



Organization of the Petroleum Exporting Countries

OPEC Monthly Oil Market Report

14 March 2023

Feature article:
Assessment of the global economy

Oil market highlights	iii
Feature article	v
Crude oil price movements	1
Commodity markets	7
World economy	10
World oil demand	28
World oil supply	37
Product markets and refinery operations	52
Tanker market	58
Crude and refined products trade	62
Commercial stock movements	68
Balance of supply and demand	73



Organization of the Petroleum Exporting Countries

Helferstorferstrasse 17, A-1010 Vienna, Austria

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

Website: www.opec.org

Disclaimer

The data, analysis and any other information (the “information”) contained in the Monthly Oil Market Report (the “MOMR”) is for informational purposes only and is neither intended as a substitute for advice from business, finance, investment consultant or other professional; nor is it meant to be a benchmark or input data to a benchmark of any kind. Whilst reasonable efforts have been made to ensure the accuracy of the information contained in the MOMR, the OPEC Secretariat makes no warranties or representations as to its accuracy, relevance or comprehensiveness, and assumes no liability or responsibility for any inaccuracy, error or omission, or for any loss or damage arising in connection with or attributable to any action or decision taken as a result of using or relying on the information in the MOMR. The views expressed in the MOMR are those of the OPEC Secretariat and do not necessarily reflect the views of its governing bodies or Member Countries. The designation of geographical entities in the MOMR, and the use and presentation of data and other materials, do not imply the expression of any opinion whatsoever on the part of OPEC and/or its Member Countries concerning the legal status of any country, territory or area, or of its authorities, or concerning the exploration, exploitation, refining, marketing and utilization of its petroleum or other energy resources.

Full reproduction, copying or transmission of the MOMR is not permitted in any form or by any means by third parties without the OPEC Secretariat’s written permission, however, the information contained therein may be used and/or reproduced for educational and other non-commercial purposes without the OPEC Secretariat’s prior written permission, provided that it is fully acknowledged as the copyright holder. The MOMR may contain references to material(s) from third parties, whose copyright must be acknowledged by obtaining necessary authorization from the copyright owner(s). The OPEC Secretariat or its governing bodies shall not be liable or responsible for any unauthorized use of any third party material(s). All rights of the MOMR shall be reserved to the OPEC Secretariat, as applicable, including every exclusive economic right, in full or per excerpts, with special reference but without limitation, to the right to publish it by press and/or by any communications medium whatsoever; translate, include in a data base, make changes, transform and process for any kind of use, including radio, television or cinema adaptations, as well as a sound-video recording, audio-visual screenplays and electronic processing of any kind and nature whatsoever.

Chairman of the Editorial Board

HE Haitham Al Ghais Secretary General

Editor-in-Chief

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

Editor

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

Contributors

Crude Oil Price Movements

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

Commodity Markets

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

World Economy

Dr. Joerg Spitzzy Senior Research Analyst, PSD *email: jspitzzy(at)opec.org*

World Oil Demand

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

World Oil Supply

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

Product Markets and Refinery Operations

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

Tanker Markets

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

Crude and Refined Products Trade

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

Stock Movements

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

Technical Team

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

Nadir Guerer Senior Research Analyst, DRDO *email: nguerer(at)opec.org*

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

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

Viveca Hameder Research Specialist, PSD *email: vhameder(at)opec.org*

Masudbek Narzibekov Senior Research Analyst, DRDO *email: mnarzibekov(at)opec.org*

Statistical Services

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

Editing and Design

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

Oil Market Highlights

Crude Oil Price Movements

The OPEC Reference Basket (ORB) value rose by 26¢, or 0.3%, m-o-m in February to average \$81.88/b. The ICE Brent front-month contract declined by 37¢, or 0.4%, m-o-m to \$83.54/b and the NYMEX WTI front-month contract fell by \$1.30, or 1.7%, m-o-m to average \$76.86/b. In contrast, the DME Oman front-month contract increased by \$1.08, or 1.3%, m-o-m reaching \$81.97/b. The front-month ICE Brent/NYMEX WTI spread widened again in February by 93¢ m-o-m to average \$6.68/b. The market structure of ICE Brent and DME Oman strengthened in February and the first-to-third month spread moved into wider backwardation. However, the NYMEX WTI price structure remained in contango. Hedge funds and other money managers raised ICE Brent bullish positions m-o-m in February but cut WTI-related futures and options net-long positions in the first three weeks of the month.

World Economy

The world economic growth forecast for 2022 is revised up slightly to 3.2%, given the better-than-anticipated economic performance in 2H22 in various key economies. The 2023 global economic growth forecast remains unchanged at 2.6%. For the US, the economic growth forecast is unchanged, standing at 2.1% for 2022 and 1.2% for 2023. Similarly, the Euro-zone's economic growth forecast remains at 3.5% for 2022 and 0.8% for 2023. Japan's economic growth forecast for 2022 is revised down to 1%, following the release of the government's estimate, while the growth forecast for 2023 remains at 1.2% for 2023. China's economic growth forecast remains at 3% for 2022 and 5.2% for 2023. India's 2022 economic growth estimate is revised down slightly to 6.7%, considering official 2022 data, while the forecast for 2023 remains at 5.6%. Brazil's economic growth is adjusted based on the officially reported growth level of 2.9% for 2022 and remains at 1% for 2023. Russia's statistical office reported a contraction of 2.1% in 2022. This is expected to be followed by a smaller contraction of 0.5% in 2023. Although growth momentum is expected to carry over into 2023, the global economy will continue navigating through challenges amid high global inflation, likelihood of further rate hikes particularly in the Euro-zone and the US, high debt levels in many regions, and geopolitical uncertainties.

World Oil Demand

World oil demand growth in 2022 remains at 2.5 mb/d, broadly unchanged from last month's assessment. Oil demand for OECD Americas and OECD Europe is adjusted lower, reflecting weaker-than-expected demand, but oil demand in Asia Pacific and non-OECD countries is revised higher, reflecting better-than-expected improvements in these regions. For 2023, the world oil demand growth forecast remains unchanged at 2.3 mb/d, with the OECD Americas and OECD Europe revised slightly lower, while China is revised higher, with jet/kerosene and gasoline leading demand growth. OECD demand is expected to grow by 0.2 mb/d, while non-OECD is forecast to grow by 2.1 mb/d.

World Oil Supply

Non-OPEC liquids supply is estimated to have grown by 1.9 mb/d in 2022, broadly unchanged from the previous assessment. Minor downward revisions to OECD Europe and OECD Americas were largely offset by upward revisions to liquids production in the non-OECD. The main drivers of liquids supply growth for 2022 are seen to be the US, Russia, Canada, Guyana, China and Brazil, while the largest declines are expected from Norway and Thailand. For 2023, non-OPEC liquids production growth remains unchanged from last month and is forecast to grow by 1.4 mb/d. The main drivers of liquids supply growth are expected to be the US, Brazil, Norway, Canada, Kazakhstan and Guyana, while the decline is expected primarily in Russia. Nevertheless, large uncertainties remain over the impact of ongoing geopolitical developments, as well as the output potential for US shale in 2023. OPEC NGLs and non-conventional liquids are forecast to grow by 0.1 mb/d in 2022 to average 5.39 mb/d and by 50 tb/d to average 5.44 mb/d in 2023. OPEC-13 crude oil production in February increased by 117 tb/d m-o-m to average 28.92 mb/d, according to available secondary sources.

Product Markets and Refining Operations

Refinery margins in February underwent a counter seasonal downturn to show solid losses in all main trading hubs despite rising global offline capacities as maintenance work intensified. Most of the weakness stemmed from the middle section of the barrel, as a result of increased arrivals of middle distillates in Europe, mainly from the East. The high product availability in Europe, amid weaker US product exports and strong refinery product output levels in Asia, led to stock builds and caused jet fuel and gasoil margins to experience massive losses across all regions. Global refinery processing rates continued to decline in February, losing nearly 646 tb/d, according to preliminary estimates.

Tanker Market

Dirty freight rates improved in February, with m-o-m gains in VLCCs and Suezmaxes outpacing declines in Aframax. VLCCs picked up from a relatively lower base, as renewed demand for long-haul vessels strengthened rates. Rates on the Middle East-to-East route rose 22% m-o-m. Gains in Suezmax spot freight rates earned back some of the previous month's losses with rates on the US Gulf Coast-to-Europe route up 18% compared with the previous month. By contrast, Aframax rates fell from high levels. Spot freight rates on the intra-Med route declined 18% m-o-m. Clean rates edged up, as West of Suez rose 14% and East of Suez rates slipped 4%. Rates in the Atlantic basin claimed back some of the previous month's losses.

Crude and Refined Products Trade

Preliminary data shows US crude exports set a record high of 4.3 mb/d in February. US crude imports declined from a three-year high the month before to an average 6.4 mb/d in February. Preliminary aggregate customs data showed China's crude imports declined in January and February 2023 from the high levels seen in the previous three months to an average 10.4 mb/d. China's product exports were lower in the first two months of the year, averaging 1.6 mb/d, falling from an almost three-year high the month before, with losses seen across all major products. India's crude imports rose 2% in January to average 4.7 mb/d, as refiners returned from maintenance and boosted inflows of discounted Russian grades. India's product exports erased much of the gains seen the month before, averaging 1.1 mb/d, with declines across the barrel. Japan's crude imports fell from a four-month high in January to an average 2.7 mb/d. Japan's product imports, including LPG, were little changed in January after reaching an 11-month high the month before, and product exports recovered further. Preliminary estimates for February show OECD Europe bringing in alternate crudes from a variety of regions, with Russian imports limited to Turkey and southern Druzhba flows.

Commercial Stock Movements

Preliminary January 2023 data sees total OECD commercial oil stocks up by 34.9 mb m-o-m. At 2,802 mb, they were 147 mb higher than the same time one year ago, but 75 mb lower than the latest five-year average and 124 mb below the 2015–2019 average. Within the components, crude and product stocks rose m-o-m by 10.5 mb and 24.5 mb, respectively. At 1,372 mb, OECD crude stocks were 120 mb higher than the same time a year ago, but 4 mb lower than the latest five-year average and 59 mb lower than the 2015–2019 average. OECD product stocks stood at 1,430 mb, representing a surplus of 26 mb from the same time a year ago, but they were 71 mb lower than the latest five-year average and 65 mb below the 2015–2019 average. In terms of days of forward cover, OECD commercial stocks rose m-o-m by 0.8 days in January 2023 to stand at 60.8 days. This is 2.9 days above the January 2022 level, but 3.1 days less than the latest five-year average and 1.2 days lower than the 2015–2019 average.

Balance of Supply and Demand

Demand for OPEC crude in 2022 is revised down by 0.2 mb/d from last month's assessment to stand at 28.4 mb/d. This is around 0.5 mb/d higher than in 2021. Demand for OPEC crude in 2023 is revised down by 0.2 mb/d from the previous assessment to stand at 29.3 mb/d. This is around 0.8 mb/d higher than in 2022.

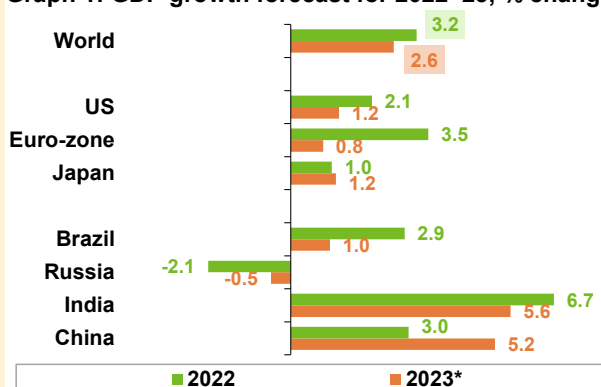
Feature Article

Assessment of the global economy

The world economic growth forecast for 2023 is expected at 2.6% y-o-y, following growth of 3.2% in 2022 (**Graph 1**). Despite this slight deceleration, the growth of 2.6% in 2023 remains a sound growth level when considering the many challenges that the global economy is facing. These challenges range from elevated worldwide inflation levels and subsequent monetary tightening measures, to the consequences of the geopolitical developments in Eastern Europe.

Despite these challenges, it is anticipated that the OECD economies will continue to be supported by healthy consumption and investment. In the emerging economies, China's reopening, following the lifting of the strict zero-COVID-19 policy, will add considerable momentum to global economic growth. Moreover, India is expected to perform well in 2023, on the back of the government's spending plans that include a rise in infrastructure spending and income tax cuts, as well as other measures. Brazil and Russia are forecast to face challenging environments in 2023 for different reasons, yet their economies are underpinned by robust commodity markets, structural reforms and fiscal support measures. Indeed, a stable global oil market, sustained by the successful efforts of the countries participating in the Declaration of Cooperation (DoC), will provide consumer nations with ample oil supply to fuel global economic growth.

Graph 1: GDP growth forecast for 2022–23, % change

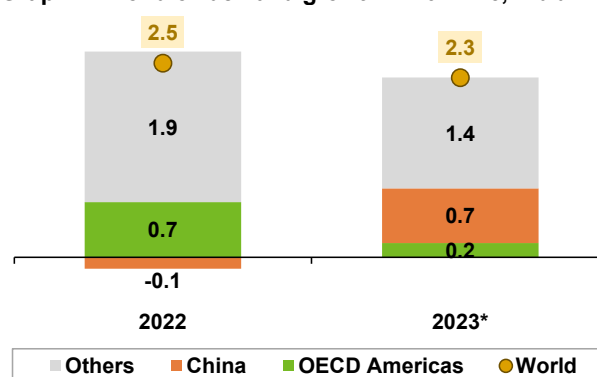


Note: * 2023 = Forecast. Source: OPEC.

While such growth forecast is perceived as balanced, there exist some upside potential and downside risks. Upside potential may come from the US Federal Reserve managing inflation towards 2H23 with sufficiently healthy underlying demand. Moreover, the Euro-zone's better-than-expected performance in 2H22 may continue into 2023. A stronger-than-anticipated rebound in China, with consumption accelerating significantly, following years of stringent lockdown measures, is another factor to be considered. Finally, a resolution of tensions in Eastern Europe would likely provide further upside potential. On the other hand, downside risks remain. Any negative impact from current monetary policies, or measures potentially ahead, could impact global debt markets, hence slowing global economic growth. The rapid rises in interest rates and global debt levels could cause significant negative spill-over effects, and may negatively impact the global growth dynamic. Finally, protracted geopolitical tensions in Eastern Europe could further add to the downside.

Overall, oil demand continues to be driven by the ongoing recovery in the travel and transportation sectors. Following estimated growth of 2.5 mb/d y-o-y in 2022, oil demand is forecast to grow by a healthy 2.3 mb/d y-o-y in 2023 to average at 101.9 mb/d (**Graph 2**). While the OECD is projected to fall slightly short of pre-COVID-19 levels in 2023, oil demand in the non-OECD region is estimated to have surpassed 2019 levels already in 2022.

Graph 2: World oil demand growth in 2022–23, mb/d



Note: * 2023 = Forecast. Source: OPEC.

Given the ongoing high level of uncertainty with regard to the timing and extent of a full global economic recovery to pre-pandemic levels in all sectors, the OPEC and non-OPEC countries participating in the DoC continue to carefully monitor market developments and address challenges in order to ensure sustainable market stability for the benefit of the global economy.

Table of Contents

Oil Market Highlights	iii
Feature Article	v
<i>Assessment of the global economy</i>	v
Crude Oil Price Movements	1
Crude spot prices	1
The oil futures market	3
The futures market structure	5
Crude spreads	6
Commodity Markets	7
Trends in selected commodity markets	7
Investment flows into commodities	9
World Economy	10
OECD	12
Non-OECD	18
The impact of the US dollar (USD) and inflation on oil prices	27
World Oil Demand	28
OECD	29
Non-OECD	32
World Oil Supply	37
OECD	40
Non-OECD	46
OPEC NGLs and non-conventional oils	49
OPEC crude oil production	50
World oil supply	51
Product Markets and Refinery Operations	52
Refinery margins	52
Refinery operations	53
Product markets	53
Tanker Market	58
Spot fixtures	58
Sailings and arrivals	58
Dirty tanker freight rates	59
Clean tanker freight rates	60

Crude and Refined Products Trade	62
US	62
China	63
India	64
Japan	65
OECD Europe	66
Eurasia	67
Commercial Stock Movements	68
OECD	68
US	69
Japan	70
EU-14 plus UK and Norway	71
Singapore, Amsterdam-Rotterdam-Antwerp (ARA) and Fujairah	72
Balance of Supply and Demand	73
Balance of supply and demand in 2022	73
Balance of supply and demand in 2023	74
Appendix	75
Glossary of Terms	81
Abbreviations	81
Acronyms	81

Crude Oil Price Movements

Crude spot prices were mixed in February despite signs of robust physical crude market fundamentals in the Atlantic Basin and East of Suez markets. The spot market witnessed firm buying interest, boosted by strong demand from Chinese buyers. However, selling pressure in futures prices, a rise in the US crude stocks and a drop in refining margins weighed on the value of spot benchmarks.

The OPEC Reference Basket (ORB) value rose marginally last month, increasing by 26¢, or 0.3%, m-o-m, to stand at \$81.88/b, amid the mixed performance of ORB component-related crude benchmarks. A decline in the official selling prices (OSPs) of medium and heavy sour crudes offset the higher value of OSPs of sweet grades and limited the rise of the ORB value.

Crude oil futures prices averaged lower in February. The decline accelerated in the second half of the month, along with selloffs in major equity markets, as concerns about the impact of aggressive rate hikes from major central banks, including the US Federal Reserve, dominated market sentiment. A rebound in the US dollar and the announcement of the sale of 26 mb of crude oil from the US Strategic Petroleum Reserve (SPR) amid signs of a well-supplied market added downward pressure on futures prices. However, the prospect of oil demand recovery in China limited futures price losses.

In February, the ICE Brent first-month contract declined by 37¢, or 0.4%, m-o-m to \$83.54/b, while the NYMEX WTI first-month contract fell by \$1.30, or 1.7%, m-o-m, to average \$76.86/b. The DME Oman first-month contract increased by \$1.08, or 1.3%, m-o-m, to settle at \$81.97/b.

Hedge funds and other money managers raised their ICE Brent-related bullish positions in the first half of February, with futures and net long positions rising to their highest since October 2021. Rising oil futures prices and optimism about a strong demand recovery in China, along with the prospects of supply disruptions of crude and petroleum products in Eastern Europe, likely encouraged speculators to raise their long positions and to reduce short positions.

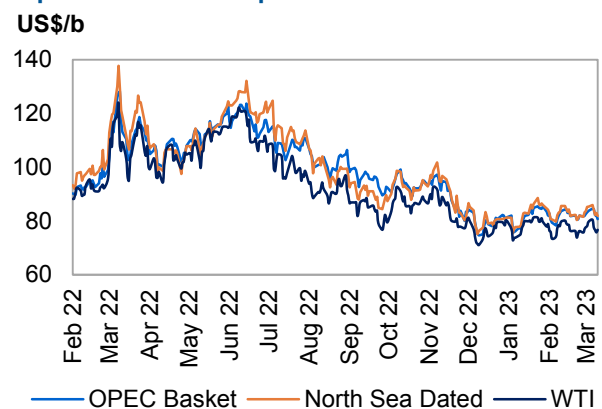
The forward curve of ICE Brent and DME Oman strengthened in February compared to the previous month, and the nearest months' time spreads moved into wider backwardation. Investors were more optimistic about the supply/demand balance outlook. Strong demand for prompt loading cargoes, specifically from Chinese buyers, and the prospect of a lower loading programme in Russia's western ports in March, supported the value of first-month contracts compared to forward months. However, the NYMEX WTI price structure remained in contango, although the nearest time spread contracted.

Sweet/sour crude differentials narrowed for the third month in February in all major regions amid a tighter spread between light/medium distillate and heavy distillate product margins, such as the diesel-high-sulphur fuel oil (HSFO) spread. Meanwhile, the sour crude market was supported by sustained demand from Asia-Pacific refiners, higher refining margins of fuel oil and the prospect of a reduced supply of medium sour crude Urals in March.

Crude spot prices

Crude spot prices were mixed in February despite signs of robust physical crude market fundamentals, particularly in the Atlantic Basin and East of Suez markets. The spot market witnessed firm buying interest, boosted by strong demand from Chinese buyers, which contributed to accelerating the clearing of March loading programmes. However, selling pressure in futures prices, a rise in the US crude stocks and a drop in refining margins weighed on the value of spot benchmarks. The North Sea Dated price steadied, averaging slightly lower m-o-m, and WTI fell, while Dubai's first-month contract rose. The WTI benchmark fell the most due to a rising in US stocks at Cushing and lower demand from US refineries, while strong demand for Middle East crude in the Asia Pacific supported the Dubai crude benchmark.

Graph 1 - 1: Crude oil price movements



Sources: Argus, OPEC and Platts.

Crude Oil Price Movements

Spot crude prices have remained below futures prices since December. On a monthly average, the North Sea Dated-ICE Brent spread stood at a discount of \$1.04/b in February, unchanged from the previous month.

North Sea crude differentials rose m-o-m in February, buoyed by demand from European refiners, while the sour crude market was additionally supported by the absence of Urals crude and the outage in the Johan Sverdrup field that reduced loading volumes of the grade. However, high WTI crude flow to Europe and a sharp decline of middle distillate margins in Europe limited gains of North Sea crudes. The Forties crude differentials stayed at a discount to North Sea Dated but rose on average by 19¢ m-o-m to stand at a discount of 15¢/b in February, compared to a discount of 35¢/b in January. Ekofisk crude differentials also rose by 35¢ m-o-m to an average of \$3.17/b premium. Medium sour crude John Sverdrup rose m-o-m on average by \$1.61 in February to stand at a discount of 8¢/b.

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

OPEC Reference Basket (ORB)	Jan 23	Feb 23	Change		Year-to-date	
			Feb 23/Jan 23	%	2022	2023
ORB	81.62	81.88	0.26	0.3	89.49	81.75
Arab Light	83.80	83.56	-0.24	-0.3	89.89	83.68
Basrah Medium	77.82	78.33	0.51	0.7	88.02	78.07
Bonny Light	82.36	82.88	0.52	0.6	92.66	82.62
Djeno	75.41	75.05	-0.36	-0.5	84.72	75.24
Es Sider	81.01	81.45	0.44	0.5	91.97	81.23
Girassol	82.05	84.06	2.01	2.4	94.38	83.03
Iran Heavy	81.56	81.88	0.32	0.4	89.22	81.72
Kuwait Export	82.94	83.19	0.25	0.3	89.97	83.06
Merey	61.74	61.95	0.21	0.3	67.21	61.84
Murban	82.53	83.36	0.83	1.0	89.54	82.94
Rabi Light	82.40	82.04	-0.36	-0.4	91.71	82.23
Sahara Blend	83.76	84.05	0.29	0.3	94.31	83.90
Zafiro	81.29	82.24	0.95	1.2	93.25	81.75
Other Crudes						
North Sea Dated	82.86	82.50	-0.36	-0.4	92.17	82.69
Dubai	80.75	82.05	1.30	1.6	87.62	81.39
Isthmus	68.82	68.27	-0.55	-0.8	84.49	68.55
LLS	80.73	80.35	-0.38	-0.5	89.65	80.55
Mars	74.73	75.53	0.80	1.1	85.63	75.12
Minas	81.57	81.53	-0.04	0.0	87.49	81.55
Urals	52.21	51.91	-0.30	-0.6	90.48	52.06
WTI	78.19	76.81	-1.38	-1.8	87.33	77.52
Differentials						
North Sea Dated/WTI	4.67	5.69	1.02	-	4.85	5.16
North Sea Dated/LLS	2.13	2.15	0.02	-	2.52	2.14
North Sea Dated/Dubai	2.11	0.45	-1.66	-	4.55	1.30

Sources: Argus, Direct Communication, OPEC and Platts.

West African crude differentials strengthened in February, specifically Angolan crude, on firm demand from Asia-Pacific buyers, particularly Chinese buyers, in addition to lower loading programmes of several grades that reduced supply, further improving arbitrage economics for East of Suez destinations. Lower freight rates to Europe added support. Bonny Light, Forcados and Qua Iboe crude differentials rose last month against North Sea Dated, increasing by a monthly average of 40¢, 29¢, and 22¢, respectively, to stand at premiums of \$1.73/b, \$2.48/b and \$1.71/b. The crude differential of medium-heavy sweet Cabinda rose by a strong \$2.43 m-o-m in February to settle at a premium of \$1.02/b.

Crude differentials mostly weakened in February due to higher competition from West African grades. Azeri Light crude differentials weakened the most on a sharp decline of middle distillate margins in Europe and Asia and as the grade loadings from the Ceyhan port resumed, and the availability of similar grades at competitive prices weighed on the grade value. The Azeri Light crude differential declined by \$2.07 m-o-m to an average of \$3.17/b. Saharan Blend crude differentials averaged lower, falling by 84¢/b m-o-m to stand at a premium of \$1.05/b on average. The Caspian CPC Blend differential traded at deep discounts and declined m-o-m in February by 8¢, averaging at a discount of \$3.83/b.

In the **Middle East**, **crude differentials** to Dubai strengthened in the spot market amid strong demand from Asia-Pacific refiners, including those in China, and higher fuel oil margins in all major hubs, specifically in Singapore. The value of the Oman crude differential rose 88¢ m-o-m in February to a premium of \$2.18/b.

In the **US Gulf Coast (USGC)**, **crude differentials** were supported by a wider Brent-WTI spread and strong demand for exports, pushing US crude exports to a record high of 5.63 mb/d in the week of 24 February, according to the EIA weekly data, which offset lower demand from domestic refiners. LLS and Mars sour crude differentials to WTI futures rose 99¢ and \$2.17 m-o-m, respectively, in February to an average of \$3.52/b premium and a discount of \$1.29.

OPEC Reference Basket (ORB)

The **ORB value** rose marginally in February, increasing by 26¢, or 0.3%, m-o-m, to stand at \$81.88/b, amid the mixed performance of ORB component-related crude benchmarks. A decline in OSPs, mainly of medium and heavy sour crudes, offset the higher value of OSPs of sweet grades and limited the rise of the ORB value. Compared with the previous year, the ORB was down by \$7.75, or 8.7%, from \$89.49/b in 2022, to an average of \$81.75/b so far this year.

ORB component values showed mixed results in February. West and North African Basket components – Bonny Light, Djeno, Es Sider, Girassol, Rabi Light, Sahara Blend and Zafiro – rose by 50¢, or 0.6% m-o-m on average to \$81.68/b. Multiple region destination grades – Arab Light, Basrah Light, Iran Heavy, and Kuwait Export – increased m-o-m by 21¢, or 0.3% on average, to settle at \$81.74/b. Murban crude rose m-o-m by 83¢, or 1.0% on average, to settle at \$83.36/b. The Meroy component rose m-o-m by 21¢, or 0.3% on average, to settle at \$61.95/b.

The oil futures market

Crude oil futures prices averaged lower in February and the decline accelerated in the second half of the month along with selloffs in major equity markets, amid concerns about aggressive rate hikes from major central banks, including the US Federal Reserve, dominated market sentiment. A rebound in the US dollar to its highest since December and the announcement of the sale of 26 mb of crude oil from the US SPR amid signs of a well-supplied market added downward pressure on futures prices. The US dollar index rose by 3.9% between 1 and 24 February to 105.21.

The **NYMEX WTI** contract fell the most compared to other international benchmarks, dropping by 1.7% on average m-o-m. This was prompted by signs of a softening US economy and the large build in US crude oil stocks in January and February, including at Cushing, Oklahoma, amid lower demand from domestic refineries due to a busy maintenance season. US crude oil stocks rose by 61 mb, or about 15%, between mid-December and mid-February, hitting their highest point since the end of May 2021, according to EIA weekly data. An increase in gasoline and middle distillate stocks and easing refining margins also weighed on WTI futures prices.

The decline in the **ICE Brent** futures contract was less pronounced. The prospect of a strong oil demand recovery in China, buoyed by signs of strong buying from Chinese refiners, lent some support to prices. A tighter supply outlook after the temporary closure of Turkey's Ceyhan oil terminal and Russia's announcement of a plan to unilaterally and voluntarily reduce crude oil production by 500,000 b/d in March, as well as supply outages in Norway, also limited the decline of Brent futures benchmark.

However, major crude oil benchmarks in the East of Suez market increased m-o-m, including DME Oman and Dubai, supported by strong demand from Asia-Pacific buyers, specifically Chinese buyers.

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

Crude oil futures	Jan 23	Feb 23	Change		Year-to-date	
			Feb 23/Jan 23	%	2022	2023
NYMEX WTI	78.16	76.86	-1.30	-1.7	87.19	77.53
ICE Brent	83.91	83.54	-0.37	-0.4	89.73	83.73
DME Oman	80.89	81.97	1.08	1.3	87.84	81.42
Spread						
ICE Brent-NYMEX WTI	5.75	6.68	0.93	16.2	2.54	6.20

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

In February, ICE Brent declined by 37¢, or 0.4%, m-o-m to \$83.54/b, while NYMEX WTI fell m-o-m by \$1.30, or 1.7%, to average \$76.86/b. On an annual average, ICE Brent fell \$6.00, or 6.7%, to \$83.73/b, and NYMEX WTI declined by \$9.66, or 11.1%, y-o-y to \$77.53/b.

Crude Oil Price Movements

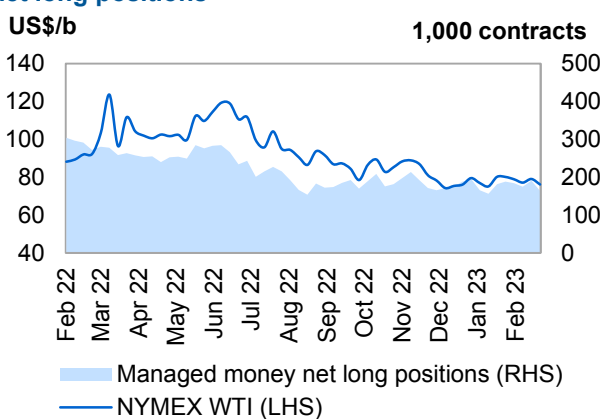
DME Oman crude oil futures increased m-o-m by \$1.08, or 1.3% over the last month, to settle at \$81.97/b. On a yearly average, DME Oman was down by \$6.42, or 7.3%, y-o-y at \$81.42/b.

The price of the WTI futures contract at Cushing continued to drop more than Brent futures prices, resulting in a further widening of the front-month **ICE Brent/NYMEX WTI spread** in February. NYMEX WTI remained under pressure from the sell-offs in US equity markets amid growing concerns about the US economic outlook, and a build in US crude stocks, including in Cushing, Oklahoma. Meanwhile, geopolitical developments in Eastern Europe, the EU bans on Russian crude and petroleum product exports and the prospect of lower Russian crude supply in March limited the decline of ICE Brent. The ICE Brent/NYMEX WTI spread widened m-o-m by an average of 93¢ in February to stand at \$6.68/b, the highest monthly average since September 2022. A wide Brent-WTI futures spread kept export economics of WTI crude well supported in February.

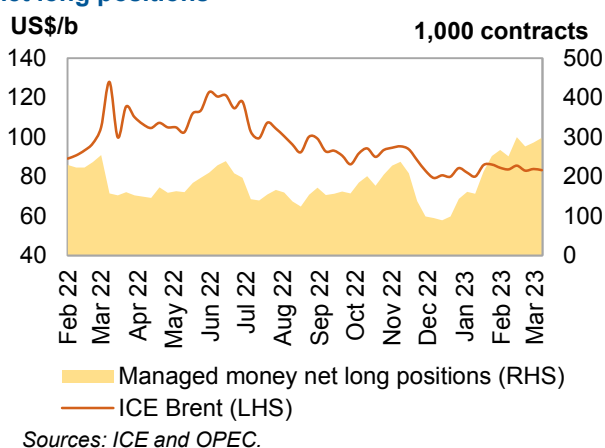
The **North Sea Dated premium to WTI Houston** also rose in February w-o-w, widening significantly by \$3.89 on a monthly average to stand at a premium of \$7.18/b. This is due to a sharp decline in the value of light sweet crude in the USGC because of lower demand from domestic refineries and rising supply, which was reflected in higher crude stocks. The decline in North Sea crudes in Northwest Europe was limited by firm demand from European buyers amid the absence of Russian crude in Europe, as well as an outage in the Johan Sverdrup field that reduced availability in Northwest Europe. Chinese buyers' renewed interest in Atlantic Basin crude amid more favourable west-to-east arbitrage economics supported the value of Brent.

Hedge funds and other money managers raised ICE Brent-related bullish positions in the first half of February, with futures and net long positions rising to their highest since October 2021. Rising oil futures prices and optimism about a strong demand recovery in China, along with the prospects of crude and petroleum products supply disruptions in Eastern Europe, likely encouraged speculators to raise their long positions and reduce short positions. Between the weeks of 31 January and 14 February, net long positions rose by 31,893 lots, or 11.9%, to stand at 299,908 contracts, according to the ICE Exchange. In the week of 28 February, money managers reduced long positions as prices turned lower amid high volatility.

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



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



Money managers raised their **futures and options net long positions in ICE Brent** by 17,985 lots, or 6.7%, to 286,000 contracts between the weeks of 31 January and 28 February. During the same period, gross long positions rose by 15,403 lots, or 5.3%, to 307,855 contracts, while gross short positions declined by 2,582 lots, or 10.6%, to 21,855 contracts.

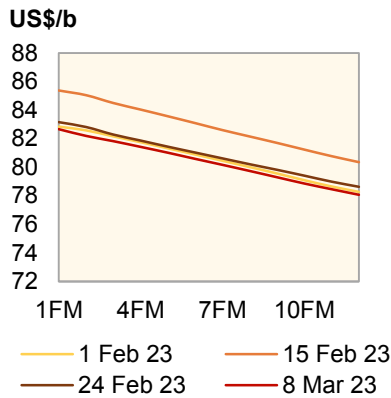
The **long-to-short ratio of speculative positions in ICE Brent** rose to 14:1 in the weeks of 14 February and 28 February, compared to 3:1 in early January. Total futures and options open interest volumes in ICE Brent increased in February, rising by 0.1%, or 2,350 contracts, to stand at 2.66 million contracts in the week ending 28 February.

The latest released data of the Commitments of Traders report from the Commodity Futures Trading Commission (CFTC) for **WTI-related positions** showed speculators cut their futures and options net long positions in NYMEX WTI by 20,196 lots, or 10.9%, in the first three weeks of February to 164,292 contracts. During the same period, gross long positions declined by 3,624 lots, or 1.6%, to 226,610 contracts, and gross short positions increased by 16,572 lots, or 36.2%, to 62,318 contracts. Total futures and options open interest volumes in NYMEX WTI fell in the first three weeks of February, declining by 0.1%, or 1,794 lots, to stand at 2.17 million contracts in the week ending 21 February.

The futures market structure

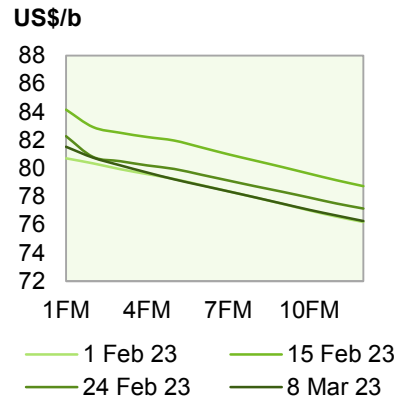
The **forward curve** of ICE Brent and DME Oman strengthened further in February compared to the previous month, and the nearest months' time spreads moved into a wider backwardation despite lower Brent futures prices. Investors were more optimistic about the supply/demand balance outlook. Strong demand for prompt loading cargoes, specifically from Chinese buyers, and the prospect of a lower loading programme in Russia's western ports in March, supported the value of first-month contracts compared to forward months. Worries about a tighter middle distillate market in the Atlantic Basin also continued to support the value of prompt-month prices. A relatively rapid clearing of several Atlantic Basin loading programmes in February buoyed the value of the prompt-month contract.

Graph 1 - 4: ICE Brent forward curves



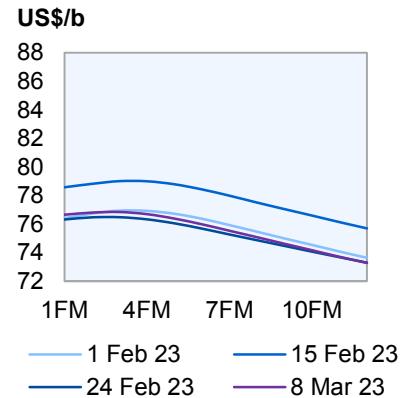
Sources: ICE and OPEC.

Graph 1 - 5: DME Oman forward curves



Sources: DME and OPEC.

Graph 1 - 6: NYMEX WTI forward curves



Sources: CME and OPEC.

The **ICE Brent** first-month premium to the third month increased m-o-m by 78¢ to a backwardation of 82¢/b, from a backwardation of 3¢/b in January. The ICE Brent M1-M6 moved into wider backwardation last month to settle at \$2.12/b on average, compared with a backwardation of \$1.15/b in the previous month.

The backwardation structure of **DME Oman** also strengthened in February on firm demand for Middle East crude from Asia-Pacific buyers and an improving demand outlook amid the prospect of strong economic and oil demand growth from China as its economy continued to reopen. The DME Oman's first-to-third month backwardation expanded by \$1.00 to stand at \$1.28/b on average in February, compared with a backwardation of 28¢/b in January.

However, the **NYMEX WTI** price structure stayed in contango, although the nearest time spread contracted, as low demand from US refiners and a large build in crude stocks weighed on the value of the first-month contract, keeping the front of the forward curve in contango. The NYMEX WTI first-to-third month contango contracted by 12¢ to stand at 37¢/b on average in February, compared with a contango of 49¢/b in January.

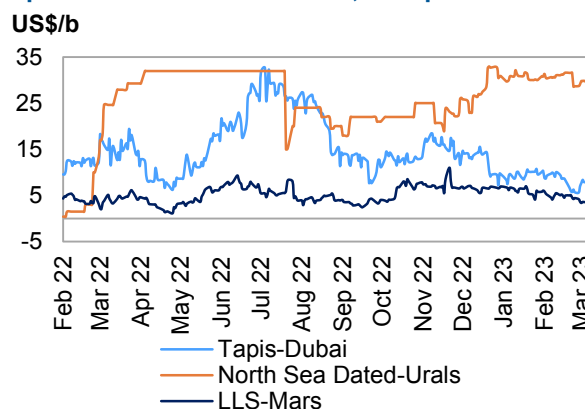
Regarding the **M1/M3 structure**, the North Sea Dated and Dubai M1/M3 spreads widened in February on a monthly average by 75¢ and 79¢, respectively, to a backwardation of 57¢/b and \$2.00/b. The WTI M1/M3 contango contracted in February by 13¢ to 38¢/b, compared with a contango of 51¢/b in January.

Crude spreads

Sweet/sour crude differentials continued to narrow for the third month in February in all major regions as the value of medium and heavy sour crude performed better than light sweet crude amid a narrowed spread between light/medium distillate and heavy distillate product margins, such as the diesel-HSFO spread. A drop in margins of light and middle distillate products, specifically diesel/gasoil and gasoline cracks, a well-supplied light sweet crude market and rising US crude exports weighed on the value of light sweet crudes. Diesel/gasoil and jet fuel margins declined the most and in all regions. Meanwhile, the sour crude market was supported by sustained demand from Asia-Pacific refiners, higher refining margins of fuel oil and the prospect of a lower supply of medium sour crude Urals in March.

In **Europe**, the sour crude market was supported by a tighter supply due to the EU import ban on Russian crude oil and the production outages in the Johan Sverdrup field that reduced the supply of the grade in February. The assessment of Urals crude differentials in Northwest Europe to North Sea Dated rose \$1.31 m-o-m to stand at a discount of \$35.72/b in February, while the discount in the Mediterranean stayed almost unchanged m-o-m. Meanwhile, the value of light sweet in Northwest Europe was under pressure from the availability of similar crude in the Atlantic Basin and the high arrival of WTI. This is in addition to the decline of diesel/gasoil and gasoline margins. The spread between the values of light sweet Ekofisk crude against Johan Sverdrup narrowed by \$1.26/b to stand at \$3.24/b on average in February due to a robust rise in the value of Johan Sverdrup.

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



Sources: Argus, OPEC and Platts.

In **Asia**, the Tapis premium over Dubai continued to decline significantly last month as the value of light sweet crude, like Tapis, came under pressure in the East of Suez market on more favourable west-to-east arbitrage economics. Meanwhile, the value of Sour crude, including Dubai, rose m-o-m, buoyed by robust demand from Chinese buyers. The Tapis-Dubai spread narrowed by \$1.48 m-o-m in February to an average of \$8.09/b. A narrowed diesel-HSFO spread also contributed to narrowing the Tapis-Dubai spread. The Brent-Dubai exchange of futures for swaps contract (EFS), a barometer of west-to-east arbitrage, narrowed in the second half of February to below \$3.90/b. On a monthly average, the EFS Dubai narrowed m-o-m by 77¢ to stand at a \$4.32/b premium. The Brent-Dubai differential also narrowed by \$1.66 on a monthly average in February to stand at a premium of 45¢/b, compared to a premium of \$2.11/b in January.

In the **USGC**, the Light Louisiana Sweet (LLS) premium over medium sour Mars also narrowed last month by \$1.19/b m-o-m to stand at \$4.81/b. Light sweet benchmark WTI weakened on a large build in US crude oil stocks amid softer demand from domestic refineries due to maintenance. Fears about a US economic slowdown also weighed on the value of the WTI benchmark. The value of sour crude rose in the USGC last month, supported by firm demand for exports amid lower sour crude availability in the Atlantic Basin and stronger fuel oil margins.

Commodity Markets

In February, the energy price index continued its downward trajectory, falling for the sixth consecutive month. Non-energy price indices declined, under pressure from higher production outputs and a stronger US dollar. Additionally, prices retracted from their y-o-y highs as the geopolitical risk premium from developments in Eastern Europe eased considerably.

In the paper market, overall sentiment continued to be mixed m-o-m, but heavily skewed towards the downside. Money managers reduced their net length across selected commodities after four consecutive months of increased net long positions. Meanwhile, total open interest rose for the second consecutive month driven by increased hedging activity by producers.

Industrial activity in China rose m-o-m, supported by monetary and fiscal stimulus; however, optimism over China's reopening ebbed as demand for commodities remained weak. Outside of China, recent inflation data showed that in some OECD countries, inflationary pressures remained elevated. Last month's report noted that a slowdown of interest rate hikes by the US Federal Reserve (Fed) could add support to commodity prices. However, markets are now anticipating a longer Fed monetary tightening cycle due to strong inflation readings. Consequently, renewed concerns over the duration of the ongoing monetary tightening cycles in some OECD countries weighed on the demand for commodities.

Trends in selected commodity markets

In February, the **energy price index** fell for the sixth consecutive month. The index fell by 7.3% m-o-m as all components receded. A sharp reduction in coal prices led the declines, followed by natural gas prices and average crude oil prices. The index was down by 15.7% y-o-y, driven mainly by a reduced geopolitical risk premium.

The **non-energy index** receded after three consecutive months of gains, falling marginally by 0.1% m-o-m. Fears of supply disruptions eased on an improved crop outlook by the US Department of Agriculture, as well as increased agricultural exports from the Black Sea safe corridor. The index was down by 9.1% y-o-y, as geopolitical risk eased compared with last year.

Table 2 - 1: Commodity prices

Commodity	Unit	Monthly averages			% Change	Year-to-date	
		Dec 22	Jan 23	Feb 23	Feb 23/Jan 23	2022	2023
Energy*	Index	130.9	119.3	110.6	-7.3	127.3	115.0
Coal, Australia	US\$/mt	379.2	318.0	207.5	-34.8	208.4	262.7
Crude oil, average	US\$/b	78.1	80.4	80.3	-0.2	88.7	80.3
Natural gas, US	US\$/mmbtu	5.5	3.3	2.4	-27.2	4.5	2.8
Natural gas, Europe	US\$/mmbtu	36.0	20.2	16.5	-18.1	27.7	18.4
Non-energy*	Index	115.5	117.3	117.2	-0.1	126.2	117.3
Base metal*	Index	114.8	121.0	117.8	-2.7	136.1	119.4
Precious metals*	Index	138.1	144.9	140.3	-3.1	140.6	142.6

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

Sources: World Bank and OPEC.

Average crude oil prices declined by 0.2% m-o-m. Expectations of a well-supplied market, exacerbated by concerns over the outlook of the global economy and stronger US dollar, added downward pressure on prices. Y-o-y, prices were down sharply by 14.2%.

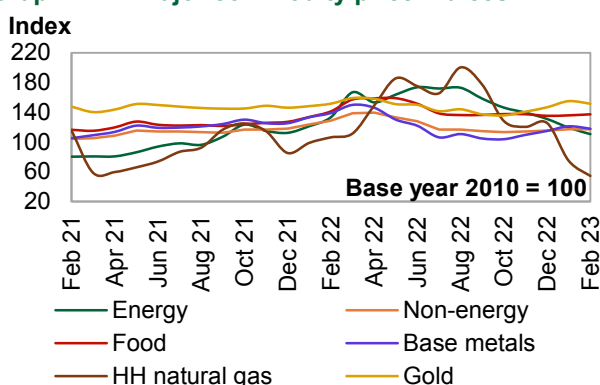
Henry Hub's natural gas prices fell sharply for the second consecutive month, declining by 27.2% m-o-m. According to data from the US Energy Information Administration (EIA), as of February, underground storage was 19.3% above the five-year average. Warmer weather and robust production contributed to inventory build-ups. Furthermore, the ongoing decline in Title Transfer Facility (TTF) and LNG Asia spot prices remained a drag on US LNG demand. Prices were down by 48.8% y-o-y.

The **average TTF price** went from \$20.2/mmbtu in January 2023 to \$16.5/mmbtu in February 2023, an 18.1% decline m-o-m. Warmer weather and robust supplies from alternative sources continued to reduce the geopolitical risk premium of TTF prices. The latest data from Gas Infrastructure Europe shows EU gas storage at 59.2% capacity, down from 70.0% in the previous month; however, with two-thirds of the winter now gone,

the risks of supply uncertainties have ebbed, thus putting downward pressure on prices. Y-o-y, prices were down by 39.3%.

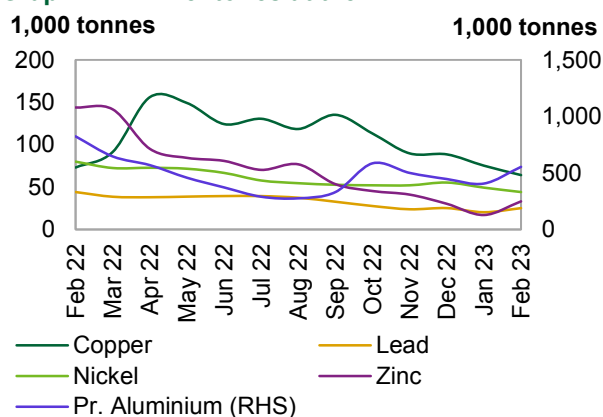
Australian thermal coal prices declined sharply for the second consecutive month, falling by 34.8% m-o-m. Prices remained under pressure from weak imports from China, which continued to display strong production output and overall healthy inventories. Outside of China, the combination of warmer weather, which reduced heating demand, and the decline of natural gas prices added downward pressure to coal prices. Y-o-y, prices were down by 6.5%.

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** receded after three consecutive monthly gains. The index fell by 2.7% m-o-m as all the components receded. China's industrial activity continued to improve, with the manufacturing Purchasing Managers' Index (PMI) increasing from 49.2 in January to 51.6 in February; however, this expansion translated into a supply glut of metals while demand remained weak. Outside of China, industrial activity remained weak. In the EU, manufacturing PMI receded from 48.8 in January to 48.5 in February. Meanwhile, in the US manufacturing PMI rose from 47.4 in January to 47.7 in February, but remained below expansion. Furthermore, renewed concerns about the global economic outlook amid rising interest rates in both the US and the EU, and a stronger US dollar, weighed on the demand for metals. Y-o-y, the index was down by 15.2%.

Aluminium prices fell after three consecutive months of increases. Prices declined by 3.4% m-o-m following an inventory build-up from Russian supplies at London Metal Exchange (LME) warehouses. According to data from the LME, inventories rose by 36.2% m-o-m. Prices were down by 25.6% y-o-y.

Average monthly **copper prices** receded after three consecutive months of gains, falling by 1.1% m-o-m. Prices were under pressure from a combination of increased supplies and weaker demand in China amid property and construction challenges. Outside of China, macroeconomic headwinds weighed on prices, despite the m-o-m decline in inventories at the LME (down by 14.8% m-o-m). Y-o-y, prices were down by 10.1%.

Lead prices fell for the second consecutive month, declining by 4.9% m-o-m. Weaker sales of electric vehicles exacerbated by inventory build-ups at the LME put downward pressure on prices. According to the LME, inventories rose by 24.0% m-o-m. Prices were down by 8.9% y-o-y.

Both **nickel and zinc prices** fell m-o-m under pressure from increased China production. Nickel prices declined by 5.2% m-o-m and zinc prices fell by 5.3% in the same period. Admittedly, Iron ore prices rose by 4.4% m-o-m, underpinned by hoard demand outside of China. Y-o-y, nickel prices were up by 11.3% while those for zinc were down by 13.4%.

The **precious metals index** declined after three consecutive months of gains, falling by 3.1% m-o-m. All index components fell m-o-m, led by platinum. Precious metals receded as strong inflation readings in the US renewed expectations of a longer and stronger monetary tightening cycle by the Fed. **Gold prices** fell by 2.3% m-o-m as the US dollar advanced in the same period, underpinned by expectations of rising US interest rates. Meanwhile **silver and platinum** fell by 7.3% and 9.0%, respectively, in the same period. Y-o-y, the index was down by 1.3%; gold was down marginally by 0.1%, silver by 6.9% and platinum by 8.6%.

Investment flows into commodities

Total money managers' net length decreased after four consecutive months of gains, falling by 16.1% m-o-m. Copper led the declines in net length, followed by gold, but were partially offset by the increases in natural gas and crude oil. Meanwhile, total open interest rose for the second consecutive month, increasing by 7.9% m-o-m. Natural gas led the gains in open interest followed by copper and crude oil, but were partially offset by a decline in gold.

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

Selected commodity	Open interest		Net length			
	Jan 23	Feb 23	Jan 23	% OI	Feb 23	% OI
Crude oil	2,046	2,246	175	9	177	8
Natural gas	1,097	1,254	-83	-8	-72	-6
Gold	674	609	93	14	63	10
Copper	232	258	31	13	14	5

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

Sources: CFTC and OPEC.

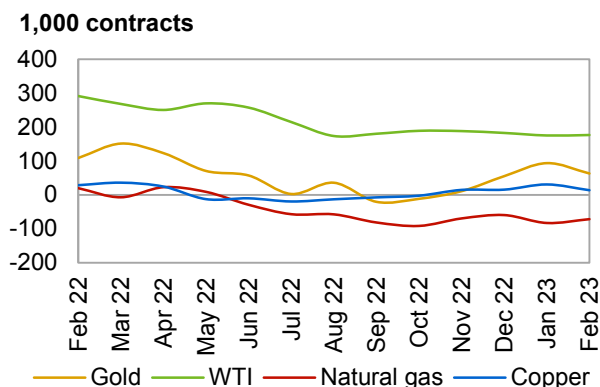
Total crude oil (WTI) open interest (OI) increased for the second consecutive month, rising by 9.8% m-o-m. Meanwhile, money managers' net length also rose, increasing by 0.8% over the same period. Money Managers turned bullish amid optimism over China's reopening.

Total Henry Hub natural gas OI rose for the fifth consecutive month, increasing by 14.3% m-o-m. Money managers also increased their net length by 13.6% over the same period. Producers drove the rise in OI amid increased hedging activity, while money managers' increase in net length increase was mainly driven by a decline in short positions.

Gold's OI decreased by 9.8% m-o-m. Money managers also decreased their net length by 32.7% over the same period. Expectations of a longer US monetary tightening cycle and a stronger US dollar weighed on gold sentiment.

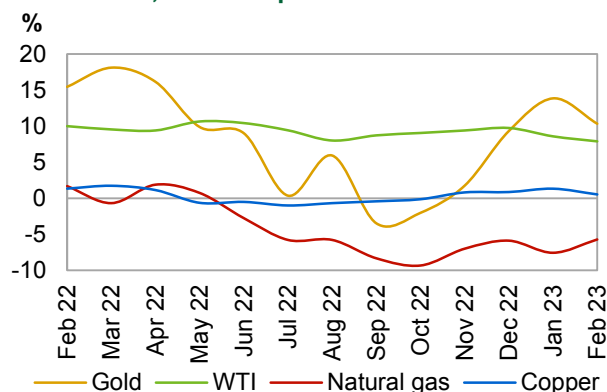
Copper's OI rose for the second consecutive month, increasing by 11.1% m-o-m. Meanwhile, money managers reduced their net length by 55.6% over the same period. Weaker demand and renewed concerns over the outlook of the global economy dampened money managers' sentiment.

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 latest data shows that the economic growth trend in 2H22 remained well supported, with potential for a carry-over into 1H23. Despite the recent uplift in global economic sentiment, a slight slowing dynamic in 2023 y-o-y remains evident, with global inflation still high and further hikes in key interest rates likely, particularly in the Euro-zone and the US. Taking into account the latest 2H22 output numbers from key economies, the 2022 global GDP growth forecast is revised up to 3.2% from 3.1%. Ongoing uncertainties keep the 2023 global forecast unchanged at 2.6%.

According to the latest data, most OECD economies have contributed to the growth dynamic in 2022, boosted by solid and better-than-expected consumer spending. Moreover, the Euro-zone avoided an economic decline at the turn of the year despite challenges particularly related to its energy market. Some of this momentum is expected to carry over into 2023. In addition, the positive effects from China's reopening may also support global growth in 1H23. India is also likely to perform relatively well in 2023, with support coming from government spending plans this year that include a rise in infrastructure spending and income tax cuts, among other measures. Brazil and Russia are forecast to face challenges in 2023, but are likely to be supported by robust commodity markets, structural reforms and fiscal support measures.

However, downside risks remain and need to be carefully monitored in the coming months. In addition to high global inflation levels and the consequence of rising interest rates, further risks may include continued geopolitical tensions in Eastern Europe and China's ongoing domestic challenges stemming from its still-fragile real estate sector. The effects from China's reopening could lead to a strong rise in consumption and therefore keep global inflation elevated.

Upside potential may come from the US Federal Reserve successfully managing an inflation slowdown towards 2H23. An even stronger-than-anticipated rebound in China is another possibility. In the Euro-zone, the better-than-expected dynamic from 2H22 may continue into 2023. A slight further easing of commodity prices in 2023, compared to annual averages in 2022, and a resolution of the conflict in Eastern Europe could provide further upside potential. Finally, inflation may subside more rapidly than expected, providing central banks with additional room for an accommodative monetary policy.

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

	World	OECD	US	Euro-zone	UK	Japan	China	India	Brazil	Russia
2022	3.2	2.9	2.1	3.5	4.0	1.0	3.0	6.7	2.9	-2.1
Change from previous month	0.1	0.1	0.0	0.0	0.0	-0.2	0.0	-0.1	0.1	1.4
2023	2.6	1.1	1.2	0.8	0.0	1.2	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 the **better-than-expected 2H22 growth dynamic** in OECD economies **continued in January and February**. This momentum was accompanied by a clear upswing in China's economic activity, following the reopening the economy at the end of last year. US GDP was confirmed to have reached 2.1% in 2022, while the Euro-zone's GDP stood at 3.5% in 2022. While China's 2022 GDP growth was reported at only 3%, sentiment indicators point at a recovery in economic activity this year.

The **sound OECD dynamic** may also have been supported by a continued positive development in disposable income and a supportive consumer credit environment, which counterbalanced the high inflation. Gross disposable household income in 4Q22 and non-profit institutions serving households (NPISHs) reached 4.5% y-o-y in the US, the highest quarterly level in 2022, after standing at 2.7% y-o-y in 3Q22.

In the Euro-zone, disposable income rose by a strong 7.1% y-o-y in 3Q22 from 5.1% y-o-y in 2Q22. This development has been supported by the strong rise in wages and salaries in advanced economies, which grew by 6.1% in 3Q22 in the Euro-zone and 7.5% in 4Q22 in the US, according to the latest data. Consumer credit, another support factor, expanded nicely as well, growing by 7.8% in 4Q22 in the US and by 2.7% in the same period in the Euro-zone. Both consumer credit levels were above the 15-year pre-pandemic averages of 4.5%

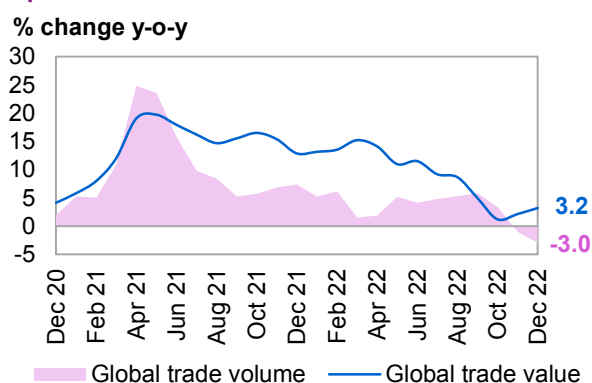
and 2.4%, respectively. At the same time, the gross savings rate in the US increased to 7.9% in 4Q22 from 7.3% in 3Q22. This compares with an annual average of 7.7% in 2022 and pre-pandemic levels of around 10%. The Euro-zone savings rate retracted, but stood at a solid 13.3% in 3Q22, compared with 13.4% in 2Q22 and a pre-pandemic rate of around 12%. Savings rates remain at sound levels and could continue to balance out income losses when interest rates rise further.

This will be important as **global inflation** remains high in advanced economies, with the US recording a level of 6.3% in January and the Euro-zone 8.5% in February. As indicated by the leadership of both the US Federal Reserve (US Fed) and the European Central Bank (ECB), continued high inflation accompanied by tight labour markets and good underlying consumption and investments will lead central banks to lift interest rates further in these major OECD regions.

Global trade expanded in December in value terms, increasing by 3.2% y-o-y, after a rise of 2.2% y-o-y in November, based on the CPB World Trade Monitor Index provided by the CPB Netherlands Bureau for Economic Policy Analysis.

Trade in volume terms declined by 3% y-o-y in December, compared with a decline of 1% y-o-y in November. The December and November declines were triggered by a significant decrease in China's export volumes, which fell by 10.9% y-o-y in December and by 8.9% y-o-y in November.

Graph 3 - 1: Global trade



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

Near-term global expectations

The **near-term global growth pattern** will depend to a large extent on the path of inflation and consequent monetary policies. In key OECD economies, it appears that the momentum at the beginning of the year is sound, although downside risks remain. China's economy seems to have gained momentum after the reopening. India's growth appears to have been well supported at the beginning of the year. The better-than-expected performance in 2H22 lifted last year's global growth estimate to 3.2%, compared to last month's estimate of 3.1%. The 2H22 growth dynamic in the US and the Euro-zone, along with the effects of China's reopening and additional fiscal measures in India, lead to a growth expectation of 2.6% for 2023, unchanged from last month.

While the forecast seems to be well supported, it will very much depend on **monetary policies** set primarily in the US and the Euro-zone. The current assumption is that monetary tightening will continue, albeit with a slowing momentum, especially from the Fed. The ECB is expected to continue lifting interest rates more forcefully in 2023, with a more consequential effect in terms of dampening the Euro-zone's economic activity. The Fed is expected to lift rates by a further 50 bp in 1H23 and possibly another 25 bp in 2H23 with the latter currently not accommodated in the forecast. The ECB is forecast to lift interest rates by a further 75 bp by 1H23 and by a further 25 bp in 2H23.

In addition to more forceful monetary policies, **downside risks** include rising commodity prices due to ongoing geopolitical developments. Continuing domestic challenges in China amid a still-fragile real estate sector is another area to watch. In addition, the effects from China's reopening could lead to a strong rise in consumption and therefore keep global inflation at high levels. This could necessitate continued monetary tightening, consequently accentuating the dampening effect on global economic growth.

Upside potential to the current growth forecast may come from a variety of sources. Among possible supportive factors would be the US Fed successfully managing a soft landing, which is the most likely outcome in the US, given the expected inflation slowdown towards 2H23 and the sufficient underlying demand dynamic. An even stronger-than-anticipated rebound in China is another possibility, with consumption in the economy accelerating significantly after years of stringent lockdown measures. In the Euro-zone the better-than-expected dynamic from 2H22 may extend into 2023. A continued slight easing of commodity prices in 2023, compared to annual averages in 2022, could also have a positive effect on inflation. At the same time, commodity prices would need to remain at a sufficient income level for commodity-producing economies. A resolution of tensions in Eastern Europe would likely provide further upside potential. More generally,

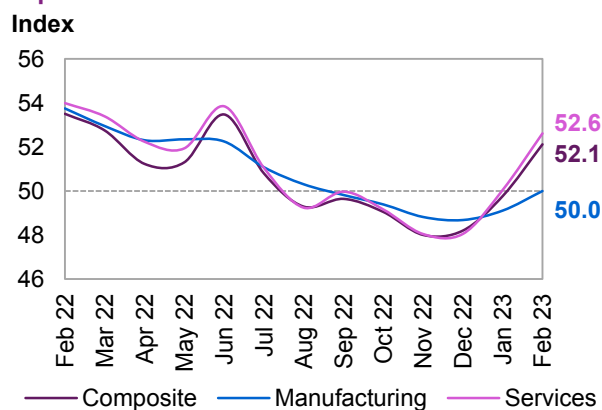
World Economy

inflation may subside quicker than expected, providing key central banks with additional room for accommodative monetary policies.

Global purchasing managers' indices (PMIs) from February reflect the continuing momentum in both the manufacturing and the services sectors of major economies. The global **manufacturing PMI** rose to the growth indicating level of 50 after five months of standing in contractionary territory.

The **global services sector PMI** increased to 52.6 in February, a significant 2.6-point increase from the level of 50 in January.

Graph 3 - 2: Global PMI



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

Based on better-than-anticipated momentum in 2H22, the annual **2022 GDP growth** forecast was revised up slightly to 3.2%, compared with 3.1% in the February MOMR.

The **growth forecast for 2023** remains at 2.6%. While indicating a slight slowdown from 2022, it is still solid growth considering the ongoing global economic challenges, particularly strongly rising interest rates as a consequence of persistently high inflation, high global debt levels and continued geopolitical tensions.

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

	World
2022	3.2
Change from previous month	0.1
2023	2.6
Change from previous month	0.0

Note: * 2023 = Forecast.

Source: OPEC.

OECD

OECD Americas

US

Update on the latest developments

The US economy has continued to perform well and the most recent data shows a **solid underlying economy** in 1Q23. The underlying dynamic seems to have also been supported by the relatively warm weather so far in the current quarter having provided particular support for the services sector, while manufacturing is still catching up with the services sector. While the growth pace appears to have slightly decelerated from 4Q22, the incoming 1Q23 data was better than what was expected only a few months ago.

4Q22 GDP growth data, as provided by the Bureau of Economic Analysis, confirmed that the US economy rebounded strongly in 2H22. Growth was reported to have stood at 2.7% q-o-q at the seasonally adjusted annualised rate (SAAR) in the second of three growth estimates, a slight downward revision from the first growth estimate of 2.9% q-o-q SAAR.

This follows the growth of 3.2% q-o-q SAAR in 3Q22 and reported GDP declines of 1.6% q-o-q SAAR and 0.6% q-o-q SAAR in 1Q22 and 2Q22, respectively. While this confirms a sound and better-than-expected growth trend in recent months, it is evident that challenges remain.

While general **inflation** retracted, the deceleration was very small, similar to core inflation, which has not changed much and remains persistently high. The general price index has now slowed for seven consecutive months to stand at 6.4% y-o-y in January, although this was barely changed from the 6.5% y-o-y level in December. Core inflation stood at 5.6% y-o-y in January, compared to 5.7% in December, marking the fourth consecutive month of gradual decline. It should be noted that this is still an elevated level and the Fed has confirmed it will stay its course in its aim to reduce inflation, particularly core inflation. It is also being steered

by its own guideline, the index of personal consumption expenditures (PCE). This index rose in January to 4.7% y-o-y from 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 in that respect as the PCE services price index rose by 5.7% y-o-y in January from 5.4% y-o-y in December. Consequently, bond market yields have risen significantly and the Fed has continued to highlight its efforts to dampen inflation through its monetary tightening efforts, after having lifted interest rates by 25 bp in February, with the key policy rate's upper limit now at 4.75%.

In addition to monetary tightening, the US Congress is facing a major challenge on the fiscal side as a bipartisan agreement is needed to lift the sovereign **debt ceiling**. While negotiations are ongoing, the outcome remains uncertain in the divided Congress and the failure to strike a deal could have consequential effects. In 2011, the debt ceiling gridlock ultimately led to a downgrade to the US credit rating.

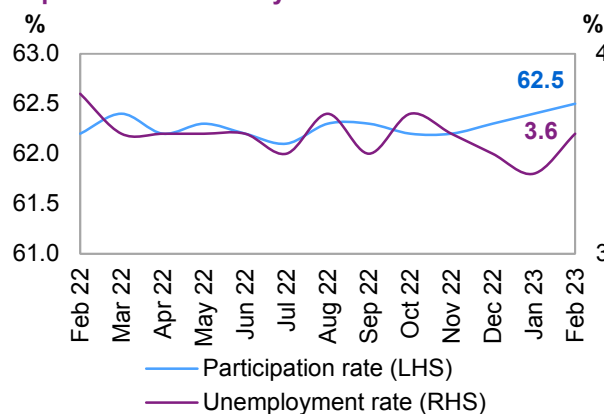
In the meantime, the **consumer confidence index**, as reported by the Conference Board, retracted slightly to stand at 102.9 in February, compared with 106 in January and 109 in December. This compares to pre-pandemic levels of somewhat below 100. So it remains at a sound level.

While the labour market was cooling off a bit in February, it remained in robust shape. The **unemployment rate** rose to 3.6% in February, compared with 3.4% in January and, 3.5% in December.

The **participation rate** continued its gradual improvement in February. It stood at 62.5%, compared with 62.4% in January and 62.3% in December.

Non-farm payrolls rose strongly again. There were 311,000 new jobs recorded in February, compared with 504,000 new jobs in January. The corresponding hourly wage growth remained strong. Hourly earnings rose by 4.6% in February, compared with 4.4% y-o-y in January and 4.8% y-o-y in December.

Graph 3 - 3: US monthly labour market



Sources: Bureau of Labor Statistics and Haver Analytics.

Near-term expectations

The **US economy is forecast to perform relatively well in 2023**, albeit below the 2.1% growth level in 2022. Relatively high interest rates and the tight labour market are the major factors that are holding back high growth rates in the current year. In addition to these economic and structural challenges, the domestic political spectrum will need to be carefully monitored as a standoff in the debt ceiling debate in Congress could have consequential effects on business and consumer sentiment and fiscal spending abilities with severe spillover effects into the real economy. Indeed, the main support is forecast to come from consumption, with possibly some additional support from investments, so this debate will be an important one. However, the current forecast assumes that no frictions will arise from this issue. Moreover, much depends on the ability of the Fed to engineer a soft-landing, which is currently anticipated in this forecast.

As indicated by current data, 1Q23 GDP growth should remain at a sound level, while decelerating in a consecutive quarterly view. Based on the estimates of the Atlanta Fed's GDP forecast, 1Q23 GDP growth should stand at 2.3% q-o-q SAAR. As inflation will remain high in 1H23 and is forecast to slow only towards 2H23 at a more significant rate, the gradually softening dynamic is forecast to carry on throughout the year. Following core inflation of 6.1% in 2022, the forecast for 2023 is around 4.5%. Consequently, monetary tightening is forecast to continue, but it is expected to slow in the coming months. The Fed is expected to lift rates further by 50 bp in 1H23, so that the key policy rate's upper limit will stand at 5.25%.

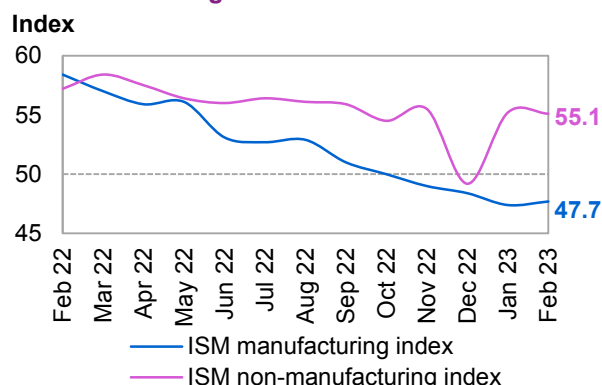
There is also a possibility of the Fed further lifting the policy rate by 25 bp in 2H23 in the case of a further sustained inflationary trend, but that is not yet anticipated in the forecast.

As **private household consumption** remains positive and the important housing market holds up well, the indicators for a soft landing have grown. However, some – notably the inverse yield curve (i.e., the negative yield spread between short-term treasury bonds and the 10-year treasury bond) and the very low unemployment rate that potentially indicates future economic turbulence – point to the possibility of a US recession somewhere in 2023. This is not considered in the forecast, but it is important to vigilantly monitor this possibility in the coming months.

February **PMI** levels, as provided by the Institute for Supply Management (ISM), reflect a stabilizing trend in both the manufacturing and the services sector. The February **manufacturing PMI** was barely unchanged at 47.7, following an index level of 47.4 in January. However, it remained below the growth-indicating level of 50 for the fourth consecutive month.

The index level for the **services sector**, representing around 70% of the US economy, stood at 55.1 in February. This compares with a January level of 55.2, when it rose significantly, recovering from an unexpected fall to 49.2 in December, likely impacted by the cold weather towards the end of the year.

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



Sources: Institute for Supply Management and Haver Analytics.

Considering the only slight revision of the 4Q22 GDP growth level, **US GDP growth** for **2022** remains at 2.1%.

The assumptions for the **2023** GDP growth forecast are unchanged from last month, assuming that some of the sound momentum from the beginning of the year continues. Moreover, the dampening effects of monetary tightening in 2H23 are considered. Hence, the forecast for 2023 GDP growth remains at 1.2%.

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

The **Euro-zone economy** has weathered the adversities of 2022, and the **2H22 performance was especially strong**. Although an economic decline in 4Q22 was widely expected, the Euro-zone has managed to escape a significant economic downturn. Even though the pace of growth seems to have slowed down significantly in the last months, the momentum has held up better-than-expected only some months ago. The accommodative monetary policies up to the end of 1H22 were an important support factor, and the coordinated support measures by the European Commission, including fiscal responses by the member countries in order to counterbalance the consequences of the geopolitical crisis in Eastern Europe, were all stabilizing elements. However, inflation remained high, supported by a variety of factors, in addition to the relative accommodative monetary policy of the ECB. Another inflationary factor was the implementation of broad-based social welfare measures, including energy subsidies, which helped support demand, leading to ongoing solid consumption.

GDP growth in 4Q22 was reported at 0.4% q-o-q SAAR, based on the latest update from Eurostat, the European Statistical Agency. This follows a previously slightly higher estimate of 0.5% q-o-q SAAR. 3Q22 growth was reported unchanged at 1.2% q-o-q SAAR.

Inflation in the Euro-zone eased very slightly in February to stand at 8.5%. This compares with 8.6% in January, 9.2% y-o-y and 10% y-o-y in November. However, the important issue is that core inflation remained not only high, but increased; a factor that the ECB will carefully consider. When excluding volatile items such as food and energy, inflation stood at 7.3% y-o-y in February, after 7.1% in January and 6.9% y-o-y in December.

Lending to the private sector by financial institutions continued to expand, but as a consequence of rapidly rising interest rates, the pace of lending slowed down. Lending activity rose by 4.6% y-o-y in January, after 5.3% y-o-y in December, and compared with 5.9% in November, after having peaked at 6.6% y-o-y and 7.1% y-o-y, in October and September, respectively.

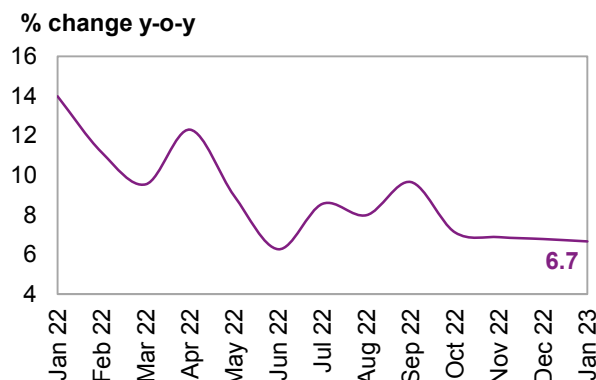
The **labour market** has maintained its positive trajectory with unemployment declining slightly. According to the latest numbers from Eurostat, the unemployment rate stood at 6.6% in January, after 6.7% in both December and November.

Growth in **retail sales** in value terms remained stable in January, standing at 6.7% y-o-y, following 6.8% y-o-y in December and 6.9% in November.

Spending in volume terms fell by 2.4% y-o-y in January, a slight improvement from the December level of -2.8% y-o-y and compared with -2.6% y-o-y in November.

Industrial production (IP) fell considerably in December, contracting by 2%, after strong appreciations of 2.3% y-o-y in November and 2.7% y-o-y in October. On a monthly basis, industrial activity declined by 1.1% m-o-m in December.

Graph 3 - 5: Euro-zone retail sales



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

Near-term expectations

The **slowing momentum in the Euro-zone** has apparently carried over into the beginning of the year, driven by the combination of high inflation and the consequent rise in interest rates, ongoing uncertainties about the developments in Eastern Europe and the continued impacts this may have on the Euro-zone economy. The generally slower global momentum is another dampening factor, which is hurting exports and IP and is expected to continue in 2023. However, this is still better-than-expected some months ago, when a short period of recession in the Euro-zone was forecast at the beginning of the year. It is now anticipated that none of the calendar quarters will see negative growth in 2023.

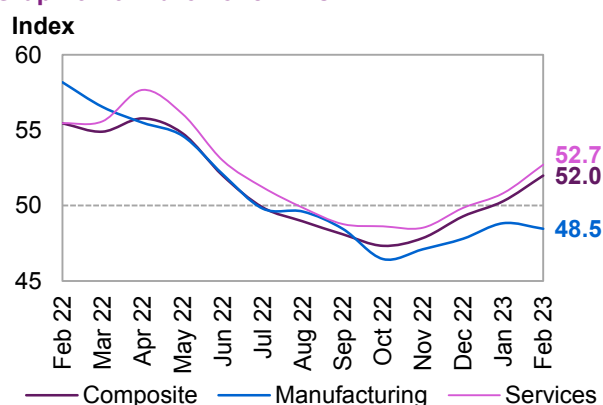
The most influential factor is expected to be the further trend in **monetary tightening** as a consequence of inflation expectations. Inflation stood at 8.4% y-o-y in 2022, and, while it is forecast to slow, it is anticipated to remain elevated at almost 5% in 2023. This will also likely lead the ECB to continue a policy of **monetary tightening**, as already pointed out on several occasions by the head of the ECB. The ECB is forecast to lift interest rates by a further 1 pp by the end of the year, moving the main key policy rate to 4% in 2023. Consequently, strong Euro-zone lending activity – an important factor for investment and growth during the post-pandemic recovery – is forecast to slow during the year, with potentially negative impacts, especially on the real estate sector and business-related investments in general. High debt levels are set to limit fiscal stimulus measures in several key Euro-zone economies.

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

The **PMI for services**, the largest sector in the Euro-zone, rose to 52.7 in February from 50.8 in January. This compares to a December level of 49.8.

The **manufacturing PMI** remained in contractionary territory, standing at 48.5 in February, after 48.8 in January and compared with 47.8 in December.

Graph 3 - 6: Euro-zone PMIs



Sources: S&P Global and Haver Analytics.

The **GDP growth forecast for 2023** remains unchanged at 0.8%. This considers the impact of a variety of dampening factors, including inflation and monetary tightening, expected ongoing energy supply constraints and other associated issues. This compares with actual **2022** GDP growth of 3.5%.

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 data for 2022 provides a mixed picture, including a volatile GDP growth pattern with frequent up- and down-swings and contradicting messages coming from measures like industrial production exports, consumer confidence and exports. In general, the situation for the Japanese economy has been challenging in 2022 with frequent COVID-19-related lockdown measures, a slowdown in China and global supply chain issues also hurting the important export markets and/or dynamic in domestic demand. These challenging factors have continued to be counterbalanced by an ongoing accommodative monetary policy and fiscal stimulus measures. This situation led to a low annual GDP growth level of 1% in 2022, as reported recently by the Ministry of Economics, Trade and Industry.

In 4Q22, GDP growth was reported at a low level of 0.1% q-o-q SAAR. Private consumption held up well in 4Q22, contributing a majority of GDP growth, standing at 1.3% q-o-q SAAR. 3Q22 GDP declined by 1.1% q-o-q SAAR, impacted by lock-down measures in Japan, but also in China. This was preceded by strong growth of 4.7% q-o-q SAAR in 2Q22, a dynamic that was very much lifted by pent-up demand in Japan and also in major export partners. But the year started off on the wrong foot with 1Q22 GDP declining by 1.8% q-o-q SAAR.

Concerns related to a significant weakening yen became a relevant topic in 2H22, but may have abated somewhat at the beginning of the year. The limited monetary policy tightening that has occurred has significantly contributed to the weakening of the yen in 2022, especially compared to the US dollar, but also the euro. As the **Bank of Japan (BoJ)** is expected to rein in inflation gradually, the exchange rate has already appreciated. The exchange rate stood at almost 150 to the US dollar at the end of October, while it traded at slightly above 130 in February. At the current level, it is obviously a supportive factor for exports, while import prices seem to be in check.

Despite having seen a traditionally low-inflationary environment, consumer inflation is one important factor that will likely keep economic growth from moving much beyond 2022 levels of slightly above 1% GDP growth. While it has not been an issue for the Japanese economy for a long time, inflation rose by 4.4% y-o-y in January. This is compared with an already elevated 4% y-o-y in December and 3.8% in in October. 4Q22 inflation stood at 3.9% y-o-y, the highest level since the beginning of the 1990s, except for a period in 2014 when a sales tax increase briefly lifted total inflation to around the same level. Similar to inflationary trends in other economies, core inflation, excluding food and energy, a main guideline for central bank policies, rose significantly as well, reaching 1.9% y-o-y in January, compared with 1.5% y-o-y in December and following a more moderate level of 1.4% y-o-y in November and October.

With this rising inflationary momentum, the BoJ will likely need to respond beyond its measures from December and will likely tighten monetary policies further. Already at the end of December, the BoJ announced that it would allow 10-year bond yields to fluctuate by 0.5 pp above or below its target of zero, replacing the previous band of 0.25 pp, while it kept overnight interest rates at minus 0.1%.

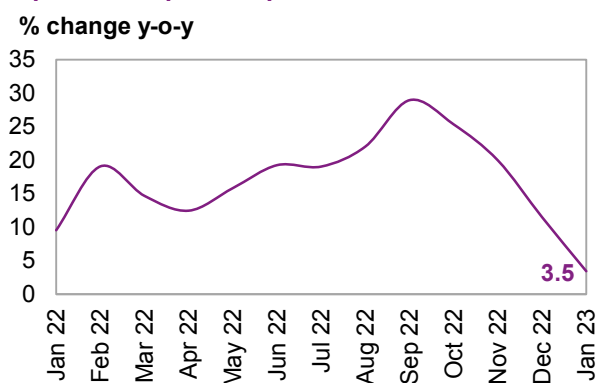
Similar to other major economies industrial **production (IP)** retracted to -2.5% y-o-y in January, compared with -2.4% y-o-y in December and -1.1% y-o-y in November.

After sound **export growth** in 2Q22, rising by 25.3% y-o-y, and a 4Q22 growth rate of 18.7% y-o-y, the dynamic in external demand decelerated in January. Exports grew by only 3.5% in January, while export growth reached 11.5% y-o-y in December and 20% y-o-y in November, all on a non-seasonally adjusted basis.

Retail sales continued their solid trend in December in value terms, rising by 6.4% y-o-y, compared with an already high 3.8% y-o-y in November and 2.5% y-o-y in October.

Consumer confidence fell slightly, standing at an index level of 30.7 in February, compared with 30.9 in January and 30.6 in December.

Graph 3 - 7: Japan's exports



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

Near-term expectations

The growth dynamic in Japan is forecast to pick up slightly in 2023. The economy is forecast to remain constrained by the tight labour market, high inflation, an already sound utilization rate in its industrial base and a global slowdown. The upside from 2022 growth is therefore expected to be limited. However, more upside potential may come from trade with China, Japan's most important trading partner in Asia.

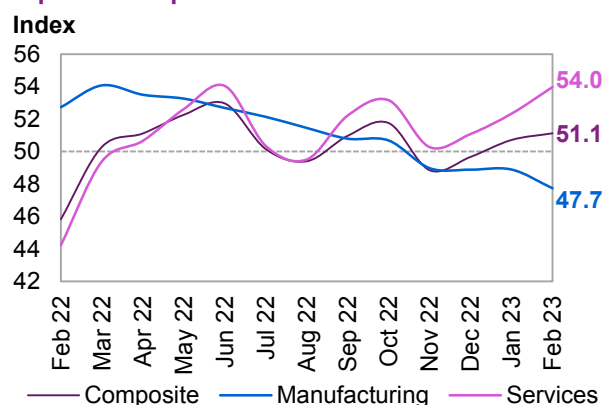
Inflation in Japan will need to be closely monitored, considering the relatively accommodative monetary policies and the likelihood of monetary tightening. After having reached 2.5% in 2022, inflation is forecast at around a 1.5% annual average in 2023. However, it stood at almost 3.9% in 4Q22 and at 4.4% in January 2023. It is still forecast to gradually recede and stand at around 2.2% in 1H23 and then taper off towards the end of the year, when it is forecast to be at only around 1%. Although core inflation remains a challenge, it remains to be seen how the BoJ will react in the coming months. Nevertheless, further tightening is likely. As a result, long-term rates will foreseeably continue to rise and retract only in 2H23, amid the expected slowdown in inflation. Given the ongoing interest rate differentials for 2023, the yen's room for appreciation will remain limited, so that an average rate of around 130 yen/US-dollar for 2023 is expected.

February PMI numbers were mixed with a weakening trend in the manufacturing sector, while the services sector appears to have recovered further.

The **services sector PMI**, which constitutes around two-thirds of the Japanese economy, rose to 54 in February, after 52.3 in January and 51.1 in December.

The **manufacturing PMI** fell to stand at 47.7 in February, compared with 48.9 in both January and December, all below the growth-indicating level of 50.0.

Graph 3 - 8: Japan's PMIs



Sources: S&P Global and Haver Analytics.

After Japan's **2022 GDP growth** of 1%, economic activity is forecast to pick up only slightly. A further uptick in domestic demand and a rebound in China are expected to support growth in **2023**, which is forecast to reach 1.2%.

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

	Japan
2022	1.0
Change from previous month	-0.2
2023	1.2
Change from previous month	0.0

Note: * 2023 = Forecast.

Source: OPEC.

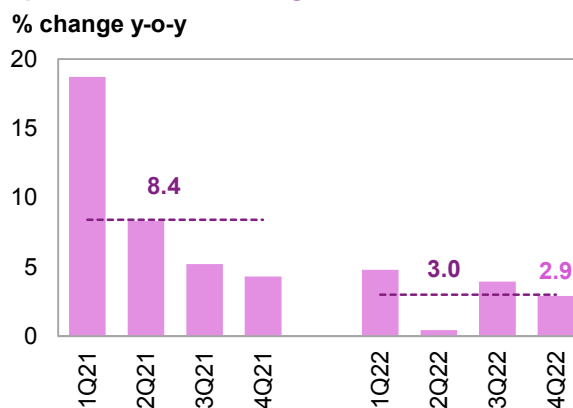
Non-OECD

China

Update on the latest developments

China's economy has significantly slowed down towards the end of the year. 4Q22 stood at 2.9% y-o-y, again very much impacted by the strict COVID-19 policies. However, the government changed course in December and started to reopen the economy. Additionally, the government took back some of the restrictions that were limiting growth in the property sector in November of last year. These and other measures helped the economy to rebound at the beginning of the year as indicated by business sentiment indices. While manufacturing is showing globally a relatively more subdued dynamic, the services sector, in particular, seems to be well supported.

Graph 3 - 9: China's GDP growth



Sources: National Bureau of Statistics and Haver Analytics.

Importantly, China just held its **National People Congress** and announced some important economic guidelines. An updated economic growth target was announced, now standing at 5% for 2023, compared to an expected level of around 5.5%. In addition, the target for new urban jobs was raised for the first time since 2017, to now stand at 12 million jobs. This compares with a target of 11 million in previous years. With a still relatively high youth-unemployment rate of 17.3% in January and considering that almost 12 million new graduates will enter the job market this year, some effort to improve this situation is expected to be implemented. Moreover, the government has raised its budget deficit target to 3% from 2.8%, which was widely expected.

The latest available data for up to last December shows that **industrial production** growth retracted for the fourth consecutive month in December to stand at 1.3% y-o-y, compared with November's level of 2.2% y-o-y and 5% in October. **Retail trade**, also available up to December, contracted by 1.8% y-o-y in the last month of the year, following a decline of 5.9% y-o-y in November. Both end-of-the-year developments were still impacted by the strict zero-COVID-19 policies.

Another factor that will need close monitoring is international trade, as China's economy was in the past years very much driven by exports. Exports declined towards the end of the year, falling by 6.8% y-o-y in January and February, after -9.9% in December and -8.7% y-o-y in November. With rising tensions in global trade, it remains to be seen, how this sphere will develop going forward.

The **annual inflation rate** was 2.1% in January, after 1.8% y-o-y in December and compared with 1.6% y-o-y in November, a trend that is anticipated to rise further amid the effects from reopening the economy in December.

Near-term expectations

China's economy is forecast to rebound in 2023, driven by pent-up demand after years of strict zero-COVID-19 policies and supported by the recently announced government targeted growth rate of 5%, among other economic measures. A significant lift will come from the services sector in the coming months, with a recovery in the contact-intensive areas of the economy, including leisure, travel and tourism, and hospitality. Also, the easing of curbs in the real estate sector will likely provide some support to the housing sector. National home sales are expected to grow at a low single-digit level in 2023, while real estate investment is forecast to be flat. An important factor will be the contribution from exports. As exports have declined considerably in the past months, it will be important to see how they will develop in a global economy, which is being impacted by a global slow-down, especially in the two important trading partner economies of the US and the Euro-zone. Moreover, political tensions and trade-related issues seem to be on the rise with increasing trade barriers from G7 economies towards China. So far, exports are expected to continue contracting in 1H23 after a decline in 4Q22, but are forecast to pick up from 2H23 onwards.

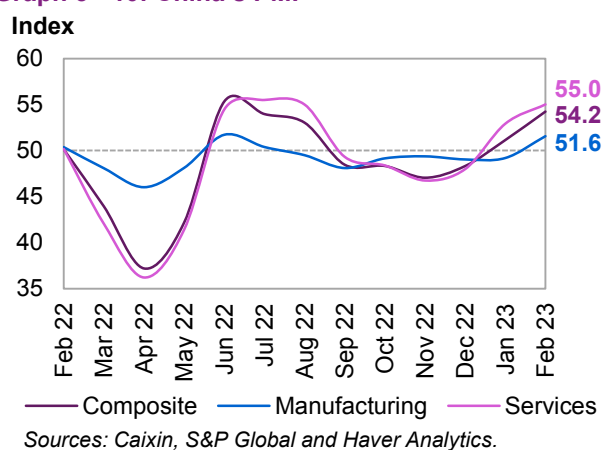
In terms of **monetary policy**, it is forecast that the accommodative policy framework will continue, with authorities remaining prudent and the central bank expected to refrain from broad-based rate cuts. At the same time, it appears that the US dollar largely peaked in 2022 and the yuan is expected to appreciate mildly in 2023, with some impact on export income.

The **February PMI** readings as provided by S&P Global show that both the **manufacturing** and the services sectors have picked up.

The **manufacturing** sector has rebounded to move above the growth indicating level to stand at 51.6. This comes after the index for the sector stood at 49.2 in January and at 49 in December.

Developments in the services sector were even stronger with the **February services PMI** to stand at 55, compared with 52.9 in January and 48 in December.

Graph 3 - 10: China's PMI



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 announcements in the National People's Congress. Hence, the **2023 GDP growth forecast** remains at 5.2%. This follows GDP growth of 3% in **2022**.

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

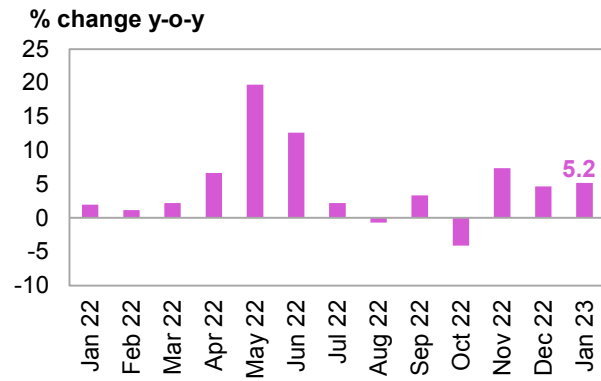
India's economy appears to have continued its solid, albeit **gradually slowing, growth dynamic into 4Q22**, supported by domestic demand and, sector-wise, by the services sector. While robust, the growth is still below pre-pandemic levels. As in other economies, a shift from manufacturing to the services sector is becoming increasingly apparent.

GDP growth in 4Q22 stood at 4.4% y-o-y, after growth of 6.3% y-o-y in 3Q22. This was preceded by strong growth of 13.2% in 2Q22, driven by pent-up demand, after low growth of 4% y-o-y in 1Q22, which was still impacted by COVID-19-related developments. The services sector expanded by 6.2% y-o-y, contributing 3.2 percentage points to the total growth level. Within the services sector, the contact-intensive business areas provided the majority of growth in line with global growth trends, contributing 1.8 percentage points to the 4Q22 growth level. Investments also picked up considerably in 4Q22, a positive signal for the economy, given the relatively high interest rates. Investments in the form of gross capital formation contributed 2.5 percentage points, i.e. more than 50% to the 4Q22 growth level. However, a weakening spot was private households' consumer spending, which grew by only 1.6% y-o-y in 4Q22.

Monthly indicators pointed to a stabilising momentum in **industrial production**, which advanced by 5.2% y-o-y in January, following growth of 4.7% y-o-y in December and 7.3% y-o-y in November. This solid growth trend comes after a contraction of 4.1% y-o-y in October. Also, the yearly advances are based on already solid growth rates in the last year of 1% y-o-y in both November and December.

The **unemployment rate** rose slightly to stand at 7.5% in February, compared with 7.1% in January. This, however, was compared to 8.3% in December, 8% in November and 7.9% in October.

Graph 3 - 11: India's industrial production



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

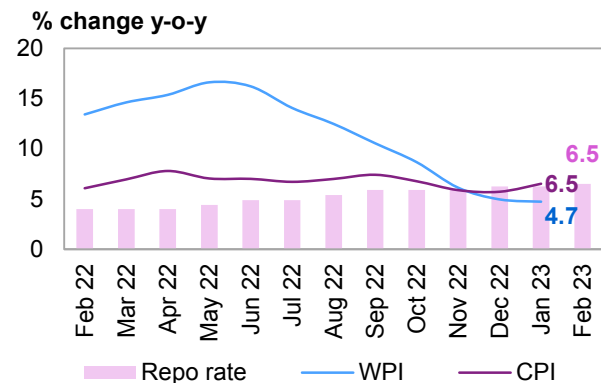
An issue to watch in the coming months is **inflation**. In line with the global inflationary trend, the consumer price index rose again in the latest available month of January. Also reflecting the global inflationary trend, core inflation picked up at a strong pace. So, while it appeared likely that the Reserve Bank of India would hold already elevated interest rate levels steady, it seems now that monetary tightening will continue into 1H23.

The **general CPI index** rose by 6.5% y-o-y in January, following growth of 5.7% y-o-y in December. Hence, the slowdown of the inflationary trend in 4Q22 came to an end, and near-term developments will need to be carefully monitored.

Moreover, **core inflation** remained persistently high, as it expanded for a fourth consecutive month to reach the highest level in January since May of last year. It was at a level of 6.2% y-o-y, compared with 6.1% y-o-y in December and 6% y-o-y in November.

So far, the Reserve Bank of India (RBI) has lifted the **repo rate** to a level of 6.5%, following the latest 25 bp increase in February.

Graph 3 - 12: Repo rate and inflation in India



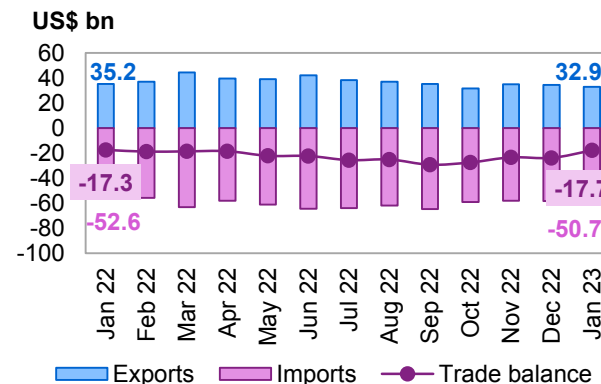
Sources: Ministry of Commerce and Industry, Reserve Bank of India and Haver Analytics.

India's **December trade balance** posted a deficit of about \$17.7 billion in January, compared with \$23.8 billion in December and a deficit of \$17.3 billion in January of last year.

Monthly **exports** fell to \$32.9 billion in January from \$34.5 billion in December, and this compares to \$35.2 billion in January of last year.

Meanwhile, monthly **imports** retracted to stand at \$50.7 billion in January, compared with \$58.2 billion in December and a level of \$52.6 billion in January of last year.

Graph 3 - 13: India's trade balance



Sources: Ministry of Commerce and Industry and Haver Analytics.

Near-term expectations

While India's economy slowed down towards the end of the year, the trend is forecast to slightly rebound in 1Q23 and beyond. However, given the global slowdown and ongoing high-interest rate level in India, the economy is forecast to show lower growth in 2023. Persistently high inflation, in particular, will need to be closely monitored as it could trigger further monetary policy actions that may dampen growth beyond the currently anticipated slowing dynamic. As seen in 4Q22, the **services sector** was the dominant GDP growth contributor and is forecast to maintain strong momentum in 2023, also constituting an important export driver. Given the importance of the domestic services sector, it will be vital to see if this sector is able to compensate for the expected decline in manufacturing.

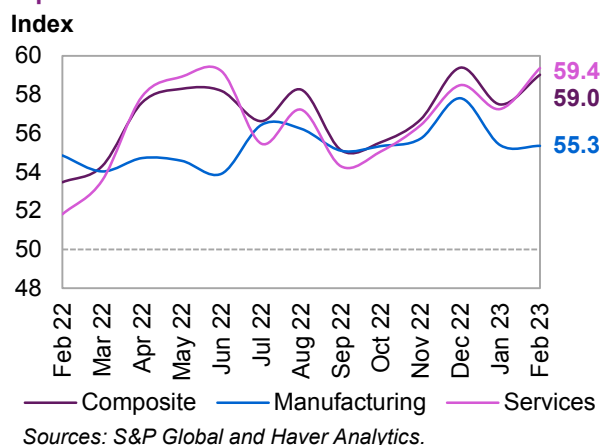
Another important factor will be the capex push that the government announced in its latest **budget proposal**. The government's latest budget proposal foresees tax cuts and large government spending at a magnitude of around 4%, which aims to counterbalance the economy's weaker spots. As another important element, it remains to be seen to what extent private household **consumption** can regain its pace from its slowing momentum at the end of 2022. This will very much depend on the monetary policies that the central bank will pursue.

The **RBI** is now expected to lift interest rates again at its upcoming meeting in April by 25 basis points. This will follow the hike of 25 bp, which was decided at its February meeting. With these hikes, the repo rate is forecast to stand at 6.75%. Further gradual interest rate hikes remain a possibility in 2023 as inflation remains high. Inflation is forecast to remain above the RBI's upper band of 6% in 2023, and with persistently high core-inflation, there is some room for uncertainty. However, if the situation improves on a foreseeably sustainable path in 2H22, the RBI may even move to monetary easing towards the end of the year, however it is too early to predict this.

The S&P Global **manufacturing PMI** remained at a strong level of 55.3 in February, following 55.4 in January and after a December level of 57.8.

The **services PMI** indicated ongoing strong momentum, rising to 59.4 in February, after an already strong level of 57.2 in January and compared with 58.5 in December. This is the highest on record for this data series going back to 2017, indicating a strong trend in this important sector.

Graph 3 - 14: India's PMIs



Following **2022 GDP growth** of 6.7%, the growth dynamic is forecast to slow-down. However, growth is expected to remain healthy and will be supported by the services sector's dynamic, fiscal support and a rebound in consumption.

Considering these indicators, India's **2023 GDP growth** is forecast to reach 5.6%, unchanged from last month. Upside momentum may come from envisaged fiscal support, in combination with an improving global economy.

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

	India
2022	6.7
Change from previous month	-0.1
2023	5.6
Change from previous month	0.0

Note: * 2023 = Forecast.

Source: OPEC.

Latin America

Brazil

Update on latest developments

Brazil's economy experienced healthy growth in 2022, to a large extent driven by fiscal stimulus measures. However, this is limiting the fiscal space in 2023. In addition to the limited spending capacity of the new government that took office in January, the economy was already facing **slowing momentum** towards the end of the year. Moreover, inflation retracted significantly in 2H22 but it remains high and persistent for now, mirroring a global trend.

Hence, the central bank has kept the **key policy rate** unchanged after having lifted interest rates significantly since 2021. The key policy rate was kept at 13.75% at the last rate-setting meeting at the beginning of February. Inflation stood at 5.5% in February, compared with 5.7% in January and 5.9% in December.

4Q22 GDP growth was reported to have reached 1.9% y-o-y, the lowest quarterly growth level of 2022. This follows growth of 3.6% y-o-y in 3Q22, 3.7% y-o-y in 2Q22 and 2.4% y-o-y in 1Q22. On a seasonally adjusted (SA) quarterly level, growth was even negative (-0.2% q-o-q) based on data from Brazil's statistical office, the Instituto Brasileiro de Geografia e Estatística. While full-year GDP growth added up to 2.9%, the weakness in 4Q22 provides a soft base for growth in 2023. In particular, investments in the form of gross capital formation were negative in 4Q22, falling by 1.1% q-o-q SA. On a quarterly basis household consumption stood at a slight 0.3% q-o-q SA. Both GDP components were evidently impacted by high interest rates. From a supply-side perspective, industrial output declined by 0.3% q-o-q SA, while the extractive industries grew by 2.5% q-o-q SA, supported by an increase in oil production. The fall in industrial output was only slightly offset by growth in the services sector, which expanded by 0.2% q-o-q SA, while agriculture grew by 0.3% q-o-q SA. The services sector in particular was a driving element in growth up to 3Q22, so the softening needs to be carefully considered.

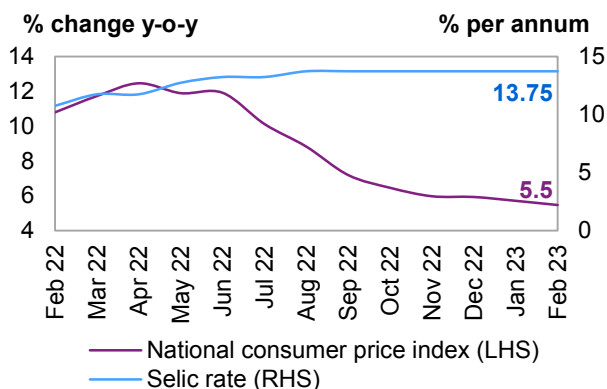
Unemployment declined further. Based on the usual three-month moving average, Brazil's **unemployment rate** dropped to 7.9% in December, compared with 8.1% in November and 8.3% in October and 8.7% in September. Meanwhile, **consumer confidence** retracted again in February, to stand at an index level of 86.5, compared with 89.2 in January and 89.5 in December, as measured by the Fundação Getúlio Vargas institute.

Brazil's new government announced ambitious plans to consolidate the **budget**, which – if successful – could provide a sound base for economic growth in 2023 and even more so in the coming years. The government followed through with its plan announced at the beginning of the year to phase out tax breaks on fuel. The reinstatement of fuel taxes is expected to raise revenues equivalent to about 0.3% of GDP. Moreover, the government introduced a tax on crude oil exports of around 9% to preserve the expected increase in tax revenues in order to lower the deficit, reduce untargeted spending and implement more targeted reforms. Other planned reforms include a harmonization of the tax code and the VAT framework. In general, the plan to reduce the budget deficit and to balance the budget by next year – if successful – could attract private investment to the economy. In addition, a new fiscal anchor should be negotiated in Congress, and this could provide more flexibility compared with the current debt limit instrument. Plans to establish a common currency with Argentina may be less successful, but this will need to be monitored. Based on the assumption of a sound fiscal agenda, it could be expected that foreign direct investment (FDI) would again provide an important support factor in 2023. FDI rose to US\$91 billion in 2022, corresponding to 4.8% of GDP and marking a decade's peak.

Near-term expectations

Last year's growth of 2.9% was strong and very much supported by governmental stimulus measures and subsidies, including the tax break on fuels, support factors that will not be available in the current year.

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



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

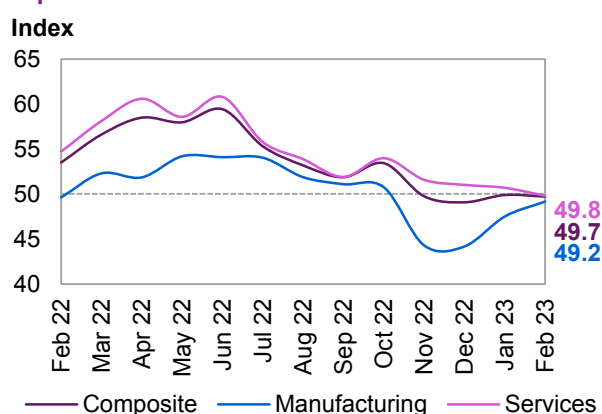
In light of Brazil's high interest rates, their potential impact on consumption and investment, and the general global economic slowdown, the country's economic momentum is forecast to continue to **decelerate into 1H23**. However, the expected recovery in China – an important trading partner of Brazil –, gradual domestic reforms and sustained base momentum in consumption could provide the basis for at least low growth in 2023. Even more so, the new government seems keen on consolidating the budget in order to lower the deficit. Given last year's rise in sovereign debt, the fiscal developments will need to be closely monitored. The ratio of gross general government debt to GDP in Brazil stands at more than 70%, having risen from slightly more than 50% a decade ago.

While **monetary policies** are expected to remain relatively tight, the previous month's expectation of a more accommodative stance towards 2H23 is now less likely to materialize given the persistence of inflation globally. Furthermore, inflation levels in Brazil will depend on the government navigating the need to reduce the budget deficit and at the same time taming inflation. Inflation is forecast to slow but remain high at more than 5% in 2023. Upside to the economy may come from the solid agricultural sector and further opportunities in exports in light of the Eastern European conflict. Crop and livestock production accounts for almost 10% of the economy, and when including processing and distribution, this share could rise even higher. While a possible finalization of the EU-Mercosur trade deal could lift investments and trading opportunities for the economy, there is still opposition in Europe that could make it challenging for the deal to succeed in the near term.

Recent PMI indices indicated a continuation of the slowing trend, albeit the **manufacturing PMI** recovered significantly in February to a level of 49.2, compared with 47.5 in January. However, it remained below the growth indicating level of 50 for the fourth month in a row. Positively, the index was up for the third consecutive month.

The **services PMI** fell into contractionary territory to stand at 49.8 in February, following a level of 50.7 in January, pressured by heightened market uncertainty amid high interest rates, still-elevated inflation and the ongoing political transition. It was the fourth consecutive month of decline.

Graph 3 - 16: Brazil's PMIs



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

The **GDP growth forecast for 2023** remains unchanged from last month at 1.0%, following reported growth of 2.9% in 2022. While the economic situation remains challenging, lower inflation – and consequently a more accommodative monetary policy, primarily in 2H23 – could spur growth. Stronger asset market conditions and optimistic business confidence could also lead to growth beyond the current forecast. The fiscal reforms that are envisaged could also turn out as a supportive factor.

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

	Brazil
2022	2.9
Change from previous month	0.1
2023	1.0
Change from previous month	0.0

Note: * 2023 = Forecast.

Source: OPEC.

Africa

South Africa

Update on the latest developments

South Africa remains significantly impacted by the **challenges in power supply**, high inflation, monetary tightening by the central bank and limited fiscal space. The economic slow-down amid multiple challenges was reflected in the latest release of 4Q22 GDP figures. GDP in 4Q22 declined by 4.9% q-o-q SAAR, leading to FY growth of 2% in 2022. The main drivers for the decline in 4Q22 were falling household consumption, which declined at a rate of 2.8% q-o-q SAAR, and the decline in exports, falling at 17.9% q-o-q SAAR. Positively, private household consumption held up well, rising by 3.7% q-o-q SAAR, providing some hope, that once the power crisis may be overcome, the economy could accelerate its growth dynamic.

However, the strong contraction and the likelihood of a spillover of this **slowing momentum into 1H23**, does provide a fragile base for this year's growth. After a record year for power rationing in 2022, counting 205 days in total, the situation did not improve since the beginning of the year. This has and will continue to pose risks to business operations and public services, as well as social stability. Additionally, the private sector is experiencing a growing need to invest in power-related infrastructure to keep operations going and hence must divert resources from investments that are more likely to have good returns. The power outages led the President to declare a state of disaster and a new **electricity minister** was nominated to tackle the crisis. The main priority of the minister will be to coordinate with the leadership of South Africa's power company, Eskom, and to improve the performance of existing power stations and accelerate the procurement of new generation capacity. However, it remains to be seen how fast and effective a turnaround of the current malaise in the power sector will be. A central bank analysis estimates that the consequences of continued blackouts amount to around 50 million US-dollar in cost per day and GDP growth will likely stand at only about 0.3% in 2023 as an outcome of this situation. Additionally, heavy rainfall and **flooding** make the prospect of 1Q23 GDP growth even more challenging.

Inflation remains high and persistent, mirroring the current global environment. The headline inflation of urban areas stood at 6.9% y-o-y in January, after 7.2% y-o-y in December and 7.4% y-o-y in November. The corresponding core inflation stood at 4.9% in January and December, after 5% in November. This persistently high inflation will likely lead the central bank to further tighten monetary policies in its upcoming meeting in March and they are likely to hike interest rates by another 25 bp to a total level of 7.5%.

Near-term expectations

As **economic challenges** have mounted since the beginning of the year, prospects for 1Q23 GDP growth have consequently deteriorated. A contraction in 1Q23, similar to the dynamic in 4Q23 has become increasingly likely.

South Africa's **economic growth is likely to decelerate in 2023**, a view unchanged from the previous month. The main drivers for this view are a softer commodity market in 2023, relative to the strong appreciation seen in 2022; ongoing domestic political issues and the ensuing spill-over into rising domestic uncertainty. In particular, challenges stemming from the ongoing power supply crisis play a vital – and dampening – factor. Moreover, the central bank will continue its monetary tightening efforts in order to rein in inflation.

In the obvious anticipation of some improvements in the economy towards 2Q23, the forward-looking seasonally adjusted composite **Purchasing Managers' Index** as provided by S&P Global recovered to stand at 50.5, after it fell below the growth-indicating level of 50 in January to stand at 48.7. However, it remains to be seen if this improving view will be justified in the coming months.

South Africa's **2022 GDP growth** was revised up slightly to 2% from 1.9%, taking on board the reported growth number.

The **2023** forecast was kept unchanged from the last assessment of 1.1%. More downside risks in 2023 could surface, depending on domestic and global economic developments over the short term. In particular, the power sector will need monitoring in this respect.

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

	South Africa
2022	2.0
Change from previous month	0.1
2023	1.1
Change from previous month	0.0

Note: * 2023 = Forecast.

Source: OPEC.

Russia and Central Asia

Russia

Update on the latest developments

Russia's economy performed better than expected in 2022, with an initial estimate by the Federal State Statistics Service putting the GDP contraction for the year at 2.1%. This compares with forecasts of much higher GDP declines for 2022, with consensus estimates in September seeing a decline of more than 5%. However, several factors played a role in containing the decline. Importantly, the high export income from commodities played a vital role in supporting the economy. Exports grew by 3.3% y-o-y in 2022, despite G7 sanctions. China, India and Turkey have emerged as key buyers of Russia's crude and a sound price level turned out to be supportive as well.

Other associated measures undertaken by the **central bank** included successfully targeting the containment of financial outflows and shoring up the currency. While initially the Russian rouble declined to a level of more

than 100 compared to the US dollar, it recovered to a level of RB60/\$US to around RB75/\$US for most of the months following the strong decline in March 2022. This came after financial flows were regulated and key policy rates were lifted to a peak level of 20%. Moreover, fiscal spending was a major contributor to economic growth in 2022, growing by 2.8% y-o-y and counterbalancing the overall GDP decline for the year. Despite the positive developments, private household consumption declined by 1.8% y-o-y. Also, investments declined by a significant 3.2% y-o-y. Moreover, sanctions – including the EU embargo on Russian petroleum products that took effect at the beginning of February – have kept significant pressure on the economy.

The **contraction in industrial production (IP)** continued. IP declined by 2.4% y-o-y in January, after falling 4.3% y-o-y in December. January's results marked the ninth consecutive monthly decline in industrial activity.

Consumer inflation was almost unchanged in January with the CPI standing at 11.8% y-o-y, compared with 11.9% y-o-y in December and 12% in November.

Russia's central bank held its **policy rate** at 7.5% in February, while indicating it would remain flexible in adjusting monetary policy.

Russia's **jobless rate** continued to decline and stood at 3.5% in January, compared with 3.7% in December and November.

Near-term expectations

Uncertainties remain significant. While Russia's economic decline in 2022 provided a good guideline for developments in the current year, the challenges remain significant. For instance, it remains to be seen to what extent the EU embargo on imports of Russian petroleum products will play out. There are also indications that federal revenues will be lower in 2023, given the relatively lower income from fuel exports. The government reported that oil- and gas-related income is expected to decline by 2.7 trillion roubles, from 11.6 trillion roubles in 2022 to 8.9 trillion roubles in 2023. The federal budget law defines the base level for oil and gas revenue to be 8 trillion roubles. Otherwise the Finance Ministry is authorised to draw from the national wealth fund to fulfil its spending obligations.

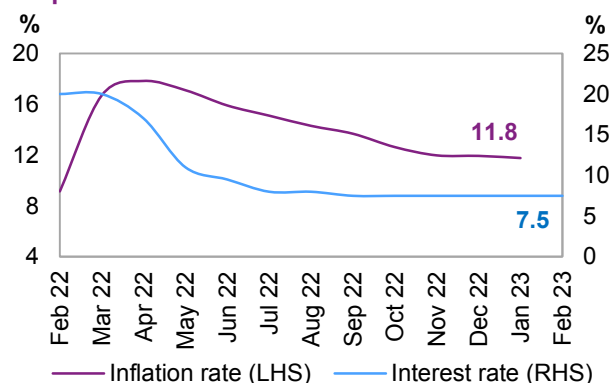
The **downward momentum of the Russian economy in 2H22**, in combination with rising external pressure, are forecast to keep growth in negative territory in 2023, albeit at a lower level. Further counterbalancing measures undertaken by the government are expected to compensate to a significant extent for the negative impact from external pressure. However, near-term developments are affected by the region's geopolitical tensions and the uncertainties related to the impact of sanctions, which make forecasting economic growth even more challenging. In addition, any further softening in the commodities sector in 2023 compared to 2022 may also have a more aggravated impact on government revenues and consequently the GDP. For the time being, domestic investment – supported by the government – is forecast to rise by 3% in 2023 and direct government spending is expected to expand by slightly more than 1.5%. Consumption, however, is forecast to decline by around 1% in the current year and exports are forecast to drop by around 7%.

PMI indices in February reflect an improving trend in both the manufacturing and services sectors.

February's S&P Global **manufacturing PMI** rose to 53.6 from 52.6 in January and 53.0 in December.

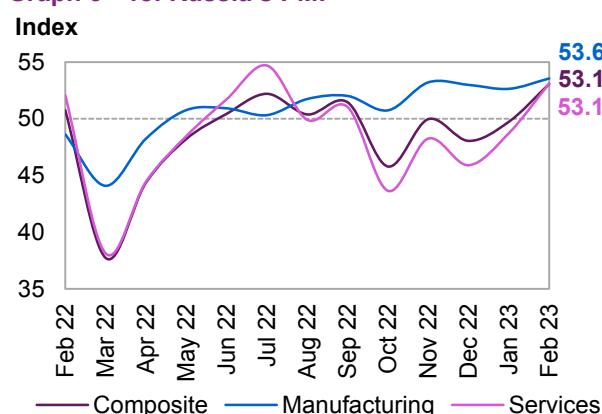
The **services PMI** grew by a considerable 4.4 index points and stood at 53.1 in February, compared with 48.7 in January and 45.9 in December.

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



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

Graph 3 - 18: Russia's PMI



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

GDP growth in 2023 is forecast to decline by 0.5%, unchanged from the previous month. However, the forecast remains subject to high levels of uncertainty amid the ongoing geopolitical tensions and the global economic environment. This 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	1.4
2023	-0.5
Change from previous month	0.0

Note: * 2023 = Forecast.

Source: OPEC.

OPEC Member Countries

Saudi Arabia

Saudi Arabia's economy has benefitted from robust oil exports and an ongoing buoyant domestic market in 2022 and, while the economy is forecast to decelerate in 2023, the momentum remains strong. The economy expanded by 8.7% in 2022, with some deceleration into 4Q22 GDP growth, which stood at 5.5% y-o-y, compared with 8.7% y-o-y in 3Q22. Crude oil and natural gas production was the main contributor in 2022, growing by 16.1% y-o-y. Manufacturing, including petroleum refining, was also strong at 7.9% y-o-y. In general, oil activities expanded by 16.3% y-o-y, while non-oil activities grew by 5.4% y-o-y and government activities expanded by 2.6% y-o-y. As a consequence of the strong underlying growth, inflation has risen towards the end of 2022 and since the beginning of the year. Inflation stood at 2.5% in 2022, but has risen by more than 3% in 4Q22 and stood at 3.3% y-o-y in January. Business confidence remained very strong. The latest purchasing managers' index (PMI) reading of 59.8 in February follows an already high reading of 58.2 in January, pointing to continued strong growth at the beginning of the year. This compares with 56.9 in December. While domestic activity remains strong, the latest key policy rate increases by the Saudi Central Bank may dampen economic activity going forward. The central bank lifted interest rates by 25 bp in February to 5.25%, mirroring the US dollar interest rate regime and is likely to continue hiking interest rates along with the US Fed in March.

Nigeria

Nigeria's economic growth accelerated notably in 4Q22, expanding by 3.6% y-o-y, after a rise of 2.4% y-o-y in 3Q22. Full-year 2022 GDP growth stood at 3.3% in 2022, down from 3.6% in 2021. Growth was supported by the services sector and the broader non-oil sectors. Inflation stood at 18.8% y-o-y in 2022. This high rate has been driven by localized food and fuel shortages. The rate showed a constantly rising trend for most of 2022 and increased further in January, standing at 21.8% y-o-y. Hence, the rising trend in inflation, ongoing external and fiscal pressures, and deteriorating global macroeconomic conditions are expected to lead towards decelerating economic activity in 2023. Given the ongoing challenges, the Stanbic IBTC Bank total economy PMI fell considerably to stand at 44.7 in February, after a level of 53.5 in January and 54.6 in December.

The United Arab Emirates (UAE)

After strong growth in 2022, the **UAE's GDP growth** is forecast to ease this year, but to remain solid, driven by both the services and the hydrocarbons sectors. Travel and tourism are forecast to continue supporting growth in the UAE. The latest Dubai airport data highlight the rebound in travel and tourism activity in the UAE, showing activity at its highest level since 4Q19 and with expectations for activity to exceed pre-COVID-19 levels by the end of 2023. The UAE's central bank raised its policy rate in February, mirroring the latest 25 bps rate hike by the US Fed. As the Fed is expected to continue its monetary tightening cycle, the UAE's central bank is expected to similarly raise its key policy rate to potentially stand at more the 5% by the end of the year, which could put pressure on borrowing costs and debt-fuelled areas of the economy, particularly the real estate sector. The S&P Global UAE PMI for February rose slightly to 54.3, from 54.1 in January and 54.2 in December. This compares with an annual average level of 55.2 for 2022. This shows the gradually slowing momentum that may continue in 2023. Ongoing support for the 2023 growth dynamic may come not only from the hydrocarbons and the services sector but also from government policies that aim to increase foreign direct investment together with rising investments into renewable energy.

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

The **US dollar (USD) index** advanced after three consecutive months of declines, increasing m-o-m by 1.0%. The increase was underpinned by expectations for higher interest rates following stronger US inflation readings in February. Markets are now anticipating that the current US monetary tightening cycle will last longer and that terminal rates will be much higher than anticipated. In **developed market (DM)** currencies, the USD rose against the euro by 0.5% m-o-m, and by 1.7% and 1.0% against the yen and the pound sterling, respectively, in the same period.

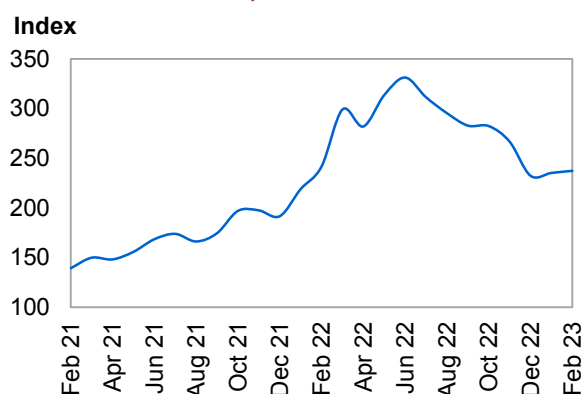
In terms of **emerging market (EM)** currencies, the USD advanced by 0.9% m-o-m against the rupee, thus recovering from losses in the previous period. The USD also rose against the yuan by 0.6% m-o-m but fell by 0.5% against the real in the same period.

The differential between nominal and real **ORB** prices widened on a stronger USD and higher crude oil prices. **Inflation** (nominal price minus real price) went from \$1.27/b in January to \$1.42/b in February, an 11.8% increase m-o-m.

In **nominal terms**, accounting for inflation, the ORB price rose for the second consecutive month, going from \$81.62/b in January to \$81.88/b in February, a 0.3% increase m-o-m.

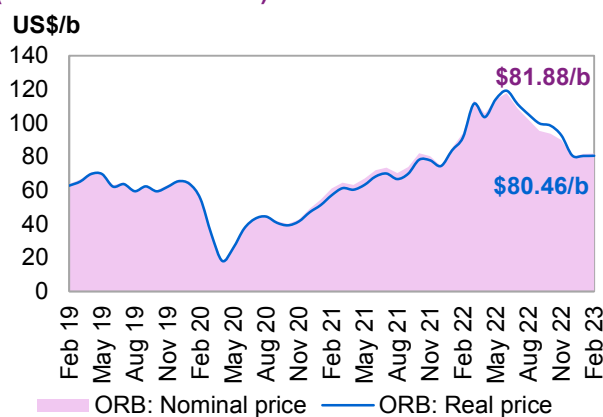
In **real terms** (excluding inflation), the ORB went from \$80.35/b in January to \$80.46/b in February, a 0.1% increase m-o-m.

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

World oil demand growth in 2022 is estimated at 2.5 mb/d y-o-y, broadly unchanged from last month's assessment. However, to reflect the historical data, oil demand in 4Q22 is adjusted down in OECD Americas and OECD Europe, while OECD Asia Pacific is adjusted slightly upwards. Similarly, oil demand in non-OECD countries is revised higher due to improvements in economic activity in some countries and a recovery in oil demand in China after the zero-COVID-19 policy was abandoned. Total world oil demand is estimated to have averaged 99.6 mb/d in 2022.

The forecast for 2023 world oil demand growth remains broadly unchanged from last month's assessment at 2.3 mb/d. However, oil demand growth is adjusted lower in 1Q23 and 2Q23 to account for an anticipated decline in the OECD region, due to an expected slowdown in economic activity in OECD Americas and OECD Europe. In the other hand, the oil demand in non-OECD countries is revised higher due to improvements in economic activity in China after the zero-COVID-19 policy was discontinued, as well as expected improvements in Russian oil demand. Accordingly, in the non-OECD region, oil demand is projected to grow by 2.1 mb/d. For 2023, world oil demand is projected to average 101.9 mb/d. However, this forecast is subject to many uncertainties, including the trend and pace of global economic activity and ongoing geopolitical developments.

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	25.02	25.03	0.71	2.93
<i>of which US</i>	20.03	20.38	20.41	20.62	20.43	20.46	0.42	2.12
Europe	13.13	13.19	13.43	14.07	13.37	13.52	0.39	2.95
Asia Pacific	7.38	7.85	6.99	7.22	7.77	7.46	0.08	1.02
Total OECD	44.83	45.81	45.40	46.63	46.16	46.00	1.17	2.62
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	6.49	6.43	0.20	3.28
Middle East	7.79	8.06	8.13	8.50	8.42	8.28	0.49	6.25
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	3.66	3.55	-0.07	-1.83
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	52.88	52.86	54.93	53.58	1.33	2.54
Total World	97.08	99.45	98.28	99.49	101.10	99.58	2.50	2.58
Previous Estimate	97.01	99.38	98.20	99.44	101.17	99.55	2.54	2.62
Revision	0.07	0.07	0.07	0.05	-0.07	0.03	-0.04	-0.04

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	25.03	24.86	25.17	25.63	25.18	25.21	0.18	0.73
of which US	20.46	20.41	20.46	20.85	20.49	20.55	0.09	0.46
Europe	13.52	13.12	13.41	14.11	13.42	13.52	0.00	0.02
Asia Pacific	7.46	7.89	7.05	7.27	7.79	7.50	0.04	0.55
Total OECD	46.00	45.88	45.63	47.01	46.39	46.23	0.23	0.49
China	14.85	15.23	15.40	15.43	16.16	15.56	0.71	4.75
India	5.14	5.41	5.44	5.21	5.50	5.39	0.25	4.96
Other Asia	9.02	9.46	9.65	9.14	9.24	9.37	0.35	3.83
Latin America	6.43	6.44	6.49	6.71	6.65	6.58	0.15	2.29
Middle East	8.28	8.45	8.46	8.84	8.71	8.61	0.33	4.02
Africa	4.40	4.71	4.34	4.43	4.88	4.59	0.19	4.32
Russia	3.55	3.68	3.45	3.59	3.82	3.64	0.09	2.50
Other Eurasia	1.15	1.21	1.16	1.02	1.22	1.15	0.01	0.51
Other Europe	0.77	0.80	0.76	0.75	0.83	0.79	0.02	2.32
Total Non-OECD	53.58	55.40	55.14	55.13	57.00	55.67	2.09	3.90
Total World	99.58	101.28	100.77	102.14	103.39	101.90	2.32	2.33
Previous Estimate	99.55	101.26	100.70	101.99	103.51	101.87	2.32	2.33
Revision	0.03	0.02	0.07	0.15	-0.12	0.03	0.00	0.00

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

OECD

OECD Americas

Update on the latest developments

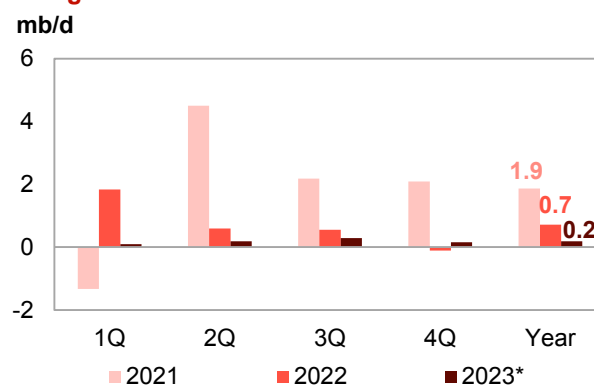
Oil demand in the US plunged unexpectedly by 1.2 mb/d y-o-y in **December**, down from 20 tb/d y-o-y growth in November, likely impacted by a cold weather spell that hit regions of the country amid slowing economic and manufacturing activity.

The US macroeconomic performance has been impacted by high inflation and other macroeconomic challenges weighing on oil demand. US core inflation declined somewhat, but remained high, standing at 5.7% y-o-y in December. This was compared with 6.5% reported in November, but was still well above normal levels and the Fed's 2% target. The December manufacturing PMI stood at 48.4 points, slightly below 49.0 reported in November, and continued below the 50-point threshold. US manufacturing activity has been in contraction territory since October 2022. The services PMI, representing around 70% of the US economy, unexpectedly fell to 49.2 in December, from 55.5 in November; likely also affected by the severe cold weather conditions.

With regard to transportation, the US Federal Highway Administration reported that traffic volume trends remained below pre-pandemic levels and declined by 1.8% (-4.6 billion vehicle miles) in December 2022 y-o-y. However, the International Air Transport Association's (IATA) Air Passenger Market Analysis reported that US airline activity was strong in December, and revenue passenger kilometers (RPKs) stood just 11.3% under December 2019 volumes.

Jet/kerosene led December oil demand growth by 90 tb/d y-o-y, similar to November. The 'Other products' category increased by 40 tb/d y-o-y in December, down from y-o-y growth of 0.3 mb/d a month earlier. LPG dropped y-o-y by 0.5 mb/d, down from y-o-y growth of 60 tb/d seen in November. With Americans making fewer car journeys and a strong winter storm that posed some challenges for holiday travelers in the US in December, gasoline declined by 0.3 mb/d y-o-y, which was compared to an annual decline of 0.2 mb/d in November.

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



Note: * 2023 = Forecast.
Source: OPEC.

World Oil Demand

Residual fuels also recorded a y-o-y decline of 170 tb/d in December, down from a y-o-y decline of 60 tb/d in November. Naphtha remained weak for 10 consecutive months due to low demand from the petrochemical sector, posting a 75 tb/d y-o-y decline.

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

By product	Dec 21	Dec 22	Change Dec 22/Dec 21	
			Growth	%
LPG	4.03	3.52	-0.51	-12.7
Naphtha	0.21	0.13	-0.08	-36.1
Gasoline	8.88	8.57	-0.31	-3.5
Jet/kerosene	1.52	1.61	0.09	5.9
Diesel	3.95	3.72	-0.23	-5.9
Fuel oil	0.43	0.26	-0.17	-39.6
Other products	1.94	1.98	0.04	2.1
Total	20.95	19.78	-1.17	-5.6

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

Near-term expectations

In **1Q23**, US GDP is set to remain in positive territory, albeit at a relatively low level. Furthermore, risk of continued monetary tightening may likely affect investor and consumer expenditure, which will consequently impact oil demand. Furthermore, continued weakening of manufacturing activity and seasonal weakening of mobility in winter months are likely to weigh on demand for transportation and industrial fuels. In 1Q23, US oil demand is projected to grow marginally y-o-y by 30 tb/d. Jet fuel is expected to be the major driver of oil demand growth in the quarter. Gasoline is expected to recover on the back of softer retail prices, while diesel is expected to remain relatively weak.

In **2Q23**, US GDP is projected to slow down slightly and while inflation is also expected to continue to decline, it is projected to remain at a relatively high level. Furthermore, the services PMI has shown signs of rebounding from the January low, almost matching the November level of 55.5. Similarly, airline activity is approaching pre-pandemic levels, which is projected to support oil demand to grow by 50 tb/d y-o-y in 2Q23. However, the risks are still skewed to the downside with a focus on the macroeconomic performance of the US economy.

OECD Europe

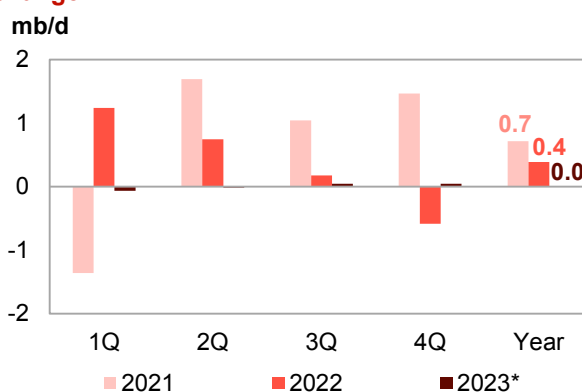
Update on the latest developments

Oil demand in OECD Europe declined by 0.5 mb/d y-o-y in **December**, the fourth consecutive month of annual declines. Oil demand was impacted by weakening macroeconomic performance and ongoing geopolitical developments in the region. Inflation softened marginally but remained high in the Euro-zone, standing at 9.2% in December, far above the target 2% inflation rate sought by the ECB's monetary policy across all Euro-zone countries combined. The PMI for services was at 49.8 and the manufacturing PMI stood at 47.8 in December, both slightly improved but remaining in contraction territory.

Demand for diesel has remained weak for seven consecutive months, with the exception of August, due to weakening industrial activity in the region.

Warmer-than-expected winter weather and a decline in natural gas prices also helped to depress diesel demand in the industrial and residential sectors, which posted a y-o-y decline of 0.2 mb/d in December. Similarly, weak demand for cracking and blending in the region's petrochemical sector continues to weigh on feedstock requirements. Naphtha and LPG declined by 0.3 mb/d and 0.2 mb/d y-o-y in the month. Finally, the other products category also declined by 40 tb/d y-o-y compared to an 110 tb/d annual decline recorded in November.

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



Note: * 2023 = Forecast.
Source: OPEC.

Positively, IATA reported that revenue passenger-kilometers (RPKs) in the region performed well to stand at 14.5% below December 2019 levels. Accordingly, jet/kerosene increased y-o-y by 130 tb/d in December. Similarly, residual fuels grew y-o-y by 120 tb/d on the back of gas-to-oil switching for winter heating demand, slightly higher than the y-o-y rise of 80 tb/d seen a month earlier. Gasoline posted y-o-y growth of 50 tb/d in December, up from y-o-y growth of 30 tb/d a month earlier.

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

By product	Dec 21	Dec 22	Change Dec 22/Dec 21	
			Growth	%
LPG	0.46	0.38	-0.08	-16.9
Naphtha	0.62	0.40	-0.22	-34.9
Gasoline	1.15	1.17	0.02	1.7
Jet/kerosene	0.61	0.68	0.07	11.3
Diesel	3.26	3.04	-0.22	-6.9
Fuel oil	0.17	0.21	0.05	27.5
Other products	0.41	0.39	-0.02	-5.6
Total	6.67	6.26	-0.40	-6.1

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

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

Near-term expectations

The region's GDP is forecast to remain positive, though at a low level in **1Q23**. In addition, ongoing geopolitical developments have induced supply chain bottlenecks in the region, which will likely continue causing manufacturing activity to remain in contraction territory. In January, the manufacturing MPI stood at 48.8 and decreased further to 48.5 in February. Furthermore, the European Central Bank is expected to deliver significant interest rate increases in 2Q23 in an effort to rein in inflation, which could lead to weaker economic activities and hence lower oil demand. Although sustained improvements in air travel activity are expected to support oil demand in 1Q23, demand in the region is forecast to soften by 70 tb/d y-o-y.

In **2Q23**, the GDP of the region is projected to decelerate further from 1Q23, but is expected to remain positive. Oil demand growth in the quarter is anticipated to improve slightly q-o-q, but is forecast to show a minor y-o-y decline. Accordingly, transportation fuels, most notably jet fuel, are set to support oil demand improvements in the second quarter. The risks, however, are skewed to the downside, hinging on geopolitical developments and the possibility of a recession in the region.

OECD Asia Pacific

Update on the latest developments

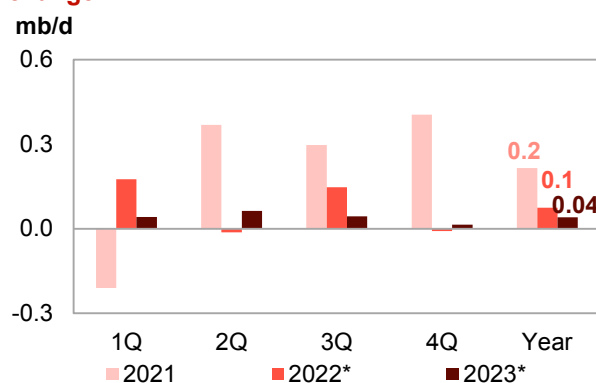
Oil demand in OECD Asia Pacific in December softened by 80 tb/d y-o-y, following y-o-y growth of 120 tb/d a month earlier. Sluggish macroeconomic performance in Japan and South Korea weighed on oil demand in the region.

The two largest oil-consuming countries in the region are facing some economic headwinds. In Japan, inflation rose to stand at 4% in December, compared with an already elevated 3.8% y-o-y in November. Similarly, in South Korea, inflation rose from 5.0% y-o-y in November to 5.2% y-o-y in December.

Furthermore, the manufacturing PMIs for both Japan and South Korea were below the expansion threshold in December. In Japan, the manufacturing PMI was 48.7, down from 49.4 in November.

The South Korean manufacturing PMI also slightly declined from 49 in November to 48.2 in December. However, the services sector PMI, which constitutes around two-thirds of the Japanese economy, rose to 51.1 in December from 50.3 in November.

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



Note: * 2023 = Forecast.
Source: OPEC.

Nevertheless, airline activity in the region remains healthy, according to a report from IATA, which shows that domestic air traffic increased in Japan and achieved 74.1% of the recovery to 2019 levels. Australia also experienced a similar rebound in transportation, with RPKs recovering to 81.2% of 2019 levels. Similarly, international traffic within the region maintained its growth momentum.

Weak naphtha margins have led to some naphtha-fed steam crackers in the region's petrochemical industry to operate at low rates, thereby reducing their naphtha requirements. Accordingly, naphtha posted an annual decline of more than 0.2 mb/d, which is compared to the 0.1 mb/d y-o-y decline in November in the region. Finally, diesel demand declined further by 70 tb/d y-o-y from a decline of 39 tb/d y-o-y in November.

In contrast, oil demand growth in the region was led by jet/kerosene, which increased y-o-y by 124 tb/d, up from 80 tb/d y-o-y growth a month earlier. Winter demand for heating and rising natural gas prices also led to some oil-to-gas switching, enabling the "other products" category to expand by 60 tb/d y-o-y. Diesel also benefitted from gas-to-oil switching to grow marginally by 10 tb/d y-o-y. Gasoline demand grew only slightly by 20 tb/d y-o-y. Slow gasoline demand was partly due to colder-than-average temperatures and heavy snowfall weighing on domestic mobility in some countries of the region.

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

By product	Jan 22	Jan 23	Change Jan 23/Jan 22	
			Growth	%
LPG	0.50	0.39	-0.11	-22.8
Naphtha	0.69	0.67	-0.02	-2.8
Gasoline	0.66	0.65	-0.01	-1.6
Jet/kerosene	0.65	0.60	-0.05	-7.3
Diesel	0.77	0.72	-0.04	-5.8
Fuel oil	0.31	0.33	0.02	7.5
Other products	0.22	0.30	0.08	38.5
Total	3.79	3.66	-0.13	-3.4

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

Near-term expectations

The region's GDP is projected to remain positive in 2023, albeit at a slightly lower level than what was seen in 2022. The economies of the two major oil-consuming countries in the region, Japan and South Korea, have witnessed some slowing momentum, and inflation rates in both countries are on a rising trend. At the same time, air travel activity continues to increase. The recent opening of the Chinese economy is projected to support oil demand in the region in the months to come.

The region's oil demand is projected to grow y-o-y in **1Q23** and **2Q23**, mainly supported by transportation fuel requirements and petrochemical feedstock. However, risks remain high and tilted to the downside, mainly dependent on developments in the economies of Japan and South Korea.

Non-OECD

China

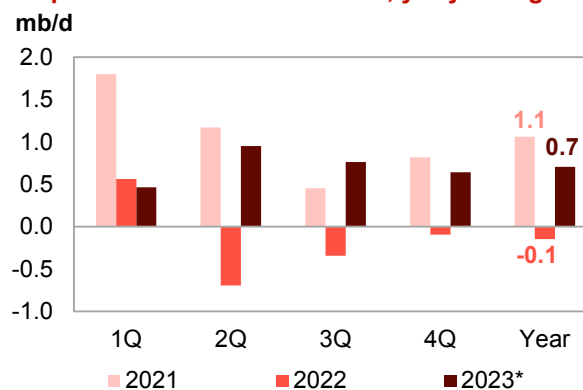
Update on the latest developments

China's oil demand saw a strong rebound of 0.8 mb/d y-o-y growth in **January**, up from 0.2 mb/d y-o-y growth posted a month earlier. Oil demand growth was propelled by the recovery of economic and social activity after the abandonment of the zero-COVID-19 policy in December. In addition, demand from the resilient petrochemical sector remained solid to support January oil demand. However, the January PMI showed that the manufacturing sector remains relatively weak, as the index for the sector was almost unchanged at 49.2 in January, compared with 49 in December. At the same time, the January services PMI shows a strong positive trend, reflecting the reopening effect, moving up to 52.9 in January from 48 in December.

January oil demand in China was driven by requirements for petrochemical feedstock; naphtha saw y-o-y growth of 0.2 mb/d, the same as what was reported a month earlier. LPG increased by 0.1 mb/d y-o-y, up from 80 tb/d y-o-y reported in December. The lifting of COVID-19 restrictions has led to a stronger-than-expected air travel recovery as people took advantage of the Lunar New Year holiday to travel. According to the Civil Aviation Administration of China, the airline industry transported 55.23 million passengers over the 40-day period, up 39% from the same holiday period in 2022, and equivalent to 76% of the air traffic during 2019. Accordingly, jet fuel demand increased y-o-y by 0.2 mb/d, up from 70 tb/d y-o-y in December. Demand for residual fuels increased y-o-y by 0.1 mb/d, up from 60 tb/d y-o-y

growth in December. However, diesel demand saw y-o-y growth of 70 tb/d, down from 0.1 mb/d y-o-y growth in December. The other products category rebounded by 70 tb/d y-o-y, from a decline of 0.1 mb/d y-o-y in December. Finally, during the New Year holiday, China saw millions of passengers travelling by road, according to the Ministry of Transport. The volume of traffic was 85.9% higher than during the same period in 2022, which resulted in gasoline growing y-o-y by 30 tb/d, up from an annual decline of 0.2 mb/d in December.

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



Note: * 2023 = Forecast.
Source: OPEC.

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

By product	Jan 22	Jan 23	Change Jan 23/Jan 22	
			Growth	%
LPG	2.36	2.46	0.10	4.0
Naphtha	1.56	1.77	0.21	13.2
Gasoline	3.77	3.80	0.03	0.8
Jet/kerosene	0.62	0.86	0.24	38.6
Diesel	4.04	4.11	0.07	1.7
Fuel oil	0.68	0.78	0.10	14.8
Other products	2.38	2.45	0.07	3.2
Total	15.42	16.23	0.81	5.3

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 is picking up now that the Chinese New Year celebrations are over, factories have reopened, truck deliveries resumed and construction activity is picking up. The February PMI readings show that the manufacturing sector has started responding positively to the opening of China as the index increased to 51.6, compared with just 49 in December. The services PMI also shows a strong positive trend, reflecting the reopening effect, moving up to 55.0 in February, from 52.9 in January. The GDP of China will remain firm at 5.2% in 2023, supporting oil demand growth of 0.7 mb/d y-o-y.

In **1Q23**, oil demand is set to see y-o-y growth of 0.5 mb/d. Jet/kerosene will be the driver of the demand recovery. Domestic and international airline activity is expected to rise with the increase in international business and tourism due to the removal of quarantine periods for international travelers arriving in China. This is also providing support for the jet fuel demand recovery. Gasoline demand will also improve significantly, driven by a strong rebound in mobility. Similarly, the petrochemical industry has continued to operate at around full capacity of 99% in January, stable from December, with the Hengli Petrochemical (Dalian) plant operating at around 94% of capacity. Furthermore, two new refineries -- PetroChina's Guangdong Petrochemical and Jiangsu Shenghong Petrochemical -- are expected to enter commercial operation in the coming months and will boost feedstock demand for light distillates. Lastly, economic stimulus, along with infrastructure expansion in 2023, will set the stage for a robust diesel consumption recovery.

In **2Q23**, oil demand is expected to increase y-o-y by a solid 1.0 mb/d. Jet fuel will again drive oil demand growth in this quarter, with millions of air passengers expected to support air travel activity during the Golden Week holiday in May, combined with further pent-up demand and business travelers 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

India's oil demand remained at y-o-y growth of 0.2 mb/d in **January**, similar to the growth reported in December. Data from S&P Global and Haver Analytics shows that the manufacturing PMI in India remained at a strong level of 55.4 in January. Likewise, the services PMI remained solid at a level of 57.2.

Oil demand was driven by diesel, which posted y-o-y growth of 0.2 mb/d, compared with annual growth of 0.1 mb/d reported in December. Furthermore, vehicle sales in January remained strong as data from the Federation of Automobile Dealers Associations showed that passenger vehicle (PV) sales jumped 22% y-o-y in January, up by 8% from pre-COVID 2019 levels. Accordingly, gasoline grew y-o-y by 0.1 mb/d, a significant improvement from the 46 tb/d y-o-y growth seen in December. According to IATA, India saw domestic revenue passenger-kilometers (RPKs) increase substantially in December to stand only 3.6% below traffic levels at the same time in 2019.

Demand for jet/kerosene in January increased by 30 tb/d y-o-y compared with a marginal increase of 7 tb/d y-o-y in December.

However, demand for petrochemical feedstock – LPG and naphtha – slipped in January. Naphtha was hit by weak feedstock demand from naphtha-fed steam crackers in the wake of poor olefin production margins.

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

By product	Jan 22	Jan 23	Change Jan 23/Jan 22	
			Growth	%
LPG	0.99	0.97	-0.02	-2.1
Naphtha	0.40	0.35	-0.06	-14.0
Gasoline	0.70	0.79	0.10	13.8
Jet/kerosene	0.17	0.20	0.03	17.3
Diesel	1.57	1.75	0.18	11.3
Fuel oil	0.16	0.17	0.01	6.7
Other products	0.94	0.88	-0.07	-6.9
Total	4.93	5.10	0.17	3.5

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

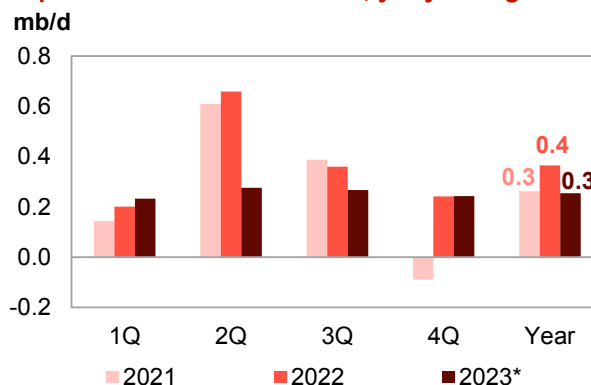
Sources: JODI, Petroleum Planning and Analysis Cell of India and OPEC.

Near-term expectations

Looking forward, India's demand for refined oil products is expected to remain strong with demand for particularly diesel and gasoline expected to expand significantly beyond pre-pandemic levels. Demand for jet fuel is also projected to increase significantly in **1Q23** and **2Q23**. The country's manufacturing and service sectors are expected to continue to provide support for oil demand. The February PMI readings show that manufacturing and services indices reflect a strong positive trend. The manufacturing PMI stood at 55.4 and the services PMI jumped to 59.4 points. Supported by projected GDP growth of 5.6% in 2023, India's oil demand is projected to rise by 0.2 mb/d y-o-y in 1Q23, with increasing mobility and air travel expected to support gasoline and jet fuel demand.

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

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



Note: * 2023 = Forecast.

Source: OPEC.

Latin America

Update on the latest developments

The latest **Latin American oil demand** data shows a y-o-y increase of 0.14 mb/d in **December**. Economic activity in the region has been facing some headwinds, stemming largely from high inflation in Argentina and Venezuela. Recent PMI indices indicated a slowing trend in Brazil, where the manufacturing PMI remained significantly below the growth-indicating level of 50 for the second month in a row standing at 44.2 in December compared with 44.3 in November. The services PMI in the country also fell to 51 in December, from 51.6 in November.

However, airline activity in the region continued to improve. According to IATA's Monthly Statistics, international passenger traffic during December in the region stood at 15.9% below the pre-pandemic level in December 2019.

Oil demand in Latin America was mainly driven by the other products category and residual fuel, which rose by 65 tb/d y-o-y and 62 tb/d y-o-y, respectively. Jet kerosene saw a y-o-y increase of 31 tb/d on the back of a gradual improvement in air travel activity. Diesel stood broadly unchanged y-o-y, down from 40 tb/d y-o-y growth in November. However, gasoline recorded a decline of 21 tb/d y-o-y, down from an annual increase of 67 tb/d in November.

LPG saw a slight y-o-y increase of 8 tb/d. However, weak petrochemical activity weighed on naphtha, which fell by 8 tb/d y-o-y for the 12th consecutive decline.

Near-term expectations

GDP growth for the region in 2023 is projected to slow, albeit remaining positive. Oil demand is projected to grow y-o-y by 0.1 mb/d in **1Q23**. The ongoing recovery of air travel, along with mobility and manufacturing activity improvements should support demand for jet fuel, gasoline and distillates.

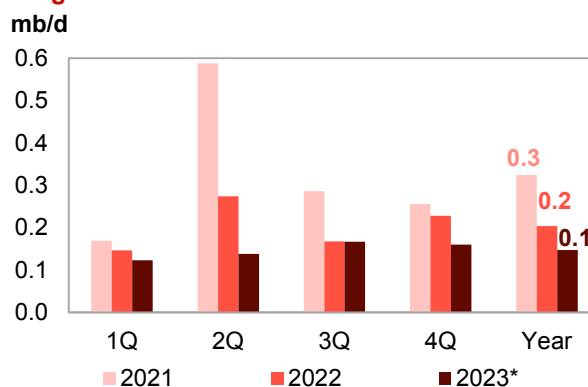
In **2Q23**, oil demand is projected to continue to grow by more than 0.1 mb/d y-o-y. The outlook for oil demand growth sees Brazil in the lead, followed by Argentina. In terms of product demand, transportation fuels are expected to grow the most, supported by the continuing recovery in mobility and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

Middle East

Update on the latest developments

Oil demand growth in the Middle East soared by 0.6 mb/d, or 12%, y-o-y in **December**, up from 0.5 mb/d growth y-o-y in November. Oil demand was backed by healthy economic and social activity in major oil-consuming countries of the region. Saudi Arabia's composite PMI stood at 56.9 in December, and the UAE posted a strong composite PMI at 54.2 in the same month. While inflation in Saudi Arabia still remains relatively well contained, it has come down from higher levels seen in the UAE in the middle of 2022. IATA reported that Middle Eastern carriers recorded 69.8% y-o-y growth in December, and international revenue passenger kilometers (RPKs) are 16.3% under pre-pandemic levels.

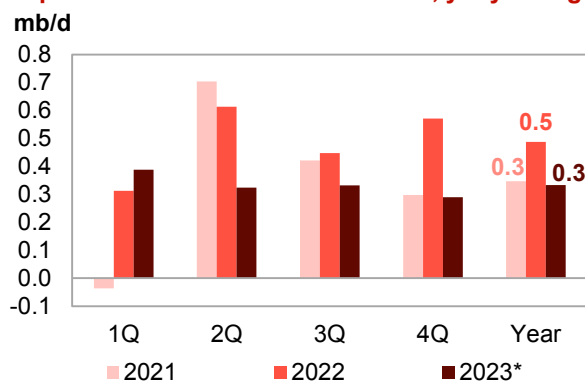
Graph 4 - 6: Latin America's oil demand, y-o-y change



Note: * 2023 = Forecast.
Source: OPEC.

From the perspective of oil products consumption, the other products category remained the main driver of oil demand in the region, up by 0.4 mb/d y-o-y and accounting for 55% of total oil demand growth in December on the back of demand for electricity generation and the manufacturing sector. Diesel grew by 0.2 mb/d y-o-y at broadly the same rate for the third consecutive month. Higher diesel demand was underpinned by an increase in mining, quarrying and manufacturing activity in the region. Saudi Arabia's mining and quarrying activity during the month increased by 4.1% y-o-y, while manufacturing activity rose 18.5% compared to December 2021. Healthy airline activity in the Middle East region boosted jet kerosene to grow by 40 tb/d y-o-y, and LPG increased y-o-y by 30 tb/d.

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



Note: * 2023 = Forecast.
Source: OPEC.

Residual fuels also increased by 50 tb/d y-o-y as compared to the 50 tb/d y-o-y decline seen in November. However, gasoline saw a y-o-y decline of 20 tb/d for the Middle East.

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

By product	Jan 22	Jan 23	Change Jan 23/Jan 22	
			Growth	%
LPG	0.05	0.06	0.01	22.8
Gasoline	0.48	0.51	0.02	4.9
Jet/kerosene	0.08	0.08	0.00	6.0
Diesel	0.48	0.56	0.08	16.2
Fuel oil	0.45	0.55	0.10	23.2
Other products	0.47	0.38	-0.09	-18.9
Total	2.00	2.14	0.13	6.6

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

Near-term expectations

Middle Eastern 2023 oil demand estimates remained robust on the back of healthy economic activity in the region continuing to support oil demand. The composite PMI in Saudi Arabia remained strong reaching 59.8 in February. Infrastructure project developments and an uptick in power generation requirements are expected to drive oil demand momentum in the region during **1Q23**. Hence, demand for residual and fuel oil is expected to continue to accelerate. Jet fuel demand in the Middle East will also likely increase y-o-y in 1Q23 due to the continued recovery of the aviation sector. The region's largest kerosene/jet fuel consumers are the UAE, Saudi Arabia, Qatar and IR Iran, with the four countries accounting for 76% of the region's total kerosene/jet fuel demand. Oil demand in the region is projected to grow 0.4 mb/d y-o-y in 1Q23.

In **2Q23**, oil demand is projected to grow y-o-y by 0.3 mb/d, led by fuel oil for electricity generation in Iraq and Saudi Arabia. In addition, gasoline, transportation diesel and jet/kerosene are further projected to support oil demand growth.

World Oil Supply

Non-OPEC liquids supply in 2022 (including processing gains) is estimated to have grown by 1.9 mb/d to average 65.8 mb/d, broadly unchanged from the previous month's assessment. Minor downward revisions to OECD Europe and OECD Americas were largely offset by upward revisions to liquids production in the non-OECD.

Total US liquids production dropped m-o-m by 0.9 mb/d in December due to severe winter storm Elliot, but saw a y-o-y increase of 0.2 mb/d in 2022 to average 19.1 mb/d. The main storm effect was on NGLs production which fell by 9%, m-o-m, while it was estimated that crude output declined by around 2%. Liquids supply growth in 2022 is estimated to have changed in a few countries, including the US, primarily owing to historical adjustments in the biofuel production and the relevant base changes. The main drivers of liquids supply growth for 2022 are estimated to be the US, Russia, Canada, Guyana, China and Brazil, while production is expected to see the largest declines in Norway and Thailand.

Non-OPEC liquids production growth in 2023 is forecast to grow by 1.4 mb/d to average 67.2 mb/d, remained unchanged from last month, where higher output projections for Russia (considering production levels in 1Q23, which came stronger than anticipated, and maintaining last month's assumption for remaining months of the year) offsets the projected declines in other regions.

US liquids production is expected to gradually recover after a considerable drop in December. However, the supply growth forecast for 2023 is revised down slightly to average 1.1 mb/d, considering lower output prospects in 1Q23. Canadian supply growth is also revised down due to the extreme effect of freezing weather on oil sands mining activities in January. Output in the North Sea region was revised down due to maintenance and natural declines, leading to expectations of lower production in 1Q23 and 2Q23. On a positive note for supply, robust Russian liquids production in January is estimated to remain fairly stable in February. The main growth drivers for 2023 are anticipated to be the US, Brazil, Norway, Canada, and Kazakhstan, whereas oil production is forecast to decline in Russia. Nevertheless, there are significant uncertainties related to the impact of ongoing geopolitical developments in Eastern Europe and US shale output assessments in 2023.

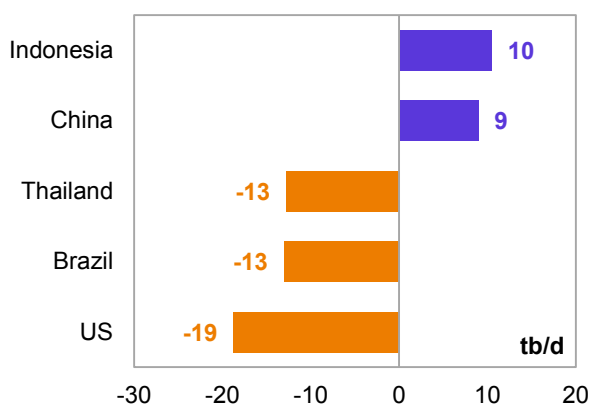
OPEC NGLs and non-conventional liquids production in 2022 is forecast to have grown by 0.1 mb/d to average 5.4 mb/d, and is expected to increase by 50 tb/d to average 5.4 mb/d in 2023. OPEC-13 crude oil production in February increased by 117 tb/d m-o-m to average 28.92 mb/d, according to available secondary sources.

Non-OPEC liquids production in February, including OPEC NGLs, is estimated to have increased m-o-m by 0.5 mb/d to average 73.0 mb/d, up by 2.4 mb/d y-o-y. As a result, preliminary data indicates that February's global oil supply increased by 0.6 mb/d m-o-m to average 101.9 mb/d, up by 2.8 mb/d y-o-y.

The **non-OPEC liquids supply estimation for 2022** was revised up by 0.2 mb/d to average 65.8 mb/d, due to historical adjustments to non-conventional outputs. However, y-o-y growth averaged 1.9 mb/d, revised down slightly by 31 tb/d compared with the previous month.

The overall OECD supply growth estimate for 2022 has dropped marginally. While OECD Europe and OECD Americas saw minor downward revisions, OECD Asia Pacific was broadly unchanged from the previous month's assessment. By contrast, the non-OECD supply growth assessment for 2022 was revised up by a slight 12 tb/d.

Graph 5 - 1: Major revisions to annual supply change estimation in 2022, MOMR Mar 23/Feb 23

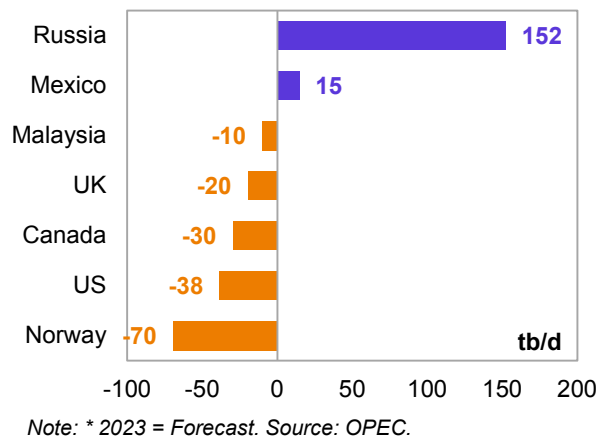


Source: OPEC.

Non-OPEC liquids production in 2023 is forecast to grow by 1.4 mb/d, remained unchanged compared with the previous month's assessment.

The supply growth forecast for OECD is revised down and expected to increase by 1.4 mb/d y-o-y in 2023; growth in OECD Asia Pacific remains unchanged, whereas OECD Europe and OECD Americas are revised down. However, the non-OECD supply growth projection is revised up by 145 tb/d to show a decline of 0.1 mb/d in 2023, y-o-y.

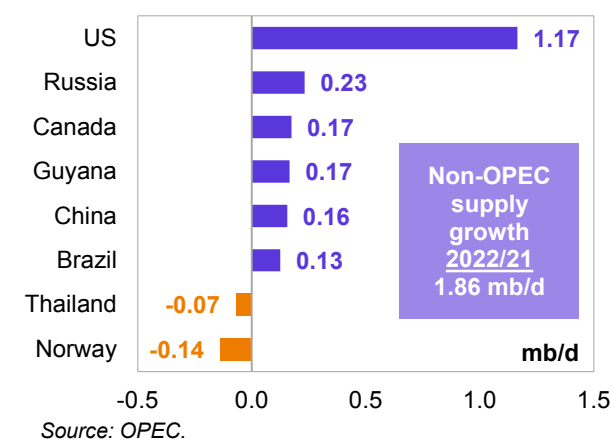
Graph 5 - 2: Major revisions to annual supply change forecast in 2023*, MOMR Mar 23/Feb 23



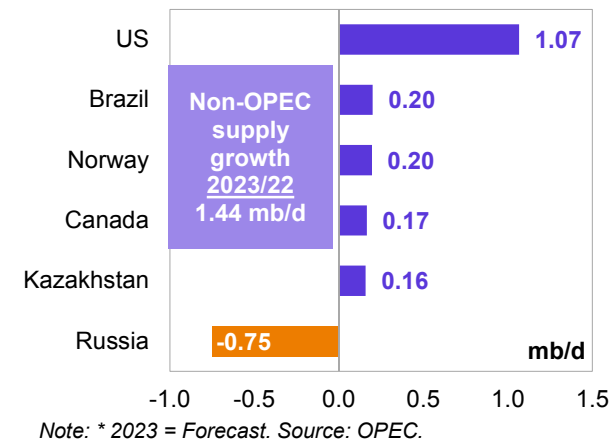
Key drivers of growth and decline

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 - 3: Annual liquids production changes y-o-y for selected countries in 2022



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



For **2023**, the key drivers of non-OPEC supply growth are forecast to be the US, Brazil, Norway, Canada, and Kazakhstan, 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	26.11	26.51	27.26	27.47	26.84	1.39	5.47
<i>of which US</i>	18.04	18.51	19.07	19.57	19.67	19.21	1.17	6.46
Europe	3.79	3.72	3.46	3.51	3.61	3.58	-0.22	-5.68
Asia Pacific	0.51	0.49	0.51	0.43	0.49	0.48	-0.03	-6.23
Total OECD	29.75	30.32	30.49	31.20	31.56	30.90	1.15	3.85
China	4.32	4.54	4.54	4.41	4.42	4.48	0.16	3.61
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	1.30	1.32	-0.03	-2.34
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	32.22	32.88	32.47	0.60	1.89
Total Non-OPEC production	61.62	63.17	62.41	63.42	64.44	63.36	1.75	2.83
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	65.57	64.81	65.82	66.84	65.76	1.86	2.91
Previous estimate	63.68	65.33	64.53	65.55	66.84	65.57	1.89	2.97
Revision	0.23	0.25	0.28	0.27	0.00	0.20	-0.03	-0.06

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	27.44	27.89	28.25	28.62	28.06	1.22	4.53
<i>of which US</i>	19.21	19.67	20.26	20.45	20.68	20.27	1.07	5.55
Europe	3.58	3.74	3.74	3.80	3.93	3.80	0.23	6.40
Asia Pacific	0.48	0.49	0.47	0.49	0.48	0.48	0.00	0.65
Total OECD	30.90	31.67	32.11	32.55	33.03	32.34	1.45	4.69
China	4.48	4.52	4.52	4.49	4.49	4.50	0.03	0.64
India	0.77	0.78	0.79	0.78	0.78	0.78	0.01	1.03
Other Asia	2.31	2.38	2.37	2.34	2.36	2.36	0.05	2.36
Latin America	6.34	6.62	6.62	6.67	6.73	6.66	0.32	5.12
Middle East	3.29	3.27	3.31	3.34	3.34	3.32	0.03	0.86
Africa	1.32	1.32	1.33	1.35	1.34	1.34	0.02	1.57
Russia	11.03	10.90	10.00	10.10	10.15	10.28	-0.75	-6.78
Other Eurasia	2.83	3.04	3.05	3.01	3.05	3.04	0.21	7.39
Other Europe	0.11	0.10	0.10	0.10	0.10	0.10	0.00	-2.83
Total Non-OECD	32.47	32.93	32.10	32.18	32.36	32.39	-0.08	-0.24
Total Non-OPEC production	63.36	64.60	64.21	64.72	65.39	64.73	1.37	2.16
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	67.07	66.68	67.19	67.86	67.20	1.44	2.19
Previous estimate	65.57	66.72	66.64	66.99	67.65	67.01	1.44	2.20
Revision	0.20	0.35	0.03	0.20	0.21	0.20	0.00	0.00

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

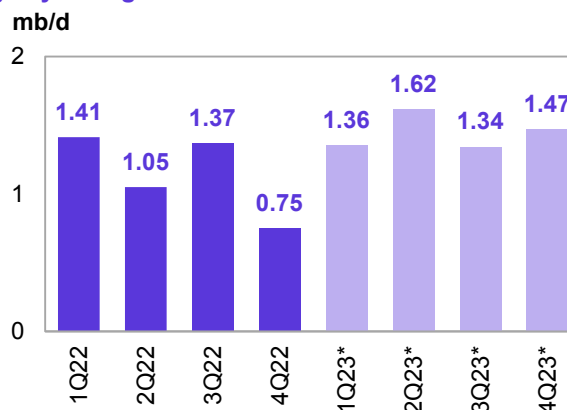
OECD

OECD liquids production in 2022 is estimated to have increased y-o-y by 1.1 mb/d to average 30.9 mb/d. This is revised down by 43 tb/d compared with a month earlier, with some downward revisions for OECD Europe and OECD Americas, mainly due to biofuel historical adjustments.

OECD Americas was revised down slightly by 18 tb/d compared with last month's assessment. It is now estimated to grow by 1.4 mb/d to average 26.8 mb/d.

OECD Europe and OECD Asia Pacific are estimated to decline y-o-y by 0.2 mb/d to average 3.6 mb/d and by 32 tb/d y-o-y to average 0.5 mb/d, respectively.

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



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

For **2023**, oil production in the OECD region is forecast to grow by 1.4 mb/d to average 32.3 mb/d. Growth is led by OECD Americas with 1.2 mb/d to average 28.1 mb/d. Yearly liquids production in OECD Europe is anticipated to grow by 0.2 mb/d to average 3.8 mb/d, while OECD Asia Pacific is expected to remain broadly unchanged to average 0.5 mb/d.

OECD Americas

US

US liquids production in December 2022 fell sharply m-o-m by 909 tb/d to average 19.1 mb/d. However, this was up by 159 tb/d compared with December 2021.

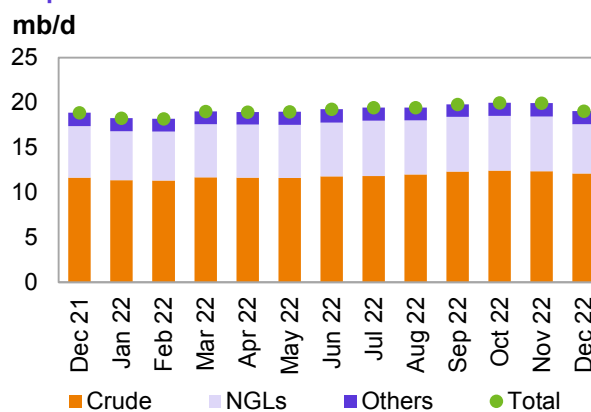
Crude oil and condensate production fell m-o-m by 276 tb/d in **December 2022** to average 12.1 mb/d, up by 0.5 mb/d y-o-y.

In terms of **crude and condensate production breakdown by region (PADDs)**, production decreased mainly in the Midwest, where it was down by 168 tb/d to average 1.6 mb/d. Production in the Rocky Mountain and US Gulf Coast (USGC) regions fell by 63 tb/d and 41 tb/d, respectively, while the West Coast and East Coast remained broadly unchanged m-o-m. Production declines in the main regions were primarily driven by weather-related issues, severe winter storms and freezes at North Dakota and Texas oil and gas fields.

NGLs production was down by 552 tb/d m-o-m to average 5.5 mb/d in December. This was lower y-o-y by 0.2 mb/d. Production of **non-conventional liquids** (mainly ethanol) dropped by 81 tb/d m-o-m to average 1.4 mb/d, according to the US Department of Energy (DoE). Preliminary estimates see non-conventional liquids averaging around 1.4 mb/d in January, down by 22 tb/d compared with the previous month. It is worth mentioning that US non-conventional liquids production has been historically adjusted in this report.

GoM production declined marginally m-o-m by 14 tb/d in December to average 1.8 mb/d, with quite stable production seen on Gulf Coast offshore platforms. Shell's Vito development project started production in February. In the **onshore Lower 48**, crude and condensate production fell m-o-m by 264 tb/d to average 9.9 mb/d in December.

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



Sources: EIA and OPEC.

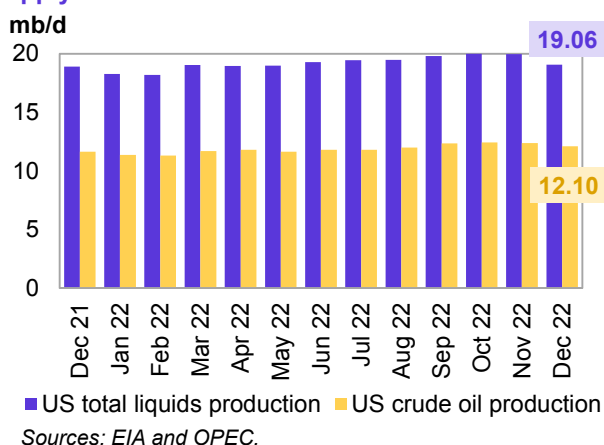
Table 5 - 3: US crude oil production by selected state and region, tb/d

State				Change	
	Dec 21	Nov 22	Dec 22	m-o-m	y-o-y
Texas	4,991	5,212	5,147	-65	156
Gulf of Mexico (GOM)	1,693	1,798	1,784	-14	91
New Mexico	1,365	1,724	1,770	46	405
North Dakota	1,135	1,083	948	-135	-187
Alaska	451	445	447	2	-4
Oklahoma	402	444	418	-26	16
Colorado	453	445	408	-37	-45
Total	11,634	12,377	12,101	-276	467

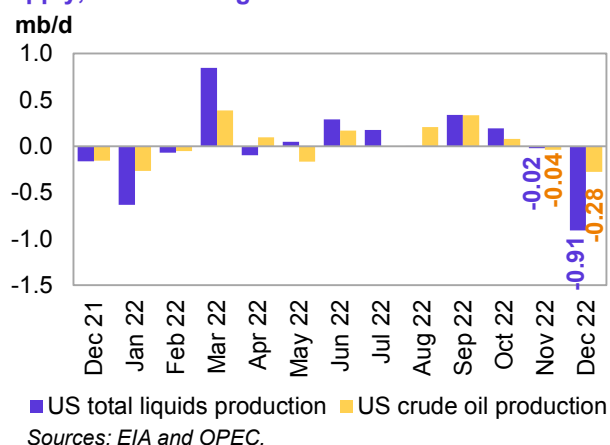
Sources: EIA and OPEC.

Looking at **individual states**, New Mexico's oil production rose by 46 tb/d to average 1.8 mb/d, which is 405 tb/d higher than a year ago. Texas production was down by 65 tb/d to average 5.1 mb/d, which is 156 tb/d higher than a year ago. In the Midwest, North Dakota's production fell m-o-m by 135 tb/d to average 0.9 mb/d, down by 187 tb/d y-o-y, and Oklahoma's production was down m-o-m by 26 tb/d to average of 0.4 mb/d. Alaska's output remained broadly stable m-o-m, and in Colorado, production fell by 37 tb/d.

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



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

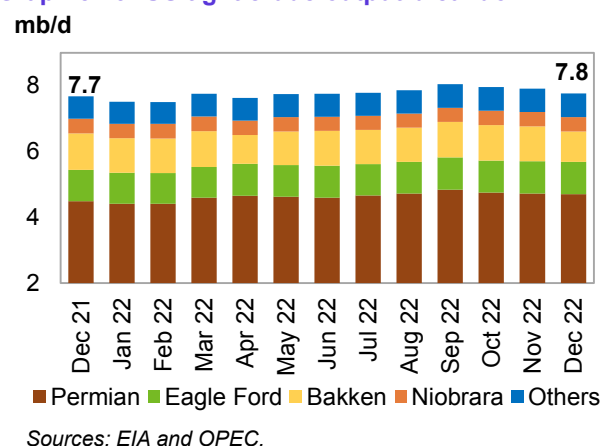


US tight crude output in December 2022 is estimated to have dropped by 145 tb/d m-o-m to average 7.8 mb/d, according to the latest estimation. This was 0.1 mb/d higher than in the same month of the previous year.

The m-o-m decrease from shale and tight formations using horizontal wells came mainly from the Bakken, where output decreased by 133 tb/d to average 0.9 mb/d. This was down by 179 tb/d y-o-y.

In Texas and New Mexico, Permian shale production dropped by 21 tb/d, averaging 4.7 mb/d. This is up by 211 tb/d y-o-y. Tight crude output at Eagle Ford in Texas remained broadly stable at an average 1.0 mb/d. This is up by 29 tb/d y-o-y. Production in Niobrara-Codell in Colorado and Wyoming was also unchanged at an average of 0.4 mb/d.

Graph 5 - 9: 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 revised down by 19 tb/d compared with the previous assessment, due to a crude and NGLs output slump in December and upward biofuel adjustments. Tight crude is assessed to have grown by 0.5 mb/d in 2022 to average 7.8 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 GoM is estimated to have increased by a minor 36 tb/d. Non-conventional liquids and the crude from conventional reservoirs are assessed to have expanded by 78 tb/d to average 1.4 mb/d and by 0.1 mb/d to average 2.4 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 1.1 mb/d to average 20.3 mb/d, revised down by 38 tb/d from the previous assessment, due to lower output expectation in 1Q23 and lower-than-expected upstream activities in this period. Greater drilling activity and fewer supply chain/logistical issues in the prolific Permian, Eagle Ford and Bakken shale sites are still assumed for 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 8.5 mb/d, up by 0.7 mb/d y-o-y.

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

The 2023 forecast assumes continuing capital discipline, lower inflationary pressures, 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 in this year.

Graph 5 - 10: US liquids supply developments by component

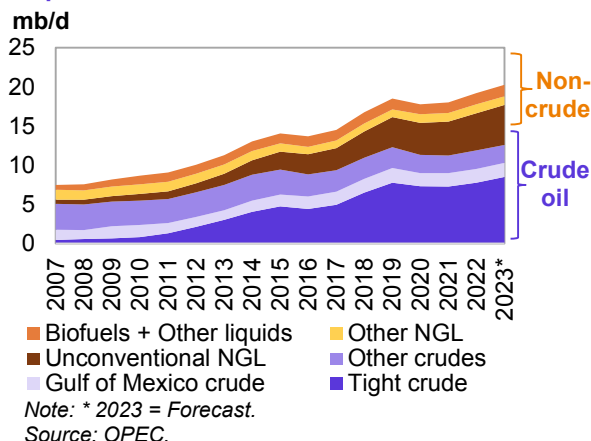


Table 5 - 4: US liquids production breakdown, mb/d

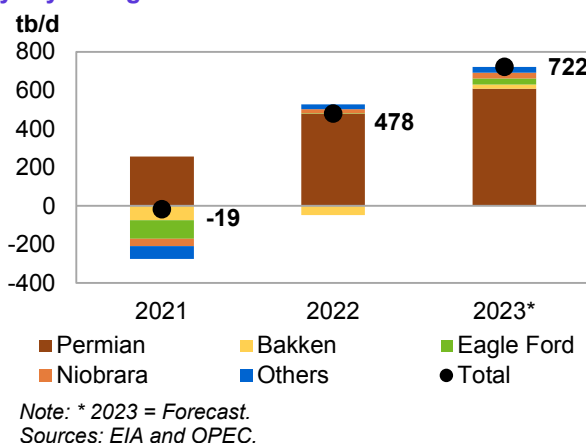
US liquids	2021	Change 2021/20	2022	Change 2022/21	2023*	Change 2023/22
Tight crude	7.29	-0.02	7.77	0.48	8.49	0.72
Gulf of Mexico crude	1.71	0.04	1.74	0.04	1.83	0.09
Conventional crude oil	2.26	-0.09	2.37	0.12	2.28	-0.09
Total crude	11.25	-0.06	11.88	0.63	12.60	0.72
Unconventional NGLs	4.31	0.23	4.74	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	1.16	20.27	1.07

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 0.5 mb/d to 4.6 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 48 tb/d in 2022 to average 1.0 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 and available DUC wells were lower than the levels required to revive output. In 2023, growth is forecast to resume at 21 tb/d to average 1.1 mb/d.

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



The **Eagle Ford** in Texas saw output of 1.2 mb/d in 2019, which declined in 2020 and 2021. It is estimated to have remained broadly unchanged in 2022 to average 0.96 mb/d. Growth of around 30 tb/d is then forecast for 2023, to average just under 1.0 mb/d.

Niobrara production is estimated to have grown y-o-y by 22 tb/d in 2022 and is forecast to increase by 30 tb/d in 2023 to average 435 tb/d and 465 tb/d, respectively. Other shale plays are expected to show marginal increases of 25 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	4.17	0.26	4.64	0.48	5.25	0.61
Bakken shale	1.08	-0.07	1.03	-0.05	1.05	0.02
Eagle Ford shale	0.96	-0.10	0.96	0.00	0.99	0.03
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	7.29	-0.02	7.77	0.48	8.49	0.72

Note: * 2023 = Forecast. Source: OPEC.

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

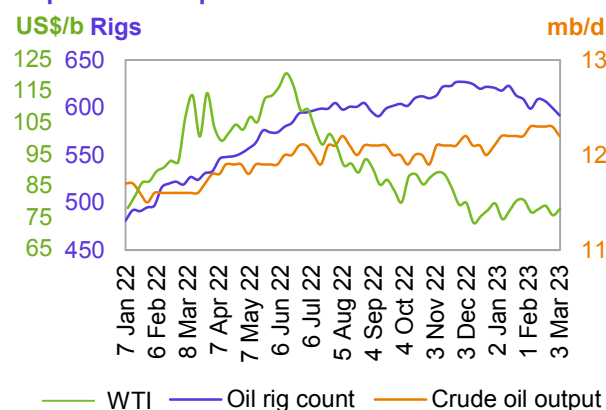
Total **active US drilling rigs** fell by four to 749 in the week ending 3 March 2023. This was up by 99 rigs compared with a year ago. The number of active offshore rigs fell w-o-w to 16, a decrease of one. This is higher by four compared with the same month a year earlier. Onshore oil and gas rigs were lower by two w-o-w to stand at 732 rigs, up by 97 rigs y-o-y, with one rig in inland waters.

The **US horizontal rig count** fell by three w-o-w to 690, compared with 595 horizontal rigs a year ago. The number of drilling rigs for oil fell by eight w-o-w to 592. Conversely, gas-drilling rig counts were up by three to 154.

The Permian's rig count fell by four w-o-w to 349 rigs. However, rig counts remained steady in Eagle Ford, Williston and DJ-Niobrara at 71, 42 and 15, respectively. The rig count rose by one w-o-w in Cana Woodford to 31.

One operating oil rig remained in the Barnett basin, unchanged w-o-w, but down from two last month.

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



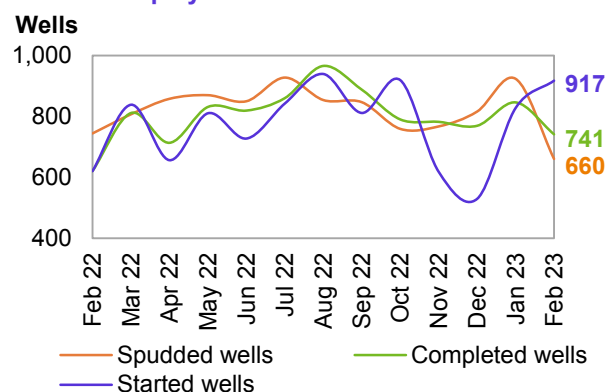
Sources: Baker Hughes, EIA and OPEC.

Drilling and completion (D&C) activities for spudded, completed and started oil-producing wells in all US shale plays, based on EIA-DPR regions, included 924 horizontal wells spudded in January (as per preliminary data). This is up by 108 m-o-m, and 11% higher than in January 2022.

January preliminary data indicates a higher number of completed wells at 846, which is up 13% y-o-y. Moreover, the number of started wells was estimated at 827, which is 21% higher than a year earlier.

Preliminary data for February 2023 estimates 660 spudded, 741 completed and 917 started wells, according to Rystad Energy.

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

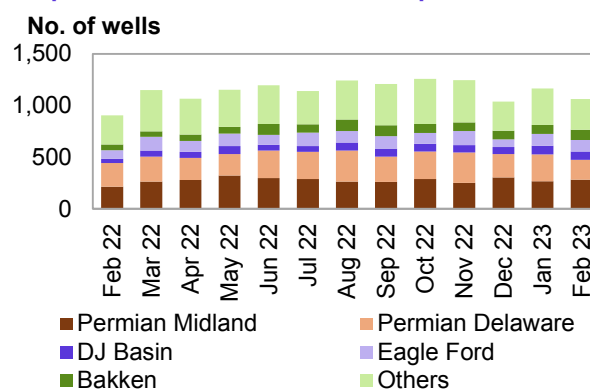


Note: Jan 23-Feb 23 = Preliminary data.
Sources: Rystad Energy and OPEC.

In terms of identified **US oil and gas fracking operations by region**, Rystad Energy reported that 1,039 wells were fracked in December 2022. In January and February, it stated that 1,166 and 1,064 wells began fracking, respectively. Preliminary numbers are based on analysis of high-frequency satellite data.

Preliminary January data showed that 266 and 262 wells were fracked in the Permian Midland and Permian Delaware, respectively. Compared with December, there was a decline of 38 in the Midland and a jump of 37 in the Delaware. Data also indicated that 83 wells were fracked in the DJ Basin, 114 in Eagle Ford and 87 in Bakken during January.

Graph 5 - 14: Fracked wells count per month



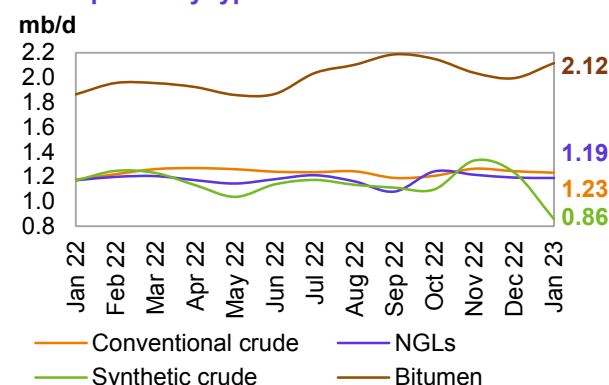
Note: Jan 23-Feb 23 = Preliminary data.
Sources: Rystad Energy Shale Well Cube and OPEC.

Canada

Canada's liquids production in January is estimated to have dropped m-o-m by 0.3 mb/d to average 5.4 mb/d. It continued to fall from the highest production on record in November, due to weather-related impacts on mining activities.

Conventional crude production decreased m-o-m by 12 tb/d to average 1.2 mb/d, while NGLs output remained broadly unchanged and averaged 1.2 mb/d. Crude bitumen production output rose m-o-m by 122 tb/d in January, while synthetic crude dropped by 375 tb/d. Taken together, crude bitumen and synthetic crude production decreased by 253 tb/d to 3.0 mb/d.

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



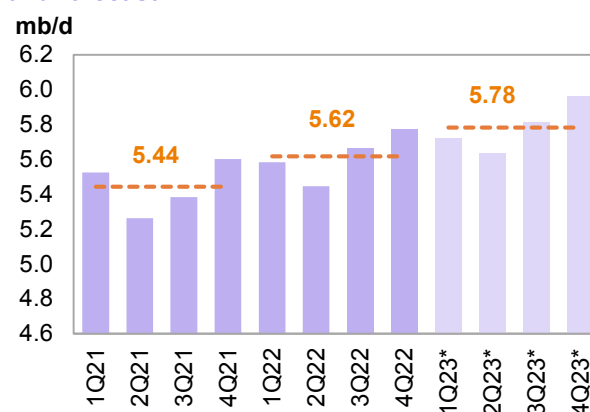
Sources: Statistics Canada, Alberta Energy Regulator and OPEC.

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 an average of 3.2 mb/d in 2022.

Canada's production recorded the highest level in 4Q22 due to turnaround recoveries and project ramp-ups. However, disruptions due to weather-related issues imposed some reductions on 1Q23 outputs, especially for synthetic crude oil.

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 revised down by 30 tb/d due to lower-than-expected production in 1Q23. Incremental production will come through oil sand project ramp-ups and debottlenecks alongside conventional growth.

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



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

In the upcoming upstream maintenance season, output at the Syncrude upgrader in 2Q23 and 4Q23 will fall by an average 40 tb/d and 20 tb/d, respectively, and production at the Suncor U2 upgrader is expected to decline during 3Q23 and 4Q23 by an average 60 tb/d and 75 tb/d, respectively. Maintenance at the Scotford upgrader is planned for a period in 2Q23 and at the Horizon upgrader for a month from mid-May. In addition, output from the Kearl and Fort Hills mining projects is expected to fall due to maintenance work in 2Q23 and 3Q23. However, the Terra Nova Floating Production Storage and Offloading (FPSO) platform is expected to resume production in 2Q23 on Newfoundland's coast, reaching 30 tb/d at peak by the end of the year.

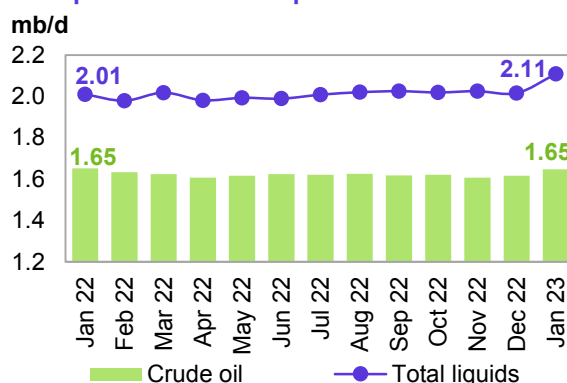
Mexico

Mexico's crude output increased by 31 tb/d m-o-m in **January** to average 1.6 mb/d, driven mainly by the ramp-up of the Quesqui field, and NGLs output rose by 61 tb/d. This saw Mexico's total January liquids output jump m-o-m by 92 tb/d to average 2.1 mb/d, according to the Comisión Nacional de Hidrocarburos (CNH).

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 forecast to decline by 14 tb/d to average 1.99 mb/d, which is up by 15 tb/d from the previous assessment, due to higher output expectation for 1Q23. The total crude production decline in Pemex's mature fields is projected to outweigh production ramp-ups, mainly from Mexico's foreign-operated fields. In its latest investor presentation, Pemex highlighted the importance of its priority fields (mainly condensate and light crude) to achieve its goal of production. However, persistent declines in Pemex's heavy mature oil fields were set to mostly offset its other grades.

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



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

OECD Europe

Norway

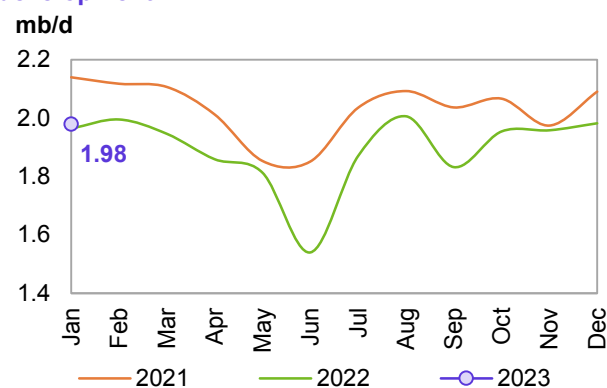
Norwegian liquids production in **January** remained broadly unchanged m-o-m at average 2.0 mb/d, which was lower than expectations, due to power-related outages at Johan Sverdrup phase-2.

Norway's crude production fell by 15 tb/d m-o-m in January to average 1.8 mb/d, up by 20 tb/d y-o-y. Monthly oil production was 3% lower than the Norwegian Petroleum Directorate's (NPD) forecast.

On the other hand, production of NGLs and condensates rose by 12 tb/d m-o-m averaging 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.

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



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

For **2023**, Norwegian liquids production is forecast to expand by 0.2 mb/d, revised down by 70 tb/d compared with the previous month, to average 2.1 mb/d. This was mainly due to unplanned outages in 1Q23 and considering maintenance for 2Q23.

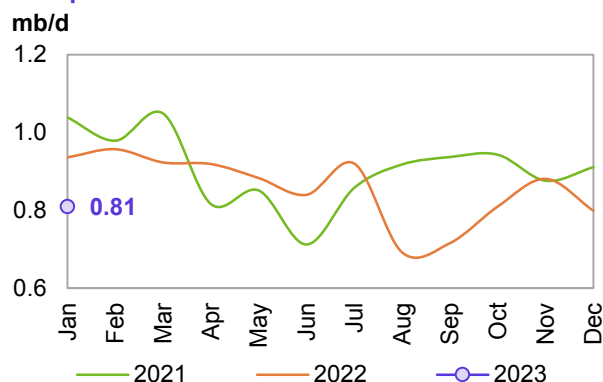
A number of small-to-large projects are scheduled to ramp up in 2023. The continuing Johan Sverdrup ramp-up is projected to be the main source of growth, after the Phase 2 start-up in December 2022. However, production from the Johan Sverdrup field, which accounts for more than a third of Norwegian oil output, suffered a power outage in January through Phase 2 of the development. The production was shut on 11 January and came back on stream after nine days, according to Equinor. In addition, Equinor halted production for a few days at Johan Sverdrup Phase 1 on 6 February due to a technical fault in the cooling system. It seems that field underperformance remains an issue throughout this year.

UK

UK liquids production rose marginally m-o-m in **January** by 11 tb/d to average 0.8 mb/d. Crude oil output increased by 13 tb/d m-o-m to average 0.7 mb/d, according to official data, which was lower by 0.1 mb/d y-o-y. NGLs output remained broadly unchanged at an average of 83 tb/d. UK liquids output in January was down by 13.5% 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.

Graph 5 - 19: UK monthly liquids production development



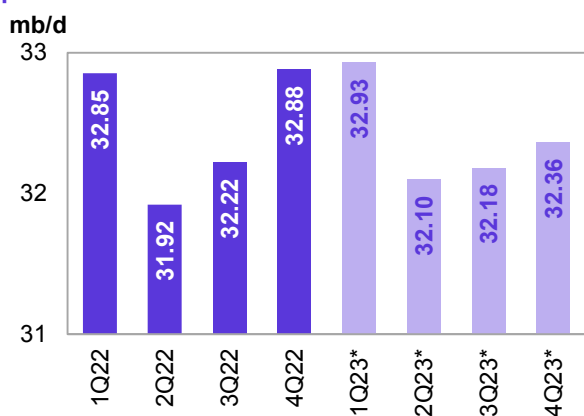
Sources: UK Department for Business, Energy and Industrial Strategy and OPEC.

For **2023**, UK liquids production is forecast to increase by 28 tb/d to average 0.9 mb/d. This is revised down by 20 tb/d from the previous assessment, mainly due to lower-than-expected output in 1Q23.

A number of new fields, including Seagull, the Penguins Redevelopment, Captain EOR and Saturn Banks phase 1 will help offset base declines in 2023. Project sanctioning will be essential to maintain future oil and gas output, as UK production has been in long-term decline. However, the UK upstream sector could be under pressure due to government windfall taxes starting in January 2023 and running through 2028.

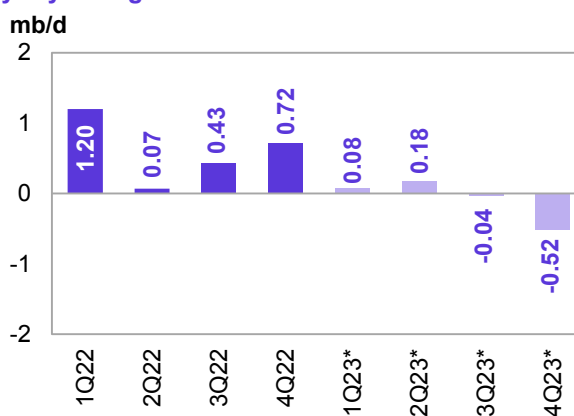
Non-OECD

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



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

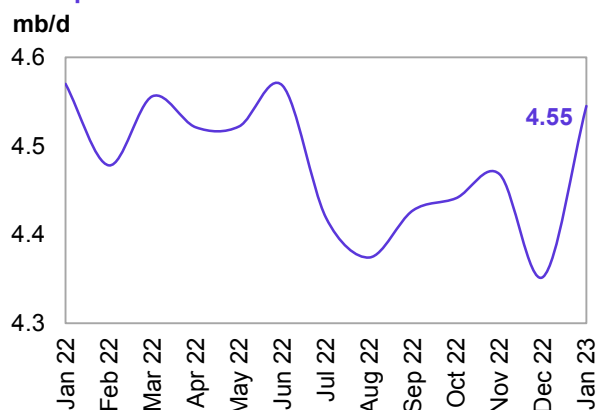
Graph 5 - 21: Non-OECD quarterly liquids supply, y-o-y changes



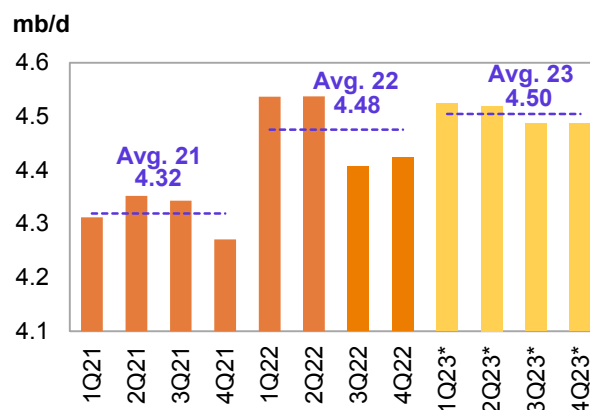
Note: * 1Q23-4Q23 = Forecast. Source: OPEC.

China

China's liquids production rose m-o-m in **January** by 193 tb/d to average 4.5 mb/d, which is a decline of 25 tb/d y-o-y, according to official data. Crude oil output in January averaged 4.2 mb/d, up by 185 tb/d compared with the previous month but lower y-o-y by 27 tb/d. NGLs and condensate production was largely stable m-o-m, averaged at 48 tb/d.

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

Sources: CNPC and OPEC.

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

Note: * 1Q23-4Q23 = Forecast. Sources: CNPC and OPEC.

For **2022**, growth of 156 tb/d is estimated for an average of 4.5 mb/d. This is revised up by a minor 9 tb/d from the previous assessment, due to historical non-conventional adjustments.

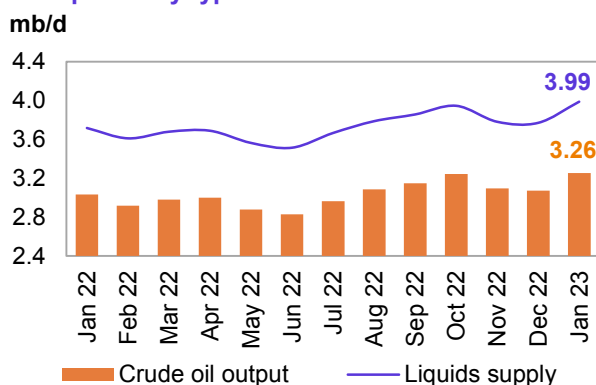
For **2023**, y-o-y growth of about 30 tb/d is forecast for an average of 4.5 m/d, unchanged from last month's assessment. Natural decline rates are expected to be offset by additional growth through more infill wells and enhanced oil recovery (EOR) projects amid efforts by state-owned oil companies to ensure energy supply security.

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. China National Offshore Oil Corporation (CNOOC), which has been the main contributor to growth in China's oil and gas output in recent years, has raised its 2023 production target by around 8%. As of January, CNOOC has completed the second phase drilling programme of the Weizhou 12-8E oil field development project in Block 22/12 in the Beibu Gulf offshore China.

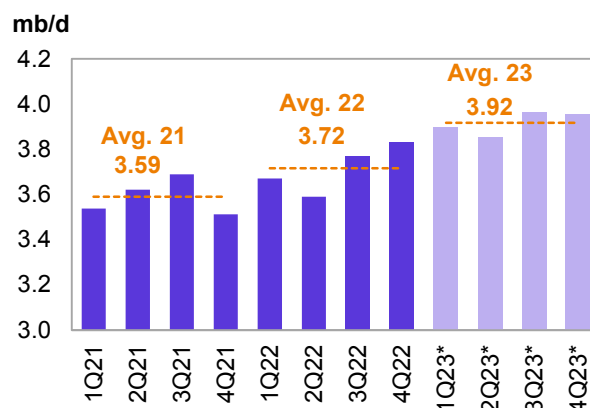
Latin America

Brazil

Brazil's crude output in January jumped m-o-m by 181 tb/d to average 3.3 mb/d. NGLs production was mostly stable at average 89 tb/d and this is expected to remain flat in February. Biofuels output (mainly ethanol) rose in January by 40 tb/d to an average of 643 tb/d, with preliminary data showing a steady trend in February. The country's total liquids production increased by 217 tb/d in January to average 4.0 mb/d, the highest production rate on record.

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

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

Graph 5 - 25: Brazil's quarterly liquids production

Note: * 1Q23-4Q23 = Forecast. Sources: ANP and OPEC.

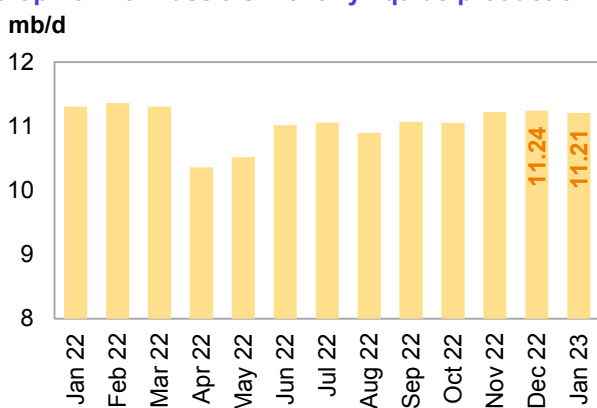
For **2022**, Brazil's liquids supply, including biofuels, is estimated to have increased by 0.1 mb/d y-o-y to average 3.7 mb/d. This is revised down by 13 tb/d from the previous month's assessment, due to historical adjustments in biofuel production.

For **2023**, Brazil's liquids supply, including biofuels, is forecast to increase by 0.2 mb/d y-o-y to average 3.9 mb/d, broadly unchanged from the previous forecast. Crude oil output is set to increase through production ramp-ups in the 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. January production growth was partly due to the newly commissioned P-71 FPSO. The P-71 platform, at the Itapu field in the Santos basin presalt area, has the capacity to process up to 150 tb/d of oil and 6 mcm/d of gas, in addition to storing up to 1.6 mb of oil.

Russia

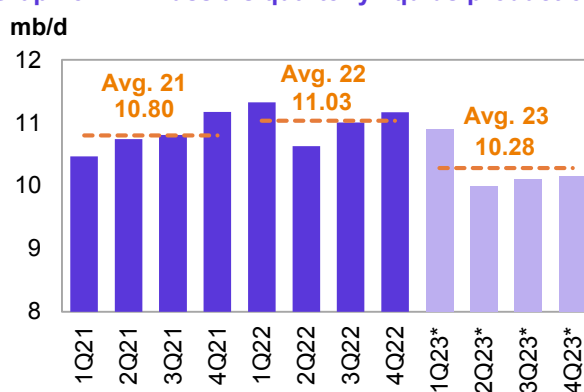
Russia's liquids production in January decreased m-o-m by 36 tb/d to average 11.2 mb/d. This includes 9.8 mb/d of crude oil and 1.4 mb/d of NGLs and condensate. A preliminary estimate of Russia's crude production in February 2023 shows stable m-o-m output at an average 9.8 mb/d, while NGLs and condensate were relatively stable.

Graph 5 - 26: Russia's monthly liquids production



Sources: Nefte Compass and OPEC.

Graph 5 - 27: Russia's quarterly liquids production



Note: * 1Q23-4Q23 = 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 0.7 mb/d to average 10.3 mb/d. Annual growth is revised up by around 152 tb/d from the previous monthly assessment, due to higher-than-expected production in 1Q23 (although production projection for remaining months of the year is maintained as projected last month). In addition to a number of planned start-ups this year, by Lukoil, Gazprom, Novatek, Sigma Energy and others, it should be noted that Russia's oil forecast remains subject to high uncertainty due to geopolitical developments in Eastern Europe.

Caspian

Kazakhstan & Azerbaijan

Liquids output in Kazakhstan decreased by 14 tb/d m-o-m to average 2.0 mb/d in **January**. Crude production was up by a minor 6 tb/d m-o-m to average 1.6 mb/d, while NGLs and condensate fell by 20 tb/d m-o-m to average 0.3 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.

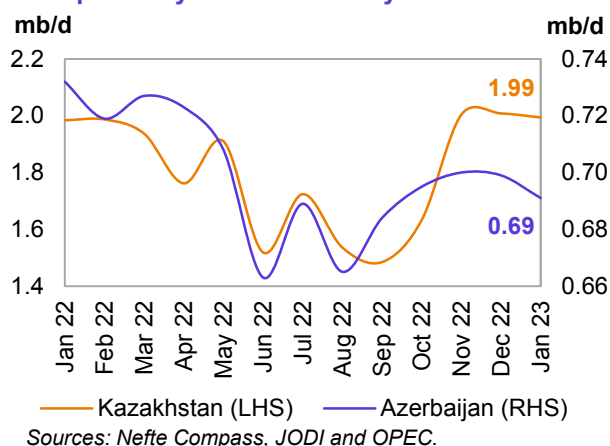
For **2023**, liquids supply is forecast to increase by 159 tb/d, mainly unchanged compared with the previous forecast to average 1.9 mb/d. Kazakhstan's crude production was under pressure in February due to the temporary suspension of loadings at the Black Sea port of Novorossiysk because of bad weather. It returned to normal operations on 27 February. In addition to the Kashagan oil field ramp-up, oil output in the Tengiz field and gas condensate production in the Karachaganak field are expected to rise marginally this year.

Azerbaijan's liquids production in January decreased slightly by 8 tb/d m-o-m, averaging 0.7 mb/d, which is a drop of 41 tb/d y-o-y. Crude production averaged 541 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 55 tb/d to average 0.8 mb/d. This is a downward revision of a minor 5 tb/d, due to lower-than-expected production in major oil fields in January. The main declines in legacy fields are expected to be offset by ramp-ups in other fields. Growth is forecast to come from the Shah Deniz and Absheron gas condensate projects; production could rise further after crude output starts up at the Azeri Central East flank project in 4Q23.

Graph 5 - 28: 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 4Q22 is estimated to have averaged 5.33 mb/d, while OPEC non-conventional output remained steady at 0.1 mb/d. Taken together, 5.4 mb/d is expected for January 2023, according to preliminary data.

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

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

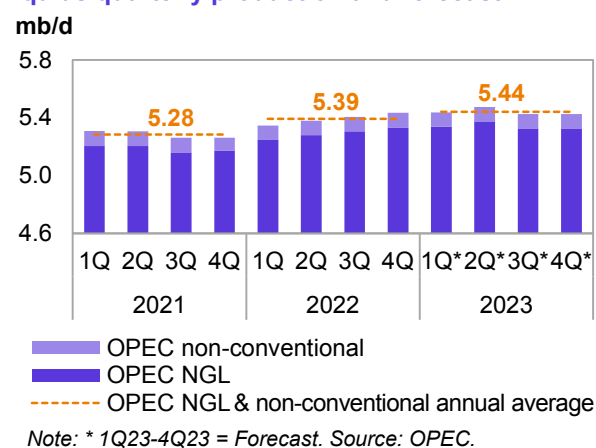


Table 5 - 6: OPEC NGL + non-conventional oils, mb/d

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

Note: 2023 = Forecast. Source: OPEC.

OPEC crude oil production

According to secondary sources, total **OPEC-13 crude oil production** averaged 28.92 mb/d in February 2023, higher by 117 tb/d m-o-m. Crude oil output increased mainly in Nigeria, Saudi Arabia and Congo, while production in Angola and Iraq declined.

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

Secondary sources	2021	2022	2Q22	3Q22	4Q22	Dec 22	Jan 23	Feb 23	Change Feb/Jan
Algeria	913	1,017	1,015	1,040	1,030	1,015	1,016	1,017	1
Angola	1,122	1,140	1,173	1,154	1,084	1,108	1,136	1,084	-52
Congo	263	261	266	264	252	240	255	276	21
Equatorial Guinea	98	84	90	90	64	60	54	63	9
Gabon	182	197	191	201	199	193	186	196	9
IR Iran	2,392	2,554	2,555	2,565	2,567	2,580	2,554	2,571	17
Iraq	4,046	4,438	4,440	4,522	4,503	4,468	4,412	4,387	-25
Kuwait	2,419	2,705	2,690	2,801	2,713	2,648	2,694	2,683	-11
Libya	1,143	981	743	976	1,153	1,159	1,148	1,164	16
Nigeria	1,372	1,204	1,209	1,063	1,171	1,271	1,308	1,380	72
Saudi Arabia	9,114	10,531	10,450	10,894	10,606	10,474	10,302	10,361	59
UAE	2,727	3,066	3,045	3,168	3,094	3,042	3,046	3,042	-4
Venezuela	553	678	709	662	667	661	696	700	4
Total OPEC	26,345	28,857	28,576	29,400	29,103	28,919	28,807	28,924	117

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

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

Direct communication	2021	2022	2Q22	3Q22	4Q22	Dec 22	Jan 23	Feb 23	Change Feb/Jan
Algeria	911	1,020	1,016	1,050	1,030	1,009	1,012	1,014	2
Angola	1,124	1,140	1,173	1,151	1,076	1,088	1,105	1,064	-41
Congo	267	262	258	261	261	257	275	273	-3
Equatorial Guinea	93	81	91	83	56	54	55	50	-5
Gabon	181	191	184	198	183	189	206	207	1
IR Iran	..	..	..	..	..	..	..	..	..
Iraq	3,971	4,450	4,472	4,632	4,505	4,431	4,331	..	..
Kuwait	2,415	2,707	2,694	2,799	2,721	2,676	2,676	2,676	0
Libya	1,207	..	..	..	..	..	..	..	..
Nigeria	1,323	1,143	1,133	999	1,145	1,235	1,258	1,306	48
Saudi Arabia	9,125	10,591	10,542	10,968	10,622	10,435	10,453	10,450	-3
UAE	2,718	3,064	3,042	3,170	3,093	3,043	3,038	3,041	3
Venezuela	636	716	745	673	693	669	732	704	-28
Total OPEC	..	..	..	..	..	..	..	..	..

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

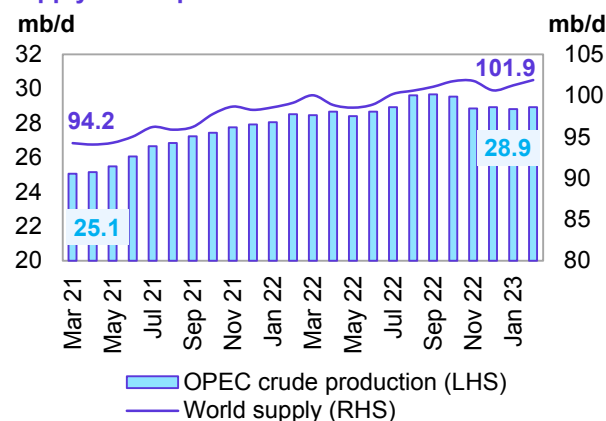
World oil supply

Preliminary data indicates that **global liquids production in February** increased by 0.6 mb/d to average 101.9 mb/d compared with the previous month.

Non-OPEC liquids production (including OPEC NGLs) is estimated to have increased m-o-m in February 2023 by 0.5 mb/d to average 73.0 mb/d. This was higher by 2.4 mb/d y-o-y. Preliminary estimated production increases in February were mainly driven by OECD Americas and OECD Europe which partially offset declines in Latin America and Kazakhstan.

The **share of OPEC crude oil in total global production** decreased by 0.1 pp to at 28.4% in February, compared with the previous month. Estimates are based on preliminary data for non-OPEC supply, OPEC NGLs and non-conventional oil, while assessments for OPEC crude production are based on secondary sources.

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



Product Markets and Refinery Operations

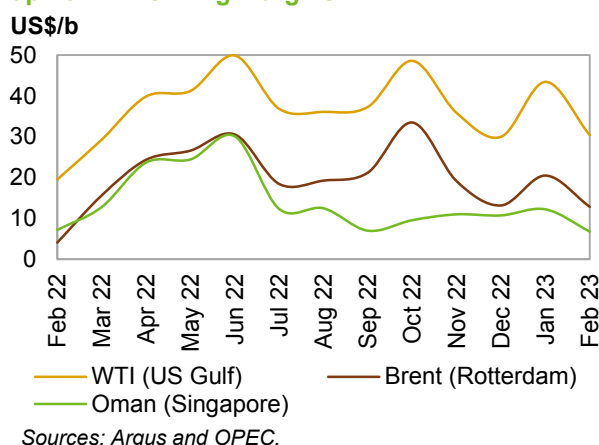
In February, refinery margins reversed course and underwent a counter-seasonal downturn to show solid losses in all main trading hubs despite rising offline capacities as maintenance works intensified. Most of the weakness stemmed from the middle section of the barrel as a result of high middle distillate volume arrivals in Europe, mainly from the East, seen in the month before. The high product availability in Europe, amid weaker US product exports and strong refinery product output levels in Asia, led to considerable stock builds and caused jet fuel and gasoil margins to experience massive losses across regions.

Global refinery processing rates continued to decline during the month, losing nearly 646 tb/d, according to preliminary estimates. In the coming month, refinery intakes are expected to drop much further amid rising offline capacities, which are projected to peak around April. Consequently, product balances are set to contract, which should provide some improvement to product performance and refinery economics in the coming month.

Refinery margins

USGC refining margins against WTI suffered the steepest monthly loss compared to the other regions, as US refining economics underwent a downward correction from the counterseasonal highs seen in the previous month. Although all products across the barrel weakened, most of the downturn was attributed to jet fuel, as the robust performance seen in early January at the end of the holiday season subsided in February. The resulting slowdown in aviation fuel demand led to considerable jet kero inventory growth, which contributed to the massive decline in jet fuel crack spreads. In addition, weaker gasoil exports and growing availability of the fuel in the country positioned gasoil as the second strongest negative performer and further contributed to the weakness in refining margins.

Graph 6 - 1: Refining margins



According to preliminary estimates, refinery intake in the US declined by a slight 30 tb/d m-o-m to average 15.41 mb/d in February. Going forward, intakes are expected to decline further as maintenance interventions intensify with the onset of the peak spring maintenance season. USGC margins against WTI averaged \$30.40/b in February, down by \$13.06 m-o-m, but up by \$10.84 y-o-y.

Refinery margins in Rotterdam against Brent weakened, affected by strong gasoil stock builds within the region as Europe prepared and secured product supplies prior to the implementation of the 5 February sanctions on Russian products. Consequently, the strong product availability led to bearish market sentiment, suppressed fuel prices and weaker fundamentals – particularly for the products at the middle section of the barrel. This impact overshadowed the supportive effect of rising offline capacities in response to increasing refinery maintenance interventions. Refinery throughput in Europe increased by 340 tb/d to average 9.45 mb/d according to preliminary data. Refinery margins against Brent in Europe averaged \$12.86/b in February, down by \$7.64/b compared with a month earlier, but were higher by \$8.77 y-o-y.

Singapore refining margins against Oman eased, albeit by the least magnitude compared to their western counterparts. Lower export opportunities from Singapore in February to the West, amid strong supplies from the Middle East and high refinery runs in the region, hindered gains in Asian refining economics. On the positive side, naphtha markets continued to benefit from the reopening of the Chinese economy following the lifting of the zero-COVID-19 policy. The resulting improvement in the petrochemical and manufacturing industries led to sustained naphtha requirements. Furthermore, a decline in Russian naphtha exports in February contributed to a tighter naphtha balance in the region and induced upward pressure on prices and crack spreads for the same product. Moreover, the product flow adjustments on the global scope, and a rise in longer trajectory shipments following the implementation of the 5 February sanctions on Russian products, provided some support to high sulphur fuel oil (HSFO) markets.

However, the positive performance observed in the naphtha and HSFO crack spreads proved to be insufficient to avert the supply-related weakness manifested in the performance of other key products.

In contrast to what was observed in other regions, refinery run rates in Asia continued to increase in February, showing a 180 tb/d rise relative to the previous month, and averaged of 26.67 mb/d, according to preliminary data. Refinery margins against Oman in Asia declined \$5.45/b m-o-m to average \$6.76/b, lower by 38¢ y-o-y.

Refinery operations

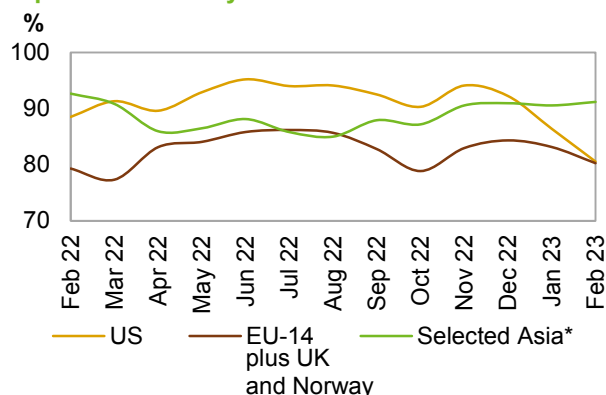
US refinery utilization rates decreased in February to average 80.53%, which corresponds to a throughput of 15.41 mb/d. This represented a drop of 5.8 pp and 30 tb/d compared with January. Y-o-y, the February refinery utilization rate was down by 8.0 pp, with throughput showing a drop of 480 tb/d.

European refinery utilization averaged 80.27% in February, corresponding to a throughput of 9.45 mb/d. This is a m-o-m drop of 2.9 pp or 340 tb/d. On a y-o-y basis, utilization rates were up by 1.0 pp, while throughput was higher by 113 tb/d.

In **Selected Asia** – comprising Japan, China, India, Singapore and South Korea – refinery utilization rates increased to average 91.18% in February, corresponding to a throughput of 26.67 mb/d.

Compared with the previous month, utilization rates were up by 0.6 pp, and throughput was higher by 180 tb/d. However, y-o-y utilization rates were lower by 1.5 pp, and throughput was down by 62 tb/d.

Graph 6 - 2: Refinery utilization rates



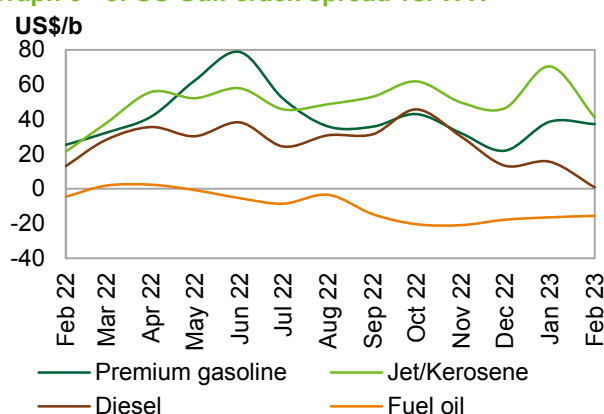
Note: * China, India, Japan, Singapore and South Korea. Sources: Argus, EIA, Euroilstock, PAJ and OPEC.

Product markets

US market

The **USGC gasoline crack spread** underwent a mild decline but retained most of the gains attained in the previous month. Gasoline availability in the country continued to rise amid seasonally suppressed demand. Weaker gasoline exports further contributed to the weakness. Going forward, gasoline markets are expected to strengthen as maintenance works continue to unfold and warmer temperatures settle in with the approaching spring season. In January, wholesale gasoline 93 prices reversed trend again and decreased by \$2.77 m-o-m to average \$114.00/b, standing \$2.98/b lower compared to the same month a year earlier. The USGC gasoline crack spread lost \$1.39 m-o-m to average \$37.19/b in February, but was \$11.91 higher y-o-y.

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



Sources: Argus and OPEC.

The **USGC jet/kerosene crack spread** lost massive ground to become the worst performer across the barrel and across key markets, although it kept its position as the main margin contributor in the USGC product market. This weakness was mainly a result of rising availability amid weaker demand. Jet fuel wholesale prices dropped \$30.65/b over the month to average \$117.91/b and the fuel remained the highest-priced product in the USGC market in February as inventories remained below the five-year average. The US jet/kerosene crack spread against WTI averaged \$41.10/b, down by \$29.27 m-o-m but higher by \$19.78 y-o-y.

The **USGC gasoil crack spread** lost the previous month's gains and suffered a sharp downturn to settle in barely positive territory in February. US gasoil inventories, however, ended the month at a significantly higher level relative to what was recorded in the last week of the previous month, although they remain below the five-year average. Gasoil prices averaged \$77.55/b in February, down \$16.17 relative to January. The US gasoil crack spread against WTI averaged 74¢/b, down by \$14.79 m-o-m and by \$12.26 y-o-y.

Product Markets and Refinery Operations

The **USGC fuel oil crack spread against WTI** maintained the upward momentum for the third consecutive month although remaining in negative territory. This improvement was mostly attributed to a contraction in the products domestic balance over the month. Although FCC and hydrocracking margins declined in February, the improvement in ambient temperatures and the subsequent seasonal improvement in gasoline consumption is projected to provide support to fuel oil conversion requirements and crack spreads in the coming months. In February, the US fuel oil crack spread against WTI averaged minus \$15.50/b, higher by 87¢/b m-o-m but lower by \$10.93 y-o-y.

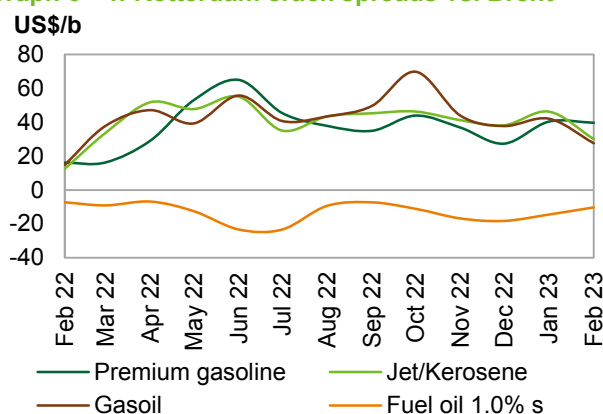
European market

Gasoline crack spreads weakened under supply-side pressure as gasoline balances in the region continued to expand, in line with seasonal trends. The gasoline crack spread against Brent averaged \$39.65/b in February, which was 69¢/b lower m-o-m but up by \$23.54 y-o-y.

In February, **jet/kerosene crack spreads** suffered a downward correction affected by weaker demand-side dynamics. The Rotterdam jet/kerosene crack spread against Brent averaged \$30.05/b, down by \$16.14 m-o-m but up by \$17.46 y-o-y.

Gasoil 10 ppm crack spreads declined significantly as diesel stock builds carried out ahead of the 5 February embargo on Russian Products left the market well supplied, which exerted pressure on European gasoil prices and crack spreads. On the consumption side, regional demand was muted likely affected by the weakening macroeconomic environment, which further contributed to the weakness. While Amsterdam-Rotterdam-Antwerp storage hub inventories were higher relative to the levels reached in recent months, they still remain bound below the 5-year average. The impact of the ongoing refinery maintenance season is yet to be absorbed in product markets. This points to a recovery in gasoil crack spreads in the near term. The gasoil crack spread against Brent averaged \$27.53/b, down by \$14.51 m-o-m but \$12.77 higher y-o-y.

Graph 6 - 4: Rotterdam crack spreads vs. Brent



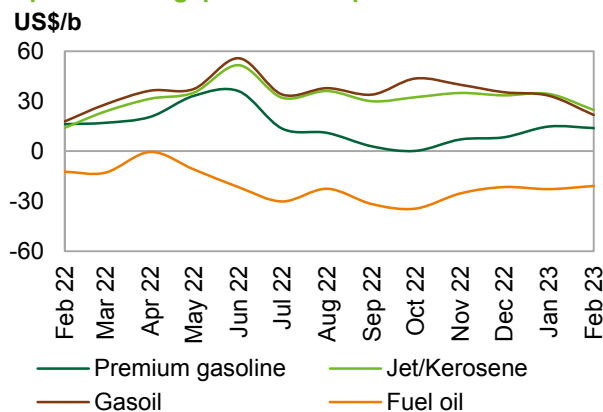
Sources: Argus and OPEC.

At the bottom of the barrel, **fuel oil 1.0% crack spreads** retained the previous months' gains and added significant strength. Product flow adjustments in light of the EU sanctions on Russian products and the onset of the refinery maintenance season likely boosted bunker fuel oil requirements which provided support to fuel oil markets. In terms of prices, fuel oil 1.0% increased in value m-o-m and averaged \$72.28/b, which was \$3.90 higher relative to the previous month. In Europe, fuel oil cracks averaged minus \$10.22/b in February, having gained \$4.26 m-o-m but lost \$3.04 y-o-y.

Asian market

The **Asian gasoline 92 crack spread** shed the previous month's gains, mainly pressured by ample volume availability within the region. Although refineries are undergoing heavy maintenance, major repair works in Asia tend to lag behind to reach a peak once maintenance works in the West subside. The combination of strong refinery runs in Asia, amid seasonally low gasoline requirements in the West, weighed on Asian gasoline markets. Despite the downturn, gasoline crack spreads experienced the smallest loss across the barrel compared to other key Asian products with reference to Dubai. The Singapore gasoline crack spread against Dubai in February averaged \$13.81/b, and was down 93¢ m-o-m and \$2.34 y-o-y.

Graph 6 - 5: Singapore crack spreads vs. Dubai



Sources: Argus and OPEC.

Asian **naphtha crack spreads** improved further for the sixth consecutive month as a decline in Russian naphtha exports in February led to a tighter balance and induced upward pressure on prices and crack spreads for the same product. The Singapore naphtha crack spread against Oman averaged minus \$5.07/b, increasing by \$3.16 m-o-m but dropping by \$8.71 y-o-y.

In the middle of the barrel, **jet/kerosene crack spreads** saw a solid loss to reach the lowest level seen since March 2022, affected by strong refinery output levels and a widening regional balance. Going forward, the onset of the refinery maintenance season and warmer ambient temperatures as spring approaches in the West should add support to export volumes in the coming months. The Singapore jet/kerosene crack spread against Oman averaged \$24.72/b, down by \$9.60 m-o-m but was \$10.66 higher y-o-y.

The Singapore **gasoil crack spread** represented the strongest negative performer across the barrel in February – just as in the West – for the second consecutive month. This was a reflection of weaker export requirements from Europe as inventories remained relatively high m-o-m, although they remain below the five-year average, as buyers there built stocks prior to 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 \$21.66/b, down \$11.57 m-o-m but up \$3.86 y-o-y.

The Singapore **fuel oil 3.5% crack spread** gained some ground as regional supplies decreased amid improved demand from the bunker sector backed by firm maritime shipping activity. Singapore fuel oil cracks against Oman averaged minus \$20.87/b, up by \$1.90 m-o-m but down by \$8.54 y-o-y.

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

Event	Time frame	Asia	Europe	US	Observations
Spring peak refinery maintenance season	Mar 23– May 23	↑ Support for product crack spreads	↑ Support for product crack spreads	↑ Support for product crack spreads	Global refinery intakes are expected to drop further with the rising global offline capacities. Consequently, product balances are set to experience contraction in the West, which should provide some improvement to product performance and refinery economics.
US gasoline markets	Mar 23– Oct 23	-	↑ Support for gasoline crack spreads	↑ Support for gasoline crack spreads	Based on past trends, and lower fuel prices y-o-y, the recent uptick in US gasoline demand is expected to continue and is set to support crack spreads for the same product in the near term.

Source: OPEC.

Table 6 - 2: Refinery operations in selected OECD countries

	Refinery throughput, mb/d				Refinery utilization, %			
	Dec 22	Jan 23	Feb 23	Change Feb/Jan	Dec 22	Jan 23	Feb 23	Change Feb/Jan
US	15.84	15.44	15.41	-0.03	92.22	86.38	80.53	-5.8 pp
Euro-14, plus UK and Norway	9.93	9.79	9.45	-0.34	84.34	83.15	80.27	-2.9 pp
France	0.99	0.94	0.87	-0.08	86.02	81.96	75.43	-6.5 pp
Germany	1.83	1.77	1.73	-0.04	89.40	86.08	84.30	-1.8 pp
Italy	1.28	1.35	1.27	-0.08	67.47	71.11	66.69	-4.4 pp
UK	1.04	1.00	0.97	-0.02	88.83	84.82	82.73	-2.1 pp
Selected Asia*	26.60	26.48	26.67	0.18	90.95	90.55	91.18	0.6 pp

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

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

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

Refinery crude throughput	2020	2021	2022	1Q22	2Q22	3Q22	4Q22
OECD Americas	16.59	17.79	18.68	18.35	18.74	19.00	18.61
of which US	14.72	15.66	16.46	16.06	16.61	16.82	16.35
OECD Europe	10.65	10.92	11.41	10.99	11.57	11.79	11.30
of which:							
France	0.67	0.69	0.84	0.79	0.84	0.96	0.78
Germany	1.72	1.72	1.83	1.75	1.87	1.83	1.87
Italy	1.11	1.23	1.32	1.16	1.42	1.41	1.29
UK	0.92	0.92	1.04	1.04	1.06	1.02	1.03
OECD Asia Pacific	5.87	5.76	6.07	6.21	5.83	6.17	6.06
of which Japan	2.48	2.49	2.71	2.80	2.60	2.73	2.73
Total OECD	33.12	34.47	36.16	35.55	36.14	36.96	35.97
Latin America	3.20	3.50	3.44	3.30	3.55	3.47	3.46
Middle East	6.08	6.78	7.30	7.12	7.29	7.40	7.41
Africa	1.79	1.76	1.77	1.79	1.82	1.80	1.69
India	4.42	4.73	5.00	5.18	5.22	4.69	4.89
China	13.48	14.07	13.50	13.96	12.89	13.00	14.14
Other Asia	4.72	4.72	5.10	4.90	5.19	5.14	5.16
Russia	5.39	5.61	5.46	5.71	5.04	5.50	5.59
Other Eurasia	1.10	1.25	1.29	1.26	1.26	1.28	1.35
Other Europe	0.43	0.41	0.51	0.42	0.51	0.55	0.56
Total Non-OECD	40.61	42.84	43.38	43.63	42.78	42.83	44.25
Total world	73.73	77.30	79.53	79.18	78.92	79.79	80.22

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

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

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

	Jan 23	Feb 23	Change Feb/Jan	Annual avg. 2022	Year-to-date 2023
US Gulf (Cargoes FOB)					
Naphtha*	83.55	78.44	-5.11	89.24	81.00
Premium gasoline (unleaded 93)	116.77	114.00	-2.77	134.59	115.39
Regular gasoline (unleaded 87)	106.64	104.12	-2.52	123.34	105.38
Jet/Kerosene	148.56	117.91	-30.65	140.17	133.24
Gasoil (0.2% S)	93.72	77.55	-16.17	122.10	85.64
Fuel oil (3.0% S)	55.30	57.60	2.30	76.84	56.45
Rotterdam (Barges FoB)					
Naphtha	76.21	79.41	3.20	85.08	77.81
Premium gasoline (unleaded 98)	123.20	122.15	-1.05	136.26	122.68
Jet/Kerosene	129.05	112.55	-16.50	139.86	120.80
Gasoil/Diesel (10 ppm)	124.90	110.03	-14.87	142.32	117.47
Fuel oil (1.0% S)	68.38	72.28	3.90	88.77	70.33
Fuel oil (3.5% S)	60.49	62.25	1.76	78.86	61.37
Mediterranean (Cargoes FOB)					
Naphtha	73.95	76.70	2.75	82.26	75.33
Premium gasoline**	100.56	100.07	-0.49	120.04	100.32
Jet/Kerosene	124.71	108.05	-16.66	135.36	116.38
Diesel	123.96	108.43	-15.53	135.91	116.20
Fuel oil (1.0% S)	74.50	76.71	2.21	94.51	75.61
Fuel oil (3.5% S)	54.67	55.16	0.49	72.30	54.92
Singapore (Cargoes FOB)					
Naphtha	72.52	76.98	4.46	83.91	74.75
Premium gasoline (unleaded 95)	98.83	99.36	0.53	115.05	99.10
Regular gasoline (unleaded 92)	95.49	95.86	0.37	111.02	95.68
Jet/Kerosene	115.07	106.77	-8.30	126.76	110.92
Gasoil/Diesel (50 ppm)	115.67	107.19	-8.48	134.94	111.43
Fuel oil (180 cst)	111.94	101.05	-10.89	129.75	106.50
Fuel oil (380 cst 3.5% S)	57.98	61.18	3.20	76.63	59.58

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

Sources: Argus and OPEC.

Tanker Market

Dirty freight rates improved in February, with m-o-m gains in VLCCs and Suezmaxes outpacing declines in Aframax. VLCCs picked up from a low base, as renewed demand for long-haul vessels strengthened rates. On the Middle East-to-East route, dirty spot freight rates rose 22% m-o-m. Gains in Suezmax spot freight rates earned back some of the previous month's losses, with rates on the US Gulf Coast-to-Europe route up 18% from the previous month. By contrast, Aframax rates declined, although from high levels. Spot freight rates on the intra-Med route decreased by 18% m-o-m.

Overall, the tanker market remained firm in the first two months of 2023. This strength is expected to persist over the course of the year, supported by ongoing trade shifts which have increased demand for longer-haul voyages along with limited fleet growth.

Clean rates edged up, as West of Suez rose 14% and East of Suez rates slipped 4%. Rates in the Atlantic basin claimed back some of the previous month's losses.

Spot fixtures

The latest estimates show **global spot fixtures** recovered further in February averaging 13.9 mb/d. Fixtures increased by about 0.4 mb/d or around 3% m-o-m. Compared with the previous year, spot fixtures declined by 1.2 mb/d or around 8%.

Table 7 - 1: Spot fixtures, mb/d

Spot fixtures	Dec 22	Jan 23	Feb 23	Change Feb 23/Jan 23
All areas	12.90	13.47	13.85	0.38
OPEC	9.13	9.01	9.82	0.81
Middle East/East	5.42	4.95	6.17	1.22
Middle East/West	1.20	1.37	1.04	-0.33
Outside Middle East	2.51	2.69	2.61	-0.08

Sources: Oil Movements and OPEC.

OPEC spot fixtures increased in February to an average 9.8 mb/d. This represents a m-o-m gain of 0.8 mb/d, or 9%. In comparison with the same month in 2022, fixtures were 0.5 mb/d, or almost 5%, higher.

Middle East-to-East fixtures rose by 1.2 mb/d, or about 25%, to average 6.2 mb/d. Compared with the same month of the previous year, eastward flows from the Middle East gained 0.9 mb/d, or over 16%.

By contrast, spot fixtures from the **Middle East-to-West** declined in February, dropping 0.3 mb/d, or 24% m-o-m, to average around 1.0 mb/d. Y-o-y, rates also fell, down 0.1 mb/d, or almost 9%.

Outside the Middle East, fixtures declined 3% m-o-m to average 2.6 mb/d. Compared to the same month last year, fixtures on the route fell about 0.3 mb/d or around 11%.

Sailings and arrivals

OPEC sailings edged higher in February, averaging 24.5 mb/d. This represents a m-o-m increase of about 0.3 mb/d or 1%. Y-o-y, OPEC sailings increased 0.6 mb/d or more than 3%.

Middle East sailings averaged 17.6 mb/d in February, representing a gain of about 1.2 mb/d or over 7%. Y-o-y, sailings from the region fell 0.5 mb/d, or by about 3%.

Crude arrivals recovered the previous month's losses in the East of Suez, while West of Suez arrivals were flat to slightly higher. Arrivals in North America averaged 9.5 mb/d, broadly unchanged from the previous month and 0.8 mb/d, or 9%, higher y-o-y. Arrivals in Europe increased 0.2 mb/d, or less than 2% m-o-m, to average 12.4 mb/d. Compared to the same month last year, European arrivals declined 0.6 mb/d or about 4%.

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

Sailings				Change
	Dec 22	Jan 23	Feb 23	Feb 23/Jan 23
OPEC	22.87	24.28	24.53	0.25
Middle East	15.95	16.39	17.58	1.19
Arrivals				
North America	9.00	9.44	9.45	0.01
Europe	12.71	12.20	12.37	0.17
Far East	16.97	15.45	16.98	1.53
West Asia	9.42	8.62	9.52	0.90

Sources: Oil Movements and OPEC.

Arrivals in the Far East rose 1.5 mb/d, or almost 10%, to average just under 17 mb/d. Y-o-y, Far East arrivals were 3.2 mb/d, or around 23%, higher. Arrivals in West Asia increased 0.9 mb/d, or over 10%, to average 9.5 mb/d. Y-o-y, arrivals in the region rose 1.1 mb/d, or about 13%.

Dirty tanker freight rates

Very large crude carriers (VLCCs)

VLCC spot rates recovered some of the previous month's losses, increasing by 17% on average m-o-m. Compared with the same month of the previous year, VLCC rates were up 86% on average. VLCC markets benefited from increased longer-haul demand.

On the **Middle East-to-East** route, rates increase 22% m-o-m to average WS60 points. This was 71% higher y-o-y. Rates on the **Middle East-to-West** route increased 8% m-o-m to average WS42 points. Y-o-y, rates on the route rose 147%.

West Africa-to-East spot rates rose 22% m-o-m to average WS62 points in February. Compared with the same month of the previous year, rates were 72% higher.

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

VLCC	Size				Change
	1,000 DWT	Dec 22	Jan 23	Feb 23	Feb 23/Jan 23
Middle East/East	230-280	77	49	60	11
Middle East/West	270-285	58	39	42	3
West Africa/East	260	77	51	62	11

Sources: Argus and OPEC.

Suezmax

Suezmax rates saw experienced a slight recovery in February, gaining 5% m-o-m. Compared with the same month of the previous year, rates were 66%. Suezmax has benefited from ongoing trade flow adjustments.

Gains were driven by spot freight rates on the **USGC-to-Europe** route, which rose 18% compared with the previous month to average WS100 points. Y-o-y, rates were 56% higher.

By contrast, rates on the **West Africa-to-US Gulf Coast (USGC)** route declined by 4% to average WS112 points. Compared with the same month of the previous year, they were still 75% higher.

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

Suezmax	Size				Change
	1,000 DWT	Dec 22	Jan 23	Feb 23	Feb 23/Jan 23
West Africa/US Gulf Coast	130-135	161	117	112	-5
US Gulf Coast/ Europe	150	135	85	100	15

Sources: Argus and OPEC.

Aframamax

Aframamax spot freight rates fell further in February, albeit from high levels. On average, spot Aframax rates declined 13% m-o-m. Compared with the same month of the previous year, rates were still up 64%. Aframax rates have remained strong, supported by trade flow adjustments. According to Vortexa data, around 66% of Russia’s maritime crude exports were shipped via Aframax last year.

The **Indonesia-to-East** route continued to fall sharply, averaging WS187 in February. This represents a decline of 25% m-o-m, although y-o-y rates on the route were still 103% higher.

By contrast, spot rates on the **Caribbean-to-US East Coast (USEC)** route showed some recovery from the sharp declines seen over the previous months. Rates rose 26% m-o-m to average WS191 points. Y-o-y, rates were 40% higher.

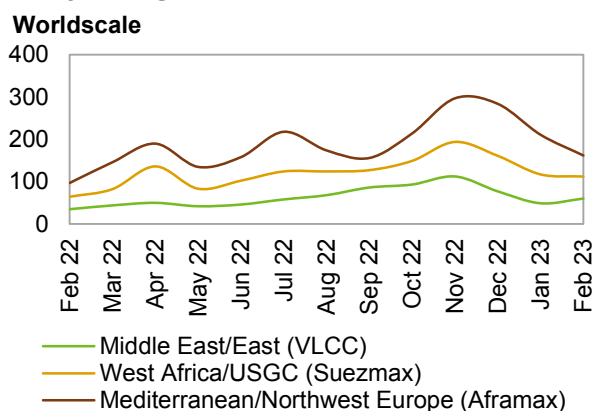
Table 7 - 5: Dirty Aframax spot tanker freight rates, WS

Aframamax	Size 1,000 DWT	Dec 22	Jan 23	Feb 23	Change Feb 23/Jan 23
Indonesia/East	80-85	306	249	187	-62
Caribbean/US East Coast	80-85	263	152	191	39
Mediterranean/Mediterranean	80-85	314	220	180	-40
Mediterranean/Northwest Europe	80-85	284	211	162	-49

Sources: Argus and OPEC.

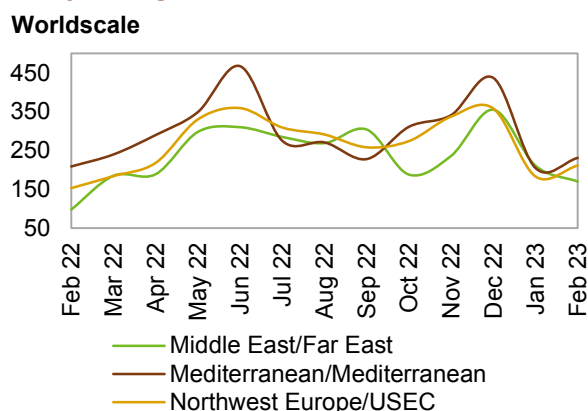
Cross-Med spot freight rates declined 18% m-o-m to average WS180 points. They remained 55% higher y-o-y. On the **Mediterranean-to-Northwest Europe (NWE)** route, rates dropped 23% m-o-m to average WS162 points. Compared with the same month of the previous year, they were around 67% higher.

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



Sources: Argus and OPEC.

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



Sources: Argus and OPEC.

Clean tanker freight rates

Clean spot freight rates improved on average, as gains West of Suez outpaced losses to the East. On average, rates increased 6% m-o-m and stood 36% higher compared with February 2022 levels.

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

East of Suez	Size 1,000 DWT	Dec 22	Jan 23	Feb 23	Change Feb 23/Jan 23
Middle East/East	30-35	355	211	170	-41
Singapore/East	30-35	382	219	245	26
West of Suez					
Northwest Europe/US East Coast	33-37	358	183	211	28
Mediterranean/Mediterranean	30-35	437	205	231	26
Mediterranean/Northwest Europe	30-35	444	212	241	29

Sources: Argus and OPEC.

Rates on the **Middle East-to-East** route declined 19% in February to average WS170. Y-o-y, rates were up 73%. Freight rates on the **Singapore-to-East** route rose 12% m-o-m to average WS245 and were 91% higher compared with the same month of the previous year.

Spot freight rates on the **NWE-to-USEC** route increased 15% m-o-m to average WS211 points in February. They were 38% higher y-o-y. Rates for the **Cross-Med** route rose 13% to average WS231 points, while rates on the **Med-to-NWE** route increased 14% to average WS241 points. Compared with the same month previous year, rates on the Med routes were both 11% higher.

Clean spot rates have been supported by trade flow shifts, with Europe bringing in higher volumes from the Middle East, Asia and the US, while Russian product flows are increasingly headed towards Asia and the Middle East.

Crude and Refined Products Trade

Preliminary data shows US crude exports set a record high of 4.3 mb/d in February. US crude imports declined from a three-year high the month before to average 6.4 mb/d in February. US product imports fell from an 11-month high the month before to average 2.2 mb/d. Gains in gasoline and jet fuel were outpaced by declines in other products.

Preliminary aggregate customs data showed China's crude imports declined from the high levels seen over the past three months, averaging 10.4 mb/d in January and February. Product exports declined m-o-m averaging an estimated 1.6 mb/d, after reaching an almost three-year high the month before.

India's crude imports rose 2% in January to average 4.7 mb/d, as refiners returned from maintenance and boosted inflows of discounted Russian grades. India's product exports erased much of the gains seen the month before, averaging 1.1 mb/d, with declines across the barrel.

Japan's crude imports fell from a four-month high in January to average 2.7 mb/d. Product imports, including LPG, were little changed in January after reaching an 11-month high the month before. Product exports recovered further in January, averaging 562 tb/d. Gasoil, gasoline and fuel oil saw gains, while kerosene and jet fuel declined.

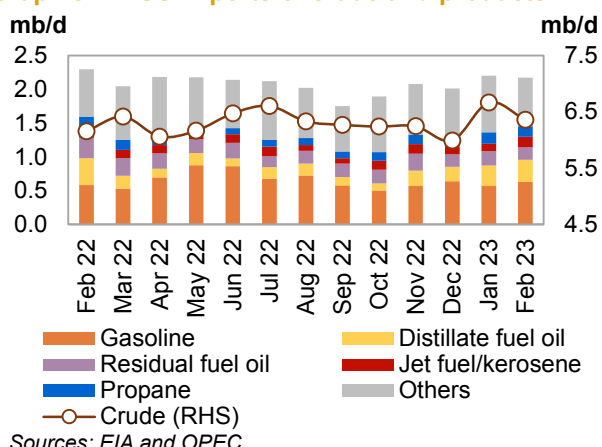
Preliminary estimates for February show OECD Europe bringing in alternate crudes from a variety of regions, with Russian flows into the region limited to Turkey and southern Druzhba flows.

US

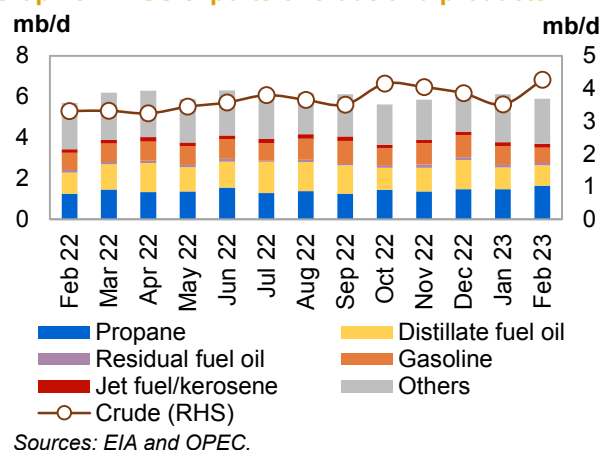
Preliminary data shows **US crude imports** fell back from a three-year high, averaging 6.4 mb/d in February. M-o-m, crude inflows declined 311 tb/d, or about 5%, but stood at the second-highest since July 2020. Compared with the same month last year, crude imports were 0.2 mb/d, or around 3%, higher.

Canada remained the **top supplier of crude** in February, with a share of 56%, according to preliminary weekly data from the US Energy Information Administration (EIA). Mexico was second with 12% and Saudi Arabia was third with a share of 6%.

Graph 8 - 1: US imports of crude and products



Graph 8 - 2: US exports of crude and products



US crude exports set a record high of nearly 4.3 mb/d in February, according to preliminary weekly data. Crude outflows rose sharply, up 749 tb/d, or more than 21% m-o-m. Compared to the same month last year, outflows rose by 954 tb/d, or almost 29%.

In terms of **destination**, the latest EIA monthly data shows Europe taking in a 52% share of US crude exports in **December**. This compares with 36% in the same month of the previous year. South Korea had the second highest share with 10% followed by Taiwan with 9%.

Based on preliminary weekly data, **US net crude imports** averaged 2.0 mb/d in February, compared with nearly 3.1 mb/d the month before and 2.8 mb/d in the same month last year.

On the **products** side, **imports** slipped from a 11-month high the month before, but still remained close to 2.2 mb/d in February. This represents a decline of just over 1%. Gains in gasoline, jet fuel and distillates were broadly offset by declines in other products as well as residual fuel and propane. Compared with the same month last year, product inflows fell 124 tb/d, or over 5%.

Product exports fell for the second-consecutive month, averaging 5.9 mb/d in February. Declines were seen across all major products, except for propane. Compared with the previous month, product exports rose 209 tb/d, or almost 4%.

As a result, preliminary data showed **US net product exports** averaging 3.7 mb/d in February, compared to 3.9 mb/d in the previous month and 3.4 mb/d in the same month last year.

Preliminary data indicates that **US net crude and product exports** averaged 1.6 mb/d in February, compared with 0.8 mb/d the month before and 0.6 mb/d in the same month last year.

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

US	Dec 22	Jan 23	Feb 23	Change Feb 23/Jan 23
Crude oil	2.14	3.15	2.09	-1.06
Total products	-4.29	-3.92	-3.73	0.19
Total crude and products	-2.15	-0.77	-1.64	-0.87

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

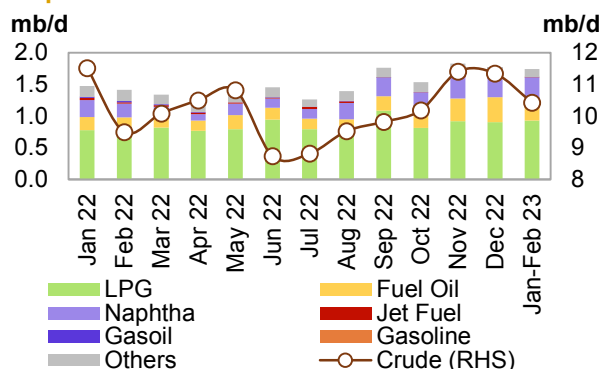
Sources: EIA and OPEC.

Looking ahead, US crude exports are expected to remain elevated, with higher flows to Asia and continued healthy demand from Europe. At the same time, the US export figures are likely to be revised lower. The EIA recently completed a 90-day assessment of the high adjustment figures seen in its weekly and monthly crude oil data. According to EIA Administrator Joe DeCarolis, among the findings is that “some of the reported US crude oil exports include other products, likely natural gasoline & naphthas (light hydrocarbons)” which “could be blended into crude or reported as crude exports.” As a result, these volumes – averaging about 0.5 mb/d in 2022 – are being “double counted”.

China

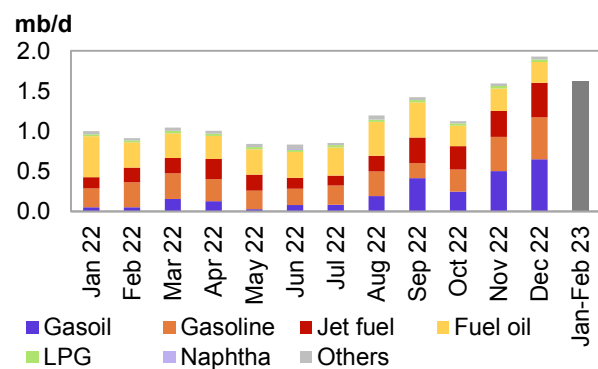
China’s crude imports declined from the high levels seen over the past three months, averaging 10.4 mb/d in **January and February**, according to estimates based on aggregate customs data. Compared to December 2022, crude inflows fell 0.9 mb/d, or about 8%. Compared to the same period last year, China’s crude imports were slightly lower, down by less than 1%. China trade flow data for the first two months of the year is generally impacted by the Lunar New Year Holiday, when refinery activities slow.

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



Note: Jan-Feb 23 data released in aggregation based on data from the General Administration of Customs.
Sources: China OGP and OPEC.

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



Note: Jan-Feb 23 data released in aggregation based on data from the General Administration of Customs.
Sources: China OGP and OPEC.

In terms of **crude imports by source**, Russia is estimated to have reclaimed the top spot in January and February with a share of 18%. Saudi Arabia was second with a share of 16% and Iraq was third with 12%.

Product imports are estimated to have slipped by less than 2% to average 1.7 mb/d in January and February, primarily due to a decline in fuel oil. Compared to the same period last year, imports were about 0.3 mb/d, or around 18%, higher y-o-y.

Crude and Refined Products Trade

Product exports declined in the first two months of the year, averaging 1.6 mb/d, down from an almost three-year high the month before. Losses were likely registered across all major products. M-o-m, refined product outflows fell 0.3 mb/d or about 16% m-o-m. Compared to the same period last year, product exports rose 0.6 mb/d or 62%.

As a result, China was a **net product importer** in January and February, averaging 121 tb/d. This compares to net exports of 154 tb/d the month before and 475 tb/d in the same month of 2022.

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

China	Nov 22	Dec 22	Jan-Feb 23	Change Jan-Feb 23/Dec 22
Crude oil	11.40	11.34	10.38	-0.96
Total products	0.23	-0.15	0.12	0.27
Total crude and products	11.64	11.19	10.50	-0.68

Note: Totals may not add up due to independent rounding. Jan-Feb 23 data released in aggregation based on the data from the General Administration of Customs.

Sources: China OGP and OPEC.

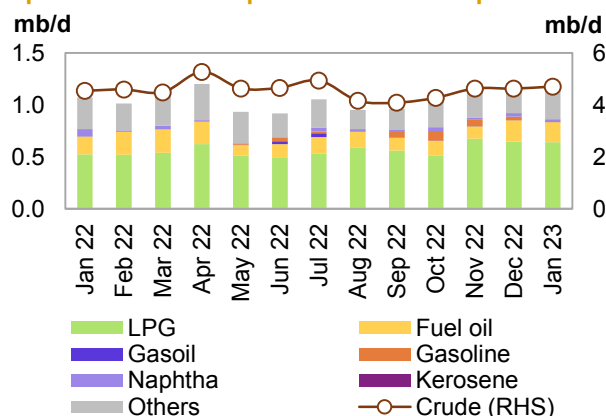
Looking ahead, China's crude imports are expected to accelerate in March, as economic activities begin to pick up and amid reports of extensive buying by Chinese state-run refiners. Product exports could also see some lift, as refiners seek to utilize available refinery capacity.

India

India's crude imports rose 2% in January, averaging 4.7 mb/d, as refiners returned from maintenance and boosted inflows of discounted Russian grades. Y-o-y, crude inflows rose by about 4% or 0.2 mb/d, amid a pick-up in domestic demand for refined products.

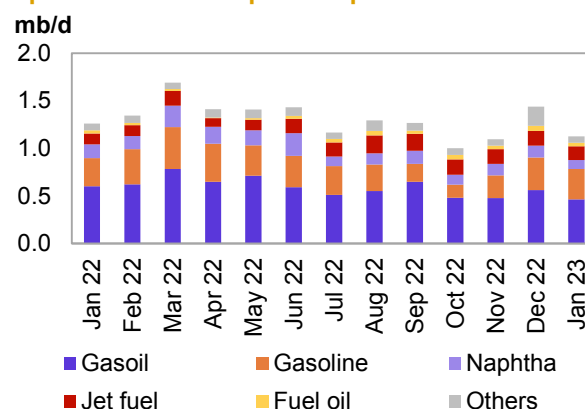
In terms of **crude imports by source**, Kpler data shows Russia was the top supplier of crude to India in January for the seventh-consecutive month with a share of 30% or 1.4 mb/d. Iraq was second with 19%, followed by Saudi Arabia with 16% and the US with 10%.

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 from an eight-month high the month before to average 1.2 mb/d in January. This represents a drop of about 3% m-o-m. Declines were led by gasoline and fuel oil. Compared with the same month last year, inflows increased by about 7%, or 77 tb/d.

Product exports erased much of the gains seen the month before, falling by close to 22% or 313 tb/d to average 1.1 mb/d. Declines were seen across the barrel, led by diesel oil and the other products category. Y-o-y, product exports declined 137 tb/d, or about 11%.

As a result, India was a marginal **net product importer** in January at 27 tb/d compared to net exports of 246 tb/d the month before. In January 2022, India's net exports averaged 187 tb/d.

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

India	Nov 22	Dec 22	Jan 23	Change Jan 23/Dec 22
Crude oil	4.64	4.63	4.71	0.08
Total products	0.06	-0.25	0.03	0.27
Total crude and products	4.69	4.39	4.74	0.35

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

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

Sources: PPAC and OPEC.

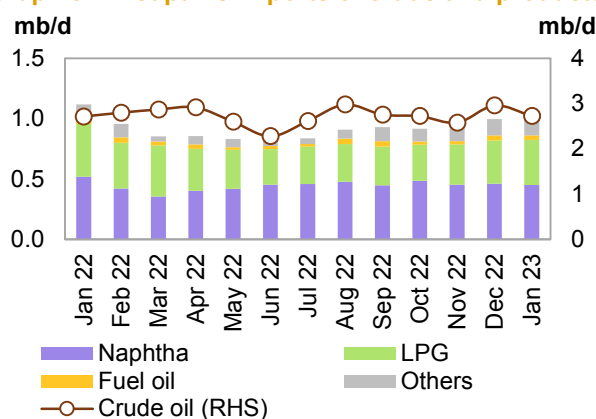
Looking ahead, crude imports are expected to continue to strengthen in February, supported by both internal and external demand for the country's refined products, and access to discounted Russian crude. Kpler data shows imports of Russian crude reaching over 1.8 mb/d in February, representing a share of about 38%. **Product exports** are seen declining slightly, as a contraction in gasoline outflows outpaced a jump in gasoil outflows.

Japan

Japan's crude imports fell from a four-month high in January, averaging 2.7 mb/d. Inflows dropped m-o-m by 0.2 mb/d, or 8%. Compared with the same month of the previous year, imports were negligibly higher.

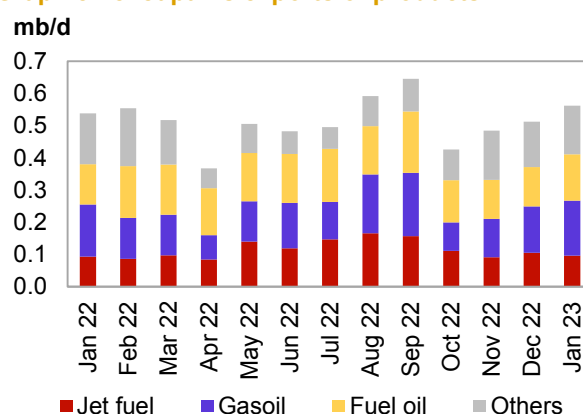
In terms of **crude imports by source**, Saudi Arabia remained at the top spot in January with a share of close to 44%. The United Arab Emirates (UAE) was second with 36%, followed by Kuwait with about 9%.

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



Sources: METI and OPEC.

Graph 8 - 8: Japan's exports of products



Sources: METI and OPEC.

Product imports, including LPG, were little changed in January after reaching an 11-month high the month before, averaging 992 tb/d. Higher inflows of LPG offset declines in gasoline and naphtha. Compared to the same month of the previous year, imports declined 126 tb/d or 11%.

Product exports recovered further in January, averaging 562 tb/d, representing an increase of 50 tb/d or about 10%. Gasoil, gasoline and fuel oil saw gains, while kerosene and jet fuel declined. Y-o-y, product outflows were 24 tb/d, or about 5% higher.

As a consequence, Japan's **net product imports**, including LPG, averaged 430 tb/d in January. This compares with 483 tb/d the month before and 580 tb/d in January 2022.

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

Japan	Nov 22	Dec 22	Jan 23	Change Jan 23/Dec 22
Crude oil	2.58	2.96	2.72	-0.24
Total products	0.46	0.48	0.43	-0.05
Total crude and products	3.04	3.44	3.15	-0.29

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

Sources: METI and OPEC.

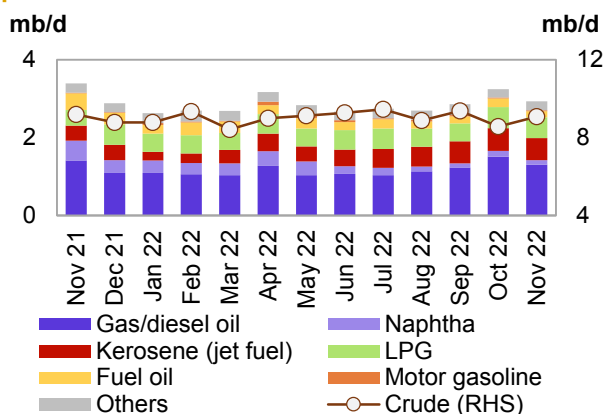
Looking ahead, Japan's crude imports are seen remaining relatively stable in February while product exports are expected to increase, on the back of higher outflows of gasoil/diesel and fuel oil.

OECD Europe

The latest regional data shows **OECD Europe** crude imports rose by almost 6% or 0.5 mb/d to average 9.1 mb/d in **November**. Y-o-y, crude imports were about 1%, or 0.1 mb/d, lower. Estimates show crude flows into the region drifting slightly lower in January and February.

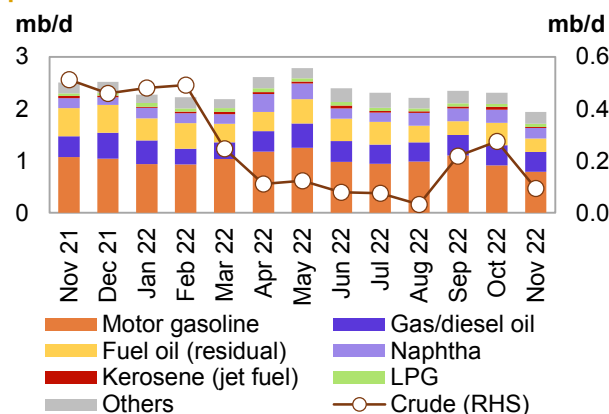
In terms of **import sources** from outside the region, Russia remained the top supplier in November with 1.6 mb/d, which was 1.2 mb/d, or about 42%, lower compared to the same month last year. The US came in second with 1.5 mb/d. Flows from Azerbaijan and Mexico were sharply higher. More recent data for February show strong y-o-y increases from South America and West Africa, as well as North America and the Middle East. These have largely replaced Russian crude, except for in Turkey and countries taking in flows from the southern leg of the Druzhba pipeline.

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



Sources: IEA and OPEC.

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



Sources: IEA and OPEC.

Crude exports averaged 94 tb/d in November, as North Sea crude generally remains in the region. This compares with 275 tb/d the month before and 512 tb/d in November 2021. China was the top **destination** outside the region in November, taking in around 66 tb/d, followed by Canada with 22 tb/d.

Net crude imports averaged just shy of 10 mb/d in November, compared with 9.2 mb/d in October and 9.6 mb/d in November 2021.

In terms of **products, imports** in November declined by almost 10% m-o-m to average 2.9 mb/d, driven by a large drop in diesel buying to build inventories ahead of the implementation of the EU ban on Russian products in February 2023. Compared with November of the previous year, product inflows were more than 13%, or 457 tb/d, higher.

Product exports dropped 16% m-o-m to average 1.9 mb/d. Declines were seen across the barrel, led by fuel oil and gasoline. Y-o-y, exports were 23%, or 0.6 mb/d, lower.

Net product imports averaged 991 tb/d in November, compared with net imports of 935 tb/d in the month before and 881 tb/d in November 2021.

Combined, **net crude and product imports** averaged just under 10.0 mb/d in November. This compares with 9.2 mb/d the month before and 9.6 mb/d in November 2021.

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

OECD Europe	Sep 22	Oct 22	Nov 22	Change Nov 22/Oct 22
Crude oil	9.16	8.29	8.98	0.69
Total products	0.52	0.93	0.99	0.06
Total crude and products	9.67	9.23	9.97	0.74

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

Sources: IEA and OPEC.

Eurasia

Total crude oil exports from Russia and Central Asia were marginally unchanged in January, averaging 6.4 mb/d. Flows were also broadly stable compared with the same month last year.

Crude exports through the **Transneft system** in January regained the losses seen in the previous month, as the increase in maritime flows from Primorsk in the Baltic Sea outpaced a sharp decline in pipeline volumes. Outflows averaged just under 4.0 mb/d, representing an increase of 277 tb/d, or over 7%, m-o-m. Compared with the same month last year, exports were up 90 tb/d or 2%. Exports from the **Baltic Sea** jumped 460 tb/d m-o-m, or by about 41%, to average 1.6 mb/d. Flows from Primorsk led gains, increasing 377 tb/d, or 66%, to average 948 tb/d, while exports from Ust-Luga rose 83 tb/d, or about 15%, to average 635 tb/d. By contrast, shipments from the **Black Sea** port of Novorossiysk edged down by 23 tb/d, or about 4%, to average 527 tb/d.

Shipments via the **Druzhba** pipeline fell by 254 tb/d or almost 40% m-o-m to average 384 tb/d in January. Exports to China via the **ESPO pipeline** were broadly unchanged averaging 598 tb/d in January. Flows to the Pacific port of **Kozmino** increased 92 tb/d, or about 12% m-o-m, to average 858 tb/d.

In the **Lukoil system**, exports via the Varandey offshore platform in the Barents Sea averaged 109 tb/d in January, down by about 7% m-o-m. There were no exports from the Kaliningrad terminal for the third month in a row.

On other routes, **Russia's Far East** exports increased 13%, or 26 tb/d, to average 235 tb/d in January. This was still a drop of 32%, or 112 tb/d, compared to the volumes shipped in the same month last year.

Central Asian exports averaged 210 tb/d in January, representing a decline of about 5% compared with the month before and a loss of 12% y-o-y.

Black Sea total exports from the **CPC terminal** fell sharply, down by more than 15% or 234 tb/d, to average 1.3 mb/d in January. This was a loss of 10% compared with the same month last year. There were no exports via the Supsa pipeline in January, compared with 82 tb/d in the same month last year. Exports via the **Baku-Tbilisi-Ceyhan (BTC) pipeline** declined in January, falling by about 6%, or 35 tb/d, to average 598 tb/d.

Total product exports from Russia and Central Asia declined by 13%, or 476 tb/d m-o-m, to average 3.1 mb/d in January. M-o-m losses were seen across the board, except for VGO and jet fuel. Gasoil exports were 174 tb/d, or 12%, lower, and naphtha outflows fell 136 tb/d, or 22%. Y-o-y, total product exports slipped 1%, or 123 tb/d, in January, as declines in naphtha and fuel oil were largely offset by a jump in gasoil exports.

Commercial Stock Movements

Preliminary January 2023 data sees total OECD commercial oil stocks up by 34.9 mb, m-o-m. At 2,802 mb, they were 147 mb higher than the same time one year ago, but 75 mb lower than the latest five-year average and 124 mb below the 2015–2019 average. Within the components, crude and product stocks rose m-o-m by 10.5 mb and 24.5 mb, respectively.

At 1,372 mb, OECD crude stocks were 120 mb higher than the same time a year ago, but 4 mb lower than the latest five-year average and 59 mb lower than the 2015–2019 average.

OECD product stocks stood at 1,430 mb, representing a rise of 26 mb from the same time a year ago, but they were 71 mb lower than the latest five-year average and 65 mb below the 2015–2019 average.

In terms of days of forward cover, OECD commercial stocks rose m-o-m by 0.8 days in January 2023 to stand at 60.8 days. This is 2.9 days above the January 2022 level, but 3.1 days less than the latest five-year average and 1.2 days lower than the 2015–2019 average.

Preliminary data for February 2023 showed that total US commercial oil stocks rose by 22.9 mb m-o-m to stand at 1,258.5 mb. This is 93.0 mb higher than the same month in 2022 and 16.6 mb above the latest five-year average. Crude stocks rose by 27.5 mb, while product stocks fell by 4.6 mb, m-o-m.

OECD

Preliminary **January 2023** data sees **total OECD commercial oil stocks** up m-o-m by 34.9 mb. At 2,802 mb, they were 147 mb higher than the same time one year ago, but 75 mb lower than the latest five-year average and 124 mb below the 2015–2019 average.

Within the components, crude and product stocks rose m-o-m by 10.5 mb and 24.5 mb, respectively. Within the OECD regions, total commercial oil stocks in January 2023 rose in OECD Americas and OECD Europe, while they fell in OECD Asia Pacific.

OECD commercial **crude stocks** stood at 1,372 mb in January. This is 120 mb higher than the same time a year ago, but 4 mb lower than the latest five-year average and 59 mb lower than the 2015–2019 average.

Compared with the previous month, OECD Americas saw a crude stock build of 23.1 mb, while stocks in OECD Asia Pacific and OECD Europe dropped by 4.1 mb and 8.5 mb, respectively.

Total product inventories stood at 1,430 mb in January 2023. This is 26 mb above the same time a year ago; 71 mb lower than the latest five-year average and 65 mb below the 2015–2019 average. Compared with the previous month, OECD Americas and OECD Europe witnessed product stock builds of 8.1 mb and 17.0 mb, respectively, while product stocks in OECD Asia Pacific fell by 0.7 mb.

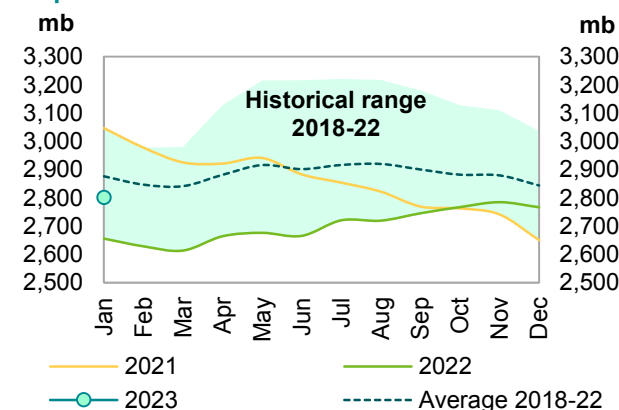
Table 9 - 1: OECD commercial stocks, mb

OECD stocks	Jan 22	Nov 22	Dec 22	Jan 23	Change Jan 23/Dec 22
Crude oil	1,252	1,348	1,362	1,372	10.5
Products	1,404	1,437	1,406	1,430	24.5
Total	2,656	2,785	2,767	2,802	34.9
Days of forward cover	57.9	60.3	60.1	60.8	0.8

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

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

Graph 9 - 1: OECD commercial oil stocks



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

In terms of **days of forward cover**, OECD commercial stocks rose m-o-m by 0.8 days in January 2023 to stand at 60.8 days. This is 2.9 days above January 2022 level, but 3.1 days lower than the latest five-year average and 1.2 days lower than the 2015–2019 average.

All three OECD regions were below the latest five-year average: the Americas by 3.3 days at 60.5 days; Asia Pacific by 1.1 days at 47.0 days; and Europe by 4.4 days at 69.2 days.

OECD Americas

OECD Americas' total commercial stocks rose by 31.2 mb m-o-m in January to settle at 1,510 mb, which is 58 mb higher than the same month in 2022, but 17 mb lower than the latest five-year average.

Commercial **crude oil stocks** in OECD Americas rose m-o-m by 23.1 mb in January to stand at 770 mb, which is 44 mb higher than in January 2022 and 11 mb above the latest five-year average. The monthly build in crude oil stocks can be attributed to lower US crude runs, which dropped by around 400 tb/d to 15.44 mb/d.

Total product stocks in OECD Americas rose m-o-m by 8.1 mb in January to stand at 740 mb, which is 14 mb higher than the same month in 2022, but 28 mb below the latest five-year average. Lower consumption in the region was behind the product stock build.

OECD Europe

OECD Europe's total commercial stocks rose m-o-m by 8.5 mb in January to settle at 934 mb. This is 54 mb higher than the same month in 2022, but 42 mb below the latest five-year average.

OECD Europe's **commercial crude stocks** fell by 8.5 mb m-o-m to end the month of January at 410 mb, which is 39 mb higher than one year ago, but 6 mb lower than the latest five-year average. The drop in crude oil inventories came despite refinery throughput in the EU-14, plus the UK and Norway dropping by around 140 tb/d m-o-m to stand at 9.79 mb/d.

By contrast, Europe's **product stocks** rose m-o-m by 17.0 mb to end January at 525 mb, which is 15 mb higher than a year ago at the same time, but 36 mb below the latest five-year average.

OECD Asia Pacific

OECD Asia Pacific's total commercial oil stocks fell m-o-m by 4.8 mb in January to stand at 358 mb, which is 34 mb higher than a year ago at the same time, but 16 mb below the latest five-year average.

OECD Asia Pacific's **crude inventories** fell by 4.1 mb m-o-m to end January at 192 mb, which is 37 mb higher than one year ago, but 9 mb below the latest five-year average.

OECD Asia Pacific's **total product inventories** fell m-o-m by 0.7 mb to end January at 166 mb, which is 3.2 mb lower than the same time a year ago and 7.5 mb below the latest five-year average.

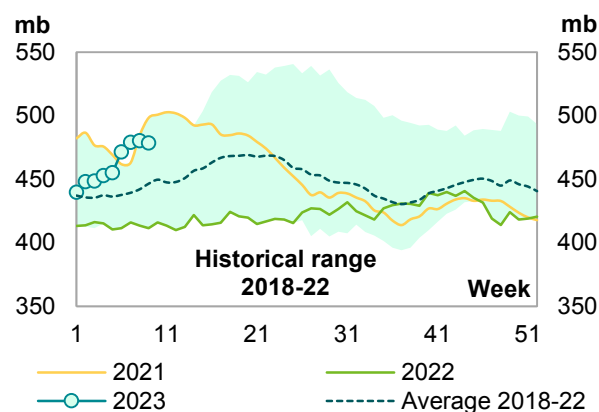
US

Preliminary data for **February 2023** showed that **total US commercial oil stocks** rose by 22.9 mb m-o-m to stand at 1,258.5 mb. This is 93.0 mb, or 8.0%, higher than the same month in 2022; and 16.6 mb, or 1.3%, above the latest five-year average. Crude stocks rose by 27.5 mb, while product stocks fell by 4.6 mb, m-o-m.

US commercial **crude stocks** in February 2023 stood at 480.2 mb. This is 71.1 mb, or 17.4%, higher than the same month of the previous year, and 34.0 mb, or 7.6%, above the latest five-year average. The monthly build in crude oil stocks can be attributed to lower crude runs, which dropped by around 30 tb/d to 15.41 mb/d.

In contrast, **total product stocks** fell in February 2023 to stand at 778.3 mb. This is 22.0 mb, or 2.9%, higher than February 2022 levels; but 17.4 mb, or 2.2%, lower than the latest five-year average. The stock drop could be attributed to higher product consumption.

Graph 9 - 2: US weekly commercial crude oil inventories



Sources: EIA and OPEC.

Commercial Stock Movements

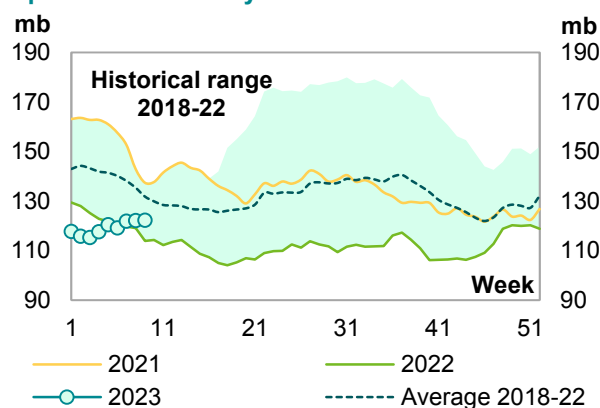
Gasoline stocks rose m-o-m by 4.6 mb in February 2023 to settle at 239.2 mb. This is 11.2 mb, or 4.5%, lower than in the same month of 2022; and 10.8 mb, or 4.3%, lower than the latest five-year average.

Distillate stocks rose m-o-m by 4.5 mb in February 2023 to stand at 122.1 mb. This is 1.3 mb, or 1.0%, higher than the same month of the previous year; but 12.5 mb, or 9.3%, below the latest five-year average.

Jet fuel stocks rose m-o-m by 2.1 mb, ending February 2023 at 37.6 mb. This is 2.3 mb, or 5.8%, lower than the same month in 2022, and 4.0 mb, or 9.5%, below the latest five-year average.

By contrast, **residual fuel oil stocks** fell by 0.6 mb m-o-m in February 2023. At 30.7 mb, this was 3.2 mb, or 11.4%, higher than a year earlier, and 0.4 mb, or 1.2%, above the latest five-year average.

Graph 9 - 3: US weekly distillate inventories



Sources: EIA and OPEC.

Table 9 - 2: US commercial petroleum stocks, mb

US stocks	Feb 22	Dec 22	Jan 23	Feb 23	Change Feb 23/Jan 23
Crude oil	409.1	429.6	452.7	480.2	27.5
Gasoline	250.4	224.3	234.6	239.2	4.6
Distillate fuel	120.8	118.8	117.6	122.1	4.5
Residual fuel oil	27.5	30.7	31.3	30.7	-0.6
Jet fuel	39.9	35.0	35.5	37.6	2.1
Total products	756.3	792.1	782.9	778.3	-4.6
Total	1,165.5	1,221.6	1,235.6	1,258.5	22.9
SPR	578.9	372.0	371.6	371.6	0.0

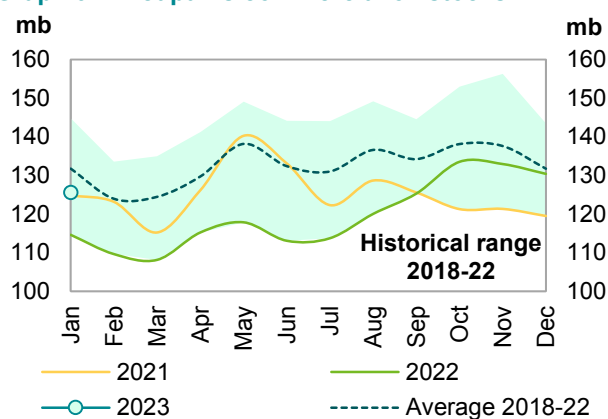
Sources: EIA and OPEC.

Japan

In Japan, **total commercial oil stocks** in January fell m-o-m by 4.8 mb to settle at 125.6 mb. This is 11.0 mb, or 9.6%, higher than the same month in 2022; but 6.2 mb, or 4.7%, below the latest five-year average. Crude and product stocks fell m-o-m by 4.1 mb and 0.7 mb, respectively.

Japanese **commercial crude oil stocks** fell m-o-m by 4.1 mb in January to stand at 67.2 mb. This is 11.2 mb, or 20.1%, higher than the same month of the previous year; but 3.7 mb, or 5.3%, 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 235 tb/d, or 8.0%, to stand at 2.72 mb/d.

Graph 9 - 4: Japan's commercial oil stocks



Sources: METI and OPEC.

Japan's **total product inventories** fell m-o-m by 0.7 mb to end January at 58.4 mb. This is 0.3 mb, or 0.4% less than the same month in 2022; and 2.4 mb, or 4.0%, below the latest five-year average.

Gasoline stocks rose m-o-m by 1.0 mb to stand at 11.2 mb in January. This was 0.2 mb, or 1.5%, below a year earlier at the same time; and 0.4 mb, or 3.6%, lower than the latest five-year average. The build came on the back of lower gasoline consumption, which dropped by 14.6% m-o-m.

By contrast, **distillate stocks** fell m-o-m by 0.7 mb to end January at 26.4 mb. This is 0.1 mb, or 0.4%, above the same month in 2022 and 0.7 mb, or 2.7%, below the latest five-year average. Within distillate components, kerosene and gasoil stocks went down by 3.9% and 3.7%, respectively, while jet fuel oil stocks rose by 2.4%.

Total residual fuel oil stocks fell m-o-m by 0.7 mb to end January at 11.1 mb. This is 0.9 mb, or 7.2%, lower than in the same month of the previous year; and 1.7 mb, or 13.1%, below the latest five-year average. Within the components, fuel oil A stocks rose by 2.3%, while fuel oil B.C stocks fell by 11.1%, m-o-m.

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

Japan's stocks	Jan 22	Nov 22	Dec 22	Jan 23	Change Jan 23/Dec 22
Crude oil	55.9	67.1	71.3	67.2	-4.1
Gasoline	11.4	11.1	10.2	11.2	1.0
Naphtha	9.1	10.0	10.0	9.7	-0.3
Middle distillates	26.3	32.1	27.1	26.4	-0.7
Residual fuel oil	11.9	12.6	11.8	11.1	-0.7
Total products	58.7	65.8	59.1	58.4	-0.7
Total**	114.6	132.9	130.4	125.6	-4.8

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

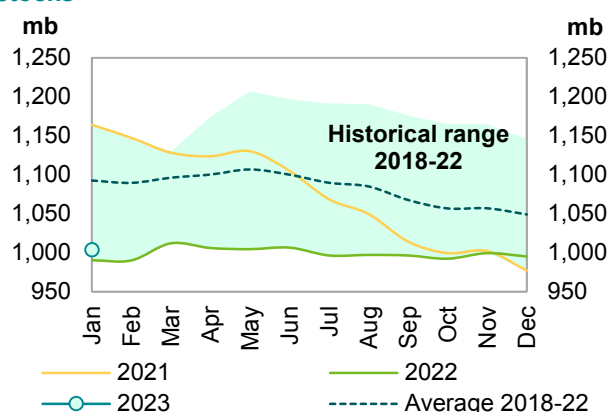
Sources: METI and OPEC.

EU-14 plus UK and Norway

Preliminary data for **January** showed that **total European commercial oil stocks** rose m-o-m by 8.5 mb to stand at 1,003.8 mb. At this level, they were 13.3 mb, or 1.3%, above the same month a year earlier, but 88.9 mb, or 8.1%, lower than the latest five-year average. Crude stocks fell by 8.5 mb, while product stocks rose by 17.0 mb, m-o-m.

European **crude inventories** fell in January to stand at 428.0 mb. This is 18.8 mb, or 4.6%, higher than the same month in 2022, but 29.8 mb, or 6.5%, below the latest five-year average. The drop in crude oil inventories came despite refinery throughput in the EU-14, plus the UK and Norway dropping by around 140 tb/d m-o-m to stand at 9.79 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** rose m-o-m by 17.0 mb to end January at 575.8 mb. This is 5.5 mb, or 0.9%, lower than the same month of the previous year; and 59.1 mb, or 9.3%, below the latest five-year average.

Gasoline stocks rose m-o-m by 4.7 mb in January to stand at 108.0 mb. At this level, they were 7.3 mb, or 6.4%, lower than the same time a year earlier; and 14.1 mb, or 11.5%, below the latest five-year average.

Middle distillate stocks rose m-o-m by 10.8 mb in January to stand at 376.5 mb. This is 7.4 mb, or 1.9%, below the same month in 2022; and 42.2 mb, or 10.1%, lower than the latest five-year average.

Residual fuel stocks rose m-o-m by 1.3 mb in January to stand at 60.6 mb. This is 2.5 mb, or 4.3%, higher than the same month in 2022; but 3.8 mb, or 5.9%, below the latest five-year average.

Meanwhile, **naphtha stocks** increased m-o-m by 0.3 mb in January, ending the month at 30.7 mb. This is 6.8 mb, or 28.7%, higher than the January 2022 level; and 1.0 mb, or 3.2%, higher than the latest five-year average.

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

EU stocks	Jan 22	Nov 22	Dec 22	Jan 23	Change Jan 23/Dec 22
Crude oil	409.2	439.8	436.5	428.0	-8.5
Gasoline	115.4	105.5	103.4	108.0	4.7
Naphtha	23.9	27.9	30.5	30.7	0.3
Middle distillates	383.9	365.3	365.7	376.5	10.8
Fuel oils	58.1	61.1	59.3	60.6	1.3
Total products	581.3	559.7	558.8	575.8	17.0
Total	990.5	999.6	995.3	1,003.8	8.5

Sources: Argus, Euroilstock and OPEC.

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

Singapore

In **January**, **total product stocks in Singapore** rose m-o-m by 2.6 mb to reach 46.7 mb. This is 0.3 mb, or 0.7%, lower than the same month in 2022 and 0.7 mb, or 1.4%, below the latest five-year average.

Light distillate stocks rose m-o-m by 2.0 mb in January to stand at 17.0 mb. This is 1.3 mb, or 8.1%, higher than the same month of the previous year and 2.5 mb, or 17.2%, above the latest five-year average.

Middle distillate stocks also rose m-o-m by 1.1 mb in January to stand at 9.1 mb. This is 0.9 mb or 10.8% higher than a year earlier at the same time, but 1.8 mb, or 16.5%, lower than the latest five-year average.

By contrast, **residual fuel oil stocks** fell m-o-m by 0.5 mb, ending January at 20.6 mb. This is 2.5 mb, or 10.8%, lower than January 2022, and 1.4 mb, or 6.3%, below the latest five-year average.

ARA

Total product stocks in ARA rose m-o-m in **January** by 2.2 mb. At 44.8 mb, they were 6.3 mb, or 16.3%, higher than the same month in 2022; and 1.3 mb, or 3.0%, higher than the latest five-year average.

Gasoline stocks in January rose by 0.6 mb m-o-m to stand at 12.0 mb, which is 1.5 mb, or 14.3%, higher than the same month of the previous year; and 1.9 mb, or 18.3%, above the latest five-year average.

Gasoil stocks rose by 2.4 mb m-o-m, ending January at 17.0 mb. This is 5.1 mb, or 42.3%, higher than January 2022; but 1.1 mb, or 5.9%, below the latest five-year average.

By contrast, **jet oil stocks** fell by 0.5 mb m-o-m to stand at 6.3 mb. This is 0.3 mb, or 4.9%, lower than levels seen in January 2022; but 0.7 mb, or 12.8%, above the latest five-year average.

Meanwhile, **fuel oil stocks** remained unchanged m-o-m in January to stand at 7.2 mb, which is 0.5 mb, or 6.7%, less than in January 2022; but 0.1 mb, or 1.1%, higher than the latest five-year average.

Fujairah

During the week ending 27 February 2023, **total oil product stocks in Fujairah** fell w-o-w by 0.52 mb to stand at 21.90 mb, according to data from Fed Com and S&P Global Platts. At this level, total oil stocks were 2.87 mb higher than at the same time a year ago.

Light distillate stocks fell by 0.96 mb to stand at 7.28 mb, which is 0.49 mb higher than a year ago.

Middle distillate stocks also fell w-o-w by 0.44 mb to stand at 1.42 mb, which is 1.04 mb lower than the same time last year. By contrast, **heavy distillate stocks** rose by 0.89 mb w-o-w to stand at 13.20 mb in the week to 27 February 2023, which is 3.43 mb higher than the same period a year ago.

Balance of Supply and Demand

Demand for OPEC crude in 2022 is revised down by 0.2 mb/d from the previous MOMR to stand 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 oil 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 0.3 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 is revised down by 0.2 mb/d from the previous assessment to stand at 29.3 mb/d. This is around 0.8 mb/d higher than in 2022.

Balance of supply and demand in 2022

Demand for OPEC crude in 2022 is revised down by 0.2 mb/d from the previous MOMR to stand at 28.4 mb/d. This is around 0.5 mb/d higher than in 2021.

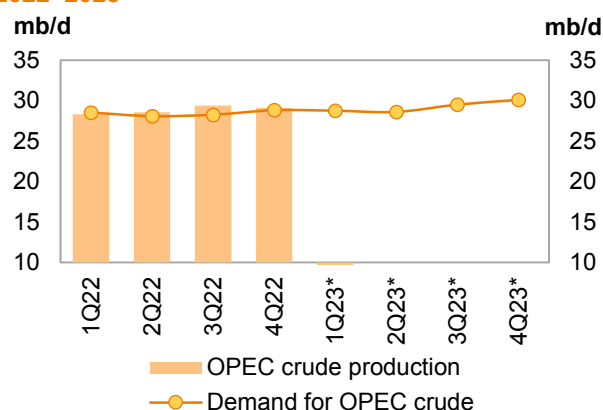
Compared with the previous assessment, 1Q22, 2Q22 and 3Q22 were revised down by 0.2 mb/d each from the previous month, while 4Q22 was revised down by 0.1 mb/d.

Compared with the same quarters in 2021, demand for OPEC crude in 1Q22 and 2Q22 is estimated to be higher by 2.4 mb/d and 1.2 mb/d, respectively, while 3Q22 and 4Q22 are estimated to be lower by 0.3 mb/d and 1.2 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 oil 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 0.3 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: * 1Q23-4Q23 = 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	98.28	99.49	101.10	99.58	2.50
Non-OPEC liquids production	63.90	65.57	64.81	65.82	66.84	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	70.92	70.19	71.23	72.27	71.15	1.97
Difference (a-b)	27.89	28.54	28.09	28.27	28.82	28.43	0.54
OPEC crude oil production	26.35	28.34	28.58	29.40	29.10	28.86	2.51
Balance	-1.55	-0.20	0.49	1.13	0.28	0.43	1.97

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 is revised down by 0.2 mb/d 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, 1Q23 and 4Q23 were revised down by 0.3 mb/d each, while 3Q23 was revised down by 0.1 mb/d. Meanwhile, demand for OPEC crude in 2Q23 remained unchanged from the previous month.

Compared with the same quarters in 2022, demand for OPEC crude in 1Q23 and 2Q23 are forecast to be higher by 0.2 mb/d and 0.5 mb/d, respectively, while both 3Q23 and 4Q23 are expected to be 1.3 mb/ higher each.

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

	2022	1Q23	2Q23	3Q23	4Q23	2023	Change 2023/22
(a) World oil demand	99.58	101.28	100.77	102.14	103.39	101.90	2.32
Non-OPEC liquids production	65.76	67.07	66.68	67.19	67.86	67.20	1.44
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	72.51	72.15	72.62	73.29	72.64	1.49
Difference (a-b)	28.43	28.77	28.62	29.52	30.10	29.26	0.83

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

Appendix

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	25.02	25.03	24.86	25.17	25.63	25.18	25.21
of which US	20.58	18.35	20.03	20.38	20.41	20.62	20.43	20.46	20.41	20.46	20.85	20.49	20.55
Europe	14.31	12.41	13.13	13.19	13.43	14.07	13.37	13.52	13.12	13.41	14.11	13.42	13.52
Asia Pacific	7.95	7.17	7.38	7.85	6.99	7.22	7.77	7.46	7.89	7.05	7.27	7.79	7.50
Total OECD	47.66	42.03	44.83	45.81	45.40	46.63	46.16	46.00	45.88	45.63	47.01	46.39	46.23
China	13.81	13.94	15.00	14.77	14.45	14.67	15.51	14.85	15.23	15.40	15.43	16.16	15.56
India	4.99	4.51	4.77	5.18	5.16	4.95	5.26	5.14	5.41	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	9.46	9.65	9.14	9.24	9.37
Latin America	6.59	5.90	6.23	6.32	6.36	6.55	6.49	6.43	6.44	6.49	6.71	6.65	6.58
Middle East	8.20	7.45	7.79	8.06	8.13	8.50	8.42	8.28	8.45	8.46	8.84	8.71	8.61
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	3.66	3.55	3.68	3.45	3.59	3.82	3.64
Other Eurasia	1.19	1.07	1.21	1.22	1.16	1.00	1.21	1.15	1.21	1.16	1.02	1.22	1.15
Other Europe	0.76	0.70	0.75	0.79	0.75	0.73	0.80	0.77	0.80	0.76	0.75	0.83	0.79
Total Non-OECD	52.62	49.16	52.25	53.65	52.88	52.86	54.93	53.58	55.40	55.14	55.13	57.00	55.67
(a) Total world demand	100.27	91.19	97.08	99.45	98.28	99.49	101.10	99.58	101.28	100.77	102.14	103.39	101.90
Y-o-y change	1.08	-9.09	5.89	5.18	2.55	1.76	0.59	2.50	1.82	2.49	2.65	2.29	2.32
Non-OPEC liquids production													
Americas	25.88	24.87	25.45	26.11	26.51	27.26	27.47	26.84	27.44	27.89	28.25	28.62	28.06
of which US	18.53	17.76	18.04	18.51	19.07	19.57	19.67	19.21	19.67	20.26	20.45	20.68	20.27
Europe	3.74	3.92	3.79	3.72	3.46	3.51	3.61	3.58	3.74	3.74	3.80	3.93	3.80
Asia Pacific	0.52	0.52	0.51	0.49	0.51	0.43	0.49	0.48	0.49	0.47	0.49	0.48	0.48
Total OECD	30.15	29.31	29.75	30.32	30.49	31.20	31.56	30.90	31.67	32.11	32.55	33.03	32.34
China	4.05	4.16	4.32	4.54	4.54	4.41	4.42	4.48	4.52	4.52	4.49	4.49	4.50
India	0.83	0.78	0.78	0.79	0.78	0.76	0.76	0.77	0.78	0.79	0.78	0.78	0.78
Other Asia	2.75	2.53	2.42	2.37	2.32	2.24	2.31	2.31	2.38	2.37	2.34	2.36	2.36
Latin America	6.09	6.02	5.96	6.11	6.18	6.46	6.59	6.34	6.62	6.62	6.67	6.73	6.66
Middle East	3.16	3.15	3.20	3.25	3.29	3.32	3.30	3.29	3.27	3.31	3.34	3.34	3.32
Africa	1.51	1.41	1.35	1.33	1.31	1.32	1.30	1.32	1.32	1.33	1.35	1.34	1.34
Russia	11.51	10.54	10.80	11.33	10.63	11.01	11.17	11.03	10.90	10.00	10.10	10.15	10.28
Other Eurasia	3.07	2.91	2.93	3.04	2.76	2.59	2.92	2.83	3.04	3.05	3.01	3.05	3.04
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	32.22	32.88	32.47	32.93	32.10	32.18	32.36	32.39
Total Non-OPEC production	63.23	60.95	61.62	63.17	62.41	63.42	64.44	63.36	64.60	64.21	64.72	65.39	64.73
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	65.57	64.81	65.82	66.84	65.76	67.07	66.68	67.19	67.86	67.20
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	70.92	70.19	71.23	72.27	71.15	72.51	72.15	72.62	73.29	72.64
Y-o-y change	2.14	-2.54	0.91	2.76	1.30	2.05	1.76	1.97	1.60	1.96	1.39	1.01	1.49
OPEC crude oil production (secondary sources)	29.36	25.72	26.35	28.34	28.58	29.40	29.10	28.86					
Total liquids production	100.18	94.00	95.53	99.25	98.76	100.63	101.38	100.01					
Balance (stock change and miscellaneous)	-0.09	2.81	-1.55	-0.20	0.49	1.13	0.28	0.43					
OECD closing stock levels, mb													
Commercial	2,894	3,037	2,651	2,613	2,665	2,746	2,767	2,767					
SPR	1,535	1,541	1,484	1,442	1,343	1,245	1,210	1,210					
Total	4,429	4,578	4,134	4,055	4,009	3,991	3,977	3,977					
Oil-on-water	1,033	1,148	1,202	1,231	1,304	1,407	1,399	1,399					
Days of forward consumption in OECD, days													
Commercial onland stocks	69	68	58	58	57	59	60	60					
SPR	37	34	32	32	29	27	26	26					
Total	105	102	90	89	86	86	87	86					
Memo items													
(a) - (b)	29.46	22.91	27.89	28.54	28.09	28.27	28.82	28.43	28.77	28.62	29.52	30.10	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	-	-	-	-	-	-	-0.14	-0.04	-0.10	-0.10	-0.05	-0.24	-0.12
of which US	-	-	-	-	-	-	-0.25	-0.06	-0.05	-0.08	-0.03	-0.32	-0.12
Europe	-	-	-	-	-	-0.02	-0.36	-0.10	-0.10	-0.05	-0.02	-0.36	-0.13
Asia Pacific	-	-	-	-	-	-	0.06	0.02	-	-	-	0.06	0.02
Total OECD	-	-	-	-	-	-0.02	-0.44	-0.12	-0.20	-0.15	-0.07	-0.54	-0.24
China	-	-	0.03	0.03	0.03	0.03	0.08	0.04	0.13	0.18	0.18	0.13	0.15
India	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Asia	-	-	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
Latin America	-	-	-	-	-	-	-	-	-	-	-	-	-
Middle East	-	-	-	-	-	-	0.10	0.03	-	-	-	0.10	0.03
Africa	-	-	-	-	-	-	0.08	0.02	-	-	-	0.08	0.02
Russia	-	-	-	-	-	-	0.07	0.02	0.05	-	-	0.07	0.03
Other Eurasia	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Europe	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Non-OECD	-	-	0.07	0.07	0.07	0.07	0.37	0.15	0.22	0.22	0.22	0.42	0.27
(a) Total world demand	-	-	0.07	0.07	0.07	0.05	-0.07	0.03	0.02	0.07	0.15	-0.12	0.03
Y-o-y change	-	-	0.07	-	-	-0.02	-0.14	-0.04	-0.05	-	0.10	-0.05	-
Non-OPEC liquids production													
Americas	0.04	0.12	0.20	0.24	0.24	0.23	-0.01	0.18	-0.15	0.21	0.21	0.21	0.12
of which US	0.04	0.12	0.19	0.24	0.24	0.23	-0.02	0.18	-0.08	0.21	0.21	0.21	0.14
Europe	0.04	0.02	0.03	-0.01	0.03	0.02	-0.01	0.01	-0.18	-0.16	0.01	0.01	-0.08
Asia Pacific	-	-	-	-	-	-	0.01	-	-0.01	-	-	-	-
Total OECD	0.08	0.14	0.23	0.23	0.27	0.26	-0.01	0.19	-0.33	0.05	0.22	0.22	0.04
China	-	0.01	0.01	0.02	0.02	0.02	0.01	0.02	0.02	0.02	0.02	0.02	0.02
India	-	-	-	0.01	0.01	0.01	-	0.01	-0.02	0.01	0.01	0.03	0.01
Other Asia	0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.02	0.02	0.02	0.02	0.02	0.02
Latin America	-	-0.01	0.01	-	-	-	0.02	-	0.14	-0.04	-0.03	-0.04	0.01
Middle East	-0.03	-0.04	-0.04	-0.04	-0.04	-0.04	-0.04	-0.04	-0.07	-0.04	-0.04	-0.04	-0.05
Africa	-	-	-	-	-	-	-	-	0.01	-	-	-	-
Russia	-	-	-	-	-	-	-	-	0.62	-	-	-	0.15
Other Eurasia	-	-	-	-	-	-	0.01	-	-0.03	0.01	0.01	0.01	-
Other Europe	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Non-OECD	-	-0.02	-	0.01	0.01	0.02	0.01	0.01	0.68	-0.02	-0.02	-0.01	0.16
Total Non-OPEC production	0.07	0.12	0.23	0.25	0.28	0.27	-	0.20	0.35	0.03	0.20	0.21	0.20
Processing gains	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Non-OPEC liquids production	0.07	0.12	0.23	0.25	0.28	0.27	-	0.20	0.35	0.03	0.20	0.21	0.20
OPEC NGL + non-conventional oils	-	-	-	-	-	-	-	-	-	-	-	-	-
(b) Total non-OPEC liquids production and OPEC NGLs	0.07	0.12	0.23	0.25	0.28	0.27	-	0.20	0.35	0.03	0.20	0.21	0.20
Y-o-y change	-0.04	0.05	0.11	0.05	0.06	0.08	-0.31	-0.03	0.11	-0.24	-0.07	0.21	-
OPEC crude oil production (secondary sources)	-	-	-	-0.01	-0.01	-0.01	-0.01	-0.01	-	-	-	-	-
Total liquids production	0.08	0.12	0.23	0.24	0.27	0.26	-0.01	0.19	-	-	-	-	-
Balance (stock change and miscellaneous)	0.08	0.12	0.16	0.17	0.20	0.21	0.06	0.16	-	-	-	-	-
mb													
Commercial	-	-	-	-	-	-	-1	-1	-	-	-	-	-
SPR	-	-	-	-	-	-	10	10	-	-	-	-	-
Total	-	-	-	-	-	-	9	9	-	-	-	-	-
Oil-on-water	-	-	-	-	-	-	-2	-2	-	-	-	-	-
Days of forward consumption in OECD, days													
Commercial onland stocks	-	-	-	-	-	1	-	-	-	-	-	-	-
SPR	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	-	-	-	-	-	1	1	1	-	-	-	-	-
Memo items													
(a) - (b)	-0.07	-0.12	-0.16	-0.18	-0.21	-0.22	-0.07	-0.17	-0.33	0.04	-0.05	-0.33	-0.17

Note: * This compares Table 11 - 1 in this issue of the MOMR with Table 11 - 1 in the February 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	1Q21	2Q21	3Q21	4Q21	1Q22	2Q22	3Q22	4Q22
Closing stock levels, mb											
OECD onland commercial	3,037	2,651	2,767	2,926	2,884	2,770	2,651	2,613	2,665	2,746	2,767
Americas	1,613	1,470	1,479	1,578	1,553	1,523	1,470	1,407	1,436	1,469	1,479
Europe	1,043	857	926	1,002	973	891	857	890	911	919	926
Asia Pacific	380	324	363	346	357	355	324	316	318	358	363
OECD SPR	1,541	1,484	1,210	1,546	1,524	1,513	1,484	1,442	1,343	1,245	1,210
Americas	640	596	375	640	623	620	596	568	495	418	375
Europe	487	479	456	493	487	485	479	468	452	447	456
Asia Pacific	414	409	378	413	413	408	409	406	395	380	378
OECD total	4,578	4,134	3,977	4,472	4,407	4,282	4,134	4,055	4,009	3,991	3,977
Oil-on-water	1,148	1,202	1,399	1,138	1,131	1,169	1,202	1,231	1,304	1,407	1,399
Days of forward consumption in OECD, days											
OECD onland commercial	68	58	60	66	63	59	58	58	57	60	60
Americas	66	59	59	65	63	61	59	56	57	59	59
Europe	79	63	68	79	70	64	65	66	65	69	70
Asia Pacific	51	43	48	49	51	46	41	45	44	46	46
OECD SPR	35	34	34	35	33	32	32	32	29	27	26
Americas	26	24	23	26	25	25	24	23	20	17	15
Europe	37	35	35	39	35	35	36	35	32	33	34
Asia Pacific	56	55	54	59	58	52	52	58	55	49	48
OECD total	103	92	94	101	96	91	90	89	86	87	86

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

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

Non-OPEC liquids production and OPEC NGLs	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	19.7	20.3	20.5	20.7	20.3	1.1
Canada	5.4	5.2	5.4	5.7	5.8	5.6	0.2	5.7	5.6	5.8	6.0	5.8	0.2
Mexico	1.9	1.9	2.0	2.0	2.0	2.0	0.1	2.0	2.0	2.0	2.0	2.0	0.0
Chile	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OECD Americas	25.9	24.9	25.4	27.3	27.5	26.8	1.4	27.4	27.9	28.3	28.6	28.1	1.2
Norway	1.7	2.0	2.0	1.9	2.0	1.9	-0.1	2.1	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	0.5	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	31.7	32.1	32.5	33.0	32.3	1.4
China	4.1	4.2	4.3	4.4	4.4	4.5	0.2	4.5	4.5	4.5	4.5	4.5	0.0
India	0.8	0.8	0.8	0.8	0.8	0.8	0.0	0.8	0.8	0.8	0.8	0.8	0.0
Brunei	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.0
Indonesia	0.9	0.9	0.8	0.8	0.8	0.8	0.0	0.8	0.8	0.8	0.8	0.8	0.0
Malaysia	0.7	0.6	0.6	0.6	0.6	0.6	0.0	0.6	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	2.4	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	0.0
Brazil	3.6	3.7	3.6	3.8	3.8	3.7	0.1	3.9	3.9	4.0	4.0	3.9	0.2
Colombia	0.9	0.8	0.8	0.8	0.8	0.8	0.0	0.8	0.8	0.7	0.8	0.8	0.0
Ecuador	0.5	0.5	0.5	0.5	0.5	0.5	0.0	0.5	0.5	0.5	0.5	0.5	0.0
Guyana	0.0	0.1	0.1	0.4	0.4	0.3	0.2	0.4	0.4	0.4	0.4	0.4	0.1
Latin America	0.4	0.3	0.3	0.3	0.3	0.3	0.0	0.3	0.3	0.3	0.3	0.3	0.0
Latin America	6.1	6.0	6.0	6.5	6.6	6.3	0.4	6.6	6.6	6.7	6.7	6.7	0.3
Bahrain	0.2	0.2	0.2	0.2	0.2	0.2	0.0	0.2	0.2	0.2	0.2	0.2	0.0
Oman	1.0	1.0	1.0	1.1	1.1	1.1	0.1	1.1	1.1	1.1	1.1	1.1	0.0
Qatar	1.9	1.9	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	10.9	10.0	10.1	10.2	10.3	-0.7
Kazakhstan	1.9	1.8	1.8	1.6	1.9	1.8	0.0	2.0	1.9	1.9	2.0	1.9	0.2
Azerbaijan	0.8	0.7	0.7	0.7	0.7	0.7	0.0	0.7	0.8	0.8	0.8	0.8	0.1
Eurasia others	0.4	0.4	0.4	0.3	0.3	0.3	0.0	0.3	0.3	0.3	0.3	0.3	0.0
Other Eurasia	3.1	2.9	2.9	2.6	2.9	2.8	-0.1	3.0	3.0	3.0	3.1	3.0	0.2
Other Europe	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.0
Total Non-OECD	33.1	31.6	31.9	32.2	32.9	32.5	0.6	32.9	32.1	32.2	32.4	32.4	-0.1
Non-OPEC	63.2	61.0	61.6	63.4	64.4	63.4	1.7	64.6	64.2	64.7	65.4	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	66.8	65.8	1.9	67.1	66.7	67.2	67.9	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	72.5	72.2	72.6	73.3	72.6	1.5

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

Appendix

Table 11 - 5: World rig count, units

World rig count	2020	2021	Change			2Q22	3Q22	4Q22	Jan 23	Feb 23	Change Feb/Jan
			2022	2022/21							
US	436	475	722	247		718	761	775	772	758	-14
Canada	90	133	174	41		114	202	186	226	248	22
Mexico	41	45	47	2		44	48	50	49	46	-3
OECD Americas	567	654	945	291		878	1,013	1,014	1,049	1,054	5
Norway	16	17	17	0		18	18	17	16	17	1
UK	6	8	10	2		10	13	10	10	11	1
OECD Europe	59	58	65	7		65	70	67	69	63	-6
OECD Asia Pacific	22	23	24	1		22	26	25	23	22	-1
Total OECD	648	735	1,034	299		966	1,109	1,106	1,141	1,139	-2
Other Asia*	187	174	186	12		184	185	188	192	190	-2
Latin America	58	91	119	28		113	122	130	119	133	14
Middle East	57	57	62	5		62	61	65	63	64	1
Africa	43	42	57	15		55	58	60	58	60	2
Other Europe	12	9	10	1		9	10	13	11	11	0
Total Non-OECD	357	373	434	61		423	436	456	443	458	15
Non-OPEC rig count	1,005	1,108	1,468	360		1,389	1,545	1,562	1,584	1,597	13
Algeria	31	26	32	6		32	33	33	31	31	0
Angola	3	4	7	3		6	6	9	9	9	0
Congo	1	0	1	1		0	1	1	1	1	0
Equatorial Guinea**	0	0	0	0		0	0	0	0	0	0
Gabon	3	2	3	1		3	2	3	3	3	0
Iran**	117	117	117	0		117	117	117	117	117	0
Iraq	47	39	51	12		50	54	55	55	62	7
Kuwait	45	25	27	2		27	27	28	23	25	2
Libya	12	13	7	-6		4	3	8	12	12	0
Nigeria	11	7	10	3		11	9	10	13	13	0
Saudi Arabia	93	62	73	11		71	71	80	79	77	-2
UAE	54	42	47	5		48	49	52	52	54	2
Venezuela	15	6	3	-3		3	3	3	3	3	0
OPEC rig count	432	343	377	34		371	376	398	398	407	9
World rig count***	1,437	1,451	1,845	394		1,760	1,921	1,959	1,982	2,004	22
<i>of which:</i>											
Oil	1,116	1,143	1,462	319		1,392	1,522	1,552	1,573	1,587	14
Gas	275	275	352	77		337	365	374	376	380	5
Others	46	33	31	-2		31	33	33	34	37	3

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

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

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

Totals may not add up due to independent rounding.

Sources: Baker Hughes and OPEC.

Glossary of Terms

Abbreviations

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

Acronyms

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

Glossary of Terms

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

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

OPEC Basket average price

US\$/b



up 0.26 in February

February 2023	81.88
January 2023	81.62
Year-to-date	81.75

February OPEC crude production

mb/d, according to secondary sources



up 0.12 in February

February 2023	28.92
January 2023	28.81

Economic growth rate

per cent

	World	OECD	US	Euro-zone	Japan	China	India
2022	3.2	2.9	2.1	3.5	1.0	3.0	6.7
2023	2.6	1.1	1.2	0.8	1.2	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

	Nov 22	Dec 22	Jan 23	Jan 23/Dec 22
Crude oil	1,348	1,362	1,372	10.5
Products	1,437	1,406	1,430	24.5
Total	2,785	2,767	2,802	34.9
Days of forward cover	60.3	60.1	60.8	0.8

Next report to be issued on 13 April 2023.