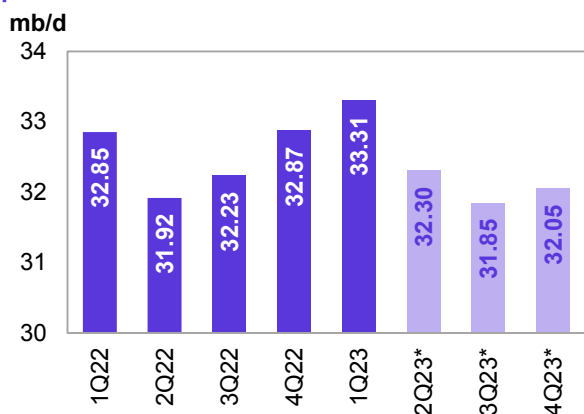
Graph 5 - 18: UK monthly liquids production development



Sources: UK Department for Business, Energy and Industrial Strategy and OPEC.

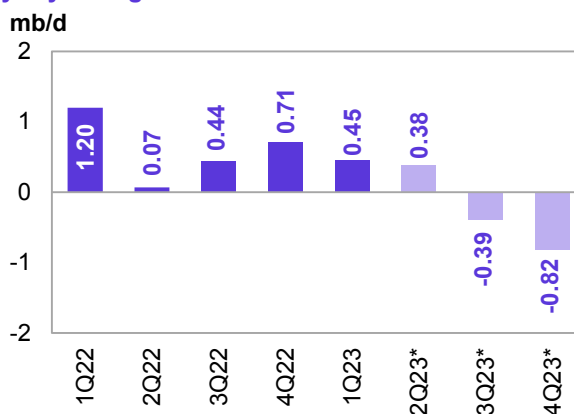
Non-OECD

Graph 5 - 19: Non-OECD quarterly liquids production and forecast



Note: * 2Q23-4Q23 = Forecast. Source: OPEC.

Graph 5 - 20: Non-OECD quarterly liquids supply, y-o-y changes

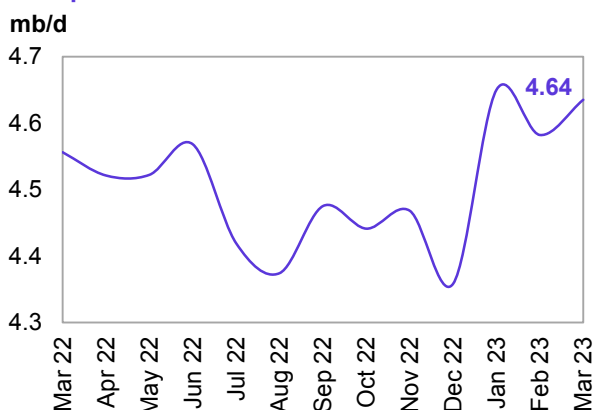


Note: * 2Q23-4Q23 = Forecast. Source: OPEC.

China

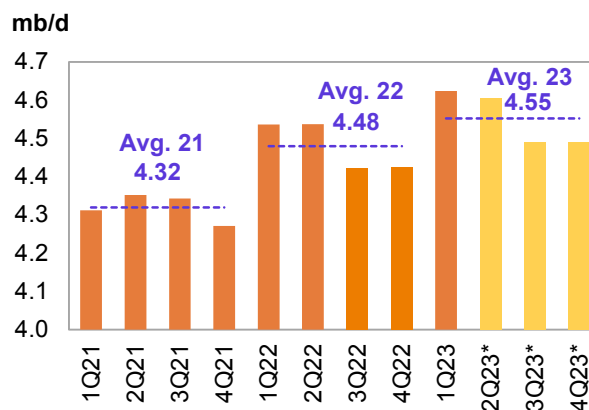
China's liquids production rose m-o-m in **March** by 53 tb/d to average 4.6 mb/d, which is a jump of 79 tb/d y-o-y, according to official data. Crude oil output in March averaged 4.2 mb/d, up by 53 tb/d compared with the previous month, but higher y-o-y by 76 tb/d. NGLs and condensate production was largely stable m-o-m, averaging 48 tb/d.

Graph 5 - 21: China's monthly liquids production development



Sources: CNPC and OPEC.

Graph 5 - 22: China's quarterly liquids production and forecast



Note: * 2Q23-4Q23 = Forecast. Sources: CNPC and OPEC.

For **2022**, growth of 160 tb/d is estimated to average 4.5 mb/d. This remained unchanged from the previous assessment and higher by 3.6% y-o-y.

For **2023**, y-o-y growth of about 73 tb/d is forecast for an average of 4.6 m/d, roughly unchanged from last month's assessment. Natural decline rates are expected to be offset by additional growth through more infill wells and enhanced oil recovery (EOR) projects amid efforts by state-owned oil companies to safeguard their energy supply.

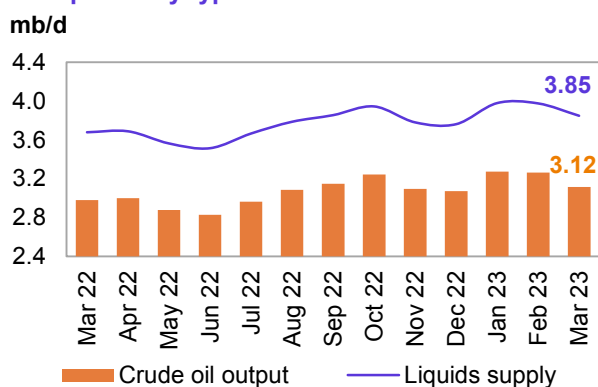
New offshore discoveries, the development of remote onshore basins and more investment in advanced EOR projects are expected to offset the declining output of mature fields. Upstream investment is expected to remain structurally elevated, considering initial 2023 capex announcements by Chinese major oil and gas companies. With a better domestic outlook, the China National Offshore Oil Corporation (CNOOC) has signaled it will scale back investments overseas and forecasts the share of production outside China to fall. Accordingly, nine new projects are planned for commissioning by CNOOC in 2023.

Latin America

Brazil

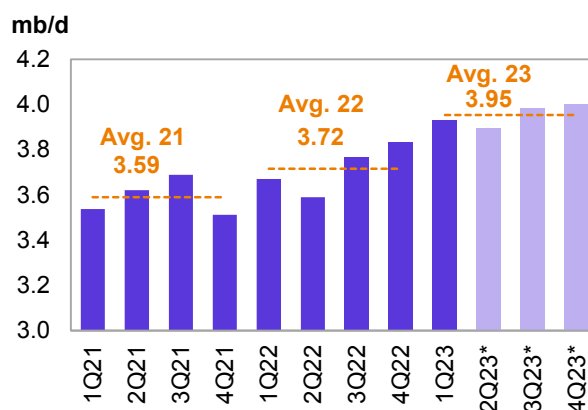
Brazil's crude output in March dropped m-o-m by 147 tb/d to average 3.1 mb/d. However, NGLs production was up by 10 tb/d to average 90 tb/d and is expected to remain flat in April. Biofuels output (mainly ethanol) rose by 10 tb/d in March to an average of 644 tb/d, with preliminary data showing a steady trend in April. The country's total liquids production decreased by 127 tb/d in March to average 3.8 mb/d, slightly lower than the highest production rate on record in January 2023, due to maintenance in some pre-salt fields.

Graph 5 - 23: Brazil's monthly liquids production development by type



Sources: Brazilian National Agency of Petroleum, Natural Gas and Biofuels (ANP) and OPEC.

Graph 5 - 24: Brazil's quarterly liquids production



Note: * 2Q23-4Q23 = Forecast. Sources: ANP and OPEC.

For **2022**, Brazil's liquids supply, including biofuels, is estimated to have increased by 0.1 mb/d y-o-y to average 3.7 mb/d, primarily unchanged from the previous assessment.

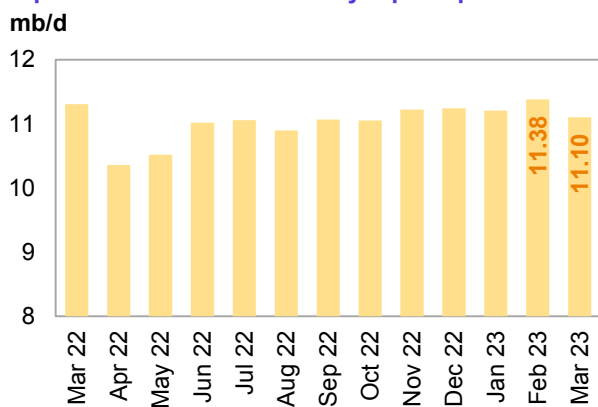
For **2023**, Brazil's liquids supply, including biofuels, is forecast to increase by 0.2 mb/d y-o-y to average 4.0 mb/d, revised down by a minor 8 tb/d from the previous forecast due to lower production rates in March.

Crude oil output is set to increase through production ramp-ups in the Buzios (Franco), Mero (Libra NW), Tupi (Lula), Peregrino, Sepia, Marlim and Itapu (Florim) fields. However, offshore maintenance is expected to cause some interruptions in major fields. The 70 tb/d Anna Nery FPSO in Marlim field and the 150 tb/d Almirante Barroso FPSO in Buzios field are expected to be on track to start production in 2Q23, as growth drivers for 2023.

Russia

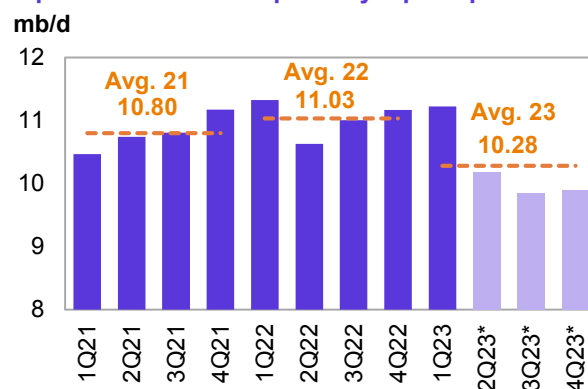
Russia's liquids production in March decreased m-o-m by 282 tb/d to average 11.1 mb/d. This includes 9.7 mb/d of crude oil and 1.4 mb/d of NGLs and condensate.

Graph 5 - 25: Russia's monthly liquids production



Sources: Nefte Compass and OPEC.

Graph 5 - 26: Russia's quarterly liquids production



Note: * 2Q23-4Q23 = Forecast. Sources: Nefte Compass and OPEC.

Russian liquids output in **2022** is estimated to have increased y-o-y by 0.2 mb/d to average 11.0 mb/d. This is broadly unchanged from the previous month's assessment.

For **2023**, Russian liquids production is forecast to drop by 0.75 mb/d to average 10.28 mb/d, unchanged from the previous month's assessment. It is worth noting that the expected contraction takes into account recently announced voluntary production adjustments to the end of 2023. A number of start-ups are planned this year by Lukoil, Gazprom, Novatek, Sigma Energy and others.

Caspian

Kazakhstan & Azerbaijan

Liquids output in Kazakhstan decreased by a minor 5 tb/d m-o-m to average 2.0 mb/d in **March**. Crude production was down by a minor 6 tb/d m-o-m to average 1.6 mb/d, while NGLs and condensate remained roughly unchanged m-o-m to average 0.4 mb/d.

Kazakhstan's liquids supply for **2022** is forecast to have declined by 44 tb/d y-o-y to average 1.8 mb/d. This is broadly unchanged compared with the previous month's assessment.

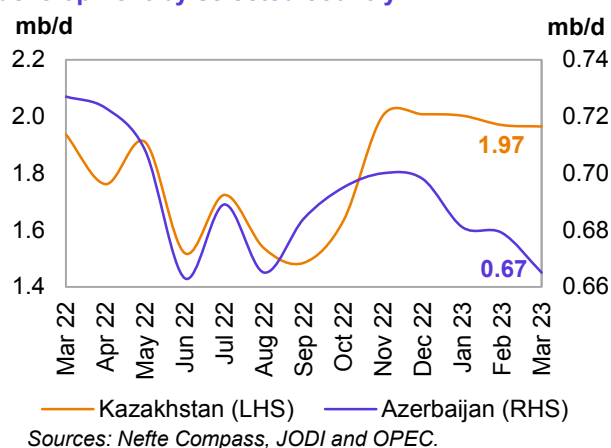
For **2023**, liquids supply is forecast to increase by 0.1 mb/d, down by a minor 7 tb/d compared with the previous forecast. The Caspian Pipeline Consortium (CPC) has halted operations at its crude export terminal near Russia's Black Sea port of Novorossiysk for an unspecified period of planned maintenance in April. However, CPC blend oil loadings are assumed to resume in mid-April after scheduled maintenance.

Azerbaijan's liquids production decreased slightly by 14 tb/d m-o-m in **March**, averaging 0.7 mb/d, which is a drop of 62 tb/d y-o-y. Crude production averaged 515 tb/d, with NGLs output at 150 tb/d, according to official sources.

For **2022**, liquids supply in Azerbaijan is estimated to have declined y-o-y by 40 tb/d to average 0.7 mb/d.

Azerbaijan's liquids supply for **2023** is forecast to rise by 37 tb/d to average 0.7 mb/d. This is a downward revision of a minor 11 tb/d, due to lower-than-expected production in major oil fields in 1Q23. The main declines in legacy fields are expected to be offset by ramp-ups in other fields. Growth is forecast to come mainly from the Shah Deniz and Absheron gas condensate projects. The Azeri-Chirag-Guneshli (ACG) oil fields have seen a steady decline since 2010. However, production is expected to rise after the start-up of the Azeri Central East flank project in 4Q23, operated by oil major BP.

Graph 5 - 27: Caspian monthly liquids production development by selected country



OPEC NGLs and non-conventional oils

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

NGLs output in 1Q23 is expected to have averaged 5.34 mb/d, while OPEC non-conventional output remained steady at 0.1 mb/d. Taken together, 5.45 mb/d is expected for March, 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 - 28: OPEC NGLs and non-conventional liquids quarterly production and forecast

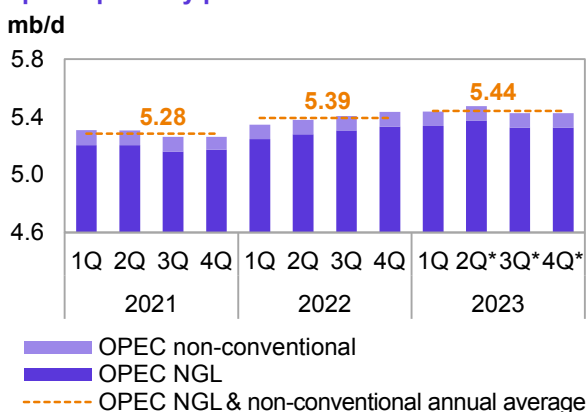


Table 5 - 6: OPEC NGL + non-conventional oils, mb/d

OPEC NGL and non-conventional oils	Change		Change		1Q23	2Q23	3Q23	4Q23	2023	Change 23/22
	2021	21/20	2022	22/21						
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: 2023 = Forecast. Source: OPEC.

OPEC crude oil production

According to secondary sources, total **OPEC-13 crude oil production** averaged 28.60 mb/d in April 2023, lower by 191 tb/d m-o-m. Crude oil output increased mainly in Saudi Arabia, Angola and IR Iran, while production in Iraq and Nigeria declined.

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

Secondary sources	2021	2022	3Q22	4Q22	1Q23	Feb 23	Mar 23	Apr 23	Change Apr/Mar
Algeria	913	1,017	1,040	1,030	1,015	1,017	1,013	1,005	-8
Angola	1,122	1,140	1,155	1,084	1,071	1,072	1,006	1,085	79
Congo	263	261	265	252	268	278	271	263	-8
Equatorial Guinea	98	84	90	63	54	61	47	59	11
Gabon	182	197	201	199	196	196	202	205	2
IR Iran	2,392	2,554	2,565	2,567	2,570	2,574	2,582	2,630	48
Iraq	4,046	4,439	4,522	4,505	4,374	4,368	4,342	4,139	-203
Kuwait	2,419	2,704	2,801	2,712	2,682	2,676	2,678	2,652	-26
Libya	1,143	981	976	1,153	1,157	1,163	1,159	1,135	-24
Nigeria	1,373	1,204	1,063	1,171	1,342	1,371	1,350	1,180	-170
Saudi Arabia	9,114	10,529	10,891	10,603	10,354	10,361	10,405	10,500	95
UAE	2,727	3,066	3,168	3,094	3,043	3,046	3,038	3,028	-11
Venezuela	553	678	662	667	693	690	700	724	24
Total OPEC	26,345	28,856	29,400	29,100	28,820	28,873	28,794	28,603	-191

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	3Q22	4Q22	1Q23	Feb 23	Mar 23	Apr 23	Change Apr/Mar
Algeria	911	1,020	1,050	1,030	1,011	1,014	1,008	999	-9
Angola	1,124	1,140	1,151	1,076	1,046	1,064	972	1,063	91
Congo	267	262	261	261	278	273	285	277	-8
Equatorial Guinea	93	81	83	56	51	50	48	49	1
Gabon	181	191	198	183	201	207	190	197	7
IR Iran	..	..	..	..	..	..	..	..	..
Iraq	3,971	4,450	4,632	4,505	4,288	4,339	4,200	3,938	-262
Kuwait	2,415	2,707	2,799	2,721	2,676	2,676	2,676	2,676	0
Libya	1,207	..	..	..	..	..	..	..	..
Nigeria	1,323	1,143	999	1,145	1,277	1,306	1,268	999	-270
Saudi Arabia	9,125	10,591	10,968	10,622	10,456	10,450	10,464	10,461	-3
UAE	2,718	3,064	3,170	3,093	3,041	3,041	3,045	3,041	-4
Venezuela	636	716	673	693	731	704	754	810	56
Total OPEC	..	..	..	..	..	..	..	..	..

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

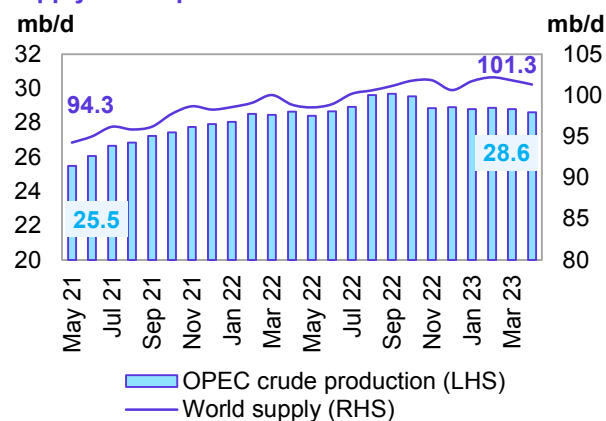
World oil supply

Preliminary data indicates that **global liquids production in April** decreased by 0.5 mb/d to average 101.3 mb/d compared with the previous month.

Non-OPEC liquids production (including OPEC NGLs) is estimated to have decreased m-o-m in April 2023 by 0.3 mb/d to average 72.7 mb/d. This was higher by 2.5 mb/d y-o-y. Preliminary estimated production rises in April were mainly driven by Other Asia and Latin America and were more than offset by decreases in Russia and Canada.

The **share of OPEC crude oil in total global production** remains unchanged to stand at 28.2% in April, 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 - 29: OPEC crude production and world oil supply development



Source: OPEC.

Product Markets and Refinery Operations

In April, refinery margins dropped to their lowest level y-t-d following the mild gains registered in the previous month. Product output in the Atlantic Basin rose as refinery runs recover and the heavy maintenance season comes to an end. Moreover, softening US diesel export opportunities, amid expectations of ample middle distillate import arrivals into Europe weighed further on product markets and crack spreads. In Asia, declining product exports contributed to weakness all across the barrel except for residual fuel, which benefitted from firm domestic requirements and lower imports. Concerns over a softening global economy and the potential negative impact on gasoil demand for heavy-machinery operations, and dissipation of the gasoil shortage fears continued to weigh heavily on diesel crack spreads, which fell further in April to enter the negative territory in the US. In addition, steam cracker maintenance led to a naphtha surplus in all main regions, while the naphtha price discount to LPG narrowed resulting in added weakness to product markets. Moreover, a recovery in feedstock prices over the month further contributed to the downturn in refining economics.

Global refinery processing rates recovered in April, and gained 918 tb/d, according to preliminary estimates. In the coming month, refinery intakes are expected to remain well supported as the peak turnaround season comes to an end. Consequently, product balances are set to expand further, which should keep pressure on product performance and refinery economics in the immediate near term until the effect of the summer season boost in fuel consumption gets factored in.

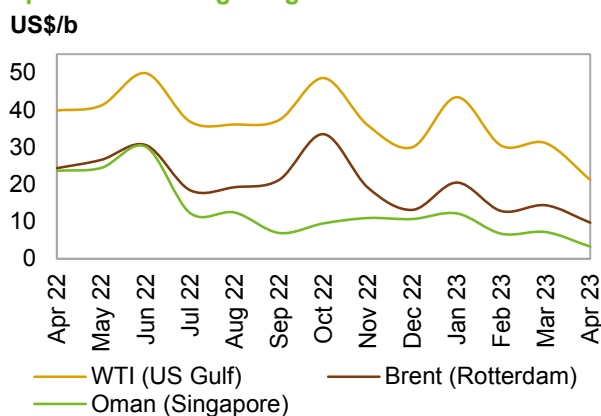
Refinery margins

USGC refining margins against WTI declined and exhibited the largest monthly loss compared to those seen in key trading hubs of other regions. The weakness stemmed from middle distillates, which offset the positive performance seen at the top and bottom of the barrel. With refinery runs on the rise for the second consecutive month, product availability in the country has improved. This was particularly the case of jet/kerosene, which showed an extension of its sharp upward trend and managed to surpass the rolling 5-year average inventory level after several months of remaining below the mark. Consequently, jet/kerosene prices showed the largest price drop across the barrel in the US. Gasoil, the second largest negative contributor to the US refining situation over the month, has faced challenges finding export

destinations as Russian gasoil deliveries to South America have increased. In addition, demand loss for space heating due to the end of the winter season, concerns over a softening US economy and expectations of weaker gasoil demand for the industrial sector amid weakening manufacturing activities are likely to have eroded previous concerns over impending gasoil shortage. These combined factors led to steep losses in gasoil margins which fell from nearly zero seen in the previous month into double-digit-negative territory in April, reaching a new multi-year record low. Regarding operations, refinery intake in the US continued to increase and gained 300 tb/d m-o-m to an average of 16.37 mb/d in April. USGC margins against WTI averaged \$21.21/b in April, down by \$9.88 m-o-m and by \$18.66 y-o-y.

Refinery margins in Rotterdam against Brent weakened as high middle distillate arrivals in Europe from India and the Middle East amid rising domestic refinery product output expanded the corresponding product's availability and weighed on middle distillate crack spreads. Product outputs were boosted by the complete return to operations of all French refineries following the strike-related product supply disruptions. Nonetheless, product balances were reported to have remained tight in Southern Germany around the second half of the month due to maintenance. This loss of supply lent support to product flows from the Amsterdam-Rotterdam-Antwerp storage hub through the Rhine River into Southern Germany, which helped keep losses in European product markets somewhat limited. Refinery throughput in Europe showed a rebound in April and increased by 440 tb/d to an average of 9.89 mb/d according to preliminary data. Refinery margins against Brent in Europe averaged \$9.75/b in April, \$4.66 lower compared with a month earlier, and \$14.61 lower y-o-y.

Graph 6 - 1: Refining margins



Sources: Argus and OPEC.

Singapore refining margins against Oman decreased, albeit by the least magnitude compared to their Western counterparts, as poor performance at the top and middle sections of the barrel exerted pressure on Asian product markets. Despite the slight monthly decline in Asian refinery processing rates, product output levels remained high. At the same time, overall regional product demand was subdued, while exports of spot cargo from China to Singapore rose. This has resulted in domestic product stock builds and weaker product crack spreads amid a contraction in inter-regional product export margins. Although fuel oil crack spreads were the exception and exhibited a positive performance, driven by a significant stock draw in Singapore and a decline in imports, this supportive factor was outweighed by the weakness associated with all other products.

In April, refinery intakes declined further and dropped 60 tb/d relative to the previous month, and averaged 27.43 mb/d, according to preliminary data. Refinery margins against Oman in Asia lost \$3.90 m-o-m to average \$3.30/b, which was \$20.35 lower y-o-y.

Refinery operations

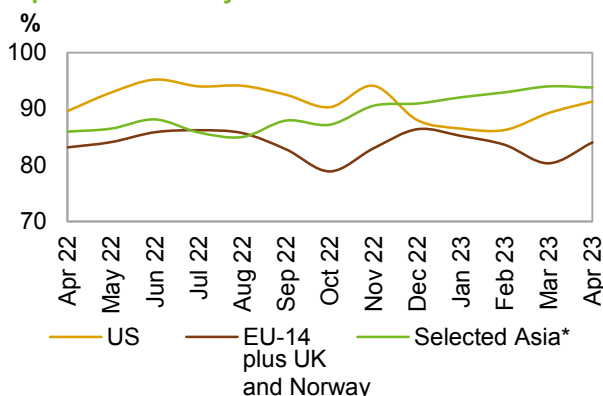
US refinery utilization rates increased in April to an average of 90.63%, which corresponds to a throughput of 16.37 mb/d. This represented a rise of 1.4 pp and 300 tb/d compared with March. Y-o-y, the April refinery utilization rate was up by 1.0 pp, with throughput showing a 285 tb/d rise.

European refinery utilization averaged 84.02% in April, corresponding to a throughput of 9.89 mb/d. This is a m-o-m rise of 3.7 pp or 440 tb/d. On a y-o-y basis, utilization rates were up by 0.9 pp, while throughput was higher by 104 tb/d.

In **Selected Asia** – comprising Japan, China, India, Singapore and South Korea – refinery utilization rates increased to an average of 93.79% in April, corresponding to a throughput of 27.43 mb/d.

Compared with the previous month, utilization rates were down by 0.2 pp, and throughput was lower by 60 tb/d. However, y-o-y utilization rates were higher by 7.9 pp, and throughput was up by 2.6 mb/d.

Graph 6 - 2: Refinery utilization rates



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

Table 6 - 1: Refinery operations in selected OECD countries

	Refinery throughput, mb/d				Refinery utilization, %			
	Feb 23	Mar 23	Apr 23	Change Apr/Mar	Feb 23	Mar 23	Apr 23	Change Apr/Mar
US	15.69	16.07	16.37	0.30	86.25	89.26	90.63	1.4 pp
Euro-14, plus UK and Norway	9.84	9.46	9.89	0.44	83.58	80.31	84.02	3.7 pp
France	1.00	0.69	0.87	0.18	86.63	59.95	75.55	15.6 pp
Germany	1.67	1.71	1.78	0.07	81.50	83.34	86.80	3.5 pp
Italy	1.17	1.33	1.50	0.18	61.63	69.84	79.20	9.4 pp
UK	1.02	0.95	1.05	0.10	86.78	80.60	89.41	8.8 pp
Selected Asia*	27.18	27.49	27.43	-0.06	92.94	94.00	93.79	-0.2 pp

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

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

Table 6 - 2: Refinery crude throughput, mb/d

Refinery crude throughput	2020	2021	2022	2Q22	3Q22	4Q22	1Q23	2Q23
OECD Americas	16.59	17.79	18.66	18.74	19.00	18.53	17.88	19.31
of which US	14.72	15.66	16.46	16.61	16.82	16.35	15.79	16.88
OECD Europe	10.65	10.92	11.43	11.57	11.79	11.38	11.27	11.39
of which:								
France	0.67	0.69	0.84	0.84	0.96	0.78	0.89	0.86
Germany	1.72	1.72	1.83	1.87	1.83	1.87	1.68	1.73
Italy	1.11	1.23	1.32	1.42	1.41	1.29	1.28	1.57
UK	0.92	0.92	1.04	1.06	1.02	1.03	1.00	0.97
OECD Asia Pacific	5.87	5.76	6.04	5.83	6.17	5.97	6.03	5.56
of which Japan	2.48	2.49	2.71	2.60	2.73	2.73	2.84	2.71
Total OECD	33.12	34.47	36.13	36.14	36.96	35.88	35.18	36.26
Latin America	3.20	3.50	3.42	3.54	3.45	3.39	3.35	3.44
Middle East	6.10	6.80	7.29	7.27	7.35	7.40	7.55	7.50
Africa	1.79	1.77	1.85	1.84	1.89	1.85	1.95	1.88
India	4.42	4.73	5.00	5.22	4.69	4.89	5.35	5.32
China	13.48	14.07	13.49	12.89	13.00	14.14	14.57	14.70
Other Asia	4.72	4.72	5.07	5.19	5.15	5.04	5.16	5.21
Russia	5.39	5.61	5.46	5.04	5.50	5.59	5.67	5.60
Other Eurasia	1.10	1.23	1.24	1.21	1.22	1.25	1.27	1.21
Other Europe	0.43	0.41	0.50	0.51	0.55	0.50	0.46	0.51
Total Non-OECD	40.63	42.85	43.30	42.73	42.81	44.06	45.34	45.38
Total world	73.75	77.32	79.44	78.87	79.77	79.94	80.52	81.63

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.

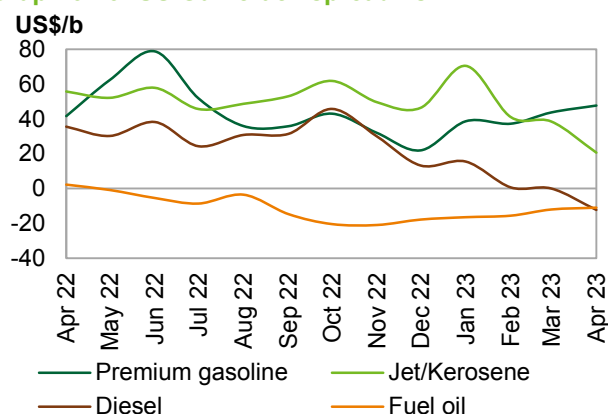
Product markets

US market

The **USGC gasoline crack spread** kept its upward momentum, showing gains for the second consecutive month, and keeping its position as the strongest positive margin contributor across the barrel in April. A contraction in the country's gasoline balance amid a continual decline in total US gasoline inventories throughout all four weeks of the month strengthened the market. In addition, an improvement in gasoline demand as well as preparations for the switch to summer-grade gasoline and an optimistic outlook for gasoline consumption over the summer months provided further support, which is expected to continue going forward. The return of US refiners from maintenance is likely to partially and temporarily offset the strength in gasoline markets, however, once gasoline consumption picks up during summer, gasoline crack spreads will most likely strengthen. In April USGC wholesale gasoline 93 prices rose further to show the largest monthly gain relative to other products on the West Coast, and increased by \$10.02 m-o-m, amid a rise in crude prices, to an average of \$127.05/b. Compared to the same month a year earlier, gasoline prices in April were \$16.20/b lower, reflecting an improved balance relative to the strong tightness witnessed in the previous year. The USGC gasoline crack spread gained \$3.96 m-o-m to average \$47.61/b in April and was \$6.07 higher y-o-y.

The **USGC jet/kerosene crack spread** lost notable ground to remain the strongest negative performer across the barrel. This weakness was mainly a result of ample availability amid weak demand, as jet fuel inventories rose further and ended the month higher compared to what was registered at the end of the previous month.

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



Sources: Argus and OPEC.

Product Markets and Refinery Operations

Wholesale prices dropped by \$11.73/b over the month to an average of \$100.14/b. The US jet/kerosene crack spread against WTI averaged \$20.70/b, down by \$17.79 m-o-m and by \$34.98 y-o-y.

The **USGC gasoil crack spread** declined further to enter the negative territory and reached a multi-year low, indicating negative profits for refiners to produce gasoil. Expectations of weaker demand from the trucking and industrial sectors, amid recession fears and rising refinery outputs, contributed to the poor performance in gasoil crack spreads. With this development, US refiners will most likely shift their focus to gasoline production. US gasoil inventories, however, ended the month at a significantly lower level relative to what was recorded in the last week of the previous month, although they remain well below the five-year average. Gasoil prices averaged \$67.27/b in April, down \$6.18 relative to March. The US gasoil crack spread against WTI averaged minus \$12.17/b, down by \$12.24 m-o-m and by \$47.67 y-o-y.

The **USGC fuel oil crack spread against WTI** maintained its positive momentum for the fifth consecutive month although remaining in negative territory. This improvement was mostly attributed to a contraction in the product's domestic balance over the month. In addition, improvement in gasoline markets likely provided better economic incentives for fuel oil to gasoline conversion. In April, the US fuel oil crack spread against WTI averaged minus \$10.91/b, higher by \$1.05/b m-o-m but lower by \$13.22 y-o-y.

European market

Gasoline crack spreads strengthened reflecting improvement in demand in line with the seasonal trends. Although gasoline refinery output levels were on the rise, the bullish market sentiment linked to the start of the summer season and expectations of a stronger gasoline market drove crack spreads higher. Going forward, gasoline crack spreads are set to benefit from better export opportunities and expectations of stronger mobility activity amid the approaching summer season. The gasoline crack spread against Brent averaged \$44.57/b in April, which was \$2.17/b higher m-o-m and \$15.49 higher y-o-y.

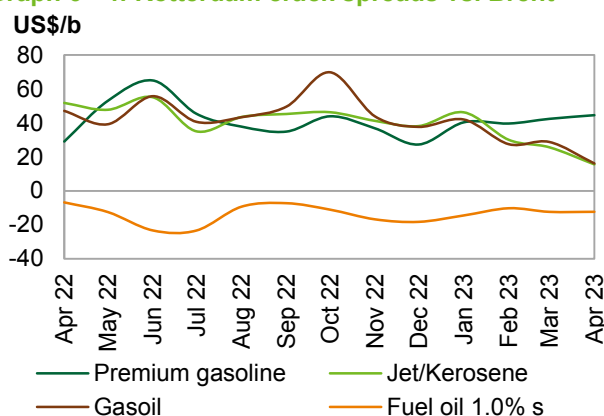
In April, **jet/kerosene crack spreads** continued to trend downward affected by subdued demand-side dynamics. The Rotterdam jet/kerosene crack spread against Brent averaged \$15.61/b, down by \$10.04 m-o-m and by \$36.10 y-o-y.

Gasoil 10 ppm crack spreads reversed the trend and declined, pressured by ample inflows from India and the Middle East amid stronger refinery output levels within the region as refiners ramp up operations following the recent heavy turnaround season. Moreover, previous concerns over gasoil shortages related to the Feb 5 embargo on Russian products continue to dissipate as Europe continued to benefit from somewhat steady alternate gasoil supplies. In addition, the ongoing end of the winter season and the subsequent expectations of lower heating demand, amid concerns of a softening global economy likely contributed to the pressure on European gasoil markets.

The gasoil crack spread against Brent averaged \$16.21/b, down by \$12.62 m-o-m and by \$30.89 y-o-y.

At the bottom of the barrel, **fuel oil 1.0% crack spreads** gained some ground as lower availability attributed to strong volume arrivals from the Middle East. On the other hand, high sulphur fuel oil markets within the region strengthened as refinery output levels declined while Russian barrels were diverted to Asia, given the product flow adjustments in light of the EU sanctions on Russian product flows. In terms of prices, fuel oil 1.0% increased in value m-o-m and averaged \$72.58/b, which was \$6.64 higher relative to the previous month. In Europe, fuel oil cracks averaged minus \$12.32/b in April, having lost only 3¢ m-o-m and lost \$5.56 y-o-y.

Graph 6 - 4: Rotterdam crack spreads vs. Brent



Sources: Argus and OPEC.

Asian market

The **Asian gasoline 92 crack spread** weakened reflecting the strong flows from China into Singapore. Despite the ongoing refinery maintenance season in the region, offline capacities have remained very low, indicating stability in regional product output levels, keeping the region well supplied. The Singapore gasoline crack spread against Dubai in April averaged \$13.12/b and was down \$2.71 m-o-m and \$7.42 y-o-y.

Asian **naphtha crack spreads** weakened in April to reach a five-month low. This was a result of several factors, including a contraction of the naphtha price advantage over LPG, and weaker naphtha-derived component demand from China's housing and automotive sectors. In addition, steam cracker maintenance works carried out over the month further contributed to lower naphtha requirements, which resulted in a weaker regional naphtha market.

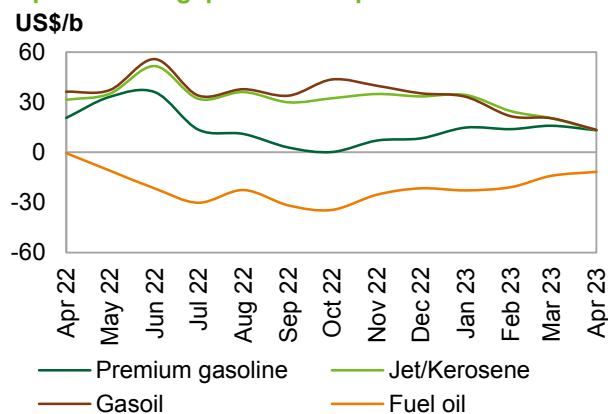
The widening propane-naphtha discounts due to lower LPG prices, which have been declining since their peak around the end of January, have placed LPG in a more competitive position and made naphtha margins unattractive. This has prompted some Asian refiners to turn their focus to LPG as a preferred feedstock choice because Asian steam crackers can replace 8%-18% of naphtha as feedstock with LPG depending on their units. The Singapore naphtha crack spread against Oman averaged minus \$11.86/b, decreasing by \$6.63 m-o-m and by \$6.70 y-o-y.

In the middle of the barrel, **jet/kerosene crack spreads** weakened and showed the strongest negative performance across the barrel, affected by ample supplies and suppressed demand from the regional aviation sector with the recent reopening of the Chinese economy thus far failing to provide significant support to the regional market. The Singapore jet/kerosene crack spread against Oman averaged \$13.38/b, down by \$7.06 m-o-m and by \$18.06 y-o-y.

The Singapore **gasoil crack spread** lost some ground, pressured by strong volume arrivals from the Middle East. This was a reflection of weaker export requirements from Europe with inventories remaining high over the month as buyers there built up their stocks before the 5 February sanctions on Russian products. In addition, the regional gasoil market was affected by ample supplies from the wider East of Suez region. The Singapore gasoil crack spread against Oman averaged \$13.51/b, down \$6.92 m-o-m and \$22.76 y-o-y.

The Singapore **fuel oil 3.5% crack spread** was the sole positive performance across the barrel supported by significant stock draws in Singapore, amid a monthly decline in imports. In addition, firm demand from the bunker sector and supportive maritime shipping activity, product trade flows amid the recent heavy refinery maintenance season lent further backing to the residual fuels' performance. Going forward improvement in fuel oil requirement for power generation should support the fuels' crack spreads. Singapore fuel oil cracks against Oman averaged minus \$11.66/b, up by \$2.37 m-o-m but down by \$11.22 y-o-y.

Graph 6 - 5: Singapore crack spreads vs. Dubai



Sources: Argus and OPEC.

Product Markets and Refinery Operations

Table 6 - 3: Short-term prospects for product markets and refinery operations

Event	Time frame	Asia	Europe	US	Observations
End of peak refinery maintenance season	May 23	↓ Pressure on product crack spreads	↓ Pressure on product crack spreads	↓ Pressure on product crack spreads	Global refinery intakes are expected to increase further with declining global offline capacities. Consequently, product balances are set to expand in the Atlantic Basin, which should pressure refinery economics.
US driving season and switch to summer-grade gasoline in the US	May 23– Oct 23	↑ Support for gasoline crack spreads	↑ Support for gasoline crack spreads	↑ Support for gasoline crack spreads	US gasoline demand is expected to pick up, while the 1 May gasoline spec adjustment mandate and resulting rise in gasoline price are set to support crack spreads in the near term.
Fuel oil markets	May 23 – Sep 23	↑ Support for fuel oil crack spreads	↑ Support for fuel oil crack spreads	↑ Support for fuel oil spreads	Higher fuel oil demand expected during the summer months to fuel cooling systems, particularly in Asia and the Middle East to support markets in months to come.

Source: OPEC.

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

	Mar 23	Apr 23	Change Apr/Mar	Annual avg. 2022	Year-to-date 2023
US Gulf (Cargoes FOB)					
Naphtha*	76.52	75.27	-1.25	89.24	78.45
Premium gasoline (unleaded 93)	117.03	127.05	10.02	134.59	118.71
Regular gasoline (unleaded 87)	107.38	110.21	2.83	123.34	107.09
Jet/Kerosene	111.87	100.14	-11.73	140.17	119.62
Gasoil (0.2% S)	73.45	67.27	-6.18	122.10	78.00
Fuel oil (3.0% S)	58.34	66.85	8.51	76.84	59.52
Rotterdam (Barges FoB)					
Naphtha	74.61	74.88	0.27	85.08	76.28
Premium gasoline (unleaded 98)	120.69	129.47	8.78	136.26	123.88
Jet/Kerosene	103.94	100.51	-3.43	139.86	111.51
Gasoil/Diesel (10 ppm)	107.12	101.11	-6.01	142.32	110.79
Fuel oil (1.0% S)	65.94	72.58	6.64	88.77	69.80
Fuel oil (3.5% S)	62.35	72.43	10.08	78.86	64.38
Mediterranean (Cargoes FOB)					
Naphtha	70.23	71.54	1.31	82.26	73.11
Premium gasoline**	101.09	104.90	3.81	120.04	101.66
Jet/Kerosene	97.84	95.67	-2.17	135.36	106.57
Diesel	104.41	99.34	-5.07	135.91	109.04
Fuel oil (1.0% S)	70.91	77.13	6.22	94.51	74.81
Fuel oil (3.5% S)	58.18	67.38	9.20	72.30	58.85
Singapore (Cargoes FOB)					
Naphtha	73.19	71.54	-1.65	83.91	73.56
Premium gasoline (unleaded 95)	98.59	100.14	1.55	115.05	99.23
Regular gasoline (unleaded 92)	94.25	96.52	2.27	111.02	95.53
Jet/Kerosene	98.86	96.78	-2.08	126.76	104.37
Gasoil/Diesel (50 ppm)	102.35	98.24	-4.11	134.94	105.86
Fuel oil (180 cst)	95.33	92.91	-2.42	129.75	100.31
Fuel oil (380 cst 3.5% S)	64.39	71.74	7.35	76.63	63.82

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

Sources: Argus and OPEC.

Tanker Market

Dirty freight rates experienced a downward correction in April across all reported routes. Aframax saw the sharpest downturn, falling by as much as 66% on the Caribbean-to-US East Coast (USEC) route. Suezmax spot freight rates were next, with rates on the US Gulf Coast (USGC)-to-Europe route down 36%. VLCC rates also declined, down 24% on the Middle East-to-East route and 23% lower on the West Africa-to East route.

Clean spot freight rates showed a mixed performance, with a weaker market West of Suez outweighing the strong performance East of Suez

Spot fixtures

Latest estimates show **global spot fixtures** experienced a seasonal decline in April, falling to 13.23 mb/d. Fixtures dropped m-o-m by 3.1 mb/d, or around 19%, with declines seen across the board. Compared with the previous year, spot fixtures fell 3.3 mb/d, or close to 20%.

Table 7 - 1: Spot fixtures, mb/d

Spot fixtures	Feb 23	Mar 23	Apr 23	Change Apr 23/Mar 23
All areas	15.64	16.36	13.23	-3.13
OPEC	11.15	11.00	9.06	-1.94
Middle East/East	6.71	6.38	5.46	-0.92
Middle East/West	1.31	1.22	1.17	-0.05
Outside Middle East	3.13	3.40	2.43	-0.97

Sources: Oil Movements and OPEC.

OPEC spot fixtures fell in April by 1.9 mb/d, or almost 18%, to average 9.06 mb/d. In comparison with the same month in 2022, fixtures were 1.6 mb/d lower, or about 15%.

Middle East-to-East fixtures declined by 0.9 mb/d, or over 14%, to average 5.5 mb/d. Compared with the same month of the previous year, eastward flows from the Middle East decreased 1.2 mb/d, or over 17%.

Spot fixtures on the **Middle East-to-West** route also declined m-o-m in April, dropping by about 50 tb/d, or about 4%, to average around 1.2 mb/d. Y-o-y, however, fixtures were up by 0.1 mb/d, or almost 13%.

Outside the Middle East, fixtures slumped m-o-m by almost 29% to average 2.4 mb/d. Compared to the same month last year, fixtures on the route were down by 0.6 mb/d, or around 19%.

Sailings and arrivals

OPEC sailings declined in April, averaging 22.8 mb/d. This represents a m-o-m drop of about 0.7 mb/d, or almost 3%. Y-o-y, OPEC sailings were down by about 0.6 mb/d, or less than 3%.

Middle East sailings averaged 17.7 mb/d in April, the same as the previous month. Y-o-y, sailings from the region were down by 0.7 mb/d, or close to 4%.

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

Sailings	Feb 23	Mar 23	Apr 23	Change Apr 23/Mar 23
OPEC	23.26	23.46	22.78	-0.68
Middle East	17.64	17.65	17.65	0.00
Arrivals				
North America	8.94	9.12	9.42	0.30
Europe	11.67	12.51	12.37	-0.14
Far East	15.57	16.53	16.77	0.24
West Asia	9.18	9.14	8.83	-0.31

Sources: Oil Movements and OPEC.

Tanker Market

Crude arrivals were mixed in April. **North American arrivals** saw strong gains, increasing 0.3 mb/d, or about 3%, to average 9.4 mb/d. However, y-o-y arrivals in North America were 0.5 mb/d higher, or 5%. In contrast, **arrivals in Europe** fell m-o-m by 0.1 mb/d, or about 1%, to average 9.4 mb/d. Compared to the same month last year, arrivals to Europe were 0.9 mb/d higher, or almost 7%.

Far East arrivals averaged 16.8 mb/d, up 0.2 mb/d, or about 2%, compared with the previous month and around 0.7 mb/d, or about 4%, higher y-o-y. In contrast, **arrivals in West Asia** fell by about 0.3 mb/d, or over 3%, to average 8.8 mb/d. Y-o-y, arrivals in the region were up by 0.2 mb/d, or about 2%.

Dirty tanker freight rates

Very large crude carriers (VLCCs)

VLCC spot rates retreated in April, down 22% compared to the previous month. However, y-o-y, VLCC rates were still 22% higher on average. High crude inventories in China, narrowing refinery margins in Asia-Pacific and reduced flows from the Middle East weakened demand for VLCCs.

On the **Middle East-to-East** route, rates dropped m-o-m by 24% to average WS66 points. This was still 32% higher y-o-y. Rates on the **Middle East-to-West** route declined 17% m-o-m to average WS48 points. Y-o-y, rates on the route were still up 55%.

West Africa-to-East spot rates fell m-o-m by 23% to average WS66 points in April. Compared with the same month of 2022, rates were 16% higher.

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

VLCC	Size	Feb 23	Mar 23	Apr 23	Change
	1,000 DWT					Apr 23/Mar 23
Middle East/East	230-280	60	87	66	-21
Middle East/West	270-285	42	58	48	-10
West Africa/East	260	61	86	66	-20

Sources: Argus and OPEC.

Suezmax

Suezmax rates in April erased the gains seen in the previous two months, falling 28% m-o-m. Compared with the same month of the previous year, rates were 30% lower.

Spot freight rates on the **West Africa-to-USGC** route declined m-o-m by 20% to average WS102 points. Y-o-y, rates were down by 25%.

Rates on the **USGC-to-Europe** route fell 36% to average WS77 points. Compared with the same month of 2022, they were 35% lower.

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

Suezmax	Size	Feb 23	Mar 23	Apr 23	Change
	1,000 DWT					Apr 23/Mar 23
West Africa/US Gulf Coast	130-135	112	128	102	-26
US Gulf Coast/ Europe	150	100	120	77	-43

Sources: Argus and OPEC.

Aframax

Aframax spot freight rates declined across all routes, down by an average of 32% in April. Compared with the same month of 2022, rates were 17% lower.

Rates on the **Indonesia-to-East route** slipped 3% lower m-o-m to average WS182 in April. Compared with the same month last year, rates were 17% higher.

In contrast, spot rates on the **Caribbean-to-USEC route** plunged m-o-m by 66% to average WS116 points. Y-o-y, rates were 51% lower.

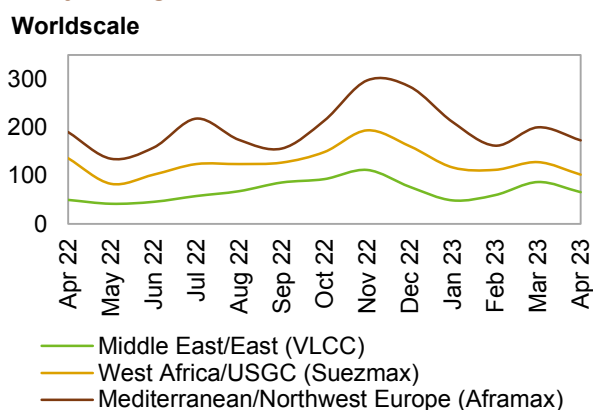
Table 7 - 5: Dirty Aframax spot tanker freight rates, WS

Aframax	Size	Feb 23	Mar 23	Apr 23	Change
	1,000 DWT				Apr 23/Mar 23
Indonesia/East	80-85	187	187	182	-5
Caribbean/US East Coast	80-85	191	339	116	-223
Mediterranean/Mediterranean	80-85	180	221	176	-45
Mediterranean/Northwest Europe	80-85	162	200	173	-27

Sources: Argus and OPEC.

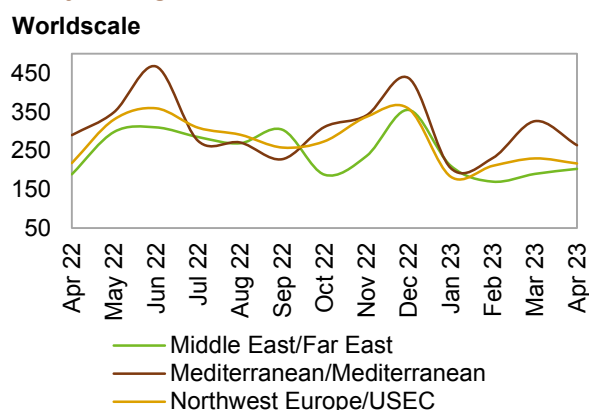
Cross-Med spot freight rates fell 20% m-o-m to average WS176 points. They were 12% lower y-o-y. On the **Mediterranean-to-Northwest Europe (NWE)** route, rates decreased 14% m-o-m to average WS173 points. Compared with the same month of 2022, rates were down by around 9%.

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 showed a mix performance, with a weaker market West of Suez outweighing the strong performance East of Suez. On average, rates fell 5% m-o-m and were down 2% compared with April 2022 levels.

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

East of Suez	Size	Feb 23	Mar 23	Apr 23	Change
	1,000 DWT				Apr 23/Mar 23
Middle East/East	30-35	170	190	203	13
Singapore/East	30-35	245	187	243	56
West of Suez					
Northwest Europe/US East Coast	33-37	211	230	217	-13
Mediterranean/Mediterranean	30-35	231	326	264	-62
Mediterranean/Northwest Europe	30-35	241	336	274	-62

Sources: Argus and OPEC.

Rates on the **Middle East-to-East** route increased 7% in April to average WS203. Y-o-y, rates were also up 7%. Clean spot freight rates on the **Singapore-to-East** route rose 30% m-o-m to average WS243 and were up 9% compared with the same month of 2022.

Spot freight rates on the **NWE-to-USEC** route declined 6% m-o-m to average WS217 points in April. They were broadly flat y-o-y. Rates for the **Cross-Med** route fell 19% to average WS264 points, while rates on the **Med-to-NWE** route declined 18% to average WS274 points. Compared with the same month of the previous year, rates on the Med routes were down 9%.

Crude and Refined Products Trade

Preliminary data shows US crude imports increased to 6.3 mb/d in April amid preparations for the summer driving season. US crude exports fell back from a record high to average a still strong 4.2 mb/d.

In March, China's crude imports surged to a new record high of 12.4 mb/d following a wave of buying by Chinese refiners, including from long-haul sources. China's product exports declined in March from high levels to average 1.3 mb/d, with declines across light and middle distillates.

India's crude imports fell from a 10-month high, averaging just under 4.9 mb/d in March. India's product exports strengthened further, averaging 1.5 mb/d.

Japan's crude imports were 8% lower in March, averaging 2.5 mb/d. Japan's product exports, including LPG, came off a strong performance in the month before to average 567 tb/d in March.

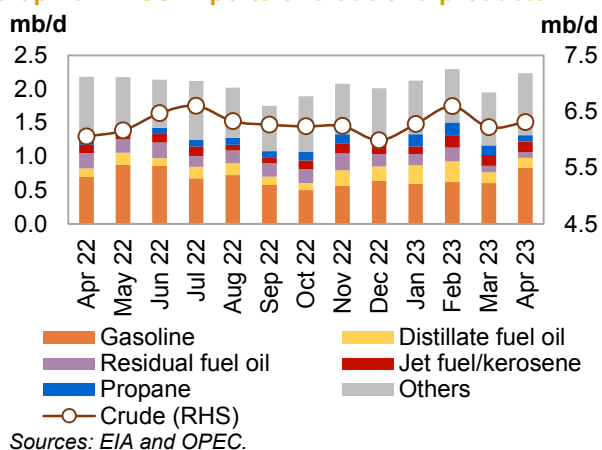
Preliminary estimates for April show OECD Europe crude imports were seasonally lower, while product imports picked up from lower levels in February and March, led by diesel.

US

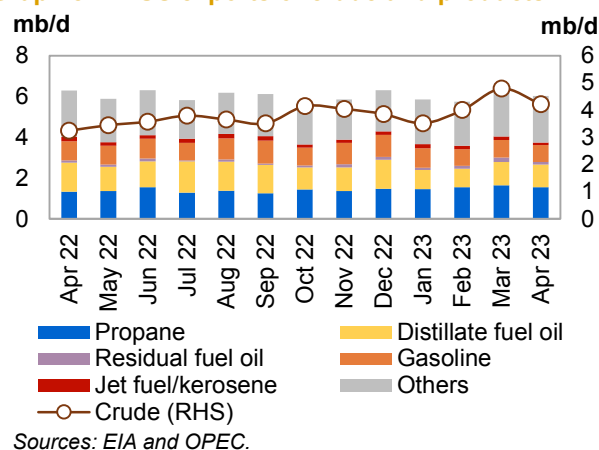
Preliminary data shows **US crude imports** increased by about 2% m-o-m in April to average 6.3 mb/d. Compared with the same month last year, crude imports were almost 0.3 mb/d, or around 4%, higher.

Canada remained the **top supplier of crude** in April, with a share of 56%, according to preliminary weekly data from the US Energy Information Administration (EIA). Mexico was second with 10% and Saudi Arabia was third with a share of 5%.

Graph 8 - 1: US imports of crude and products



Graph 8 - 2: US exports of crude and products



US crude exports fell from a record high to average 4.2 mb/d in April, according to preliminary weekly data. Crude outflows declined by almost 0.6 mb/d, or close to 12% m-o-m. Compared to the same month last year, outflows were still almost 1 mb/d, or 30% higher.

In terms of **destination**, the latest EIA monthly data shows Europe taking in a 39% share of US crude exports in **February**. This compares with 45% in the same month of the previous year. South Korea and Taiwan both had shares of 9%. Estimates for April based on tanker tracking data from Kpler indicate around half of US crude exports going to Asia and about 36% are destined to Europe.

Based on preliminary weekly data, **US net crude imports** averaged 2.1 mb/d in April, compared with 1.4 mb/d the month before and 2.8 mb/d in the same month last year.

On the **products** side, **imports** jumped by 0.3 mb/d or over 14% m-o-m in April to average just under 2.2 mb/d, driven by higher gasoline inflows. Compared with the same month last year, product inflows rose 51 tb/d, or around 2%.

Product exports declined m-o-m to average 6.0 mb/d amid lower flows to Mexico and China. Compared with the previous month, product exports were down 250 tb/d, or 4%. Y-o-y, product outflows were around 270 tb/d or about 4% higher.

As a result, preliminary data showed **US net product exports** averaging 3.7 mb/d in April, compared to about 4.3 mb/d in the previous month and 4.1 mb/d in the same month last year.

Preliminary data indicates that US **net crude and product exports** averaged 1.7 mb/d in April, compared with 2.9 mb/d the month before and 1.3 mb/d in the same month last year.

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

US	Feb 23	Mar 23	Apr 23	Change Apr 23/Mar 23
Crude oil	2.60	1.43	2.10	0.67
Total products	-3.44	-4.32	-3.79	0.53
Total crude and products	-0.84	-2.89	-1.69	1.21

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

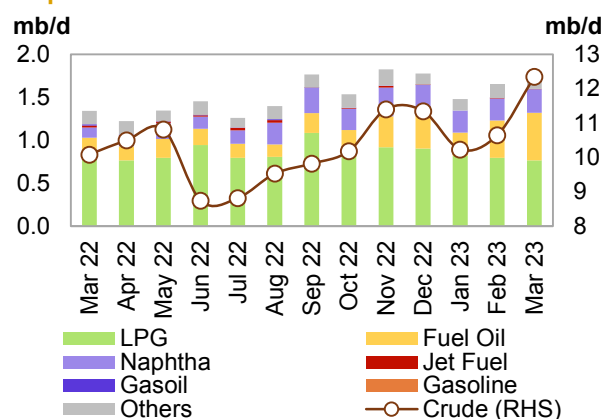
Sources: EIA and OPEC.

Looking ahead, US crude imports are likely to remain supported by preparations for the summer driving season. US crude exports are seen slowing amid a narrowing Brent/WTI spread. US product exports are likely to be dampened until flows to Latin America pickup.

China

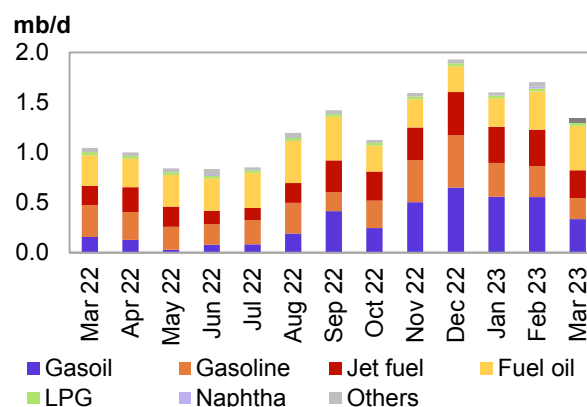
China's crude imports surged in March to a new record high of 12.4 mb/d. Compared with the previous month, crude inflows jumped 1.7 mb/d, or about 16%. Y-o-y, China's crude imports were considerably higher, up by almost 2.3 mb/d or 23%.

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 remained at the top spot in March with over 18%. Saudi Arabia was second with a share of 17% and Iraq was third with almost 12%.

Product imports increased further, up 7% to average 1.8 mb/d, with gains coming mostly from fuel oil. Compared to the same period last year, imports were 0.4 mb/d, or around 32%, higher y-o-y.

Product exports declined in March to average 1.3 mb/d, with declines led by diesel, gasoline and jet fuel. M-o-m, refined product outflows fell 0.4 mb/d or about 22% m-o-m. Compared to the same period last year, product exports were 0.3 mb/d or almost 28% higher.

As a result, China was a **net product importer** in March at 440 tb/d. This compares to net exports of 52 tb/d the month before and net product imports of 296 tb/d in the same month of 2022.

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

China	Jan 23	Feb 23	Mar 23	Change Mar 23/Feb 23
Crude oil	10.23	10.63	12.29	1.66
Total products	-0.12	-0.05	0.44	0.49
Total crude and products	10.11	10.58	12.73	2.15

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

Sources: China OGP and OPEC.

Crude and Refined Products Trade

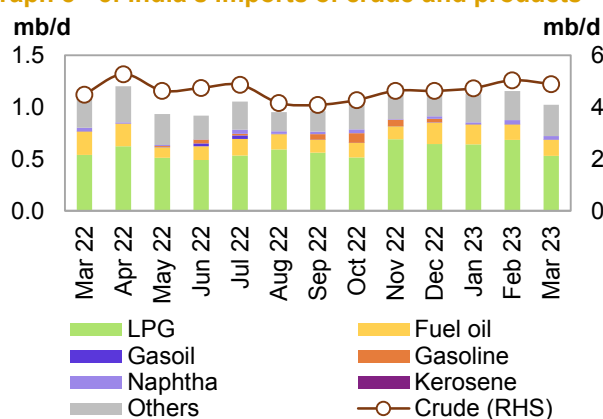
Looking ahead, recently released China customs data showed crude imports averaging 10.4 mb/d, reverting to the average seen in the first two months of the year. Tanker tracking estimates indicate a likely increase this month. Meanwhile, product exports fell to a nine-month low in April, attributed to poor margins and limited product export quotas following strong flows in January and February, and ahead of the next round of quota allowances.

India

India's crude imports fell from a 10-month high, averaging just shy of 4.9 mb/d in March. This represents a m-o-m decline of about 0.2 mb/d or almost 3%. Y-o-y, crude inflows rose by close to 0.4 mb/d or almost 9%.

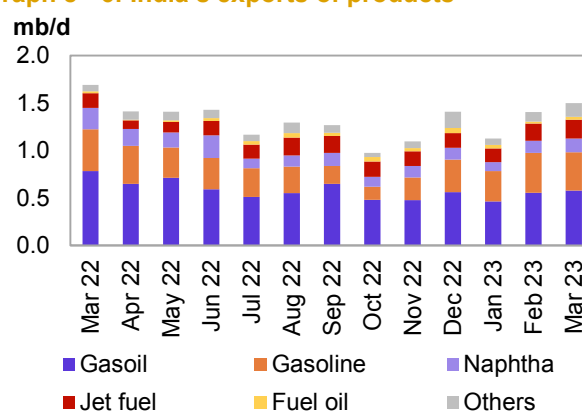
In terms of **crude imports by source**, Kpler data shows Russia was the top supplier of crude to India in March for the ninth consecutive month with a share of 43%. Iraq was second with 18%, followed by Saudi Arabia with 15%.

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



Sources: PPAC and OPEC.

Graph 8 - 6: India's exports of products



Sources: PPAC and OPEC.

In terms of **products, imports** declined by 0.1 mb/d or close to 12% m-o-m to average 1.0 mb/d. A decline in fuel oil was offset by less decreases in naphtha and LPG. Compared with the same month last year, inflows increased by about 8%, or 88 tb/d.

Product exports strengthened further, averaging 1.5 mb/d. Gains were led by diesel oil and gasoline. M-o-m, product outflows increased 94 tb/d or about 7%, with gains led by diesel and gasoline. Y-o-y, product exports fell by 190 tb/d, or about 11%.

As a result, India remained a **net product exporter** in March at 476 tb/d compared to 249 tb/d the month before. In March 2022, India's net exports averaged 578 tb/d.

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

India	Jan 23	Feb 23	Mar 23	Change Mar 23/Feb 23
Crude oil	4.74	5.04	4.89	-0.15
Total products	0.00	-0.25	-0.48	-0.23
Total crude and products	4.74	4.79	4.42	-0.37

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.

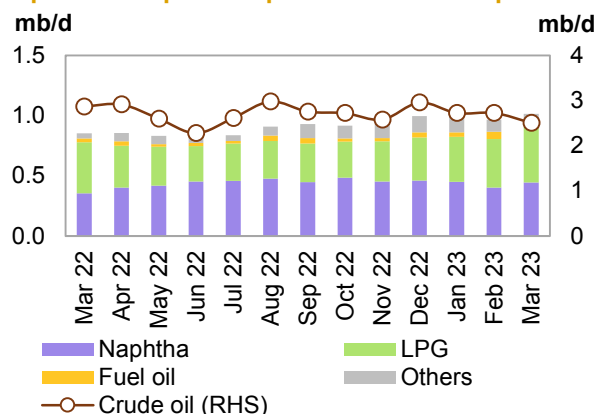
Looking ahead, crude imports are likely to decline from elevated levels, but remain supported by international demand for refined products. Product exports are expected to pick up, with higher diesel outflows.

Japan

Japan's crude imports were 0.2 mb/d or 8% lower in March, averaging 2.5 mb/d. Compared with the same month of the previous year, imports were 0.4 mb/d or close to 13% lower.

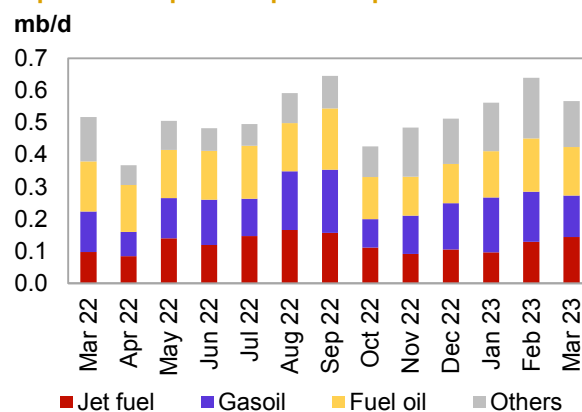
In terms of **crude imports by source**, Saudi Arabia remained at the top spot in March with a share of 42%. The United Arab Emirates (UAE) was second with 38%, followed by Kuwait with over 8%.

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, were 47 tb/d or 5% higher, averaging 1.0 mb/d. Declines in kerosene and fuel oil were partly offset by gains in LPG and naphtha. Compared to the same month of the previous year, imports rose 163 tb/d or about 19%.

Product exports came off strong the month before, averaging 567 tb/d in March. Most major products declined, except jet fuel and LPG. Compared with the previous month, outflows declined 72 tb/d or 11%. Y-o-y, product exports were up 49 tb/d, or almost 10%.

As a consequence, Japan's **net product imports**, including LPG, averaged 448 tb/d in March. This compares with 328 tb/d the month before and 334 tb/d in March 2022.

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

Japan	Jan 23	Feb 23	Mar 23	Change Mar 23/Feb 23
Crude oil	2.72	2.73	2.51	-0.22
Total products	0.43	0.33	0.45	0.12
Total crude and products	3.15	3.06	2.95	-0.10

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

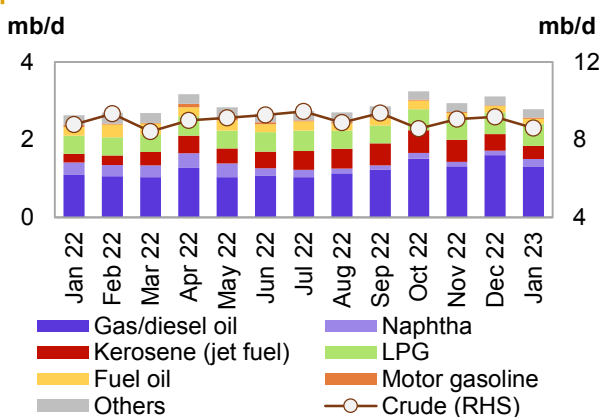
Sources: METI and OPEC.

Looking ahead, Japan's crude imports in April are seen picking up from seasonal lows amid higher volumes from the UAE. Product inflows are seen lower amid decreased imports of LPG. Japan's product exports are seen declining despite a pick-up in diesel flows to China.

OECD Europe

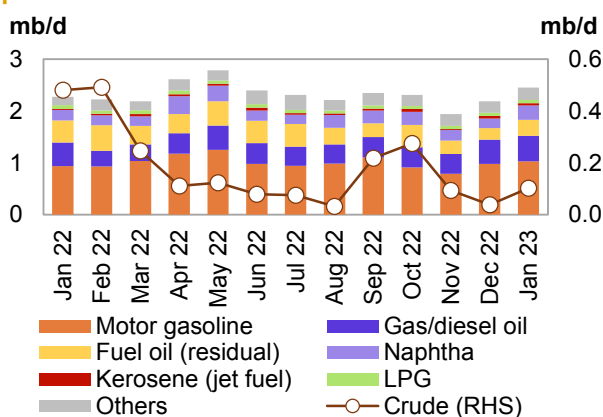
The latest regional data shows **OECD Europe imports** declined in January, averaging 8.6 mb/d. Crude flows into the region were down 0.6 mb/d or about 6% m-o-m. Y-o-y, crude imports were over 2%, or 0.2 mb/d, lower.

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 and Refined Products Trade

In terms of **import sources** from outside the region, the United States was the top supplier in January with 1.5 mb/d. Kazakhstan and Saudi Arabia came in second and third, respectively, with close to 1.1 mb/d.

Crude exports outside the region averaged 102 tb/d split between North America and Asia. Y-o-y, crude exports out of the region were 0.4 mb/d or about 79% lower.

Net crude imports averaged 8.5 mb/d in January, compared with 9.1 mb/d the month before and 8.3 mb/d in January 2022.

In terms of **products, imports** in January decreased by more than 10% m-o-m to average 2.8 mb/d. Compared with January of the previous year, product inflows were almost 6%, or 0.2 mb/d, higher.

Product exports increased a further 12% m-o-m to average 2.5 mb/d, amid higher flows of gasoline and fuel oil. Y-o-y, exports were almost 8%, or 0.2 mb/d, higher.

Net product imports averaged 332 tb/d in January, compared with net imports of 923 tb/d the month before and 351 tb/d in January 2022.

Combined, **net crude and product imports** averaged 8.8 mb/d in January. This compares with 10 mb/d the month before and 8.7 mb/d in January 2022.

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

OECD Europe	Nov 22	Dec 22	Jan 23	Change Jan 23/Dec 22
Crude oil	8.96	9.13	8.49	-0.64
Total products	1.00	0.92	0.33	-0.59
Total crude and products	9.96	10.05	8.82	-1.23

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

Sources: IEA and OPEC.

Eurasia

Total crude oil exports from Russia and Central Asia averaged 6.6 mb/d in March, representing an increase of 486 tb/d or 8% compared to the previous month. Flows were broadly in line with the same month last year.

Crude exports through the **Transneft system** increased in March, with gains on all outlets. Outflows averaged almost 3.8 mb/d, representing a gain of 144 tb/d, or 4%, m-o-m. Compared with the same month last year, exports were 150 tb/d or 4% lower. Exports from the **Baltic Sea** declined by about 3% to average 1.5 mb/d. Flows from Primorsk dropped 62 tb/d or almost 7% decrease, averaging 842 tb/d. Exports from Ust-Luga fell 10 tb/d, or about 2%, to average 685 tb/d. Shipments from the **Black Sea** port of Novorossiysk jumped 287 tb/d, or about 77%, to average 658 tb/d, recovering from bad weather the month before.

Shipments via the **Druzhba** pipeline continued to fall, down by 21 tb/d or almost 10% m-o-m to average 220 tb/d in March. Compared to the same month last year, exports on the pipeline were 0.6 mb/d or 73% lower. Exports to China via the **ESPO pipeline** declined 39 tb/d or less than 7%, to average 559 tb/d in March. Flows to the Pacific port of **Kozmino** declined 30 tb/d, or about 4% m-o-m, to average 795 tb/d.

In the **Lukoil system**, exports via the Varandey offshore platform in the Barents Sea rose by about 9% m-o-m to average 113 tb/d in March. There were no exports from the Kaliningrad terminal for the fifth month in a row.

On other routes, **Russia's Far East** exports increased about 2% to average 291 tb/d in March. This was a 53 tb/d or 15% gain compared to the volumes shipped in the same month last year.

Central Asian exports averaged 232 tb/d in March, up 22 tb/d or 10% from the month before and an increase of 5% y-o-y.

Black Sea total exports from the **CPC terminal** increased by 17% or 228 tb/d, to average 1.6 mb/d in March. This was a gain of 6% compared with the same month last year. Flows on the Supsa pipeline dropped to zero in March, compared with 40 tb/d the month before. Exports via the **Baku-Tbilisi-Ceyhan (BTC) pipeline** increased in March, up 21%, or 110 tb/d, to average 629 tb/d.

Total product exports from Russia and Central Asia rose 10%, or 276 tb/d m-o-m, to average of just under 3.0 mb/d in March. M-o-m gains were led by gasoil and gasoline, while fuel oil outflows declined. Y-o-y, total product exports increased 13%, or 336 tb/d, in March, led by increases in gasoil and VGO.

Commercial Stock Movements

Preliminary March 2023 data shows total OECD commercial oil stocks fell m-o-m by 31.7 mb. At 2,808 mb, they were 195 mb higher than the same time one year ago, but 34 mb lower than the latest five-year average and 105 mb below the 2015–2019 average. Within components, crude and product stocks fell m-o-m by 4.9 mb and 26.8 mb, respectively.

At 1,402 mb, OECD crude stocks were 119 mb higher than the same time a year ago and 2 mb higher than the latest five-year average. However, this was 60 mb lower than the 2015–2019 average. OECD product stocks stood at 1,406 mb, representing a surplus of 76 mb from the same time a year ago, though they were 36 mb lower than the latest five-year average and 45 mb below the 2015–2019 average.

In terms of days of forward cover, OECD commercial stocks fell m-o-m by 0.6 days in March to stand at 61.7 days. This is 4.1 days above the March 2022 level, but 3.2 days less than the latest five-year average and 0.8 days lower than the 2015–2019 average.

Preliminary data for April 2023 showed that total US commercial oil stocks rose m-o-m by 8.0 mb to stand at 1,234.3 mb. This is 80.8 mb higher than the same month in 2022, but 29.8 mb below the latest five-year average. Crude stocks fell by 10.3 mb, while product stocks rose by 18.3 mb.

OECD

Preliminary **March 2023** data sees **total OECD commercial oil stocks** down m-o-m by 31.7 mb. At 2,808 mb, they were 195 mb higher than the same time one year ago, but 34 mb lower than the latest five-year average and 105 mb below the 2015–2019 average.

Within the components, crude and product stocks fell m-o-m by 4.9 mb and 26.8 mb, respectively. Within OECD regions, total commercial oil stocks in March dropped in all regions.

OECD commercial **crude stocks** stood at 1,402 mb in March. This was 119 mb higher than the same time a year ago and 2.4 mb above the latest five-year average. However, the level was 60 mb lower than the 2015–2019 average.

M-o-m, OECD Americas and OECD Asia Pacific saw crude stock draws of 2.4 mb and 3.7 mb, respectively, while stocks in OECD Europe rose by 1.2 mb.

Total product inventories fell by 26.8 mb in March to stand at 1,406 mb. This is 76 mb above the same time a year ago, but 36 mb lower than the latest five-year average and 45 mb below the 2015–2019 average. M-o-m, OECD Americas witnessed a product stock draw of 20.2 mb, while product stocks in OECD Asia Pacific and OECD Europe fell by 3.0 mb and 3.6 mb, respectively.

Table 9 - 1: OECD commercial stocks, mb

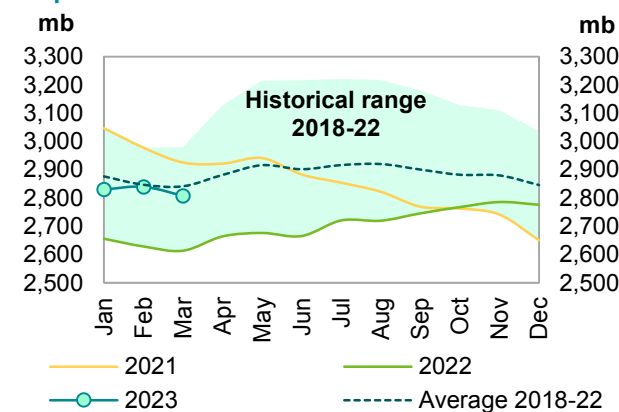
OECD stocks	Mar 22	Jan 23	Feb 23	Mar 23	Change Mar 23/Feb 23
Crude oil	1,283	1,380	1,407	1,402	-4.9
Products	1,330	1,450	1,433	1,406	-26.8
Total	2,613	2,830	2,840	2,808	-31.7
Days of forward cover	57.6	61.4	62.3	61.7	-0.6

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 fell m-o-m by 0.6 days in March to stand at 61.7 days. This is 4.1 days above the March 2022 level, but 3.2 days lower than the latest five-year average and 0.8 days less than the 2015–2019 average.

Graph 9 - 1: OECD commercial oil stocks



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

Commercial Stock Movements

All three OECD regions were below the latest five-year average: the Americas by 3.5 days at 60.2 days; Asia Pacific by 1.7 days at 48.2 days; and Europe by 3.8 days at 71.4 days.

OECD Americas

OECD Americas' total commercial stocks fell by 22.6 mb m-o-m in March to settle at 1,513 mb. This is 106 mb higher than the same month in 2022 and 5.2 mb above the latest five-year average.

Commercial **crude oil stocks** in OECD Americas dropped m-o-m by 2.4 mb in March to stand at 805 mb, which is 79 mb higher than in March 2022 and 29 mb above the latest five-year average. The monthly crude stock draw came on the back of higher US crude runs, which increased m-o-m by 380 tb/d to stand at 16.07 mb/d.

Total product stocks in OECD Americas also fell m-o-m, decreasing by 20.2 mb in March to stand at 709 mb. This is 27 mb higher than the same month in 2022, but 24 mb below the latest five-year average. Higher consumption in the region was behind the product stock draw.

OECD Europe

OECD Europe's total commercial stocks fell m-o-m by 2.4 mb in March to settle at 955 mb. This is 65 mb higher than the same month in 2022, but 21 mb below the latest five-year average.

OECD Europe's **commercial crude stocks** rose m-o-m by 1.2 mb to end March at 419 mb. This is 19 mb higher than one year ago, but 12 mb below the latest five-year average. The build in crude oil inventories came on the back of lower refinery throughput in the EU-14, plus the UK and Norway dropping m-o-m by around 380 tb/d to stand at 9.46 mb/d.

By contrast, Europe's **product stocks** fell m-o-m by 3.6 mb to end March at 536 mb. This is 46 mb higher than a year ago at the same time, but 9 mb below the latest five-year average.

OECD Asia Pacific

OECD Asia Pacific's total commercial oil stocks fell m-o-m by 6.7 mb in March to stand at 340 mb. This is 24 mb higher than the same time a year ago, but 18 mb below the latest five-year average.

OECD Asia Pacific's **crude inventories** fell m-o-m by 3.7 mb to end March at 179 mb. This is 21 mb higher than one year ago, but 14 mb below the latest five-year average.

OECD Asia Pacific's **product inventories** fell by 3.0 mb m-o-m to end March at 161 mb. This is 3 mb higher than one year ago, but 4 mb below the latest five-year average.

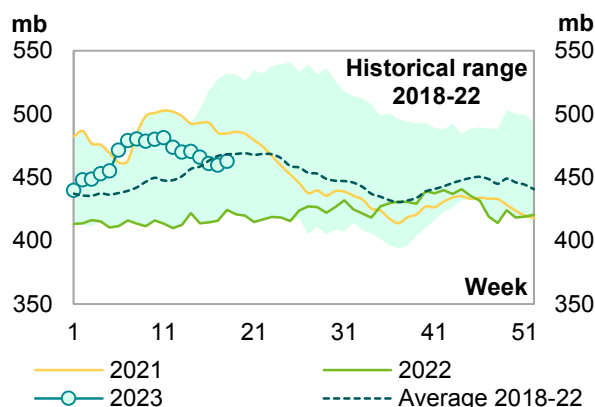
US

Preliminary data for **April 2023** showed that **total US commercial oil stocks** rose m-o-m by 8.0 mb to stand at 1,234.3 mb. This is 80.8 mb, or 7.0%, higher than the same month in 2022, but 29.8 mb, or 2.4%, below the latest five-year average. Crude stocks fell by 10.3 mb, while product stocks rose by 18.3 mb.

US commercial **crude stocks** in April stood at 459.6 mb. This is 40.5 mb, or 9.7%, higher than the same month of 2022, but 9.1 mb, or 1.9%, less than the latest five-year average. The monthly drop in crude oil stocks can be attributed to higher crude runs, which increased by around 300 tb/d to 16.37 mb/d.

By contrast, **total product stocks** rose in April to stand at 774.6 mb. This is 40.2 mb, or 5.5%, higher than April 2022 levels, but 20.7 mb, or 2.6%, lower than the latest five-year average. The product stock build could be attributed to lower product consumption.

Graph 9 - 2: US weekly commercial crude oil inventories



Sources: EIA and OPEC.

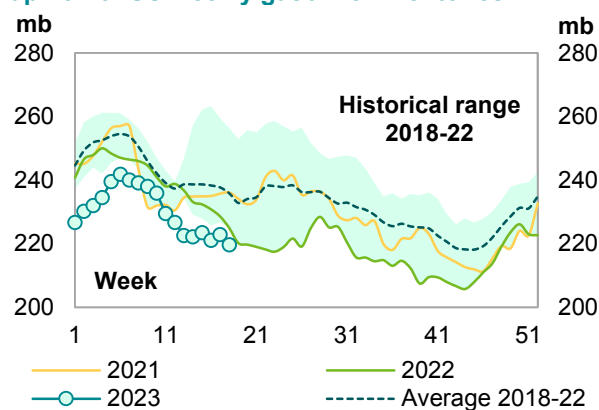
Gasoline stocks rose m-o-m by 0.3 mb in April to settle at 222.9 mb. This is 7.2 mb, or 3.1%, lower than the same month of 2022; and 16.8 mb, or 7.0%, below the latest five-year average.

Residual fuel oil stocks rose m-o-m by 2.9 mb in April. At 32.3 mb, this was 2.9 mb, or 9.9%, higher than a year earlier, and 0.6 mb, or 1.8%, above the latest five-year average

Jet fuel stocks rose m-o-m by 3.6 mb, ending April at 41.6 mb. This is 3.9 mb, or 10.5%, higher than the same month in 2022 and 1.6 mb, or 3.9%, above the latest five-year average.

By contrast, **distillate stocks** fell m-o-m, dropping by 2.7 mb in April to stand at 110.3 mb. This is 3.9 mb, or 3.6%, higher than the same month of 2022, but 18.4 mb, or 14.3%, below the latest five-year average.

Graph 9 - 3: US weekly gasoline inventories



Sources: EIA and OPEC.

Table 9 - 2: US commercial petroleum stocks, mb

US stocks	Apr 22	Feb 23	Mar 23	Apr 23	Change Apr 23/Mar 23
Crude oil	419.1	472.4	470.0	459.6	-10.3
Gasoline	230.1	242.3	222.6	222.9	0.3
Distillate fuel	106.4	124.8	113.1	110.3	-2.7
Residual fuel oil	29.4	31.3	29.4	32.3	2.9
Jet fuel	37.7	37.5	38.0	41.6	3.6
Total products	734.4	794.4	756.3	774.6	18.3
Total	1,153.5	1,266.7	1,226.3	1,234.3	8.0
SPR	547.9	371.6	371.2	364.9	-6.2

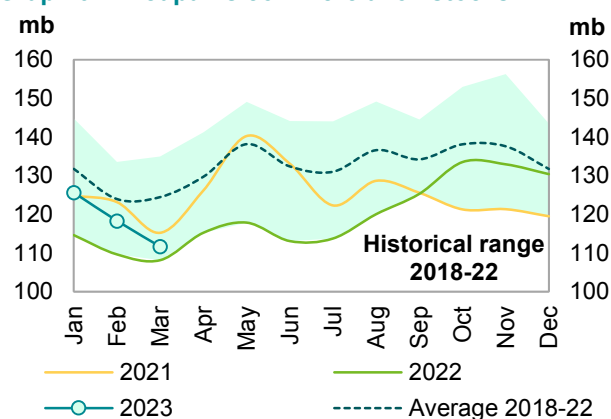
Sources: EIA and OPEC.

Japan

In **Japan, total commercial oil stocks** in **March** fell m-o-m by 6.7 mb to settle at 111.7 mb. This is 3.2 mb, or 3.2%, higher than the same month in 2022, but 12.8 mb, or 10.3%, below the latest five-year average. Crude and product stocks fell m-o-m by 3.7 mb and 3.0 mb, respectively.

Japanese **commercial crude oil stocks** fell m-o-m by 3.7 mb in March to stand at 62.0 mb. This is 2.0 mb, or 4.2%, higher than the same month of 2022, but 4.1 mb, or 7.7%, lower than the latest five-year average. This crude stock draw came on the back of lower crude imports, which declined m-o-m by around 220 tb/d, or 8.1%, to stand at 2.51 mb/d.

Graph 9 - 4: Japan's commercial oil stocks



Sources: METI and OPEC.

Japan's **total product inventories** fell m-o-m by 3.0 mb to end March at 49.6 mb. This is 2.0 mb, or 4.2%, above the same month in 2022, but 4.12 mb, or 7.7%, below the latest five-year average.

Gasoline stocks fell m-o-m by 0.5 mb to stand at 10.0 mb in March. This was 0.2 mb, or 1.8%, above a year earlier, but 0.9 mb, or 8.3%, lower than the latest five-year average. The drop came on the back of higher domestic sales, which increased by 15.3% m-o-m.

Distillate stocks fell m-o-m by 2.0 mb to end March at 19.3 mb. This is in line with the same month of 2022, but 2.8 mb, or 12.8%, below the latest five-year average. Within distillate components, jet fuel, kerosene and gasoil stocks dropped by 20.5%, 1.5% and 10.9%, respectively.

Commercial Stock Movements

Total residual fuel oil stocks fell m-o-m by 0.1 mb to end March at 11.4 mb. This is 1.4 mb, or 13.6%, higher than in the same month of 2022, but 0.1 mb, or 1.1%, below the latest five-year average. Within the components, fuel oil A stocks remained unchanged m-o-m, while fuel oil B.C stocks fell by 1.1%.

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

Japan's stocks	Mar 22	Jan 23	Feb 23	Mar 23	Change Mar 23/Feb 23
Crude oil	60.5	67.2	65.7	62.0	-3.7
Gasoline	9.9	11.2	10.5	10.0	-0.5
Naphtha	8.4	9.7	9.2	8.9	-0.4
Middle distillates	19.3	26.4	21.3	19.3	-2.0
Residual fuel oil	10.1	11.1	11.5	11.4	-0.1
Total products	47.6	58.4	52.6	49.6	-3.0
Total**	108.2	125.6	118.3	111.7	-6.7

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

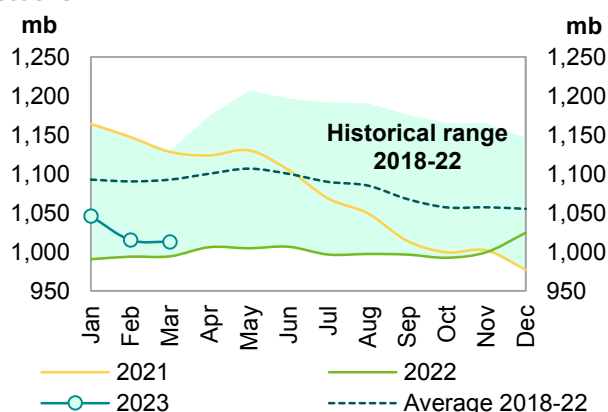
Sources: METI and OPEC.

EU-14 plus UK and Norway

Preliminary data for **March** showed that **total European commercial oil stocks** fell m-o-m by 2.4 mb to stand at 1,012.8 mb. At this level, they were 18.5 mb, or 1.9%, above the same month of 2022, but 80.0 mb, or 7.3%, lower than the latest five-year average. Crude stocks rose m-o-m by 1.2 mb, while product stocks fell by 3.6 mb.

European **crude inventories** rose in March to stand at 434.6 mb. This is 5.1 mb, or 1.2%, higher than the same month in 2022, but 36.3 mb, or 7.7%, below the latest five-year average. The build in crude oil inventories came on the back of lower refinery throughput in the EU-14, plus the UK and Norway dropping m-o-m by around 380 tb/d to stand at 9.46 mb/d.

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



Sources: Argus, Euroilstock and OPEC.

By contrast, **total European product stocks** fell by 3.6 mb m-o-m to end March at 578.1 mb. This is 13.4 mb, or 2.4%, higher than the same month of 2022, but 43.7 mb, or 7.0%, below the latest five-year average.

Gasoline stocks fell m-o-m by 0.1 mb in March to stand at 109.3 mb. At this level, they were 1.9 mb, or 1.7%, lower than the same time in 2022 and 7.7 mb, or 6.6%, below the latest five-year average.

Middle distillate stocks fell m-o-m by 1.6 mb in March to stand at 376.7 mb. This is 11.2 mb, or 3.1%, higher than the same month in 2022, but 31.5 mb, or 7.7%, lower than the latest five-year average.

Residual fuel stocks dropped m-o-m by 1.5 mb in March to stand at 61.6 mb. This is 2.8 mb, or 4.8%, higher than the same month in 2022, but 3.5 mb, or 5.4%, below the latest five-year average.

Naphtha stocks fell m-o-m by 0.4 mb in March, ending the month at 30.5 mb. This is 1.3 mb, or 4.5%, higher than the March 2022 level, but 1.1 mb, or 3.5%, below the latest five-year average.

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

EU stocks	Mar 22	Jan 23	Feb 23	Mar 23	Change Mar 23/Feb 23
Crude oil	429.6	432.4	433.5	434.6	1.2
Gasoline	111.2	112.0	109.4	109.3	-0.1
Naphtha	29.2	30.7	30.9	30.5	-0.4
Middle distillates	365.5	409.4	378.3	376.7	-1.6
Fuel oils	58.8	61.3	63.1	61.6	-1.5
Total products	564.7	613.4	581.7	578.1	-3.6
Total	994.3	1,045.8	1,015.2	1,012.8	-2.4

Sources: Argus, Euroilstock and OPEC.

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

Singapore

In **March**, **total product stocks in Singapore** rose m-o-m by 2.9 mb to reach 48.0 mb. This is 6.5 mb, or 15.7%, higher than the same month in 2022 and 0.4 mb, or 0.9%, above the latest five-year average.

Middle distillate stocks rose m-o-m by 2.3 mb in March to stand at 9.6 mb. This is 2.6 mb, or 37.1%, higher than a year earlier, but 1.4 mb, or 12.6%, lower than the latest five-year average.

Residual fuel oil stocks rose m-o-m by 2.0 mb, ending March at 22.9 mb. This is 2.0 mb, or 9.6%, higher than March 2022, and 0.9 mb, or 4.2%, above the latest five-year average.

By contrast, **light distillate stocks** fell m-o-m by 1.4 mb in March to stand at 15.5 mb. This is 1.9 mb, or 14.0%, higher than the same month of 2022 and 0.9 mb, or 6.2 %, above the latest five-year average.

ARA

Total product stocks in ARA rose m-o-m by 0.7 mb in **March**. At 46.5 mb, they were 7.3 mb, or 18.6%, higher than the same month in 2022 and 2.9 mb, or 6.7%, higher than the latest five-year average.

Gasoline stocks in March rose by 0.2 mb m-o-m to stand at 12.4 mb. This is 0.6 mb, or 5.3%, higher than the same month of 2022 and 1.7 mb, or 15.8%, above the latest five-year average.

Fuel oil stocks also rose by 0.6 mb m-o-m in March to stand at 8.0 mb, which is 2.4 mb, or 42.1%, higher than in March 2022 and 0.5 mb, or 6.6%, higher than the latest five-year average

Jet oil stocks rose by 1.1 mb m-o-m to stand at 6.5 mb. This is 1.0 mb, or 13.9%, lower than levels of March 2022, but higher by 0.7 mb, or 11.6 %, when compared with the latest five-year average.

By contrast, **gasoil stocks** fell by 1.3 mb m-o-m, ending March at 17.6 mb. This is 5.8 mb, or 49.6%, higher than March 2022 and 0.9 mb, or 5.3%, above the latest five-year average.

Fujairah

During the week ending 1 May 2023, **total oil product stocks in Fujairah** fell w-o-w by 0.27 mb to stand at 19.69 mb, according to data from Fed Com and S&P Global Commodity Insights. At this level, total oil stocks were 2.81 mb higher than at the same time a year ago.

Light distillate stocks fell w-o-w by 0.11 mb to stand at 6.76 mb, which is 2.70 mb higher than a year ago.

Middle distillate stocks fell w-o-w by 0.45 mb to stand at 2.98 mb, which is 1.42 mb higher than the same time last year.

By contrast, **heavy distillate stocks** rose by 0.30 mb w-o-w to stand at 9.69 mb, which is 1.31 mb lower than the same period a year ago.

Balance of Supply and Demand

Demand for OPEC crude in 2022 remained unchanged from the previous MOMR at 28.4 mb/d. This is around 0.5 mb/d higher than in 2021.

According to secondary sources, OPEC crude production averaged 28.3 mb/d in 1Q22, which is 0.2 mb/d lower than demand for OPEC crude. In 2Q22, OPEC crude production averaged 28.6 mb/d, which is 0.5 mb/d higher than demand for OPEC crude. In 3Q22, OPEC crude production averaged 29.4 mb/d, which is 1.1 mb/d higher than demand for OPEC crude. In 4Q22, OPEC crude 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 0.4 mb/d higher than demand for OPEC crude.

Demand for OPEC crude in 2023 remained also unchanged from the previous assessment to stand at 29.3 mb/d. This is around 0.8 mb/d higher than in 2022.

According to secondary sources, OPEC crude production averaged 28.8 mb/d in 1Q23, which is 0.3 mb/d higher than demand for OPEC crude.

Balance of supply and demand in 2022

Demand for OPEC crude in 2022 remained unchanged from the previous MOMR at 28.4 mb/d. This is around 0.5 mb/d higher than in 2021.

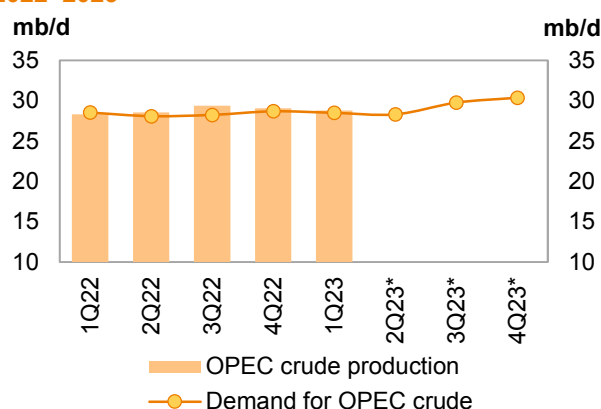
Compared with the previous assessment, 1Q22, 2Q22 and 3Q22 remained unchanged from the previous month, while 4Q22 was revised down by 0.1 mb/d.

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

According to secondary sources, OPEC crude production averaged 28.3 mb/d in 1Q22, which is 0.2 mb/d lower than demand for OPEC crude.

In 2Q22, OPEC crude production averaged 28.6 mb/d, which is 0.5 mb/d higher than demand for OPEC crude. In 3Q22, OPEC crude production averaged 29.4 mb/d, which is 1.1 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 0.4 mb/d higher than demand for OPEC crude.

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



Note: * 2Q23-4Q23 = Forecast. Source: OPEC.

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

	2021	1Q22	2Q22	3Q22	4Q22	2022	Change 2022/21
(a) World oil demand	97.08	99.45	98.29	99.51	101.00	99.57	2.49
Non-OPEC liquids production	63.90	65.55	64.80	65.83	66.85	65.76	1.86
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	69.19	70.90	70.18	71.24	72.29	71.15	1.97
Difference (a-b)	27.89	28.55	28.11	28.27	28.71	28.41	0.52
OPEC crude oil production	26.34	28.33	28.58	29.40	29.10	28.86	2.51
Balance	-1.54	-0.22	0.46	1.13	0.39	0.44	1.99

Note: 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 unchanged from the previous assessment to stand at 29.3 mb/d. This is around 0.8 mb/d higher than in 2022.

Compared with the previous assessment, 2Q23 is revised down by 0.2 mb/d, while both 3Q23 and 4Q23 were revised up by 0.1 mb/d. Meanwhile, demand for OPEC crude in 1Q23 remained unchanged.

According to secondary sources, OPEC crude production averaged 28.8 mb/d in 1Q23, which is 0.3 mb/d higher than demand for OPEC crude.

Compared with the same quarters in 2022, demand for OPEC crude in 1Q23 is forecast to be unchanged, while 2Q23, 3Q23 and 4Q23 are expected to be higher by 0.2 mb/d, 1.5 mb/d and 1.7 mb/d, respectively.

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

	2022	1Q23	2Q23	3Q23	4Q23	2023	Change 2023/22
(a) World oil demand	99.57	101.58	100.70	102.03	103.25	101.90	2.33
Non-OPEC liquids production	65.76	67.62	66.90	66.82	67.44	67.19	1.43
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	71.15	73.06	72.37	72.25	72.86	72.63	1.48
Difference (a-b)	28.41	28.52	28.34	29.78	30.38	29.26	0.85
OPEC crude oil production	28.86	28.82					
Balance	0.44	0.30					

Note: * 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	25.33	24.95	25.01	24.61	25.14	25.51	25.09	25.09
of which US	20.58	18.35	20.03	20.38	20.41	20.62	20.32	20.43	20.16	20.43	20.75	20.37	20.43
Europe	14.31	12.41	13.13	13.19	13.43	14.07	13.34	13.51	12.99	13.36	14.10	13.37	13.46
Asia Pacific	7.95	7.17	7.38	7.85	6.99	7.22	7.68	7.43	7.89	7.05	7.27	7.70	7.47
Total OECD	47.66	42.03	44.82	45.81	45.39	46.62	45.97	45.95	45.50	45.55	46.87	46.15	46.02
China	13.81	13.94	15.00	14.77	14.45	14.67	15.51	14.85	15.63	15.40	15.43	16.16	15.66
India	4.99	4.51	4.77	5.18	5.16	4.95	5.26	5.14	5.40	5.44	5.21	5.50	5.39
Other Asia	9.06	8.13	8.67	9.13	9.31	8.77	8.89	9.02	9.43	9.65	9.14	9.24	9.36
Latin America	6.59	5.90	6.23	6.32	6.36	6.55	6.52	6.44	6.56	6.49	6.71	6.68	6.61
Middle East	8.20	7.45	7.79	8.06	8.15	8.53	8.44	8.29	8.59	8.47	8.86	8.73	8.66
Africa	4.44	4.08	4.22	4.51	4.15	4.25	4.69	4.40	4.71	4.34	4.43	4.88	4.59
Russia	3.57	3.39	3.61	3.67	3.42	3.45	3.71	3.56	3.68	3.45	3.59	3.87	3.65
Other Eurasia	1.19	1.07	1.21	1.22	1.16	1.00	1.21	1.15	1.24	1.16	1.02	1.22	1.16
Other Europe	0.76	0.70	0.75	0.79	0.75	0.73	0.80	0.77	0.84	0.76	0.75	0.83	0.80
Total Non-OECD	52.62	49.16	52.25	53.65	52.90	52.89	55.03	53.62	56.09	55.16	55.16	57.10	55.88
(a) Total world demand	100.27	91.19	97.08	99.45	98.29	99.51	101.00	99.57	101.58	100.70	102.03	103.25	101.90
Y-o-y change	1.08	-9.09	5.89	5.17	2.58	1.78	0.49	2.49	2.13	2.41	2.52	2.25	2.33
Non-OPEC liquids production													
Americas	25.88	24.87	25.45	26.09	26.50	27.26	27.50	26.84	27.72	27.89	28.23	28.52	28.09
of which US	18.53	17.76	18.04	18.51	19.07	19.57	19.68	19.21	19.87	20.18	20.36	20.56	20.24
Europe	3.74	3.92	3.79	3.72	3.46	3.51	3.59	3.57	3.68	3.74	3.79	3.92	3.78
Asia Pacific	0.52	0.52	0.51	0.49	0.51	0.43	0.49	0.48	0.45	0.49	0.49	0.48	0.48
Total OECD	30.15	29.31	29.75	30.30	30.48	31.20	31.58	30.89	31.85	32.12	32.51	32.91	32.35
China	4.05	4.16	4.32	4.54	4.54	4.42	4.42	4.48	4.62	4.61	4.49	4.49	4.55
India	0.83	0.78	0.78	0.79	0.78	0.76	0.76	0.77	0.76	0.78	0.78	0.78	0.78
Other Asia	2.75	2.53	2.42	2.37	2.32	2.24	2.31	2.31	2.34	2.39	2.34	2.37	2.36
Latin America	6.09	6.02	5.96	6.11	6.18	6.46	6.59	6.34	6.70	6.66	6.70	6.79	6.71
Middle East	3.16	3.15	3.20	3.25	3.29	3.32	3.30	3.29	3.26	3.29	3.30	3.31	3.29
Africa	1.51	1.41	1.35	1.33	1.31	1.32	1.29	1.31	1.30	1.33	1.34	1.33	1.33
Russia	11.51	10.54	10.80	11.33	10.63	11.01	11.17	11.03	11.23	10.18	9.85	9.90	10.28
Other Eurasia	3.07	2.91	2.93	3.04	2.76	2.59	2.92	2.83	3.00	2.97	2.94	2.98	2.97
Other Europe	0.12	0.12	0.11	0.11	0.11	0.10	0.10	0.11	0.10	0.10	0.10	0.10	0.10
Total Non-OECD	33.08	31.64	31.87	32.85	31.92	32.23	32.87	32.47	33.31	32.30	31.85	32.05	32.37
Total Non-OPEC production	63.23	60.95	61.62	63.15	62.40	63.44	64.45	63.36	65.15	64.43	64.35	64.97	64.72
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	65.60	63.11	63.90	65.55	64.80	65.83	66.85	65.76	67.62	66.90	66.82	67.44	67.19
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	70.82	68.28	69.19	70.90	70.18	71.24	72.29	71.15	73.06	72.37	72.25	72.86	72.63
Y-o-y change	2.14	-2.54	0.91	2.74	1.30	2.07	1.77	1.97	2.16	2.19	1.01	0.58	1.48
OPEC crude oil production (secondary sources)	29.36	25.72	26.34	28.33	28.58	29.40	29.10	28.86	28.82				
Total liquids production	100.18	94.00	95.53	99.23	98.75	100.64	101.38	100.01	101.88				
Balance (stock change and miscellaneous)	-0.09	2.81	-1.54	-0.22	0.46	1.13	0.39	0.44	0.30				
OECD closing stock levels, mb													
Commercial	2,894	3,037	2,651	2,613	2,665	2,746	2,777	2,777	2,808				
SPR	1,535	1,541	1,484	1,442	1,343	1,245	1,217	1,217	1,220				
Total	4,429	4,578	4,134	4,055	4,009	3,991	3,994	3,994	4,028				
Oil-on-water	1,033	1,148	1,202	1,231	1,304	1,407	1,399	1,399	1,437				
Days of forward consumption in OECD, days													
Commercial onland stocks	69	68	58	58	57	60	61	60	62				
SPR	37	34	32	32	29	27	27	26	27				
Total	105	102	90	89	86	87	88	87	88				
Memo items													
(a) - (b)	29.46	22.91	27.89	28.55	28.11	28.27	28.71	28.41	28.52	28.34	29.78	30.38	29.26

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

Source: OPEC.

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

World oil demand and supply balance	2019	2020	2021	1Q22	2Q22	3Q22	4Q22	2022	1Q23	2Q23	3Q23	4Q23	2023
World demand													
Americas	-	-	-	-	-	-	-0.03	-0.01	-0.25	-	-	-0.03	-0.07
of which US	-	-	-	-	-	-	-	-	-0.25	-	-	-	-0.06
Europe	-	-	-	-	-	-	-	-	-0.03	-	-	-	-0.01
Asia Pacific	-	-	-	-	-	-	-	-	-	-	-	-	-
Total OECD	-	-	-	-	-	-	-0.03	-0.01	-0.28	-	-	-0.03	-0.08
China	-	-	-	-	-	-	-	-	0.20	-	-	-	0.05
India	-	-	-	-	-	-	-	-	-0.01	-	-	-	-
Other Asia	-	-	-	-	-	-	-	-	-0.03	-	-	-	-0.01
Latin America	-	-	-	-	-	-	-	-	0.06	-	-	-	0.01
Middle East	-	-	-	-	-	-	-	-	0.07	-	-	-	0.02
Africa	-	-	-	-	-	-	-	-	-	-	-	-	-
Russia	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Eurasia	-	-	-	-	-	-	-	-	0.03	-	-	-	0.01
Other Europe	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Non-OECD	-	-	-	-	-	-	-	-	0.32	-	-	-	0.08
(a) Total world demand	-	-	-	-	-	-	-0.03	-0.01	0.04	-	-	-0.03	-
Y-o-y change	-	-	-	-	-	-	-0.03	-0.01	0.04	-	-	-	0.01
Non-OPEC liquids production													
Americas	-	-	-	-0.02	-0.01	-	0.04	-	0.13	0.05	0.02	-0.05	0.04
of which US	-	-	-	-	-	-	0.01	-	0.11	-0.02	-0.03	-0.05	-
Europe	-	-	-	-	-	-	-	-	-	-	-	-	-
Asia Pacific	-	-	-	-	-	-	-	-	-0.03	-	-	-	-0.01
Total OECD	-	-	-	-0.02	-0.01	-	0.04	-	0.11	0.05	0.02	-0.05	0.03
China	-	-	-	-	-	-	-	-	0.02	0.01	-0.01	0.01	0.01
India	-	-	-	-	-	-	-	-	-0.01	-0.01	-	-	-
Other Asia	-	-	-	-	-	-	-	-	-0.03	-	-	-	-0.01
Latin America	-	-	-	-	-	-	-	-	-0.01	-0.01	-	-	-
Middle East	-	-	-	-	-	-	-	-	-	-	-	-	-
Africa	-	-	-	-	-	-	-	-	-0.01	-	-	-	-
Russia	-	-	-	-	-	-	-	-	0.01	0.18	-0.09	-0.09	-
Other Eurasia	-	-	-	-	-	-	-	-	-0.04	-0.03	-	-	-0.02
Other Europe	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Non-OECD	-	-	-	-	-	-	-	-	-0.07	0.13	-0.10	-0.08	-0.03
Total Non-OPEC production	-	-	-	-0.02	-0.01	-	0.04	-	0.04	0.18	-0.08	-0.13	-
Processing gains	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Non-OPEC liquids production	-	-	-	-0.02	-0.01	-	0.04	-	0.04	0.18	-0.08	-0.13	-
OPEC NGL + non-conventional oils	-	-	-	-	-	-	-	-	-	-	-	-	-
(b) Total non-OPEC liquids production and OPEC NGLs	-	-	-	-0.02	-0.01	-	0.04	-	0.04	0.18	-0.08	-0.13	-
Y-o-y change	-	-	-	-0.02	-0.01	-	0.04	-	0.06	0.19	-0.08	-0.17	-
OPEC crude oil production (secondary sources)													
Total liquids production	-	-	-	-0.02	-0.01	-	0.04	-	-	-	-	-	-
Balance (stock change and miscellaneous)	-	-	-	-0.02	-0.01	-	0.06	0.01	-	-	-	-	-
mb													
Commercial	-	-	-	-	-	-	-20	-20	-	-	-	-	-
SPR	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	-	-	-	-	-	-	-20	-20	-	-	-	-	-
Oil-on-water	-	-	-	-	-	-	-	-	-	-	-	-	-
Days of forward consumption in OECD, days													
Commercial onland stocks	-	-	-	-	-	-	-	-	-	-	-	-	-
SPR	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	-	-	-	-	-	-	-	-	-	-	-	-	-
Memo items													
(a) - (b)	-	-	-	0.02	0.01	-	-0.06	-0.01	-	-0.18	0.08	0.10	-

Note: * This compares Table 11 - 1 in this issue of the MOMR with Table 11 - 1 in the April 2023 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	2022	2Q21	3Q21	4Q21	1Q22	2Q22	3Q22	4Q22	1Q23
Closing stock levels, mb											
OECD onland commercial	3,037	2,651	2,777	2,884	2,770	2,651	2,613	2,665	2,746	2,777	2,808
Americas	1,613	1,470	1,487	1,553	1,523	1,470	1,407	1,436	1,469	1,487	1,513
Europe	1,043	857	936	973	891	857	890	911	919	936	955
Asia Pacific	380	324	353	357	355	324	316	318	358	353	340
OECD SPR	1,541	1,484	1,217	1,524	1,513	1,484	1,442	1,343	1,245	1,217	1,220
Americas	640	596	374	623	620	596	568	495	418	374	373
Europe	487	479	464	487	485	479	468	452	447	464	467
Asia Pacific	414	409	378	413	408	409	406	395	380	378	381
OECD total	4,578	4,134	3,994	4,407	4,282	4,134	4,055	4,009	3,991	3,994	4,028
Oil-on-water	1,148	1,202	1,399	1,131	1,169	1,202	1,231	1,304	1,407	1,399	1,437
Days of forward consumption in OECD, days											
OECD onland commercial	68	58	60	63	59	58	58	57	60	61	62
Americas	66	59	59	63	61	59	56	57	59	60	60
Europe	79	63	70	70	64	65	66	65	69	72	71
Asia Pacific	51	44	47	51	46	41	45	44	47	45	48
OECD SPR	35	34	34	33	32	32	32	29	27	27	27
Americas	26	24	23	25	25	24	23	20	17	15	15
Europe	37	35	35	35	35	36	35	32	34	36	35
Asia Pacific	56	55	55	58	52	52	58	55	49	48	54
OECD total	103	92	95	96	91	90	89	86	87	87	88

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

Appendix

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

Non-OPEC liquids production and OPEC NGLs	Change												Change
	2019	2020	2021	3Q22	4Q22	2022	22/21	1Q23	2Q23	3Q23	4Q23	2023		23/22
US	18.5	17.8	18.0	19.6	19.7	19.2	1.2	19.9	20.2	20.4	20.6	20.2	1.0
Canada	5.4	5.2	5.4	5.7	5.8	5.6	0.2	5.7	5.6	5.8	5.9	5.8	0.2
Mexico	1.9	1.9	2.0	2.0	2.0	2.0	0.1	2.1	2.1	2.0	2.0	2.1	0.1
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	25.9	24.9	25.4	27.3	27.5	26.8	1.4	27.7	27.9	28.2	28.5	28.1	1.2
Norway	1.7	2.0	2.0	1.9	2.0	1.9	-0.1	2.0	2.0	2.1	2.2	2.1	0.2
UK	1.1	1.1	0.9	0.8	0.8	0.9	-0.1	0.8	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	0.8	0.8	0.8	0.8	0.7	0.8	0.0	0.8	0.8	0.8	0.8	0.8	0.0
OECD Europe	3.7	3.9	3.8	3.5	3.6	3.6	-0.2	3.7	3.7	3.8	3.9	3.8	0.2
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	0.4	0.5	0.5	0.5	0.5	0.0
Total OECD	30.1	29.3	29.7	31.2	31.6	30.9	1.1	31.8	32.1	32.5	32.9	32.4	1.5
China	4.1	4.2	4.3	4.4	4.4	4.5	0.2	4.6	4.6	4.5	4.5	4.6	0.1
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	0.9	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	0.6	0.7	0.6	0.6	0.6	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	2.3	2.4	2.3	2.4	2.4	0.1
Argentina	0.7	0.6	0.7	0.8	0.8	0.8	0.1	0.8	0.8	0.8	0.8	0.8	0.1
Brazil	3.6	3.7	3.6	3.8	3.8	3.7	0.1	3.9	3.9	4.0	4.0	4.0	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	6.5	6.6	6.3	0.4	6.7	6.7	6.7	6.8	6.7	0.4
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	1.0	1.0	1.0	1.0	0.0
Qatar	1.9	1.9	1.9	1.9	1.9	1.9	0.0	1.9	1.9	1.9	1.9	1.9	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	3.3	3.3	3.3	0.1	3.3	3.3	3.3	3.3	3.3	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	11.2	11.0	0.2	11.2	10.2	9.8	9.9	10.3	-0.8
Kazakhstan	1.9	1.8	1.8	1.6	1.9	1.8	0.0	2.0	1.9	1.8	1.9	1.9	0.1
Azerbaijan	0.8	0.7	0.7	0.7	0.7	0.7	0.0	0.7	0.8	0.8	0.8	0.7	0.0
Eurasia others	0.4	0.4	0.4	0.3	0.3	0.3	0.0	0.3	0.3	0.3	0.3	0.3	0.0
Other Eurasia	3.1	2.9	2.9	2.6	2.9	2.8	-0.1	3.0	3.0	2.9	3.0	3.0	0.1
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	31.6	31.9	32.2	32.9	32.5	0.6	33.3	32.3	31.8	32.1	32.4	-0.1
Non-OPEC	63.2	61.0	61.6	63.4	64.5	63.4	1.7	65.2	64.4	64.4	65.0	64.7	1.4
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	65.6	63.1	63.9	65.8	66.9	65.8	1.9	67.6	66.9	66.8	67.4	67.2	1.4
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)	70.8	68.3	69.2	71.2	72.3	71.2	2.0	73.1	72.4	72.2	72.9	72.6	1.5

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

Table 11 - 5: World rig count, units

World rig count	2020	2021	Change		3Q22	4Q22	1Q23	Mar 23	Apr 23	Change Apr/Mar
			2022	2022/21						
US	436	475	722	247	761	775	761	753	752	-1
Canada	90	133	174	41	202	186	221	190	108	-81
Mexico	41	45	47	2	48	50	48	50	48	-2
OECD Americas	567	654	945	291	1,013	1,014	1,033	994	910	-84
Norway	16	17	17	0	18	17	16	15	16	1
UK	6	8	10	2	13	10	11	13	14	1
OECD Europe	59	58	65	7	70	67	67	70	72	2
OECD Asia Pacific	22	23	24	1	26	25	23	23	26	3
Total OECD	648	735	1,034	299	1,109	1,106	1,123	1,087	1,008	-79
Other Asia*	187	174	186	12	185	188	193	196	203	7
Latin America	58	91	119	28	122	130	127	130	127	-3
Middle East	57	57	62	5	61	65	62	60	63	3
Africa	43	42	57	15	58	60	60	61	57	-4
Other Europe	12	9	10	1	10	13	11	11	11	0
Total Non-OECD	357	373	434	61	436	456	453	458	461	3
Non-OPEC rig count	1,005	1,108	1,468	360	1,545	1,562	1,576	1,545	1,469	-76
Algeria	31	26	32	6	33	33	32	33	31	-2
Angola	3	4	7	3	6	9	9	9	9	0
Congo	1	0	1	1	1	1	1	2	2	0
Equatorial Guinea**	0	0	0	0	0	0	0	0	0	0
Gabon	3	2	3	1	2	3	3	4	3	-1
Iran**	117	117	117	0	117	117	117	117	117	0
Iraq	47	39	51	12	54	55	60	62	62	0
Kuwait	45	25	27	2	27	28	24	25	25	0
Libya	12	13	7	-6	3	8	11	8	14	6
Nigeria	11	7	10	3	9	10	14	15	13	-2
Saudi Arabia	93	62	73	11	71	80	78	78	84	6
UAE	54	42	47	5	49	52	53	53	57	4
Venezuela	15	6	3	-3	3	3	3	3	3	0
OPEC rig count	432	343	377	34	376	398	405	409	420	11
World rig count***	1,437	1,451	1,845	394	1,921	1,959	1,980	1,954	1,889	-65
<i>of which:</i>										
Oil	1,116	1,143	1,462	319	1,522	1,552	1,567	1,542	1,474	-67
Gas	275	275	352	77	365	374	376	374	371	-3
Others	46	33	31	-2	33	33	37	39	44	5

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

Glossary of Terms

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

▲ up 5.68 in April

April 2023	84.13
March 2023	78.45
Year-o-date	81.38

April OPEC crude production

mb/d, according to secondary sources

▼ down 0.19 in April

April 2023	28.60
March 2023	28.79

Economic growth rate

per cent

	World	OECD	US	Euro-zone	Japan	China	India
2022	3.3	2.9	2.1	3.5	1.0	3.0	6.7
2023	2.6	1.1	1.2	0.8	1.0	5.2	5.6

Supply and demand

mb/d

2022		22/21	2023		23/22
World demand	99.6	2.5	World demand	101.9	2.3
Non-OPEC liquids production	65.8	1.9	Non-OPEC liquids production	67.2	1.4
OPEC NGLs	5.4	0.1	OPEC NGLs	5.4	0.0
Difference	28.4	0.5	Difference	29.3	0.8

OECD commercial stocks

mb

	Jan 23	Feb 23	Mar 23	Mar 23/Feb 23
Crude oil	1,380	1,407	1,402	-4.9
Products	1,450	1,433	1,406	-26.8
Total	2,830	2,840	2,808	-31.7
Days of forward cover	61.4	62.3	61.7	-0.6

Next report to be issued on 13 June 2023.