

# Oil Market Report

14 April 2023

- World oil demand will climb by 2 mb/d in 2023 to a record 101.9 mb/d. Reflecting the widening disparity between regions, non-OECD countries, buoyed by a resurgent China, will account for 90% of growth. OECD demand, dragged down by weak industrial activity and warm weather, contracted by 390 kb/d y-o-y in 1Q23, its second consecutive quarter of decline. Jet/kerosene accounts for 57% of 2023 gains.
- Extra cuts by OPEC+ will push world oil supply down 400 kb/d by end-2023. From March-December, gains of 1 mb/d from non-OPEC+ fail to offset a 1.4 mb/d decline from the producer bloc. For the year as a whole, global oil production growth slows to 1.2 mb/d versus 4.6 mb/d in 2022. Non-OPEC+, led by the US and Brazil, drives the 2023 expansion, rising 1.9 mb/d. OPEC+ is expected to drop by 760 kb/d.
- Global refining throughput is forecast to average 82 mb/d this year, 0.1 mb/d lower than in last month's *Report* due to weaker 1Q23 data. Annual gains will double to 2.1 mb/d from 1Q23 to 2Q23, as runs in the US normalise and with Chinese activity materially higher than a weak 2Q22 baseline. On average, 2023 crude runs will approach pre-covid levels but remain 0.3 mb/d below 2019 average throughputs.
- Russian oil exports in March soared to the highest since April 2020 thanks to surging product flows that returned to levels last seen before Russia invaded Ukraine. Total oil shipments rose by 0.6 mb/d to 8.1 mb/d, with products climbing 450 kb/d m-o-m to 3.1 mb/d. Estimated oil export revenues rebounded by \$1 billion to \$12.7 billion but were 43% lower than a year ago.
- Global inventories held largely steady in February after surging by 58 mb in the previous month. Oil on water and non-OECD stocks fell by 11.5 mb and 2.1 mb, respectively, while total OECD inventories rose by 8.8 mb. OECD commercial stocks built by 9.6 mb, narrowing the deficit against the five-year average to 7.5 mb. Preliminary data for the US, Europe and Japan show a hefty 38.9 mb decline in March.
- ICE Brent oil futures slumped to a 15-month low of \$71/bbl in mid-March due to financial market instability but then recovered as banking stress waned and expectations of Federal Reserve interest rate cuts later this year increased. Surprise OPEC+ production cuts announced in early April added further momentum to the rebound. At the time of writing, Brent futures traded at \$87/bbl.



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# Mind the gap

Surprise OPEC+ supply cuts announced on 2 April risk aggravating an expected oil supply deficit in 2H23 and boosting oil prices at a time of heightened economic uncertainty, even as industrial activity slows in the world's largest economies and production growth outside the alliance appears robust. The bloc's self-described "precautionary move" immediately triggered a \$7/bbl jump in North Sea Dated crude to \$85/bbl, up nearly \$15/bbl from March lows.

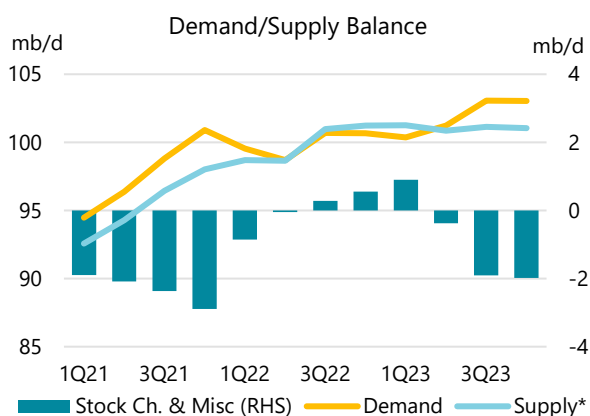
The apparent weakness in industrial activity is impacting gasoil demand, whereas the services sector and personal consumption are driving gasoline and jet uptake. While gasoil cracks have eased, those for gasoline continue to trend higher. Consumers confronted by inflated prices for basic necessities will now have to spread their budgets even more thinly. This augurs badly for the economic recovery and growth.

The latest OPEC+ voluntary curbs of 1.16 mb/d come on top of an announced 500 kb/d cut in Russian output from March that has now been extended through the rest of the year, and a 2 mb/d reduction in targets taking effect last November. While apparently a move to support declining prices amid financial turmoil in mid-March, rising global oil stocks may have also contributed to the decision. In January, OECD industry stocks surged by 53 mb to 2 830 mb, the highest since July 2021 and only 47 mb below the five-year average. Preliminary data for February show further builds, albeit at a much slower pace. By March, however, the trend was already turning, with OECD industry stocks plunging by 39 mb – their biggest monthly decline in over a year.

While oil demand in developed nations has underwhelmed in recent months, slowed by warmer weather and sluggish industrial activity, robust gains in China and other non-OECD countries are providing a strong offset. In 1Q23, OECD oil demand fell 390 kb/d y-o-y, but a solid Chinese rebound lifted global oil demand 810 kb/d above year-earlier levels to 100.4 mb/d. A much stronger increase of 2.7 mb/d is expected through year-end, propelled by a continued recovery in China and international travel. For 2023 as a whole, world oil demand is forecast to rise by an average 2 mb/d, to 101.9 mb/d, with the non-OECD accounting for 87% of the growth and China alone making up more than half the global increase.

Meeting those gains may prove challenging as the new OPEC+ cuts could reduce output by 1.4 mb/d from March through year-end, more than offsetting a 1 mb/d increase in non-OPEC+ production. Growth from the US shale patch, traditionally the most price-responsive source of more output, is currently limited by supply chain bottlenecks and higher costs.

Our oil market balances were already set to tighten in the second half of 2023, with the potential for a substantial supply deficit to emerge. The latest cuts risk exacerbating those strains, pushing both crude and product prices higher. Consumers currently under siege from inflation will suffer even more from higher prices, especially in emerging and developing economies.

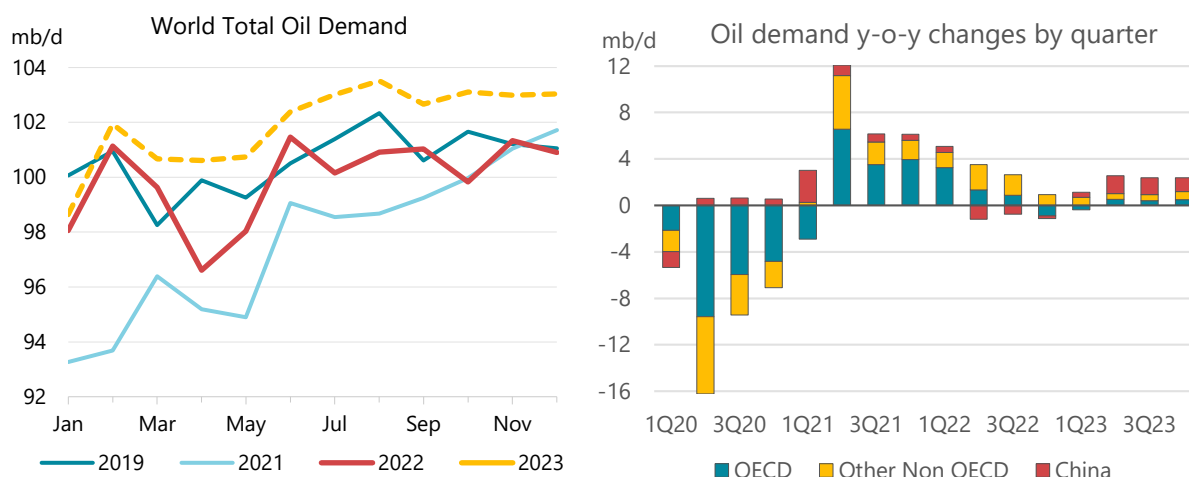


\*Assumes OPEC+ maintains cuts through 2023. Iran remains under sanctions.

# Demand

## Overview

Global oil demand returned to growth in 1Q23, climbing by 810 kb/d as the Chinese economy emerged from its lockdowns. World oil demand will increase by 2 mb/d in 2023, to average a record 101.9 mb/d. Growth will gather momentum over the course of the year, with gains of 2.4 mb/d in 2H23 lifting demand to 103.1 mb/d.

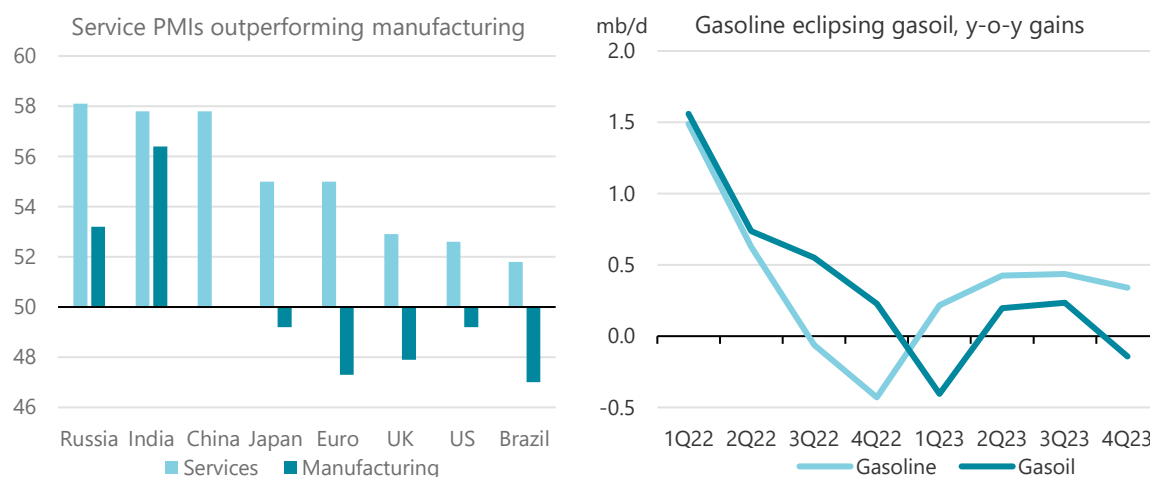


The contrast between a lacklustre OECD and resilient non-OECD continues to sharpen. Weighed down by anaemic GDP growth, rising fuel efficiencies and a mild winter in the US and Europe, OECD demand is estimated to have declined by 390 kb/d year-on-year (y-o-y) during 1Q23 – for a second consecutive quarter of lower oil use. Conversely, a resurgent post-lockdown Chinese economy accounts for the bulk of first-quarter non-OECD demand gains of 1.2 mb/d y-o-y. This disparity will narrow as the year progresses now that China's immediate rebound has largely run its course while OECD demand will return to growth as its economy recovers. Still, non-OECD countries, particularly those East of Suez, are expected to account for almost 90% of the total 2023 demand increase.

Global Demand by Region								
(thousand barrels per day)								
	Demand				Annual Chg (kb/d)		Annual Chg (%)	
	2020	2021	2022	2023	2022	2023	2022	2023
Africa	3 771	4 014	4 197	4 232	184	35	4.6	0.8
Americas	27 901	30 258	31 134	31 295	876	160	2.9	0.5
Asia/Pacific	34 095	36 154	36 342	37 994	188	1 652	0.5	4.5
Europe	13 136	13 896	14 289	14 360	394	71	2.8	0.5
FSU	4 559	4 855	4 900	4 845	45	- 56	0.9	-1.1
Middle East	8 074	8 484	9 049	9 214	564	165	6.6	1.8
<b>World</b>	<b>91 537</b>	<b>97 661</b>	<b>99 912</b>	<b>101 939</b>	<b>2 251</b>	<b>2 027</b>	<b>2.3</b>	<b>2.0</b>
OECD	42 028	44 822	45 949	46 212	1 127	262	2.5	0.6
Non-OECD	49 508	52 839	53 963	55 727	1 124	1 765	2.1	3.3

The global macroeconomic outlook remains capricious. The collapse of Silicon Valley Bank, First Republic Bank and Credit Suisse initially weighed heavily on sentiment on fears that they could prompt banks to tighten their lending. However, a more sanguine view has since taken hold, as

investors began to price an easing of monetary policy that could dampen the impact of an imminent economic downturn. This ties in with the world economy's gradually improving outlook in recent months, reflected by an upturn in purchasing managers indices (PMIs). Still, the present consensus forecast of 2.4% for 2023 global GDP growth remains well below trend and compares unfavourably to last year's 3.4% - thus acting as a headwind to this year's oil demand prospects, particularly for the OECD.

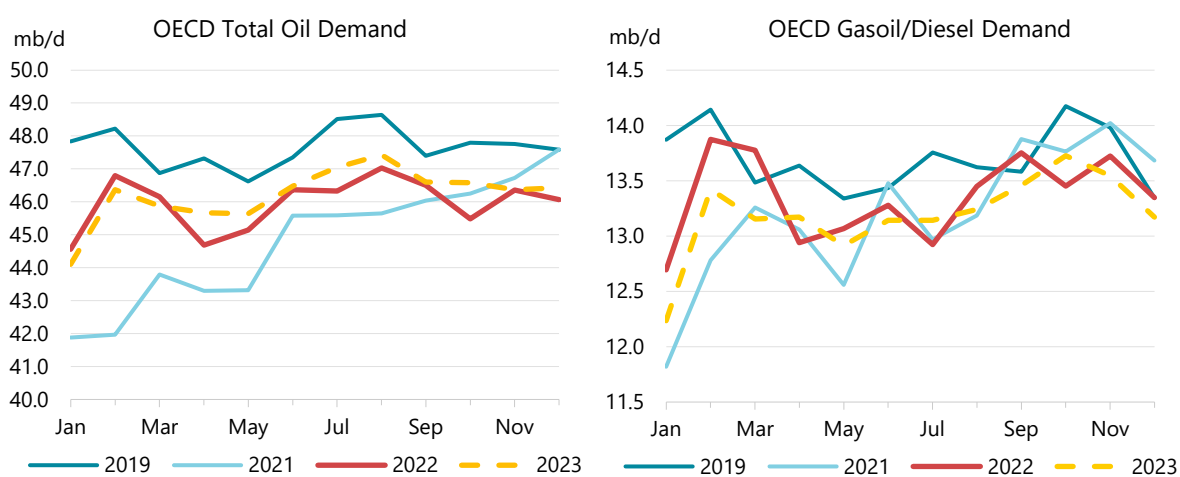


In addition to the significant differences emerging between regions, various oil products have been moving along distinct trajectories over recent months. Notably, in 1Q23 a divide opened between gasoline (for which deliveries grew by an estimated 220 kb/d y-o-y) and gasoil (where use fell by 410 kb/d). We expect this divergence to persist through the rest of 2023, with average annual gasoline demand increasing by 360 kb/d but gasoil consumption edging 30 kb/d lower overall. In part, this reflects exceptional factors such as warm 1Q23 weather in several regions depressing heating demand and the disproportionate impact of China's 2022 lockdowns on gasoline demand. However, more structural factors also appear to be at play. Gasoil demand is typically closely aligned with industrial activity, whereas gasoline follows employment levels and activity in the services sector. Unemployment remains at low levels in most advanced economies, buttressing gasoline demand, while manufacturing PMIs are consistently underperforming their services counterparts across major economies.

Global Demand by Product								
(thousand barrels per day)								
	Demand				Annual Chg (kb/d)		Annual Chg (%)	
	2020	2021	2022	2023	2022	2023	2022	2023
LPG & Ethane	13 147	13 861	14 264	14 438	404	174	2.9	1.2
Naphtha	6 438	6 996	6 829	7 018	- 167	189	-2.4	2.8
Motor Gasoline	23 668	25 667	26 067	26 422	400	355	1.6	1.4
Jet Fuel & Kerosene	4 723	5 169	6 153	7 308	984	1 155	19.0	18.8
Gas/Diesel Oil	26 142	27 733	28 497	28 469	764	- 28	2.8	-0.1
Residual Fuel Oil	5 563	6 102	6 385	6 553	283	168	4.6	2.6
Other Products	11 858	12 134	11 717	11 731	- 417	14	-3.4	0.1
<b>Total Products</b>	<b>91 537</b>	<b>97 661</b>	<b>99 912</b>	<b>101 939</b>	<b>2 251</b>	<b>2 027</b>	<b>2.3</b>	<b>2.0</b>

## OECD

OECD oil demand remained extremely lacklustre at the start of 2023, with a 390 kb/d y-o-y decline estimated for 1Q23. Usage has been especially weighed down by gasoil (-510 kb/d y-o-y) and petrochemical feedstocks (LPG and naphtha at around -280 kb/d y-o-y each). Reflecting the divergence between slumping oil use in manufacturing on the one hand and resilient consumer fuel deliveries on the other hand, gasoil and petrochemical feedstock 1Q23 weakness was counterbalanced by growth in gasoline (190 kb/d y-o-y) and jet/kerosene (450 kb/d y-o-y). OECD demand is expected to return to growth in 2Q23, as GDP recovers and macro headwinds subside. For the year as a whole, OECD demand is forecast to rise by 260 kb/d y-o-y in 2023, 150 kb/d less than in last month's *Report*.



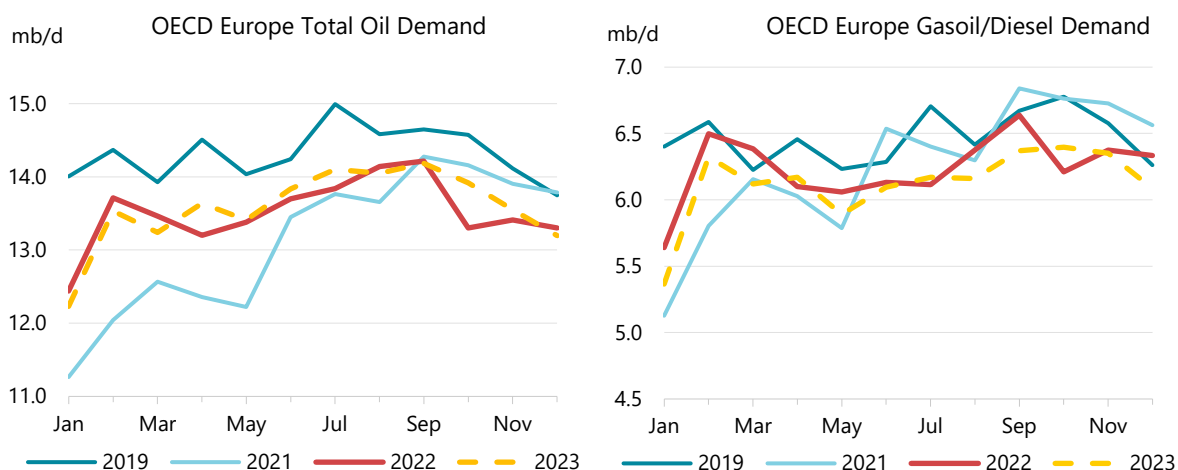
Official **OECD Europe** January demand data and preliminary February submissions showed oil use dwindling fast. We estimate a 1Q23 contraction of 200 kb/d y-o-y, with declines for gasoil (-240 kb/d y-o-y) and naphtha (-230 kb/d y-o-y) partly offset by an increase in jet/kerosene (230 kb/d y-o-y). Gasoline demand growth remained marginally positive at 10 kb/d y-o-y. At the country level, Germany (-130 kb/d y-o-y) and France (-80 kb/d y-o-y) saw the largest decelerations in demand.

The softness in European manufacturing and petrochemical demand contrasts with generally supportive eurozone economic activity data, with confidence resilient in the face of a possible tightening of bank credit due to financial sector turmoil. Germany's *Ifo Business Climate Index* rose to its highest level in more than a year in March, its sixth straight monthly increase. The *S&P Global eurozone composite PMI* showed a corresponding improvement, to reach a 10-month high of 53.7, up 1.7 points month-on-month (m-o-m).

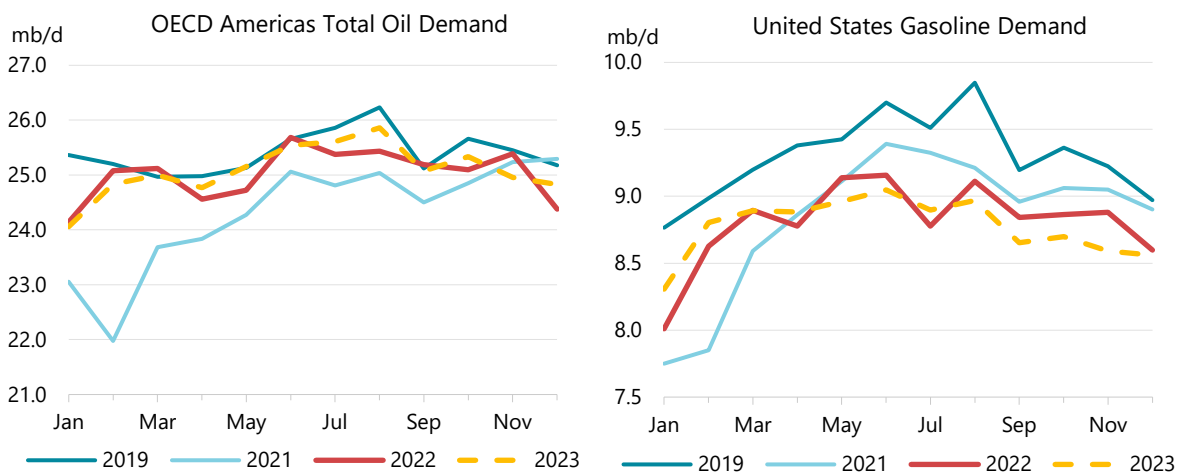
However, Europe's rebound is driven predominantly by the service sector, with manufacturing PMIs firmly in contractionary territory. This divergence is mirrored on a product level, with the retail-oriented gasoline and jet/kerosene fuels outperforming the more industrial-linked gasoil and petrochemical feedstocks. Besides weak factory runs, gasoil demand was also depressed by the extremely mild winter, as temperatures for January reached record highs across Europe. Comfortable end-user inventories, due to buyers having stocked up in anticipation of the 5 February EU embargo, probably also contributed to the slump in gasoil deliveries.

Looking ahead, we see 2023 growth averaging 70 kb/d y-o-y, dominated by jet/kerosene (160 kb/d). Our balances assume a moderate pick-up in GDP growth in 2H23 with consumer price inflation moderating towards 3%. Europe's core inflation readings remain stubbornly high, climbing to a

record 5.7% in March. Wages in the eurozone grew by 5.7% y-o-y during 4Q22, as unemployment fell to record lows. Union demands for higher wages to offset the soaring costs of living contributed to escalating labour unrest in France and Germany. The European Central Bank raised rates by half a point in March – the spectre of a wage-price spiral may keep it in hawkish mode for longer than other major banks.



We estimate negative 1Q23 y-o-y growth for the **OECD Americas** of -150 kb/d, roughly unchanged from the previous quarter. Steady Mexican demand (+130 kb/d) was counterbalanced by weakness in Canada (-60 kb/d) and the US (-220 kb/d). Gasoil (-240 kb/d) and LPG/ethane (-230 kb/d) contributed about equally to the demand malaise.



**US** gasoil demand fell by 180 kb/d y-o-y in January, with preliminary data for February and March (-320 kb/d y-o-y each) pointing to further weakness. Warmer-than-normal winter temperatures in the Northeast reduced heating requirements, while trucking indices continued to indicate tepid road fuels demand (*DAT Freight and Analytics* showed a 68% y-o-y fall in spot cargo volumes in March). Most importantly, an overall loss of economic momentum continued to materialise, depressing industrial demand. Consumer price inflation of 6% y-o-y in February weighed on household spending, as retail sales fell 0.4% m-o-m. Job openings dropped by 400 000 to 10.8 million in January, with construction and finance seeing the biggest declines. Countrywide layoffs rose to a two-year high in January – here too, redundancies were mainly concentrated in interest-rate sensitive sectors such as technology, finance, and construction. Along the same line, rising mortgage rates depressed the US



housing market, as home prices fell by 0.2% m-o-m in January, recording their seventh consecutive monthly decline and their worst run since 2012.

US LPG/ethane deliveries came in extremely weak in January, falling by a massive 390 kb/d y-o-y. Steam crackers, plagued by low margins, continued to cut their run rates. At the same time, warm weather across the country depressed propane demand for heating.

Gasoline defied the overall bearishness, rising 300 kb/d y-o-y in January, largely in line with the 5% increase in Vehicle Miles Travelled as reported by the Federal Highway Administration. Gasoline cracks at seasonally adjusted record levels are a testament to robust driving demand. Even so, US gasoline prices are about \$4/gallon or \$1/litre according to *GlobalPetrolPrices.com* (GPP), down by about 20% y-o-y, as elevated cracks counterbalance a much lower crude price.

We forecast flat average US demand in 2023, 40 kb/d lower than last month's *Report*, as the dismal start to 2023 is followed by a return to growth from 2Q23 onwards. Jet/kerosene growth of 110 kb/d will offset declines in the other major products. The outlook benefits from a somewhat higher 2023 GDP growth forecast, amid a more accommodative monetary environment. In the wake of March's banking sector turmoil, fixed income markets are pricing an imminent end to the Fed's rate hikes that commenced one year ago - so far totalling 4.75% per cent - with rate cuts seen as early as 3Q23.

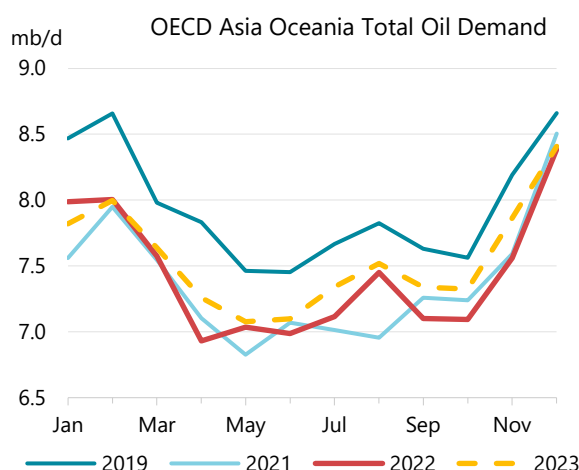
**OECD Asia Oceania's** oil demand declined by 40 kb/d y-o-y in 1Q23, due to weakness in Korean deliveries (-140 kb/d) outweighing growth in Japan (20 kb/d) and Australia (70 kb/d).

**Korean** oil use contracted y-o-y for all products apart from jet/kerosene (+10 kb/d), with the anticipated recovery in export demand due to China's re-opening so far failing to materialise.

Although business and consumer confidence increased in March according to surveys by the Bank of Korea, both indicators remain below their long-term averages. A recovering Chinese economy - Korea's main trading partner - seems to have lifted sentiment, but Korean trade data have yet to reflect any benefit from China's rebound. Exports to China fell 33% y-o-y in March, a tenth-straight month of decline. Total monthly exports recorded their sixth consecutive y-o-y decline, as external demand remained extremely soft, particularly for semiconductors. Our forecast assumes marginally negative GDP growth for 2023, compared to 2.6% in 2022, with a descent into recession remaining distinctly possible. We see 2023 y-o-y growth of 30 kb/d.

**Japan's** oil demand grew by 80 kb/d m-o-m in February, returning to y-o-y growth in the process (20 kb/d). Temperatures recovered after January's Central and Eastern Asian cold snap, lowering heating fuels consumption but buttressing road fuels demand. We see 2023 demand growth of 30 kb/d compared to a 50 kb/d contraction last year, driven by tourism-fuelled jet/kerosene demand and a modest pick-up in GDP growth. While moderate, this compares well to history: nine of the past ten years saw Japanese demand fall.

Our forecast is sensitive to a possible change in Japan's monetary policy - defined during the past decade by ultralow rates and the massive buying of financial assets. An inflationary tilt in recent data





readings (nominal wages rose for the thirteenth straight month in January, while core consumer prices rose by 3.1% y-o-y in February) added to market speculation that the Bank of Japan could normalise monetary policy under its new Governor, Kazuo Ueda. In this regard, the International Monetary Fund warned against an abrupt policy shift, as the accelerated liquidation of Japan's massive foreign bond holdings in favour of domestic debt could bring turmoil to financial markets.

OECD Demand based on Adjusted Preliminary Submissions - February 2023																
(million barrels per day)																
	Gasoline		Jet/Kerosene		Diesel		Other Gasoil		LPG/Ethane		RFO		Other		Total Products	
	mb/d	% pa	mb/d	% pa	mb/d	% pa	mb/d	% pa	mb/d	% pa	mb/d	% pa	mb/d	% pa	mb/d	% pa
<b>OECD Americas</b>	<b>10.31</b>	<b>1.4</b>	<b>1.76</b>	<b>6.9</b>	<b>3.31</b>	<b>-3.8</b>	<b>1.79</b>	<b>-7.2</b>	<b>3.95</b>	<b>-8.5</b>	<b>0.58</b>	<b>4.1</b>	<b>3.12</b>	<b>4.0</b>	<b>24.83</b>	<b>-1.0</b>
US*	8.80	2.1	1.49	4.5	2.45	-7.5	1.44	-7.8	3.37	-2.5	0.40	0.3	2.46	0.2	20.42	-0.8
Canada	0.68	-10.5	0.15	30.4	0.28	-10.3	0.31	-5.8	0.22	-53.8	0.02	-29.0	0.47	32.9	2.13	-10.1
Mexico	0.72	5.6	0.10	14.0	0.38	35.9	0.05	2.6	0.33	-7.3	0.15	19.5	0.16	0.0	1.88	8.7
<b>OECD Europe</b>	<b>1.98</b>	<b>1.0</b>	<b>1.29</b>	<b>25.8</b>	<b>4.84</b>	<b>-2.9</b>	<b>1.48</b>	<b>-1.8</b>	<b>1.08</b>	<b>-10.8</b>	<b>0.84</b>	<b>9.1</b>	<b>2.02</b>	<b>-10.1</b>	<b>13.53</b>	<b>-1.3</b>
Germany	0.48	9.3	0.17	11.7	0.71	4.8	0.31	-0.9	0.08	-26.7	0.04	-31.5	0.26	-40.8	2.06	-6.4
United Kingdom	0.27	-2.6	0.32	29.1	0.51	2.5	0.12	1.9	0.12	-6.5	0.02	22.6	0.11	8.0	1.48	5.9
France	0.22	2.5	0.12	27.1	0.68	-7.6	0.14	-19.1	0.11	-10.8	0.04	-1.6	0.24	6.5	1.56	-3.6
Italy	0.18	4.2	0.09	37.3	0.50	-0.7	0.04	-8.8	0.13	-4.2	0.12	32.9	0.17	-19.7	1.24	0.7
Spain	0.12	-6.4	0.12	27.5	0.44	-6.2	0.23	-0.2	0.08	17.4	0.13	7.9	0.20	-2.2	1.32	0.3
<b>OECD Asia &amp; Oceania</b>	<b>1.31</b>	<b>1.9</b>	<b>0.96</b>	<b>2.0</b>	<b>1.44</b>	<b>-0.6</b>	<b>0.55</b>	<b>0.3</b>	<b>0.93</b>	<b>-6.6</b>	<b>0.56</b>	<b>13.2</b>	<b>2.24</b>	<b>-1.9</b>	<b>8.00</b>	<b>-0.1</b>
Japan	0.68	3.8	0.60	-6.0	0.44	-1.9	0.39	-0.6	0.52	0.4	0.34	22.1	0.88	-1.9	3.85	0.6
Korea	0.22	-0.9	0.18	-5.9	0.37	-2.3	0.09	-1.8	0.34	-15.7	0.19	-1.9	1.20	-1.8	2.60	-4.1
Australia	0.28	-0.2	0.14	80.0	0.56	2.4	-	-	0.04	2.2	0.01	29.8	0.11	-3.9	1.15	7.2
<b>OECD Total</b>	<b>13.61</b>	<b>1.3</b>	<b>4.01</b>	<b>11.0</b>	<b>9.60</b>	<b>-2.9</b>	<b>3.82</b>	<b>-4.1</b>	<b>5.96</b>	<b>-8.6</b>	<b>1.98</b>	<b>8.7</b>	<b>7.38</b>	<b>-2.0</b>	<b>46.37</b>	<b>-0.9</b>

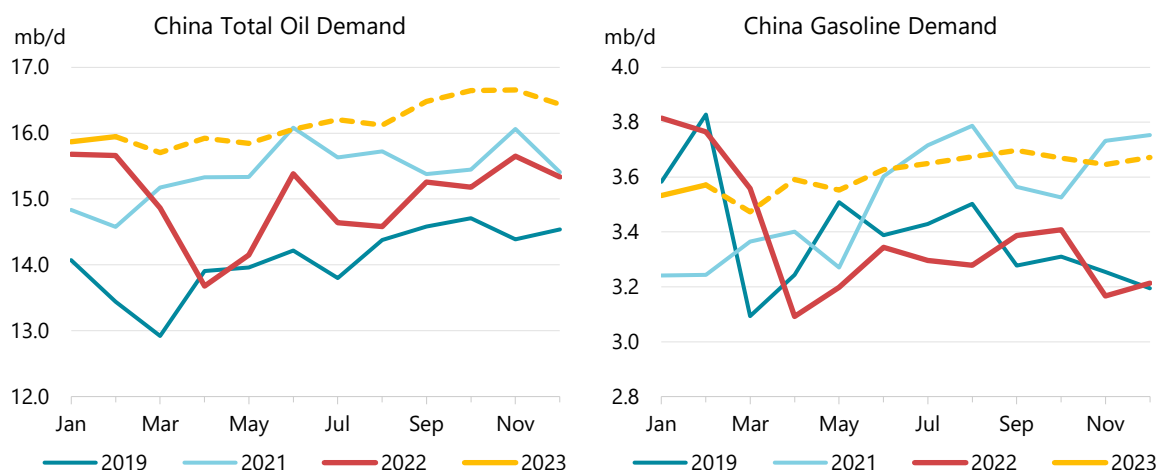
\* Including US territories

## Non-OECD

Non-OECD oil demand posted substantial growth in 1Q23, rising by an estimated 1.2 mb/d y-o-y. Strong recent reported data, most notably for China in January and February, mean that we increased our 1Q23 non-OECD growth expectation by 670 kb/d compared with last month's *Report*. Substantial 2023 gains of 1.8 mb/d, dominated by jet/kerosene (730 kb/d) and gasoline (430 kb/d), will see oil use reach 55.7 mb/d. Non-OECD economies account for 87% of all forecast demand growth in 2023.

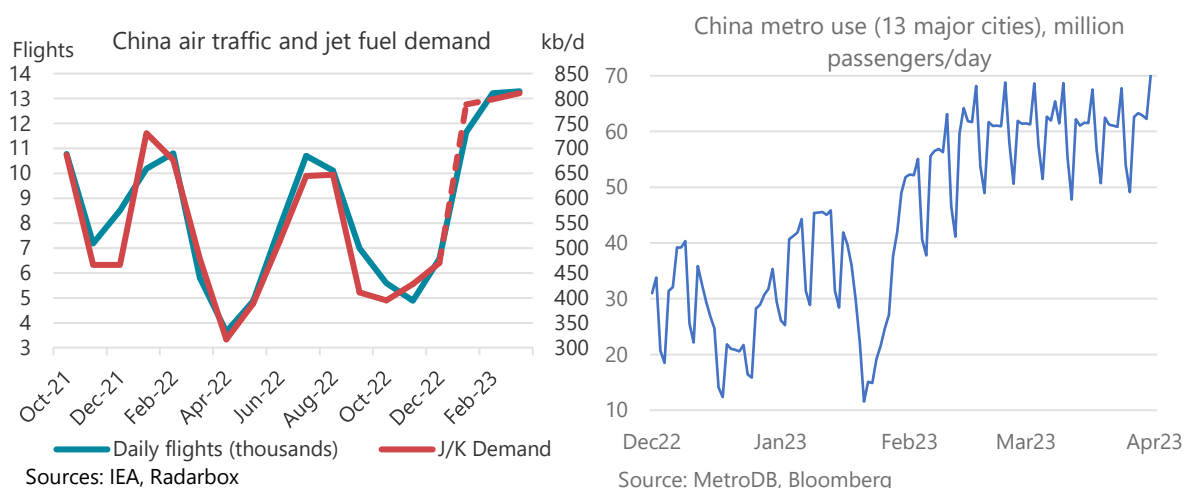
Non-OECD: Demand by Product								
(thousand barrels per day)								
	Demand				Annual Chg (kb/d)		Annual Chg (%)	
	2020	2021	2022	2023	2022	2023	2022	2023
LPG & Ethane	7 797	8 299	8 569	8 753	270	184	3.2%	2.1%
Naphtha	3 314	3 669	3 789	4 012	120	222	3.3%	5.9%
Motor Gasoline	11 008	12 043	12 235	12 669	191	434	1.6%	3.6%
Jet Fuel & Kerosene	2 127	2 140	2 363	3 094	223	731	10.4%	30.9%
Gas/Diesel Oil	13 494	14 529	15 146	15 278	617	132	4.2%	0.9%
Residual Fuel Oil	4 047	4 344	4 513	4 640	170	127	3.9%	2.8%
Other Products	7 722	7 815	7 348	7 282	- 467	- 66	-6.0%	-0.9%
<b>Total Products</b>	<b>49 508</b>	<b>52 839</b>	<b>53 963</b>	<b>55 727</b>	<b>1 124</b>	<b>1 765</b>	<b>2.1%</b>	<b>3.3%</b>

**Chinese** demand is now forecast to climb by 1.2 mb/d during 2023, to 16.2 mb/d, shaking off the impact of last year's Covid lockdowns. Apparent demand estimates, based on the newly available National Bureau of Statistics (NBS) data for January (+190 kb/d y-o-y) and February (+280 kb/d) confirm the swift recovery in mobility implied by real-time indicators. Demand across both months was comfortably above the same period in 2022, when restrictions were comparatively limited, with February and January 2023 becoming the third- and fourth-highest months on record for Chinese oil use.



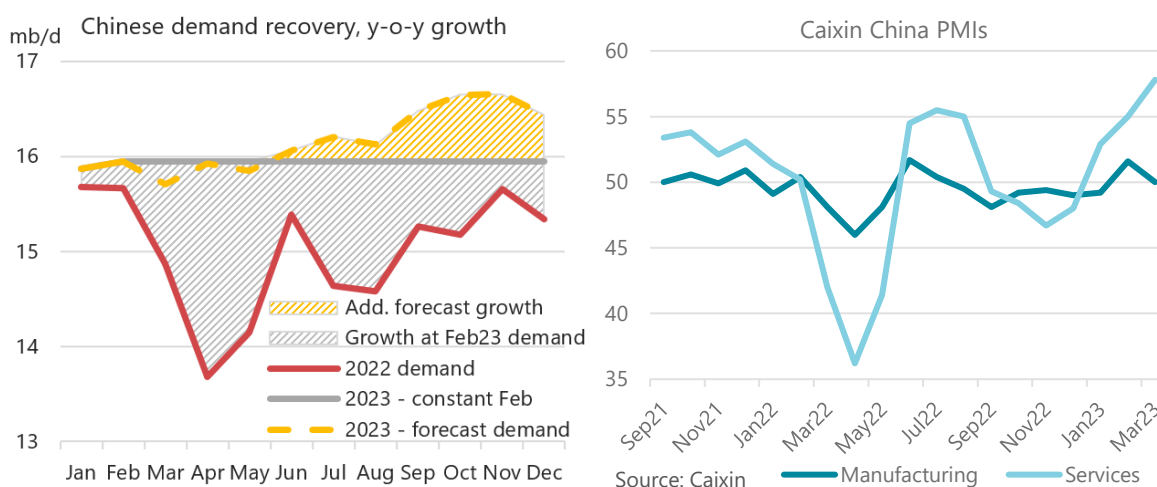
Demand came in comfortably ahead of our expectations in last month's *Report* for January and February (by 670 kb/d on average), with progress in mobility indicators evident in substantial m-o-m gains for gasoline and jet/kerosene (each +320 kb/d) during January. *Baidu* interprovincial mobility data suggested a busy Lunar New Year period, 28% above 2022 and 19% higher than 2019 levels. Further evidence of the momentum behind the rebound comes from metro use in Chinese cities. This surpassed previous highs by mid-February before stabilising, making the recovery far faster and more complete than those for transit systems in major western cities during 2021-22.

Domestic flight counts also increased rapidly during January, reaching a plateau at around 12 000 flights/day (close to peak-2021 levels), according to *Radarbox*. On average, jet/kerosene use was 90 kb/d higher y-o-y across January and February. Larger gains relative to lockdown-hit months in 2022 will boost growth for the remainder of the year. International flights have risen more gradually, approaching 65% of 2019 levels at the start of April. The continuation of this recovery should support further gains in jet/kerosene demand for an overall y-o-y increase of 380 kb/d.



While products and indicators closely connected to personal mobility surpassed expectations in January and February, gasoil demand was slightly below the level estimated in our previous *Report*. The relative performance of PMIs reinforces the impression that China's recovery has been dominated by its service sector. While the *Caixin China General Services PMI* has posted strong increases in each of the first three months of the year (accelerating to 57.8 in March), the equivalent Manufacturing PMI has been much more subdued, settling at exactly 50 in March. Gasoil is an important input for industrial users and its demand outlook is typically closely associated with

prospects for manufacturers. Compared with gasoline (+240 kb/d, +7.1%), we expect relatively narrow gains for gasoil in 2023 (+120 kb/d, +3.4%), with the uncertain outlook for the construction industry and the relatively small 2022 decline also contributing factors.



Despite an eye-catching y-o-y expansion (+1.2 mb/d) in 2023, we expect relatively limited further increases from February's level. To a large extent, the extremely weak 2022 baseline explains 2023's gains. If apparent oil use simply remained at the same level as February for the rest of the year, overall 2023 growth would still hit 940 kb/d. High-frequency indicators suggest that the explosive phase of China's post-lockdown rebound may already be largely complete and measures of industrial activity and trade, both in China and around the world, remain subdued. The 260 kb/d of average additional gains that we expect from March to December are driven by a combination of GDP growth, petrochemical capacity expansions and a gradual normalisation of international travel.

China: Demand by Product								
(thousand barrels per day)								
	Demand				Annual Chg (kb/d)		Annual Chg (%)	
	2020	2021	2022	2023	2022	2023	2022	2023
LPG & Ethane	1 836	2 153	2 326	2 494	173	168	8.0	7.2
Naphtha	1 479	1 679	1 905	2 147	226	242	13.4	12.7
Motor Gasoline	3 146	3 519	3 375	3 613	- 144	238	-4.1	7.1
Jet Fuel & Kerosene	754	739	508	887	- 232	379	-31.3	74.6
Gas/Diesel Oil	3 025	3 448	3 556	3 679	108	122	3.1	3.4
Residual Fuel Oil	490	527	573	615	47	41	8.9	7.2
Other Products	3 466	3 353	2 758	2 725	- 596	- 33	-17.8	-1.2
<b>Total Products</b>	<b>14 196</b>	<b>15 419</b>	<b>15 001</b>	<b>16 159</b>	<b>- 418</b>	<b>1 158</b>	<b>-2.7</b>	<b>7.7</b>

**India** is set to remain a mainstay of global growth in oil deliveries throughout 2023. While falling to second place in terms of total volumes added, India will contribute 210 kb/d of growth as its demand approaches 5.4 mb/d. These sustained gains (following 2022 growth of 380 kb/d) reflect continued strong macroeconomic performance. Our projections assume a 4.7% rise in GDP and both the *S&P Global India Manufacturing* (56.4) and *Services* (57.8) PMIs remained firmly planted in expansionary territory during March.

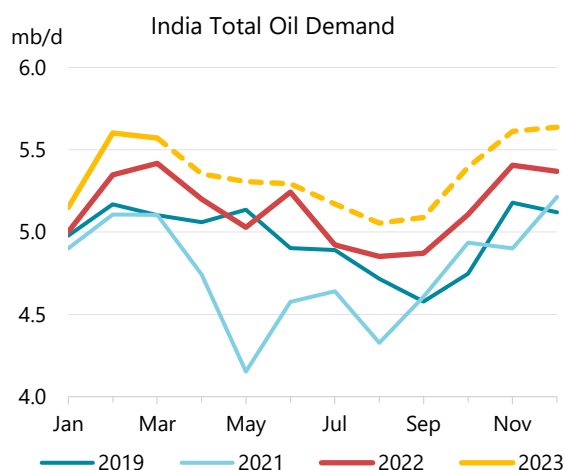
The latest data show a 30 kb/d m-o-m fall in March demand, close to the typical seasonal average, but nonetheless 150 kb/d higher y-o-y. Annual growth in gasoil slowed from 130 kb/d in February to 20 kb/d in March, with unusually heavy rains restricting the harvesting activity which helps make February/March one of the year's peak periods for Indian oil demand.

In common with several other countries, **Brazilian** gasoline demand (+90 kb/d y-o-y in February) is on an upswing relative to gasoil (-30 kb/d). The *S&P Global Brazil Manufacturing PMI* has been resolutely contractionary for five consecutive months (falling from 49.2 in February to 47 in March). However, as in other major economies, the Services PMI is performing better. It moved into expansion in March, rising from 49.8 in February to 51.8, supporting employment and mobility. *TomTom* data show a roughly 10% y-o-y increase in congestion in Sao Paulo and Rio De Janeiro during the first two months of 2023. Overall Brazilian deliveries went up by 70 kb/d y-o-y in February and are set for an average increase of the same amount for 2023.

**Argentinian** deliveries dipped into y-o-y contraction in February (-10 kb/d), the first annual decline in two years. The country's economic problems are mounting, with a devastating drought hitting the crucial soybean harvest as well as other crops like corn. Gasoil use, to which agriculture contributes roughly one-third, fell by 20 kb/d (6.5%). We project an annual fall of 10 kb/d in 2023 oil demand.

**Saudi Arabian** oil use continues to perform strongly, growing by 130 kb/d y-o-y in January. This was despite a 90 kb/d y-o-y decline (-170 kb/d m-o-m) in direct crude use in power generation. Hikes of 100 kb/d and 80 kb/d in fuel oil and gasoil consumption were more than sufficient to offset this drop. Total growth for 2023 is expected at 60 kb/d, with all major product categories seeing additional use. Elsewhere in the Middle East, we have reduced our estimates for **Iraqi** direct crude use by an average of almost 80 kb/d in 2022 and 90 kb/d in 2023, following a re-evaluation of historic reported data. The country's oil use grew by 120 kb/d in 2022 and is set to rise by 20 kb/d in 2023.

Estimated demand in **Russia** increased by 150 kb/d y-o-y in February. This was overwhelmingly due to gasoil (+100 kb/d y-o-y) which has been consistently strong since the country's February 2022 invasion of Ukraine. The *S&P Global Russia Manufacturing PMI* is amongst the strongest of any major economy, with import substitution and reduced competition helping local producers. Total 2023 oil use is forecast to fall by 100 kb/d, to close to 2021 levels as international sanctions bite. Jet/kerosene demand will fall by 20 kb/d, the only major country showing a significant drop.



### Non-OECD: Demand by Product

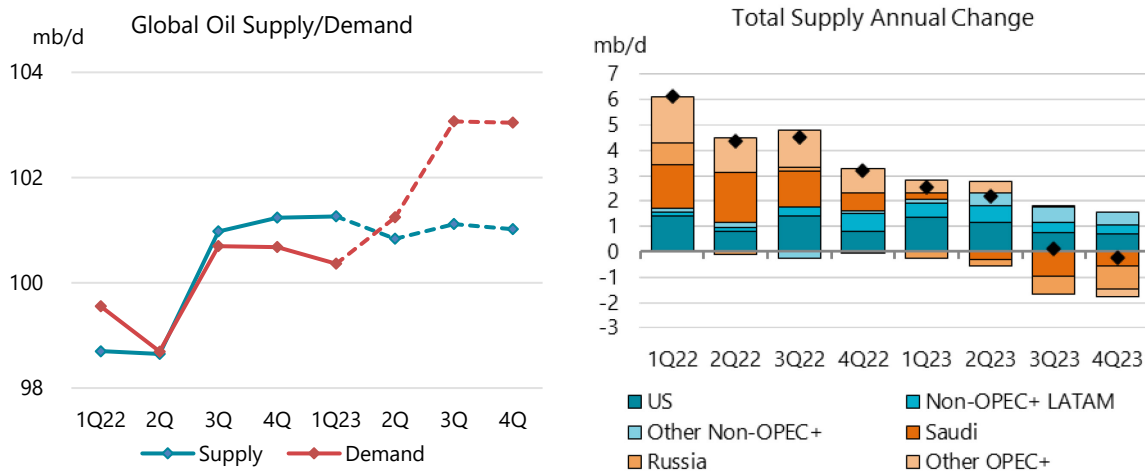
(thousand barrels per day)

	Demand				Annual Chg (kb/d)		Annual Chg (%)	
	2020	2021	2022	2023	2022	2023	2022	2023
LPG & Ethane	7 797	8 299	8 569	8 753	270	184	3.2%	2.1%
Naphtha	3 314	3 669	3 789	4 012	120	222	3.3%	5.9%
Motor Gasoline	11 008	12 043	12 235	12 669	191	434	1.6%	3.6%
Jet Fuel & Kerosene	2 127	2 140	2 363	3 094	223	731	10.4%	30.9%
Gas/Diesel Oil	13 494	14 529	15 146	15 278	617	132	4.2%	0.9%
Residual Fuel Oil	4 047	4 344	4 513	4 640	170	127	3.9%	2.8%
Other Products	7 722	7 815	7 348	7 282	- 467	- 66	-6.0%	-0.9%
<b>Total Products</b>	<b>49 508</b>	<b>52 839</b>	<b>53 963</b>	<b>55 727</b>	<b>1 124</b>	<b>1 765</b>	<b>2.1%</b>	<b>3.3%</b>

# Supply

## Overview

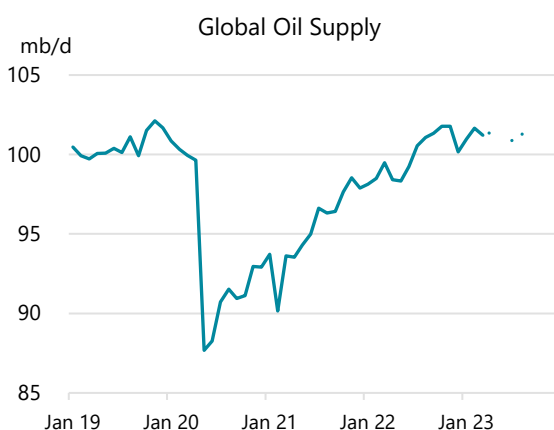
Surprise supply cuts unveiled on 2 April by core OPEC+ countries look set to further tighten the world oil market balance for the remainder of 2023 (see *OPEC+ Sunday Shocker*). After nearly a year of much-needed stock-building, a deeper deficit than previously projected will emerge from May onwards despite an upgrade to our Russian forecast and a slight downgrade to the 2H23 demand outlook. The producer alliance's unanticipated move was an apparent price-defensive action – but higher price levels will fail to ignite the US shale patch, which has limited upside potential (see *Oilfield service sector stunts shale supply*).



Extra curbs of 1.66 mb/d, led by Saudi Arabia and its Middle East neighbours – and including Russia, are on top of a 2 mb/d reduction in the bloc's target that took effect last November. After kicking in next month, the cuts are due to remain in place throughout 2023. As a result, OPEC+ oil production is expected to plunge by 1.4 mb/d from March through December. With supply from those outside the coalition (non-OPEC+) set to rise by around 1 mb/d – global output will reach 100.8 mb/d by the end of 2023 (down 400 kb/d from March).

World oil production was already falling in March, largely because of Russia – which had announced that it would turn down the taps by 500 kb/d purportedly due to sanctions and G7 price caps. Based on our estimates, Moscow appears not to have delivered in full, but its decline helped push down total oil supply in the month to 101.2 mb/d (-450 kb/d m-o-m). OPEC+ oil output (including condensates and NGLs) fell by 430 kb/d, while non-OPEC+ production inched down 20 kb/d.

The additional OPEC+ curbs, along with sanctions on Russia, will deepen the group's y-o-y decline to 760 kb/d compared to a massive 3.1 mb/d expansion in 2022 as it phased out record 2020 supply



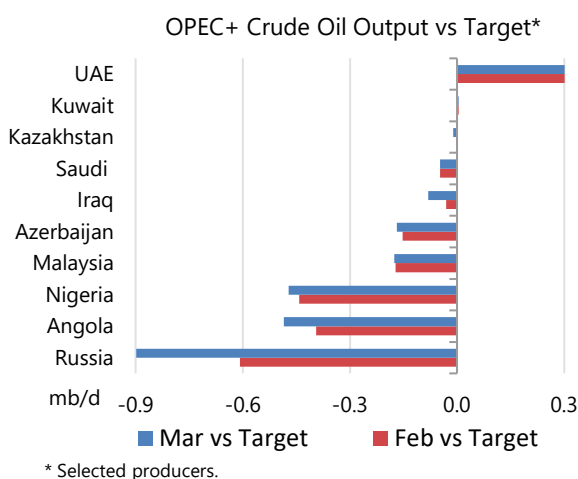
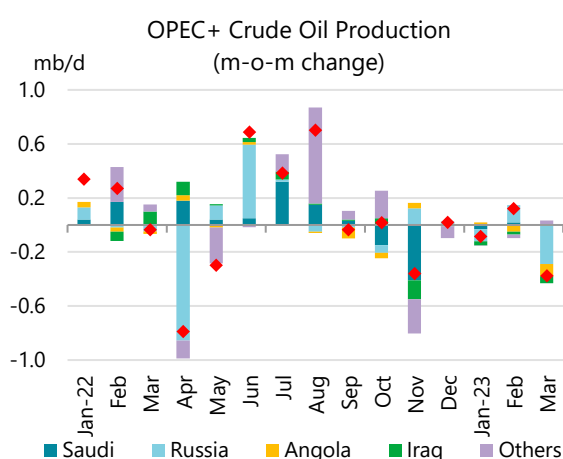
cuts. Non-OPEC+ dominates growth this year, with volumes rising 1.9 mb/d versus 1.5 mb/d last year. The US and Brazil lead these gains. Taken altogether, global supply growth is expected to slow to 1.2 mb/d this year compared to 4.6 mb/d in 2022.

World Oil Production by Region (OPEC+ based on current agreement)											
	(million barrels per day)										
	2021	1Q22	2Q22	3Q22	4Q22	2022	1Q23	2Q23	3Q23	4Q23	2023
Africa	7.4	7.4	7.0	7.0	7.2	7.1	7.3	7.3	7.3	7.3	7.3
Latin America	6.0	6.2	6.3	6.5	6.6	6.4	6.8	7.0	7.0	7.1	7.0
North America	24.3	24.9	25.3	26.1	26.3	25.6	26.4	26.8	27.1	27.2	26.9
China	4.1	4.2	4.2	4.1	4.1	4.2	4.3	4.3	4.3	4.2	4.3
Other Asia	3.4	3.3	3.2	3.1	3.2	3.2	3.2	3.1	3.1	3.1	3.1
Europe	3.5	3.4	3.1	3.2	3.3	3.3	3.4	3.3	3.3	3.4	3.3
FSU	13.8	14.4	13.4	13.7	14.1	13.9	14.1	13.2	13.2	13.2	13.4
Middle East	27.9	30.1	30.8	31.7	31.2	31.0	30.9	30.3	30.0	30.0	30.3
<b>Total Oil Production</b>	<b>90.3</b>	<b>93.9</b>	<b>93.3</b>	<b>95.3</b>	<b>96.0</b>	<b>94.6</b>	<b>96.3</b>	<b>95.2</b>	<b>95.2</b>	<b>95.5</b>	<b>95.6</b>
Processing Gains	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.4	2.4	2.4	2.4
Global Biofuels	2.8	2.5	3.1	3.3	2.9	2.9	2.6	3.2	3.5	3.1	3.1
<b>Total Supply</b>	<b>95.3</b>	<b>98.7</b>	<b>98.7</b>	<b>101.0</b>	<b>101.2</b>	<b>99.9</b>	<b>101.3</b>	<b>100.8</b>	<b>101.1</b>	<b>101.0</b>	<b>101.1</b>
<i>OPEC Crude</i>	26.4	28.5	28.7	29.6	29.4	29.1	29.2	28.7	28.4	28.4	28.6
<i>OPEC NGLs*</i>	5.2	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.4	5.4	5.4
<i>Non-OPEC OPEC+</i>	17.4	18.2	17.2	17.5	17.9	17.7	17.9	17.1	17.1	17.1	17.3
<b>Total OPEC+</b>	<b>49.0</b>	<b>52.0</b>	<b>51.3</b>	<b>52.4</b>	<b>52.6</b>	<b>52.1</b>	<b>52.5</b>	<b>51.1</b>	<b>50.8</b>	<b>50.8</b>	<b>51.3</b>

\* Includes condensates reported by OPEC countries, oil from non-conventional sources, e.g. GTL in Nigeria and non-oil inputs to Saudi Arabian MTBE

## OPEC+ crude oil supply

OPEC+ crude oil production from all 23 countries fell 380 kb/d to 44.17 mb/d in March due to a hefty decline in Russia as well as lower flows from Angola, where maintenance dropped production to the lowest since 2004.



Supply from OPEC countries decreased by 140 kb/d to 29.09 mb/d, while volumes from non-OPEC nations dropped by 240 kb/d to 15.08 mb/d. The bloc's effective spare capacity, excluding volumes of crude oil shut in by sanctions in Iran and Russia, stood at 3.7 mb/d in March, with Saudi Arabia and the UAE holding roughly 70% of it.

Production from the 19 members subject to quotas tumbled by 460 kb/d to 37.94 mb/d in March – widening the gap between the bloc's supply and official targets to 2.2 mb/d versus 1.7 mb/d in February. Russia pumped 900 kb/d below quota.

OPEC+ Crude Oil Production <sup>1</sup>						
(million barrels per day)						
	Feb 2023 Supply	Mar 2023 Supply	Mar Prod vs Target	Mar 2023 Target	Sustainable Capacity <sup>2</sup>	Eff Spare Cap vs Mar <sup>3</sup>
Algeria	1.02	1.01	0.00	1.01	1.0	0.0
Angola	1.06	0.97	-0.49	1.46	1.2	0.2
Congo	0.27	0.27	-0.04	0.31	0.3	0.0
Equatorial Guinea	0.05	0.05	-0.07	0.12	0.1	0.0
Gabon	0.20	0.20	0.02	0.18	0.2	0.0
Iraq	4.40	4.35	-0.08	4.43	4.7	0.4
Kuwait	2.68	2.68	0.00	2.68	2.8	0.1
Nigeria	1.30	1.27	-0.47	1.74	1.4	0.1
Saudi Arabia	10.43	10.43	-0.05	10.48	12.2	1.8
UAE	3.32	3.32	0.30	3.02	4.1	0.8
<b>Total OPEC-10</b>	<b>24.73</b>	<b>24.55</b>	<b>-0.87</b>	<b>25.42</b>	<b>28.0</b>	<b>3.4</b>
Iran <sup>4</sup>	2.65	2.65			3.8	
Libya <sup>4</sup>	1.16	1.16			1.2	0.0
Venezuela <sup>4</sup>	0.69	0.73			0.8	0.0
<b>Total OPEC</b>	<b>29.23</b>	<b>29.09</b>			<b>33.7</b>	<b>3.5</b>
Azerbaijan	0.53	0.52	-0.17	0.68	0.6	0.1
Kazakhstan	1.63	1.62	-0.01	1.63	1.7	0.0
Mexico <sup>5</sup>	1.64	1.69		1.75	1.7	0.0
Oman	0.84	0.84	0.00	0.84	0.9	0.0
Russia	9.87	9.58	-0.90	10.48	10.2	
Others <sup>6</sup>	0.81	0.84	-0.21	1.06	0.9	0.1
<b>Total Non-OPEC</b>	<b>15.32</b>	<b>15.08</b>	<b>-1.29</b>	<b>16.44</b>	<b>15.9</b>	<b>0.2</b>
<b>OPEC+ 19 in cut deal<sup>4</sup></b>	<b>38.41</b>	<b>37.94</b>	<b>-2.16</b>	<b>40.10</b>	<b>42.2</b>	<b>3.7</b>
<b>Total OPEC+</b>	<b>44.55</b>	<b>44.17</b>			<b>49.6</b>	<b>3.7</b>

1 Excludes condensates.

2 Capacity levels can be reached within 90 days and sustained for extended period.

3 Excludes shut in Iranian, Russian crude.

4 Iran, Libya, Venezuela exempt from cuts.

5 Mexico excluded from OPEC+ compliance.

6 Bahrain, Brunei, Malaysia, Sudan and South Sudan.

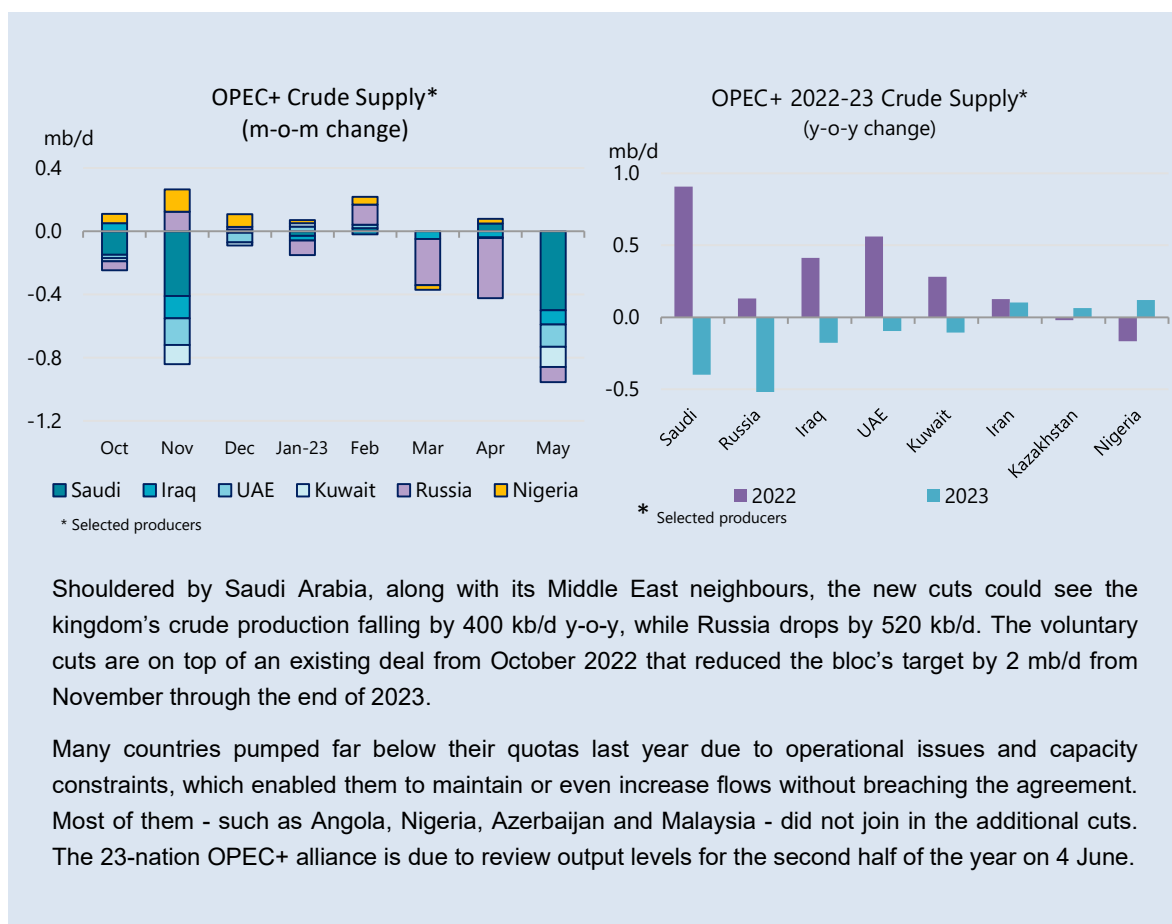
## OPEC+ Sunday Shocker

OPEC+ on 2 April surprised world oil markets with a supply cut totalling nearly 1.7 mb/d, a self-described “precautionary measure” that appears to be a price-supportive move in reaction to oil’s recent softening. Saudi Arabia led the reduction, saying it would lower output by an extra 500 kb/d from May through the end of 2023. Other core Middle East producers swiftly followed suit with curbs of their own. Russia said a 500 kb/d cut it was enforcing from March to June would be extended through end-year.

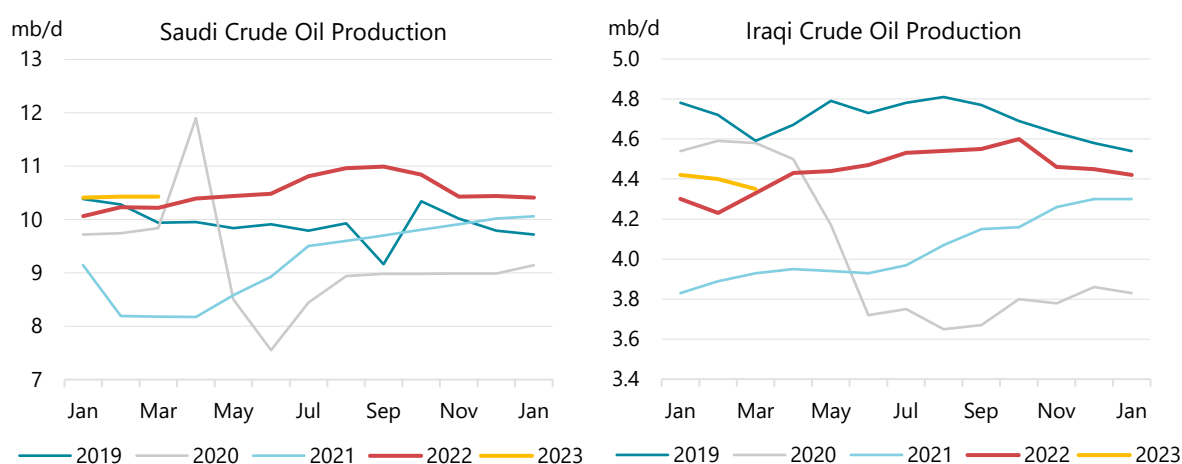
Oil market balances were already set to tilt into a substantial deficit in the second half of this year, but the new cuts risk further tightening balances and pushing up oil prices at a time when inflationary pressures are already hurting vulnerable consumers – especially in emerging and developing economies.

A meeting of the OPEC+ joint ministerial monitoring committee on 3 April – widely expected to see no change in output policy – instead noted the previous day’s voluntary cuts that required no ratification by the broader group. Among OPEC producers, Saudi Arabia will cut 500 kb/d, Iraq 211 kb/d, the UAE 144 kb/d, Kuwait 128 kb/d, Algeria 48 kb/d and Gabon 8 kb/d. Cuts by non-OPEC members were promised by Kazakhstan (78 kb/d) and Oman (40 kb/d). Russia will extend its previously announced 500 kb/d reduction.





**Saudi** crude output held steady at 10.43 mb/d in March, slightly below its quota. Saudi Aramco has meanwhile invested in refineries in China that will potentially lock in outlets for an additional 690 kb/d of its crude. Crude oil supply in the **UAE**, at 3.32 mb/d, was 300 kb/d above its OPEC+ target. **Kuwaiti** production of 2.68 mb/d was in line with its quota. Supply in **Oman** was stable at 840 kb/d.



**Iraqi** production dropped 50 kb/d in March to 4.35 mb/d, 80 kb/d below its OPEC+ target, after producers in the northern Kurdish region shut in wells following a halt to the Iraq- Türkiye export pipeline. Türkiye stopped shipping about 450 kb/d on 25 March after Iraq won an arbitration case. Baghdad and the Kurdistan Regional Government signed a deal on 4 April to resume northern flows

to the Turkish Mediterranean port of Ceyhan. At the time of writing, however, shipments had yet to resume. Elsewhere, TotalEnergies has finally struck an agreement with Baghdad on a long-delayed \$27 billion energy project. TotalEnergies signed the deal in 2021 to construct four separate oil, gas and renewables projects in southern Iraq with initial investment of \$10 billion – but disagreements over commercial terms had set things back. Now the Iraqi government has agreed to take a smaller, 30% stake in the project. TotalEnergies will hold 45% and QatarEnergy 25%.

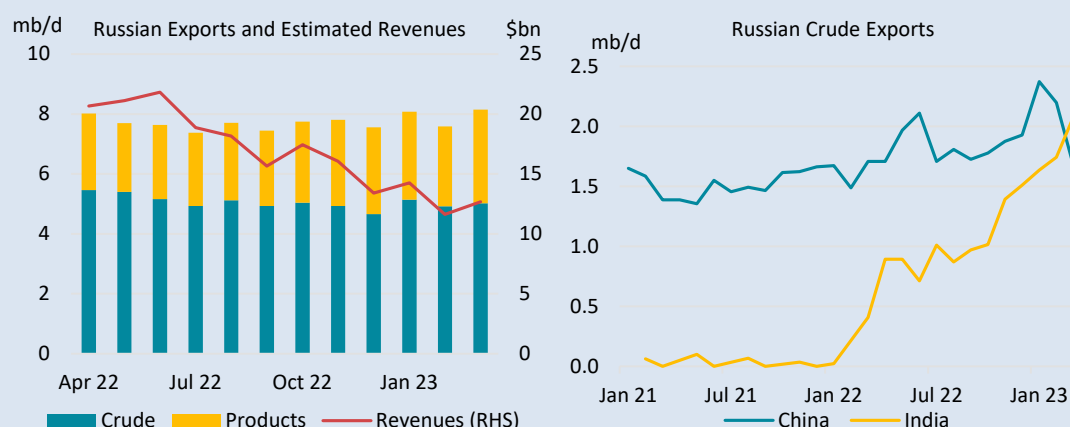
### Russia's March oil exports hit highest since Covid as products surge

Russian oil exports in March soared to the highest since April 2020 thanks to surging product flows that returned to levels last seen before Russia invaded Ukraine. Total oil shipments rose by 0.6 mb/d to 8.1 mb/d, with products climbing 450 kb/d m-o-m to 3.1 mb/d. Estimated revenues rebounded by \$1 billion to \$12.7 billion, but were 43% lower than a year ago.

	EU	UK+US	Türkiye	China	India	OECD Asia	Other	Unknown	Total	Crude	Products	Estimated export revenue \$bn
2021 avg	3.4	0.7	0.2	1.6	0.1	0.5	1.0	0.0	7.5	4.6	2.9	14.9
2022 avg	3.1	0.2	0.4	1.9	0.9	0.2	1.1	0.0	7.7	5.0	2.7	18.7
2022 Apr	3.5	0.1	0.4	1.8	1.0	0.3	1.0	0.0	8.0	5.5	2.5	20.7
2022 May	3.4	0.1	0.3	2.0	1.0	0.1	0.8	0.0	7.7	5.4	2.3	21.1
2022 Jun	3.2	0.0	0.4	2.2	0.8	0.0	1.0	0.0	7.6	5.2	2.5	21.8
2022 Jul	2.8	0.0	0.4	1.8	1.1	0.1	1.1	0.0	7.4	4.9	2.4	18.9
2022 Aug	3.0	0.0	0.6	2.0	1.0	0.1	1.1	0.0	7.7	5.1	2.6	18.2
2022 Sep	2.6	0.0	0.6	1.9	1.1	0.0	1.2	0.0	7.4	4.9	2.5	15.6
2022 Oct	2.5	0.0	0.6	2.0	1.2	0.1	1.4	0.0	7.7	5.0	2.7	17.4
2022 Nov	2.3	0.0	0.5	2.0	1.5	0.1	1.3	0.1	7.8	4.9	2.9	16.1
2022 Dec	1.9	0.0	0.4	2.1	1.7	0.1	1.3	0.0	7.6	4.7	2.9	13.4
2023 Jan	1.4	0.0	0.5	2.6	1.8	0.0	1.7	0.1	8.1	5.1	2.9	14.3
2023 Feb	0.5	0.0	0.5	2.4	1.9	0.0	1.9	0.3	7.6	4.9	2.7	11.6
2023 Mar	0.6	0.0	0.6	1.9	2.1	0.1	2.2	0.6	8.1	5.0	3.1	12.7
M-o-M chg	0.1	0.0	0.1	-0.5	0.3	0.0	0.2	0.4	0.6	0.1	0.5	1.0
Y-o-Y chg	-2.8	-0.2	0.2	0.1	1.7	-0.3	1.5	0.6	0.7	0.0	0.7	-9.6

Sources: IEA, Argus, Kpler.

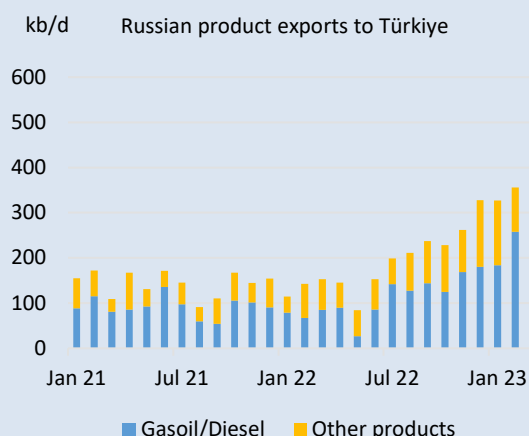
Note: Data in this table were derived by granular analysis and estimates of country of origin data in cases where shipments transit via third countries. They may differ from customs information due to calculation methodology and estimates updates.



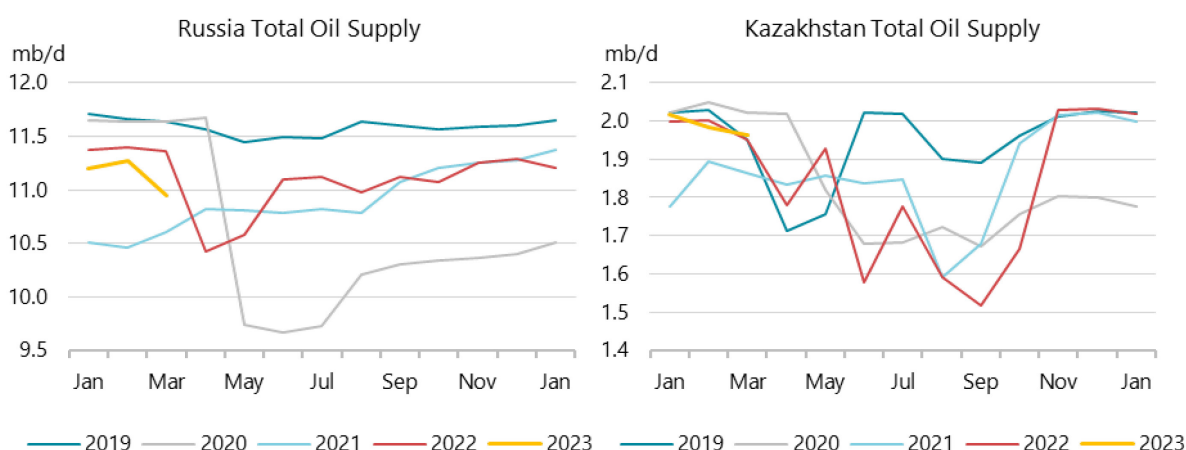
Exports of crude oil increased by 100 kb/d to 5 mb/d. Shipments destined for the EU continued at a reduced rate of 0.3 mb/d. Onshore trade via the Druzhba pipeline has been notably weak (230 kb/d), and reduced pipeline flows are expected to persist as PKN Orlen, Poland's largest refiner, cancelled its

contract with Tatneft at the start of April. Most of Russia's EU seaborne exports, totaling 110 kb/d, are destined for Bulgaria, which is exempt from the embargo. In Asia, top importers swapped ranks in March with India replacing China as the largest lifter of Russian oil. Exports to India edged up 200 kb/d to 2.1 mb/d, while shipments to China fell by 500 kb/d to 1.7 mb/d. Roughly 200 kb/d of Russian crude oil exports had no known destination listed at the time of writing.

In parallel, product exports surged by 450 kb/d to 3.1 mb/d. EU-destined product flows almost doubled to 300 kb/d (+140 kb/d m-o-m), but down nearly 1.5 mb/d compared with pre-war levels. Sales to Türkiye rose 130 kb/d m-o-m, led by a notable increase in gasoil/diesel shipments to almost 370 kb/d – the highest level at least since 2018. Other gains came from the Middle East, Africa and Latin America, which were up by 350 kb/d, 320 kb/d and 80 kb/d, respectively, compared with pre-war levels, with nearly 1 mb/d of Russian oil products heading for the three regions in March. Roughly 0.4 mb/d of Russian product exports had no known destination at the time of writing.



**Russian** crude production fell by an estimated 290 kb/d in March to 9.58 mb/d – missing Moscow's 500 kb/d cut target as the country appears to be routing its barrels to new outlets despite EU sanctions. Total output of crude oil, condensates and NGLs decreased to 10.95 mb/d – 450 kb/d lower than before Russia invaded Ukraine in February 2022. Moscow extended its announced production cut, which applies to crude oil, until the end of the year following the decision of eight other OPEC+ producers, including Saudi Arabia, to join voluntary supply curbs.

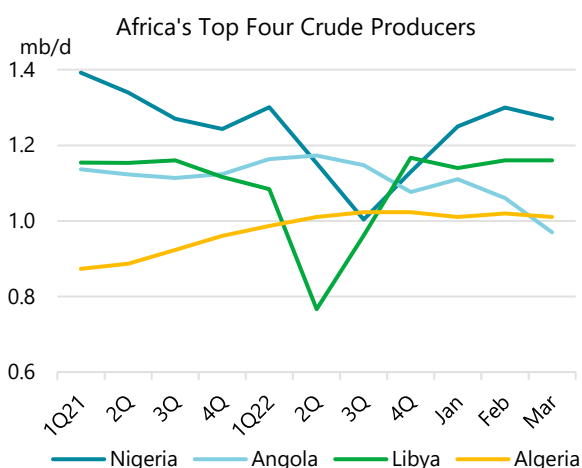


Russian oil supply has held up remarkably well following its invasion of Ukraine. Crude exports have been re-directed to new markets as deep price discounts attract traders willing to risk handling the barrels. These still robust shipments underpin our 210 kb/d upward revision of Russian output for this year. We now expect average oil output of 10.6 mb/d in 2023, down 530 kb/d y-o-y. Publication of the country's monthly oil sector data has meanwhile ended after the government classified it.

**Kazakh** crude oil supply inched down to 1.62 mb/d in March. Output at the Tengiz oil field was restored to typical levels above 600 kb/d in mid-March after unscheduled maintenance early in the month knocked flows at the country's largest producer to about 560 kb/d. Production this month is expected to decline due to planned maintenance at the Caspian Pipeline Consortium export terminal on the Black Sea. Kazakhstan's President Kassym Jomart Tokayev has meanwhile tapped the former head of the country's sovereign wealth fund as energy minister. Almasadam Satkaliyev succeeds Bolat Akchulakov, now an adviser to Tokayev.

Combined crude output from African members of OPEC+ fell 130 kb/d in March after continuing maintenance in Angola led to further declines and Nigeria's recovery faltered. Crude supply in **Angola** dropped by 90 kb/d to 970 kb/d – the lowest in nearly two decades – due to ongoing outages at the Dalia floating production storage and offloading vessel as well as offshore Block 14. In a bid to help stem a long-running decline from underinvestment at its mature deepwater fields, Angola plans to launch a tender for 12 onshore oil blocks in the Lower Congo and Kwanza basins in September.

**Nigerian** crude supply eased 30 kb/d to 1.27 mb/d, snapping a five-month recovery. The Forcados stream posted the largest m-o-m decline, falling 60 kb/d to 185 kb/d. Bonny Light output rose 25 kb/d to 100 kb/d. Shell lifted *force majeure* on exports of the key grade in mid-March. An explosion and fire on 3 March damaged a key export pipeline, forcing Shell to declare *force majeure*. Sabotage and underinvestment knocked Nigerian supply to 40-year lows in 2022, but this year could see a slight rebound after the government struck a pact with security firms in the Niger Delta. The country's minister of state for petroleum, Timipre Sylva, has meanwhile resigned. Sylva managed to get the Petroleum Industry Bill that reshapes the oil and gas sector approved in 2021 after over a decade of deadlock.

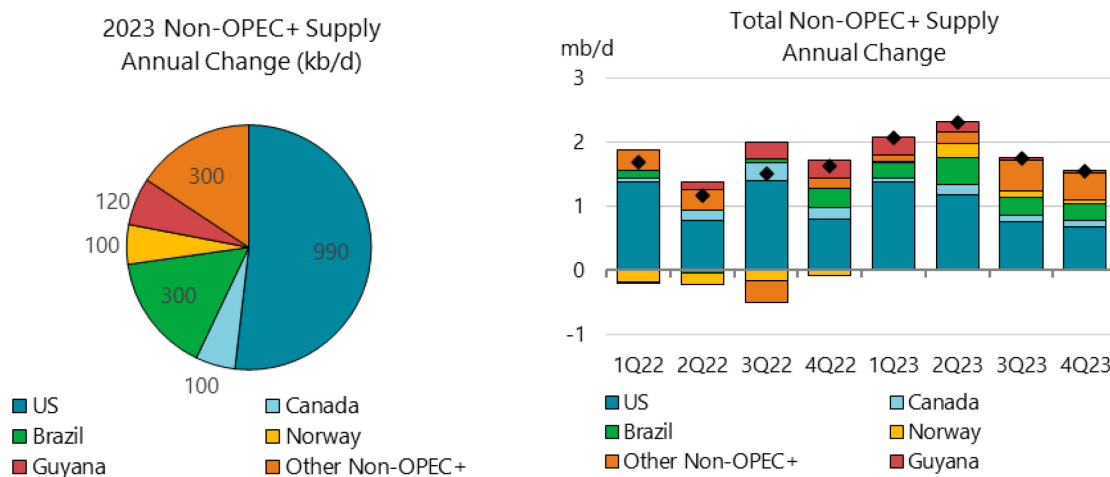


**Libyan** crude oil supply was flat at 1.16 mb/d. Libya's National Oil Corp has recently started up the 16 kb/d Erwin field. Its pipelines are linked to Sharara, the country's largest oil field. Output from the North African producer has been relatively stable owing to the Tripoli-Benghazi pact of last July that ended an oil blockade.

Output in **Venezuela** edged up 40 kb/d to 730 kb/d. Venezuelan President Nicolas Maduro has appointed Pedro Rafael Tellechea, the head of Petroleos de Venezuela, as the new oil minister. Former minister Tareck El Aissami resigned after the arrest of several government officials and judges in connection with graft investigations.

## Non-OPEC+ oil supply

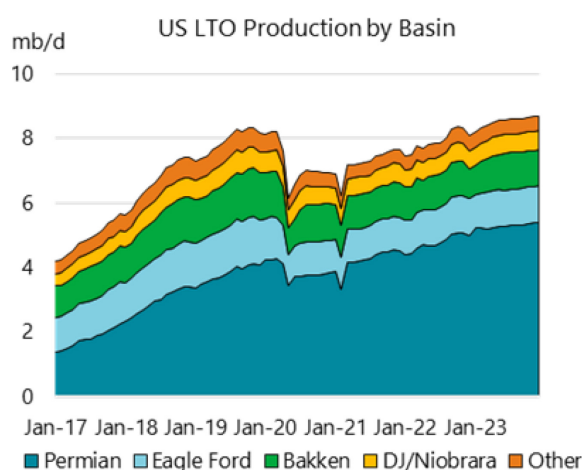
Non-OPEC+ oil output has been on a tear this year, rising 1.4 mb/d through the first quarter and clawing back most of the weather-related losses of last December. However, the expansion paused in March, falling 20 kb/d m-o-m.



Gains from the United States were offset by Canada, Norwegian growth was countered by UK weakness and Brazil, while still producing near record highs, dragged down Latin American supply even as Ecuadorian barrels flowed after March's weather disruption. This year will see total non-OPEC+ production increase 1.9 mb/d on average to 49.8 mb/d.

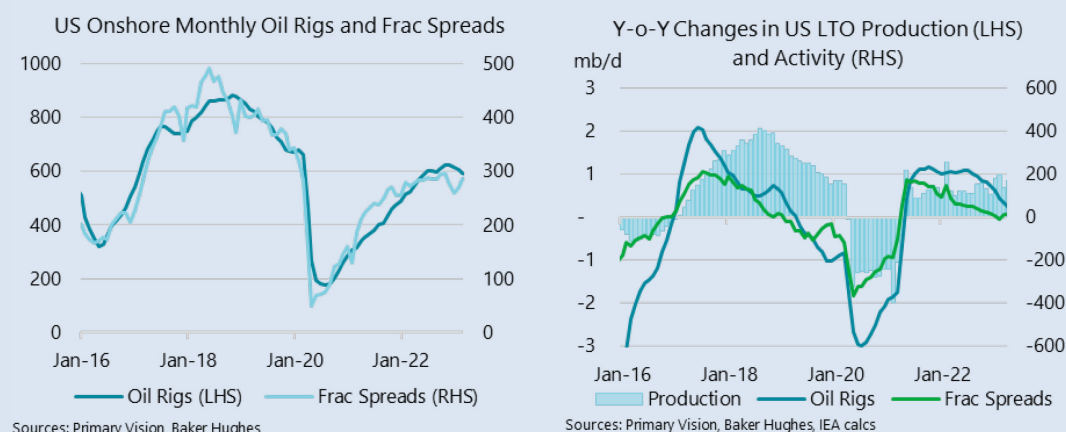
**US** output rose in March, for the third straight month, by 130 kb/d m-o-m to 18.7 mb/d. Gains from NGLs (160 kb/d) offset small losses in crude as operating disruptions from winter weather dissipated. In January, the latest month for which official data from the Energy Information Administration (EIA) are available, total oil supply rose by 680 kb/d, retaking most of December's 830 kb/d loss. Gains were split evenly between crude (350 kb/d) and NGLs (340 kb/d), with strong Gulf of Mexico (GoM) and light tight oil (LTO) production driving the former.

US output is projected to grow by 990 kb/d this year to total 18.8 mb/d, of which crude accounts for 12.5 mb/d (+660 kb/d), NGLs for 6.2 mb/d (+330 kb/d) and the remaining 90 kb/d nonconventional oils. US total supply has been revised down in this month's *Report* by 90 kb/d for 2023, despite an upwards revision of 60 kb/d for crude oil, primarily in the GoM. Nonconventional oils have been revised down by 160 kb/d for 2023, with historical revisions back to 2010 in the US dataset. These revisions were from a change in modelling methodology due to double counting of US biodiesel volumes.

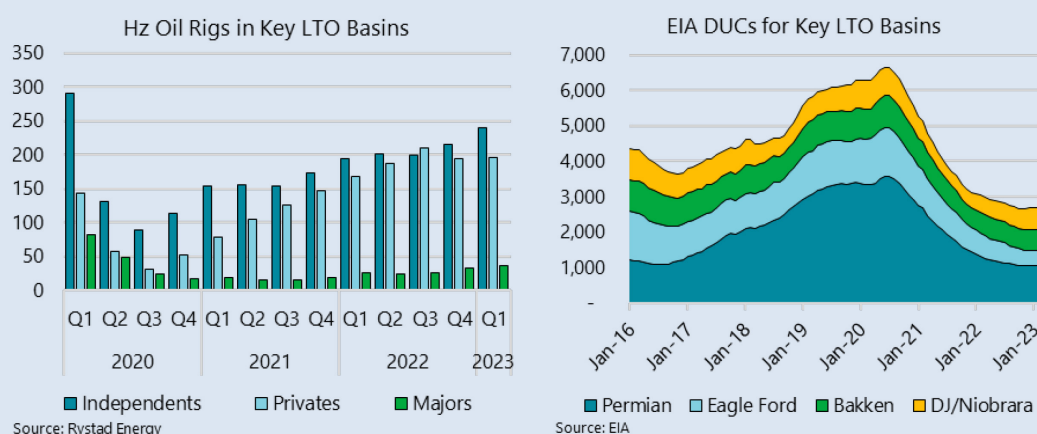


### Oilfield service sector stunts shale supply

Recent banking sector turmoil and OPEC+ production cuts are once again raising questions about the responsiveness of US shale to changing market conditions and prices. External constraints on the industry are limiting the potential for the shale patch to ramp up faster than its current pace. As such, we have merely nudged up our US LTO estimate by 10 kb/d to 640 kb/d. For now, downside risks to output are a bigger factor in our forecast.



The availability of oilfield services (OFS) remains tight, even as other supply chain pressures are easing. This is particularly true in hydraulic fracturing (frack spreads), as capacity has essentially been fully utilised for nearly a year due to structural underinvestment since the price crash of 2015 and as OFS companies see the current environment as a margin cycle and not a capacity building cycle. Over the remainder of this year, frack spread capacity is expected to increase slightly, allowing five to ten more spreads to come to market. Most of the new builds will replace older units being retired. At current margins, this is the primary constraint to accelerated US LTO growth.

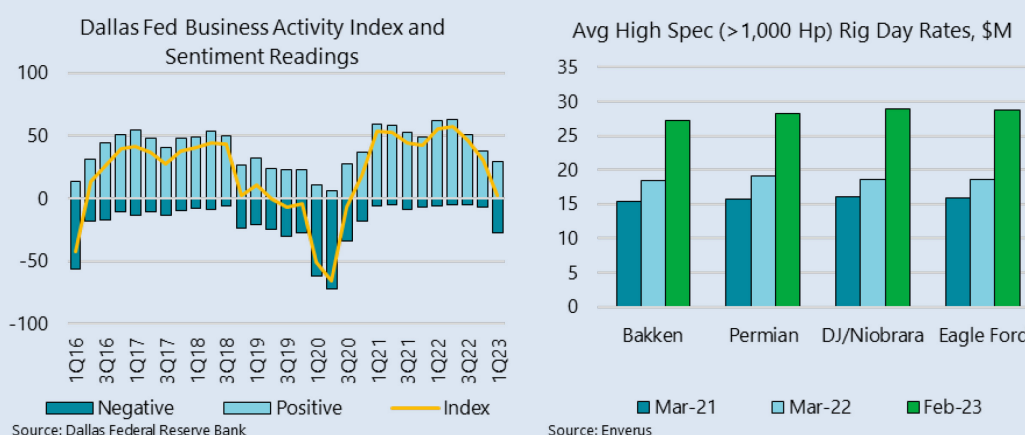


The pace of annual change in frack spreads has been decreasing since July 2021 after companies were quick to ramp up activity in the wake of Covid-19 lockdowns. Drilling rigs were brought back to the patch more steadily until last September, when the pace of rig adds began to slow dramatically. Looking at key LTO basins (Permian, Eagle Ford, Bakken and DJ/Niobrara), this mainly seems to be due to private operators (e.g., Aethon, CrownQuest, Mewborne) dropping rigs while independents (e.g., Pioneer, Oxy, Devon) and majors (e.g., BP, Chevron, ExxonMobil) maintained their previous activity levels. Publicly listed companies tend to be less price responsive, especially to the downside, than private operators.

Impacts of these changes are also evidenced in the change in drilled but uncompleted wells (DUCs) over the last three years.

While oilfield services remain tight, supply chain pressures have begun easing for the first time since 2020, according to the latest Dallas Fed Energy Survey. The quarterly survey of 147 energy firms (95 producers and 52 oilfield service providers) reiterated challenges faced by the industry. Sixty percent of respondents stated cost inflation and the health of the global economy as the biggest factors influencing profitability this year. Additionally, business activity fell sharply – breaking almost two years of rising activity in the 11th district that includes Texas and parts of New Mexico and Louisiana – while costs continued to rise for the ninth straight quarter. Data from Enverus show 50-60% yearly cost increases for high spec drilling rigs.

The shale patch also faced rising prices in the late 2010s, but this is the hottest service sector inflation has run. Additionally, the industry has matured financially over the past several years. From 2014 to 2019 a select group of publicly listed shale producers that we follow spent over \$90 billion more than they earned to grow US production. Since Covid-19, these companies have spent well within their cashflow, continued to signal capital restraint, committed to dividend increases, special dividends and share buy-back programmes to retain investors. As a result, companies have lowered their reinvestment rate (capital expenditures divided by cash flow from operations) from 145% on average over 2014-2019 to less than 50% now.



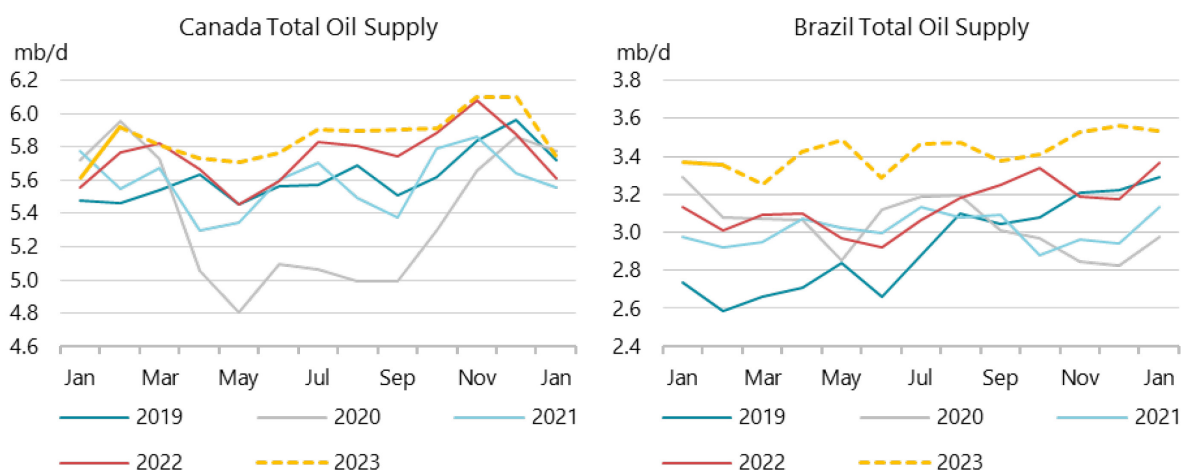
These trends look set to continue through this year, barring a sustained WTI front month price above \$100/bbl or below \$65/bbl. Only above \$100/bbl would we expect economics to incentivise increased activity, and even then, it would be marginal. Should prices fall below \$65/bbl, publicly listed companies would likely reduce shareholder incentives while private companies accelerate activity reductions.

In February, **Canadian** supply jumped by 310 kb/d m-o-m to 5.9 mb/d, according to data from the Alberta Energy Regulator. The gains were driven by a strong recovery in upgrader output as harsh weather subsided. March production fell by 110 kb/d as the spring maintenance season began. Annual growth in 2023 is expected to be 110 kb/d, lifting total volumes to 5.86 mb/d on average.

**Brazilian** production was relatively flat at 3.36 mb/d in February, down 10 kb/d from an all-time high reached in January, according to data from the Agencia Nacional do Petroleo (ANP). Volumes from the newly commissioned Itapu FPSO were higher than expected and recently installed capacity at Atapu, Mero and Sepia all provided additional gains. Provisional data from the ANP show March output was down 110 kb/d to 3.25 mb/d. We forecast supply to reach a new record high of 3.42 mb/d

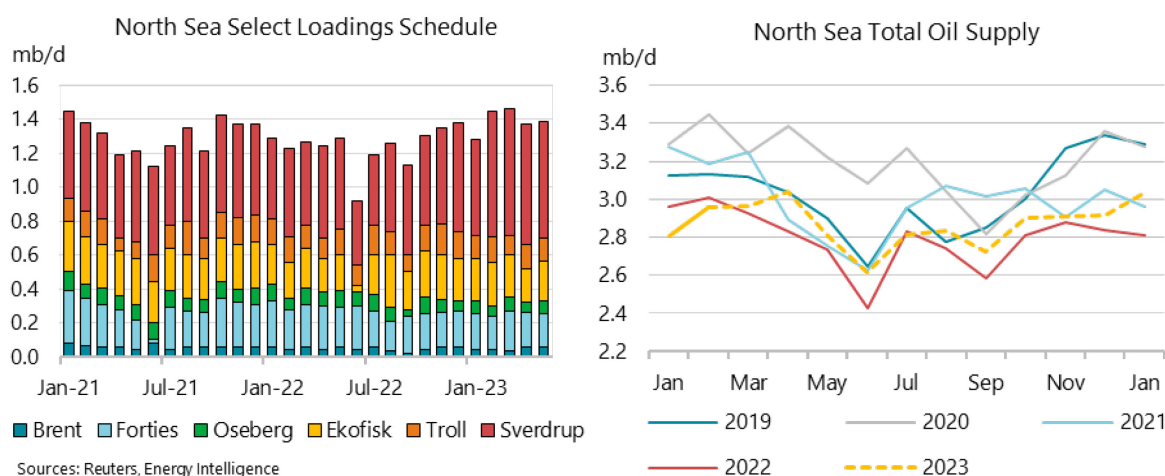


this year, up 300 kb/d y-o-y, as platform maintenance returns to normal scheduling and five additional FPSOs come online.



**Guyanese** production was revised up by 20 kb/d to 400 kb/d on the year as the Unity FPSO has consistently operated above its 220 kb/d nameplate capacity for the last three months. We assume the FPSO will be run under safe operating conditions at that volume for the remainder of the year. Our forecast continues to call for the phase 2 FPSO, Payara, to come into service in 4Q23. Additionally, the government recently finalised a new production sharing agreement (PSA) for its next licensing round this month. Fourteen blocks, eleven shallow water and three deepwater, are included in this auction. In addition to the 14 blocks, the Guyanese government is reportedly considering direct bilateral block allocation to other countries including Brazil, India, Qatar, the UAE and the UK.

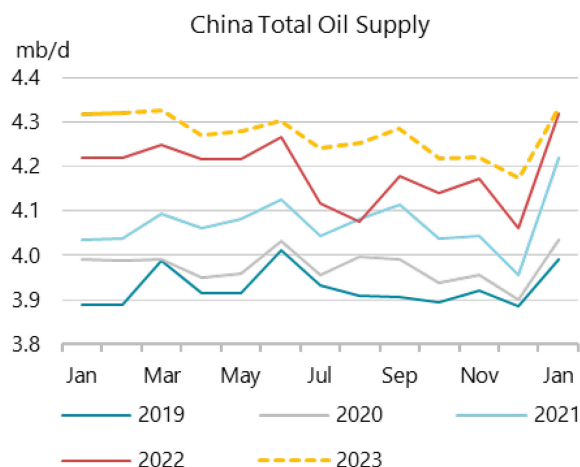
North Sea loadings (as measured by BFOE plus Troll and Johan Sverdrup) are scheduled at 1.38 mb/d in May, up 10 kb/d m-o-m as gains in Ekofisk and Oseberg offset minor decreases by the remaining grades. Scheduled loadings are nevertheless up 90 kb/d on a year ago due to additional Johan Sverdrup volumes. The long-term decline of the five grades included in the Dated benchmarks (North Sea Dated for Argus and Dated Brent for Platts) has prompted the inclusion of West Texas Intermediate (WTI) Midland beginning with the June 2023 delivery (see *Prices section*).



**UK** supply jumped by 140 kb/d m-o-m in February to 900 kb/d after two months of losses. Production is projected to fall from February through June by 170 kb/d, following seasonal trends. For the year,

UK output should average 790 kb/d, down 40 kb/d from 2022. Data from the **Norwegian** Petroleum Directorate (NPD) show production in February inched up 10 kb/d m-o-m to 2 mb/d. March volumes increased by 50 kb/d as rising volumes from Johan Sverdrup offset slightly lower output from the Troll system. Supply in 2023 is expected to grow 100 kb/d y-o-y to 2 mb/d.

**Chinese** volumes for the first two months of 2023 showed an upward step-change in offshore fields for the second year in a row. The 260 kb/d jump over December output was similar in size to last year and twice the trend observed in 2020 and 2021. Our expected annual growth in China has been revised up to 90 kb/d on stronger baseline production and as Sinopec and PetroChina both announced plans for marginal increases in domestic supply while CNOOC expects to bring online four new oilfields and one condensate gas field totalling between 50-65 kb/d of new production. Output in 2023 is expected to be 4.27 mb/d.

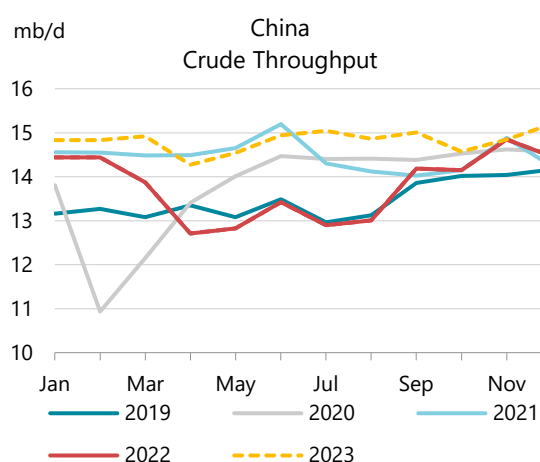
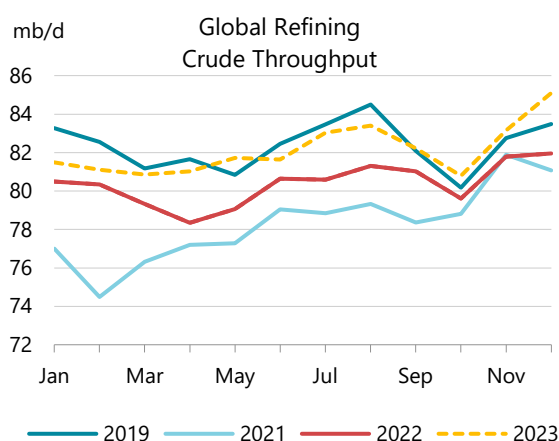


Elsewhere in Asia, **Vietnam** has brought on seven new wells thus far in 2023, with a combined crude output of just over 10 kb/d. These wells have helped temporarily stymie declines in the country, with production flat at 180 kb/d m-o-m and on par with volumes a year ago. Output is forecast to average 180 kb/d in 2023, down 5 kb/d y-o-y. **Indian** supply was down 40 kb/d m-o-m in February to 660 kb/d. Volumes have fallen short of the government's target since June 2022 as state-owned ONGC (Oil and Natural Gas Corporation) has struggled with delayed projects and increased water cuts in some existing fields. Supply in 2023 is projected to fall 20 kb/d y-o-y to 690 kb/d.

# Refining

## Overview

Global refining throughput forecasts for 2023 are trimmed marginally this month, with a cumulative 0.1 mb/d reduction to 82 mb/d for the year. Second quarter crude runs will rise 2.1 mb/d y-o-y, double the rate of growth in 1Q23. This is driven both by the normalisation of US crude runs after a lacklustre start to the year and materially higher Chinese crude runs compared to a weak 2Q22 baseline. Over the course of 2023, crude runs will approach pre-Covid levels but remain some 0.3 mb/d below 2019 average throughputs.



Indicative refining margins remain healthy by almost any historical measure. However, recent weeks have seen a shift between the contribution to margins from different product categories. Middle distillate cracks have eased further and, in the Atlantic basin, been overtaken by gasoline cracks. Asian markets have seen a similar trend, but diesel remains ahead of jet and gasoline.

Global Refinery Crude Throughput <sup>1</sup>														
	(million barrels per day)													
	2019	2020	2021	2022	Jan-23	Feb-23	Mar-23	1Q23	Apr-23	May-23	2Q23	3Q23	4Q23	2023
Americas	19.1	16.6	17.7	18.7	17.9	17.8	18.1	17.9	18.7	19.3	19.3	19.4	19.2	18.9
Europe	12.2	10.7	11.0	11.5	11.6	11.4	10.7	11.3	11.2	11.8	11.4	11.7	11.5	11.5
Asia Oceania	6.8	5.9	5.8	6.0	6.2	6.2	6.0	6.1	6.0	5.6	5.6	5.8	5.9	5.9
Total OECD	38.1	33.1	34.5	36.2	35.7	35.4	34.8	35.3	35.9	36.7	36.3	36.9	36.7	36.3
FSU	6.8	6.5	6.7	6.4	6.7	6.6	6.6	6.6	6.0	5.7	5.8	5.8	6.0	6.1
Non-OECD Europe	0.5	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.4	0.6	0.5	0.6	0.5	0.5
China	13.4	13.7	14.4	13.7	14.7	14.7	14.8	14.8	14.2	14.4	14.5	14.9	14.8	14.7
Other Asia	10.3	9.3	9.5	10.3	10.8	10.6	10.4	10.6	10.6	10.8	10.6	10.7	11.0	10.7
Latin America	3.2	3.0	3.2	3.4	3.3	3.3	3.6	3.4	3.5	3.4	3.5	3.5	3.6	3.5
Middle East	7.9	7.1	7.7	8.1	8.2	8.2	8.4	8.3	8.6	8.4	8.5	8.8	8.8	8.6
Africa	2.0	1.9	1.9	1.7	1.5	1.7	1.7	1.6	1.6	1.5	1.6	1.6	1.6	1.6
Total Non-OECD	44.2	41.8	43.8	44.1	45.7	45.6	45.9	45.7	45.0	44.9	45.1	45.9	46.3	45.7
Total	82.3	75.0	78.2	80.3	81.4	81.0	80.8	81.1	80.9	81.6	81.4	82.8	82.9	82.0
Year-on-year change	-0.1	-7.3	3.3	2.0	1.2	2.8	1.5	1.1	2.7	2.7	2.1	1.9	1.9	1.8

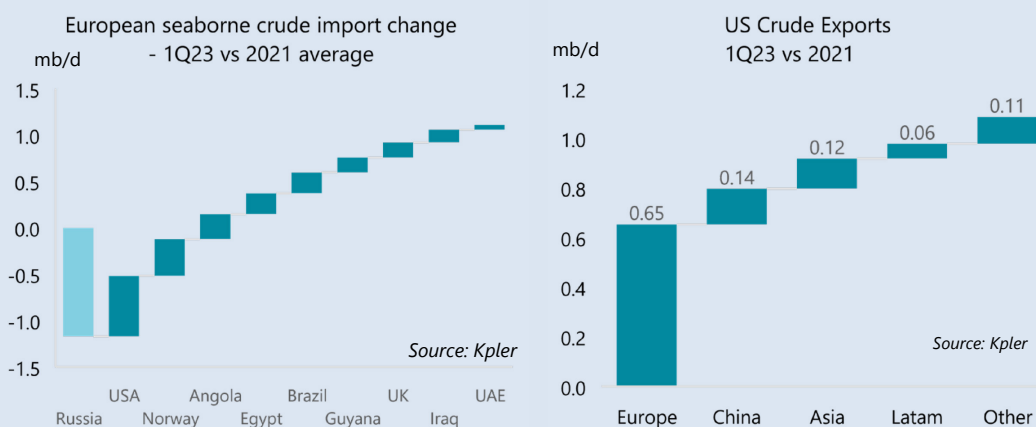
<sup>1</sup> Preliminary and estimated runs based on capacity, known outages, economic runcuts and global demand forecast.

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### Where are the backflows from the G7 sanctions?

Regional demand for refined products remains heavily influenced by the impact of the G7 trade sanctions on Russia and the EU crude and product import embargoes. The wholesale realignment of inter-regional trade patterns, between the Atlantic Basin, the Middle East and Asian markets continues to have a profound effect on market dynamics and, by extension, on prices. The loss of feedstock and finished product imports from Russia for European markets has tightened these markets and forced regional product cracks to strengthen to the point that marginal imports from longer haul destinations become economic.

Asian refineries' appetite for Middle East medium sour crudes may have diminished given the arrival of more than 3 mb/d of Russian crude in the region. The rapid upheaval in global crude trade flows, may in part explain the recent decision by OPEC+ to cut production. But with so much Atlantic Basin Russian Export Blend Crude Oil (REBCO) flowing east, why has there been little to no corollary flows of Middle Eastern crude west? The need to offset Russian seaborne and pipeline imports has resulted in refineries shifting their crude slate to run more crude from predominantly Atlantic Basin producers of generally lighter and/or sweeter crudes.



Note: OECD Europe imports excluding Türkiye – who are not bound by the EU embargo

There are several reasons that can explain the asymmetric response. First is the economic incentive to process these crudes. Refineries in Asia, e.g., India, have reportedly benefited from substantial price discounts to process REBCO cargoes. No such incentive exists for European refineries to process Middle Eastern crude. Conversely, Middle East crude differentials for Europe have, in recent months, strengthened more than Asian differentials. Furthermore, logistical constraints may limit the flexibility of European refineries to access VLCC's of Middle Eastern crude. For example, tankage or pipeline constraints on site, or midstream bottlenecks may preclude many European refineries from handling large volumes of Middle Eastern sour crudes. Moreover, freight costs have risen considerably since February 2022, favouring shorter haul grades. Lastly, capacity constraints on handling higher sulphur crude qualities may have also curtailed demand, especially given the higher natural gas prices. Refineries may not see the incentive to process higher sulphur crudes if hydrotreating capacity – either as part of the upgrading units or finished product hydrotreatment - is unable to handle the sulphur content of atmospheric naphtha, gasoil, or vacuum gasoil streams, all of which are considerably higher for Middle East Gulf sour crudes than REBCO.

US crude exports have reached record highs in recent months, with 1Q23 flows of 3.89 mb/d some 1.1 mb/d higher than 2021. Over the same period, a 650 kb/d increase in US volumes destined for

Europe have dominated increased flows to Asia and China. The prospects for the trend towards lower European Middle East crude imports are likely strengthened by recent moves by OPEC+ to restrict supplies, especially given the assurances reportedly received by Asian refineries for no change to their contractual volumes for May loadings.

## Product cracks and refinery margins

March refining margins were, on average, weaker across all configurations and across the three regions surveyed in this *Report*. Nonetheless, against the benchmark crudes that we use for each market, indicative margins remain at extremely healthy levels on a historical basis. Although not necessarily discernible, the impact of G7 sanctions will likely have contributed to higher product cracks. So too, the regional nuances of product market tightness, as demonstrated by stocks, and the marginal cost of supplying additional barrels to these markets, have impacted cracks and margins. Perhaps unsurprisingly, Singapore margins lag the strength evident in the US, and, to a lesser extent, Europe.

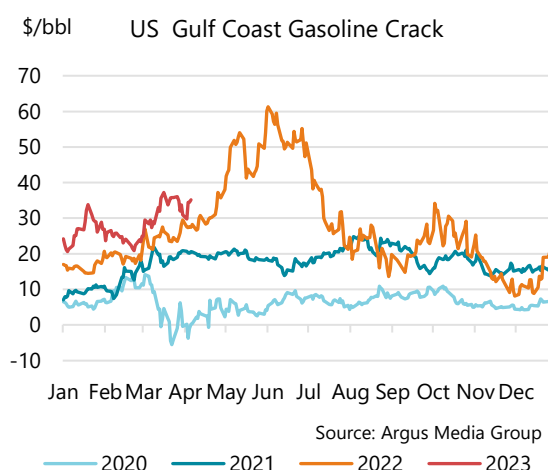
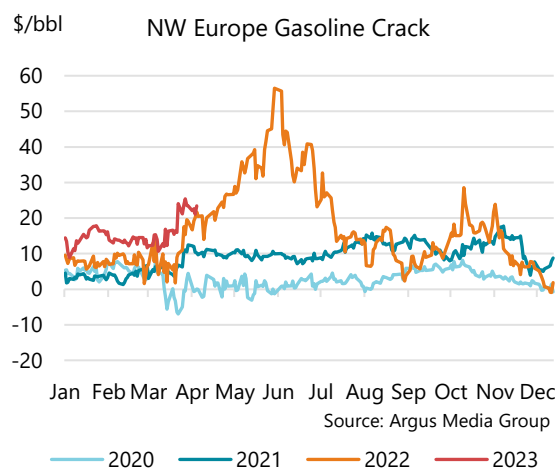
Product Prices and Differentials (\$/bbl)												
	Prices			Differentials				Week Starting				
	Jan	Feb	Mar	Jan	Feb	Mar	Feb-Mar chg	06-Mar	13-Mar	20-Mar	27-Mar	03-Apr
<b>Northwest Europe</b>												
				to North Sea Dated								
Gasoline	97.41	96.35	94.89	14.54	13.85	16.60	2.75	13.54	14.09	17.71	23.45	22.30
Diesel	124.73	109.89	106.98	41.87	27.39	28.69	1.30	26.51	30.35	31.48	26.14	20.33
Jet/Kero	128.40	112.29	104.10	45.54	29.79	25.81	-3.98	24.77	25.96	26.79	24.16	19.04
Naphtha	77.51	80.75	75.90	-5.35	-1.75	-2.39	-0.65	-3.52	-3.84	-1.21	-1.58	-6.13
HSFO	60.32	60.62	60.60	-22.54	-21.88	-17.69	4.19	-19.28	-17.34	-16.71	-14.57	-15.32
0.5% Fuel Oil	85.56	85.41	81.33	2.70	2.91	3.04	0.13	2.55	3.00	3.90	3.66	-0.01
<b>US Gulf Coast</b>												
				to WTI Houston								
Gasoline	106.15	103.64	106.68	26.57	24.35	31.83	7.47	28.74	33.08	35.44	34.49	32.40
Diesel	133.56	116.17	112.42	53.97	36.89	37.56	0.67	35.52	39.89	39.34	34.66	29.05
Jet/Kero	148.09	117.43	111.18	68.51	38.15	36.32	-1.83	39.11	34.77	34.70	32.28	25.35
Naphtha	84.75	79.90	78.04	5.17	0.62	3.18	2.56	1.46	3.47	5.67	2.95	-2.32
HSFO	55.23	57.56	58.34	-24.35	-21.73	-16.52	5.21	-17.76	-16.78	-16.05	-14.20	-14.72
0.5% Fuel Oil	91.63	93.47	87.17	12.04	14.18	12.31	-1.87	13.30	12.73	11.85	10.34	10.22
<b>Singapore</b>												
				to Dubai								
Gasoline	95.49	95.86	94.25	13.86	12.36	13.72	1.36	12.29	13.37	15.13	15.72	15.30
Diesel	116.12	107.64	102.80	34.50	24.14	22.27	-1.87	22.42	22.10	22.78	20.59	17.27
Jet/Kero	115.07	106.77	98.86	33.44	23.28	18.33	-4.95	18.90	18.34	18.13	15.70	13.12
Naphtha	72.52	76.98	73.19	-9.11	-6.52	-7.34	-0.82	-6.36	-7.79	-8.15	-8.60	-12.92
HSFO	58.90	62.14	65.41	-22.72	-21.36	-15.12	6.24	-15.51	-15.55	-15.32	-13.99	-13.58
0.5% Fuel Oil	92.84	94.11	86.64	11.21	10.61	6.12	-4.49	6.36	5.39	6.68	5.77	3.78

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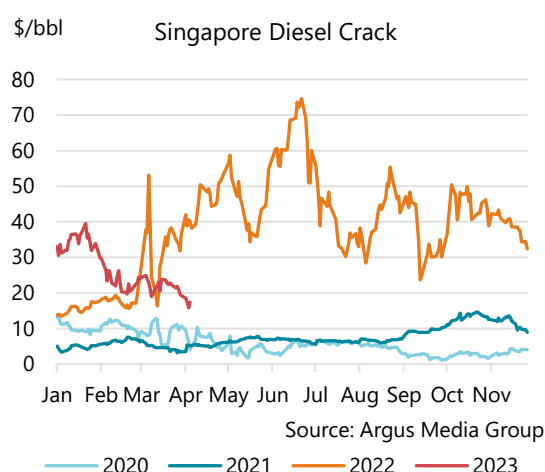
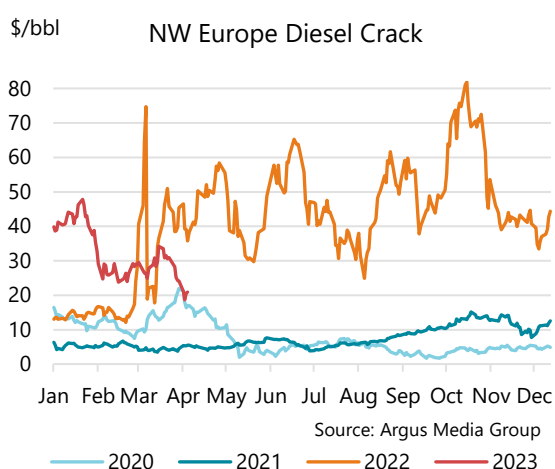
Across the US Gulf Coast, Northwest European and Singapore benchmarks, gasoline on the Gulf Coast has seen the strongest crack since the start of April, overtaking diesel. Based on weekly data, US gasoline stock cover slipped to 23 days of demand as of early April, well below the five and ten-year average levels of around 26 days and approaching levels not seen since 2006-07. At the same time, diesel cracks were largely unchanged in March versus February, with increased import demand in France, following the industrial action by refinery workers offset by seasonally weaker middle distillate demand overall. Jet cracks have lost ground relative to diesel, perhaps belying a less robust rebound in jet demand expected by market participants. Lastly, fuel oil cracks have improved further in recent weeks, but are still at substantial discounts to benchmark crudes.

Gasoline cracks strengthened further over the course of March and into early April in all three regions. Ahead of the peak summer US driving season, gasoline appears firmly in control of refinery profitability at the current juncture. Gasoline cracks, in part, reflect the still-buoyant consumer sector,

healthy service sector PMI survey readings and seemingly robust product demand, as demonstrated by weekly product supplied volumes versus seasonal average levels. Asian gasoline cracks remain at an enduring discount to the Atlantic Basin markets, with the US Gulf Coast (USGC) leading European markets by a wide margin.



The recent acceleration in US refinery crude intake will boost gasoline supplies and should start to ease gasoline market tightness. European gasoline cracks strengthened in early April, as the pull of US demand and the cumulative impact of French refining industrial action contributed to a tighter supply picture.

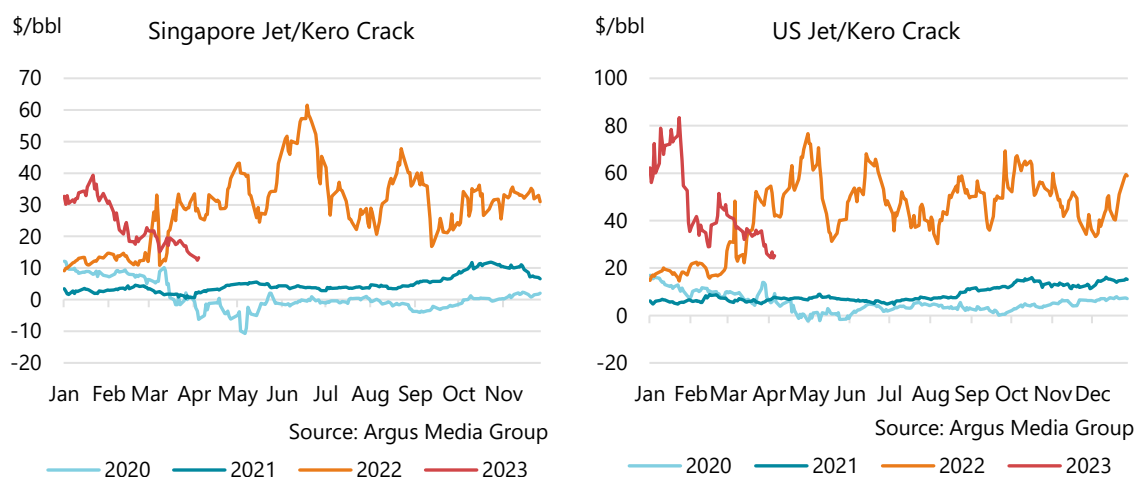


Naphtha cracks remain well supported by positive gasoline blending economics and, in Europe, the loss of Russian naphtha exports. This has boosted the relative value of European naphtha, compared to the cheaper supplies available in Asia. Profitability of naphtha-fed steam crackers in Europe has improved, but those crackers with feedstock flexibility still see an incentive to process propane rather than naphtha, thereby limiting demand. Asian naphtha cracks remain substantially below those evident in Europe, and the closed arbitrage between Europe and Asia highlights the relative tightness in European markets.

Middle distillate cracks were broadly unchanged on average in March across the three regions, when compared to February. Diesel cracks bounced in the second half of March in Europe and on the USGC, as regional import needs increased. However, this crack strength was not replicated in

Singapore, and they finished the month at the lowest level since March 2022. Early April saw renewed weakness in diesel cracks, pushing them below gasoline in the Atlantic Basin.

Jet fuel cracks declined in March to twelve-month lows and are now at a discount to diesel on a barrel basis. USGC jet cracks retained their premium to Europe and Singapore, while the rally in gasoline cracks now places them above jet fuel in all three regions.



Fuel oil cracks fared very differently in March. Very low sulphur fuel oil (VLSFO) cracks weakened substantially, while high sulphur fuel oil (HSFO) continued to post steady improvements. HSFO cracks now stand at ten-month highs across all three regions. Increased uptake of scrubbing capacity is reportedly contributing to additional demand for high sulphur bunkers while the tighter heavy sour crude market is also partly responsible. So too, weaker gasoil cracks have at the margin, eased the cost of blending VLSFO for bunker use.

IEA Global Indicator Refining Margins										
\$/bbl	Monthly Average				Change		Average for week starting:			
	Dec 22	Jan 23	Feb 23	Mar 23	Feb - Mar	06 Mar	13 Mar	20 Mar	27 Mar	03 Apr
<b>NW Europe</b>										
Light sweet hydroskimming	6.12	11.21	7.28	6.81	-0.47	4.98	6.43	8.17	7.99	4.31
Light sweet cracking	12.75	18.20	11.95	12.13	0.18	10.21	12.01	13.81	12.70	8.43
Light sweet cracking + Petchem	14.38	18.44	12.24	13.37	1.13	10.69	13.69	15.69	14.37	9.51
Medium sour cracking*	21.16	24.48	15.99	17.52	1.53	16.10	17.52	19.09	17.39	13.69
<b>US Gulf Coast</b>										
Light sweet cracking	18.86	29.74	21.25	25.41	4.16	23.10	26.82	28.06	25.60	21.84
Medium sour cracking	29.05	40.17	29.26	30.92	1.66	29.47	31.29	32.35	31.47	27.46
Heavy sour coking	38.16	54.39	40.66	40.14	-0.52	38.89	41.91	42.03	38.62	34.73
<b>Singapore</b>										
Light sweet cracking	8.92	13.13	9.43	7.75	-1.68	7.10	7.88	8.93	7.05	4.66
Light sweet cracking + Petchem	10.77	13.84	10.15	8.93	-1.22	7.85	9.24	10.60	8.38	5.83
Medium sour cracking	11.19	14.78	10.21	9.52	-0.69	9.61	9.04	9.74	9.09	6.97
Medium sour cracking + Petchem	13.01	15.48	10.93	10.69	-0.24	10.36	10.38	11.39	10.40	8.12

Note: Mediterranean and US Midcontinent margins are available in Table 15 of this Report.

Source: IEA/Argus Media Ltd prices.

Methodology notes are available at <https://www.iea.org/topics/oil-market-report#methodology>

\*From 1/12/2022, the basis has changed from Urals NWE to Argus Brent Sour

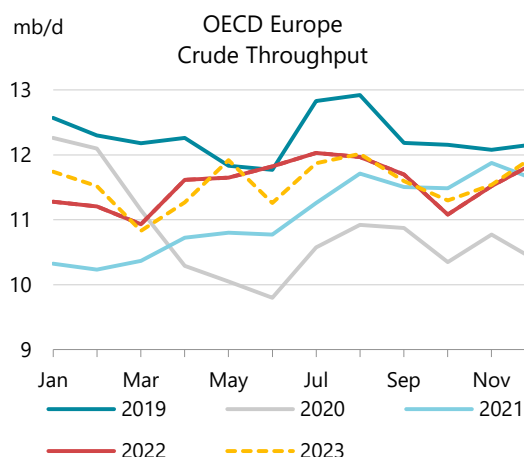
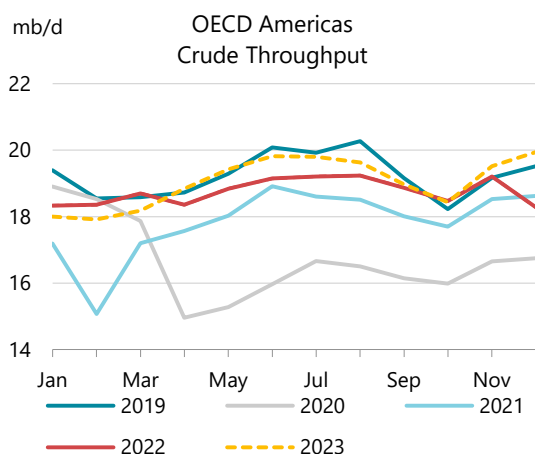
The combination of the above moves leaves global refining margins at healthy levels, albeit below the highs seen in 1Q23. Upgrading spreads have also compressed as the margin premium



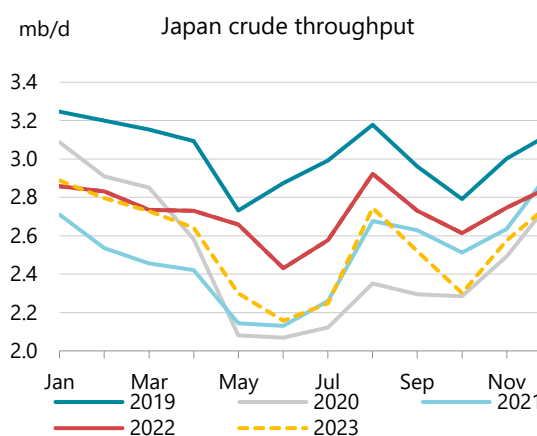
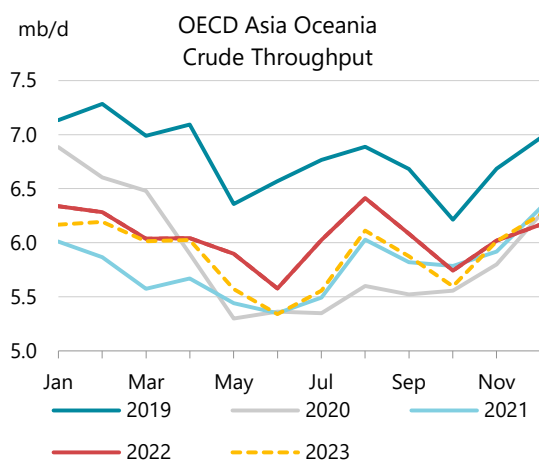
commanded by more complex refineries has contracted. In part, the lower middle distillate cracks and stronger fuel oil cracks have contributed to this.

## Regional refining developments

Global crude runs are set to accelerate in 2Q23 towards the summer peak of activity as Atlantic basin maintenance winds down. Asian crude runs will dip sequentially in 2Q23, before rebounding in 3Q23. Year-on-year growth will rise to 2.1 mb/d, double the annual growth achieved in 1Q23, as higher US and Chinese growth rates bolster the global total.



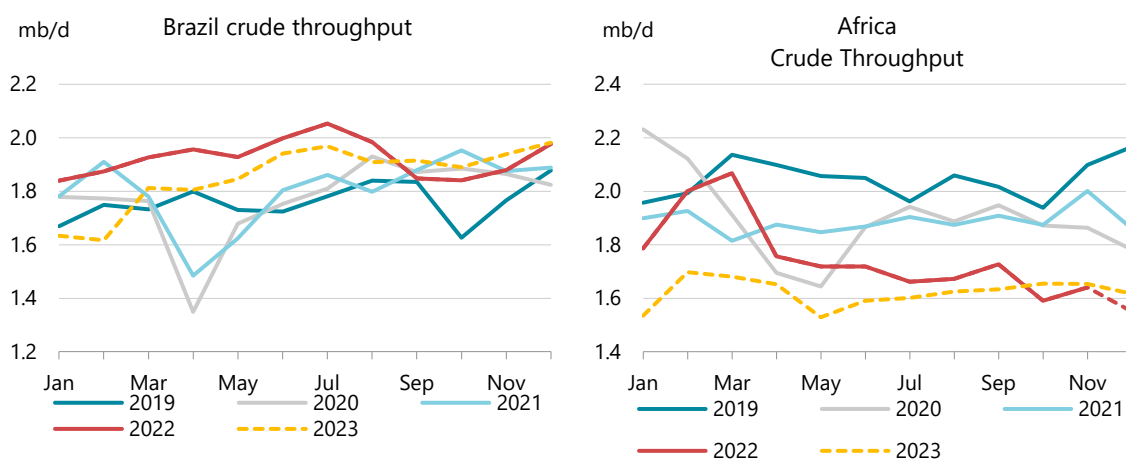
The weaker 2022 Chinese baseline – when renewed Chinese Covid restrictions limited oil demand and consequently domestic refinery activity – is partly responsible. US crude refining started 2023 on a weak note, following weather-related disruptions, but the conclusion of spring maintenance and the start of ExxonMobil's 250 kb/d Beaumont expansion underpin the higher processing rates. Global 1Q23 estimates have been trimmed by 0.4 mb/d from previous estimates, as monthly data for several large refining clusters were published. This accounts for much of the lower 2023 refining estimate in this month's *Report*. The forecast for 2Q23-4Q23 is largely unchanged, albeit updated maintenance estimates underpin larger monthly revisions.



OECD refinery throughput of 35.4 mb/d in February was 0.2 mb/d ahead of last month's expectations, based on monthly submitted data, but nevertheless 0.2 mb/d lower y-o-y. European runs outpaced our estimates by 0.2 mb/d, while OECD Asia and Americas were broadly as expected. OECD Asia and Americas were down 0.1 mb/d and 0.4 mb/d y-o-y respectively. OECD Europe runs were 0.2 mb/d higher y-o-y.

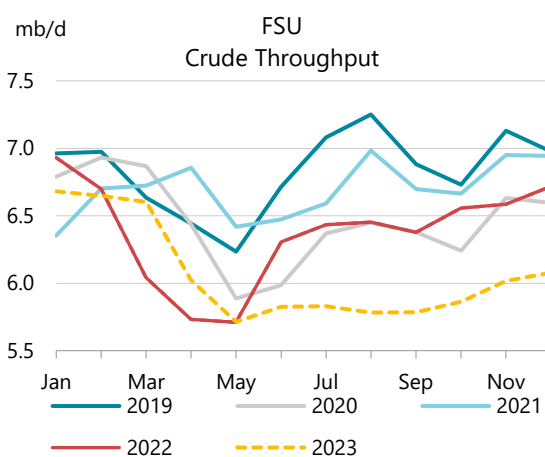
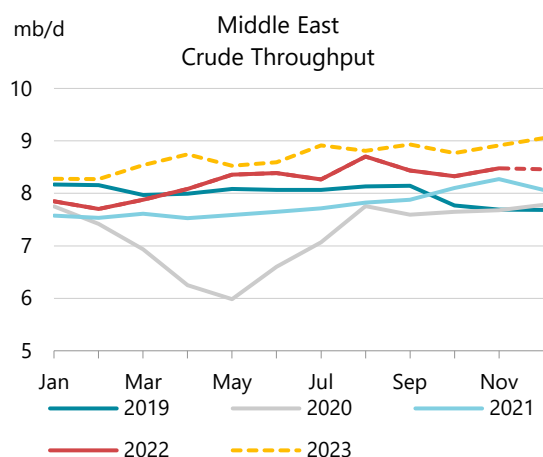
Prospects for crude demand diverge in the short term, as Atlantic Basin refineries have largely exited planned maintenance, while Japanese and Korean refineries are at the start of their turnaround season.

Non-OECD crude runs in 1Q23 were weaker than expected, with Brazil and Iraq both well below our forecast. Furthermore, our assumption for higher crude intake in Africa has been tempered by reports of delays to the restart of the 100 kb/d Cape Town refinery. Given that we now assume Nigeria's Dangote refinery will only achieve commercial operations in 2024, African crude runs remain at depressed levels seen in recent months for 2023.



Chinese refinery data for January and February were ahead of forecast, with runs now assessed at 14.7 mb/d on average, up 0.2 mb/d from earlier estimates. In the short-term, maintenance looks set to limit throughputs to around 14.1 mb/d in 2Q23, before rebounding to around 15 mb/d by 3Q23. The outlook for China remains dependent on the evolution of end-user demand and product export quotas issued by the government.

Middle Eastern crude runs remain robust with the Al Zour refinery boosting Kuwaiti runs to above 1 mb/d. Reports indicate that Iraq's 140 kb/d Karbala refinery has also entered commercial operation in recent weeks and despite weaker than expected February runs, we forecast Iraq to lift product supply to tackle its long-standing reliance on product imports to meet domestic demand. Oman's Duqm refinery is expected to further increase regional runs in late 2023.

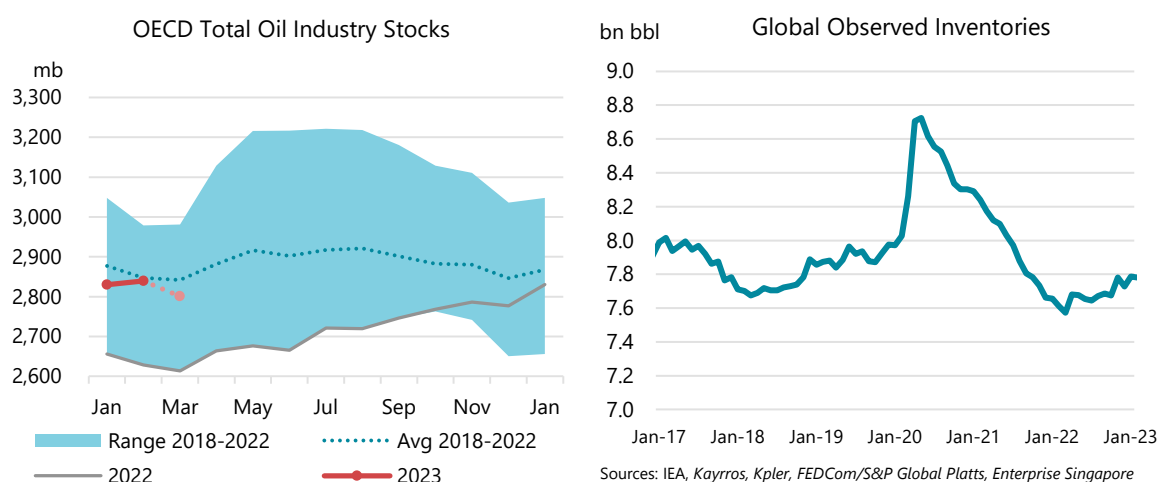


FSU throughputs are unchanged versus last month, at 6.6 mb/d in 1Q23 and 6.1 mb/d on average for this year. The lack of Russian data for March, results in no change to this *Report's* expectation for Russian runs to decline from 5.7 mb/d in 1Q23 to 5.1 mb/d in April and then a further 140 kb/d sequential decline to just below 5.0 mb/d in May/June. 3Q23 is forecast to average 4.9 mb/d, before rebounding marginally to 5.0 mb/d in 4Q23.

# Stocks

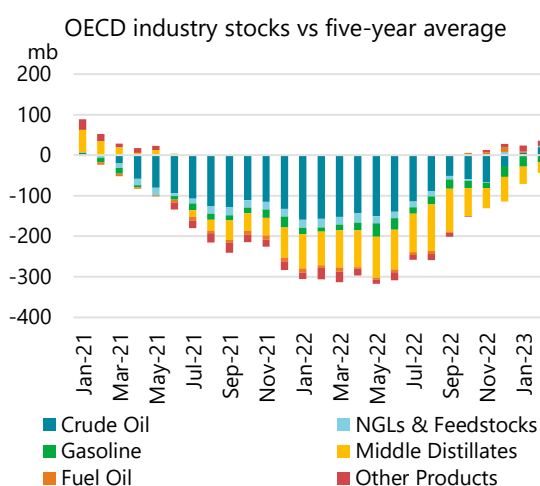
## Overview

Global inventories held largely steady in February after surging by 58 mb in the previous month. Oil on water declined for a third consecutive month, by 11.5 mb and inventories in non-OECD countries dipped by 2.1 mb as Chinese crude stocks fell by 9.5 mb. However, total OECD stocks rose by 8.8 mb to 4 060 mb, their highest in 10 months, mainly due to weak oil demand and efforts to restock ahead of the EU embargo on Russian oils. Preliminary data for March suggest OECD industry stocks may have undergone the largest draw in more than a year.



OECD commercial stocks rose by 9.6 mb to 2 840 mb in February, led by the OECD Americas where holdings rose 21.9 mb. The deficit against the five-year average narrowed to 7.5 mb thanks to counter-seasonal stock builds, even though gasoline and middle distillates remained 17.8 mb and 25.4 mb below the average, respectively. Forward demand cover rose 0.5 days to 62.1 days, partially due to a seasonal decline in demand, up 4.1 days on a year ago.

Crude oil, NGL and feedstock inventories surged by 27.5 mb, to their highest level since June 2021. A 32.2 mb increase in OECD America more than offset a 5.4 mb decline in OECD Europe. Product stocks fell across the three regions by a total of 17.9 mb, much smaller than the five-year average decline of -38.9 mb. Gasoline rose counter-seasonally by 1.7 mb, and middle distillates decreased by only 1.1 mb compared with their 17.8 mb seasonal average. Fuel oil fell by 1.5 mb, and other products dropped by 17 mb largely in line with the seasonal trend.



Preliminary data for the US, Europe and Japan show a hefty 38.9 mb decline in March. Commercial inventories fell in all three regions, with the largest draws in the US (-32.4 mb). Crude oil, NGL and feedstock inventories fell by 13.7 mb as US refinery activity recovered while exports remained high.

Oil product stocks drew by 25.2 mb, also led by the US (-21.9 mb), followed by Europe (-3 mb). Gasoline (-16.4 mb) and middle distillates (-10.6 mb) led the decline. Fuel oil fell by 1.8 mb, while other products increased by 3.6 mb in line with the seasonal trend.

Preliminary OECD Industry Stock Change in February 2023 and Fourth Quarter 2022												
February 2023 (preliminary)					Fourth Quarter 2022							
	(million barrels)				(million barrels per day)				(million barrels per day)			
	Am	Europe	As.Ocean	Total	Am	Europe	As.Ocean	Total	Am	Europe	As.Ocean	Total
<b>Crude Oil</b>	<b>24.6</b>	<b>-4.6</b>	<b>4.2</b>	<b>24.2</b>	<b>0.9</b>	<b>-0.2</b>	<b>0.1</b>	<b>0.9</b>	<b>0.2</b>	<b>0.0</b>	<b>0.0</b>	<b>0.2</b>
Gasoline	0.2	0.8	0.7	1.7	0.0	0.0	0.0	0.1	0.2	0.0	0.0	0.2
Middle Distillates	4.2	-1.4	-3.9	-1.1	0.1	-0.1	-0.1	0.0	0.1	0.2	0.0	0.3
Residual Fuel Oil	-1.5	-0.6	0.6	-1.5	-0.1	0.0	0.0	-0.1	0.0	0.0	0.0	0.1
Other Products	-13.3	-2.0	-1.7	-17.0	-0.5	-0.1	-0.1	-0.6	-0.3	0.0	-0.1	-0.4
<b>Total Products</b>	<b>-10.3</b>	<b>-3.2</b>	<b>-4.4</b>	<b>-17.9</b>	<b>-0.4</b>	<b>-0.1</b>	<b>-0.2</b>	<b>-0.6</b>	<b>0.0</b>	<b>0.2</b>	<b>0.0</b>	<b>0.1</b>
Other Oils <sup>1</sup>	7.6	-0.8	-3.5	3.3	0.3	0.0	-0.1	0.1	0.0	0.0	0.0	0.0
<b>Total Oil</b>	<b>21.9</b>	<b>-8.6</b>	<b>-3.7</b>	<b>9.6</b>	<b>0.8</b>	<b>-0.3</b>	<b>-0.1</b>	<b>0.3</b>	<b>0.2</b>	<b>0.2</b>	<b>-0.1</b>	<b>0.3</b>

<sup>1</sup> Other oils includes NGLs, feedstocks and other hydrocarbons.

OECD stock data for January have been revised down by 21.3 mb to 2 830 mb on the receipt of more complete information. The largest change came from Canadian crude stocks for December (-20.3 mb) due to the overestimation of the stock build following the shutdown of the Keystone pipeline caused by a leak. Product stocks in OECD Americas were up by 7.8 mb but were largely offset by downward revisions in crude oil, NGL and feedstock inventories. OECD Europe adjusted down crude oil stocks by 3.6 mb and products up by 1.5 mb. There were also downward revisions for crude oil in OECD Asia Oceania (-2.6 mb), mostly offset by petroleum product revisions (+2.5 mb).

OECD Industry Stock Revisions versus March 2023 Oil Market Report								
	(million barrels)							
	Americas		Europe		Asia Oceania		OECD	
	Dec-22	Jan-23	Dec-22	Jan-23	Dec-22	Jan-23	Dec-22	Jan-23
<b>Crude Oil</b>	<b>-20.1</b>	<b>-23.6</b>	<b>0.0</b>	<b>-3.6</b>	<b>0.0</b>	<b>-2.6</b>	<b>-20.1</b>	<b>-29.8</b>
Gasoline	0.1	2.3	0.0	0.7	0.0	1.1	0.1	4.1
Middle Distillates	0.0	3.0	0.0	3.5	0.0	0.3	0.0	6.7
Residual Fuel Oil	0.0	-1.2	0.0	-0.1	0.0	0.1	0.0	-1.2
Other Products	0.0	3.7	0.2	-2.6	0.0	1.1	0.2	2.2
<b>Total Products</b>	<b>0.1</b>	<b>7.8</b>	<b>0.2</b>	<b>1.5</b>	<b>0.0</b>	<b>2.5</b>	<b>0.3</b>	<b>11.8</b>
Other Oils <sup>1</sup>	0.0	-3.9	0.0	0.8	0.0	-0.2	0.0	-3.3
<b>Total Oil</b>	<b>-20.1</b>	<b>-19.7</b>	<b>0.2</b>	<b>-1.3</b>	<b>0.0</b>	<b>-0.3</b>	<b>-19.8</b>	<b>-21.3</b>

<sup>1</sup> Other oils includes NGLs, feedstocks and other hydrocarbons.

## Implied balance

Observed oil stocks fell by 170 kb/d in February, largely consistent with implied balances based on estimated supply and demand. OECD industry crude oil, NGL and feedstock inventories increased for a third consecutive month, by 980 kb/d led by the US. By contrast, product stocks fell by 640 kb/d, partly reversing the 1.15 mb/d build in the previous month. Government stocks decreased by a mere 30 kb/d. Non-OECD crude oil stocks declined by 130 kb/d, according to *Kayrros*, while product stocks in Singapore and Fujairah rose by 50 kb/d. *Kpler* data show oil on water, including short-term floating storage, declined by 410 kb/d, led by products.

IEA Global oil balance (implied stock change) (mb/d)											
	2019	2020	2021	1Q22	2Q22	3Q22	4Q22	2022	Jan-23	Feb-23	Mar-23
Global oil balance	0.00	2.35	-2.31	-0.85	-0.04	0.28	0.55	-0.01	2.32	-0.28	0.55
Observed stock changes											
OECD industry stocks	0.05	0.41	-1.06	-0.36	0.57	0.88	0.33	0.36	1.72	0.34	-1.25
OECD government stocks	-0.04	0.02	-0.16	-0.46	-1.08	-1.06	-0.31	-0.73	0.15	-0.03	-0.02
Non-OECD crude stocks*	0.17	0.44	-0.46	0.40	0.80	-0.51	0.35	0.26	0.49	-0.13	0.21
Selected non-OECD product stocks**	-0.14	0.12	-0.03	0.10	0.07	0.17	-0.27	0.02	0.68	0.05	0.05
Oil on water	0.07	0.01	-0.03	-0.53	0.54	0.98	0.14	0.29	-0.52	-0.41	
Total observed stock changes	0.10	1.00	-1.73	-0.85	0.90	0.46	0.25	0.20	2.52	-0.17	
Unaccounted for balance	-0.10	1.35	-0.58	0.00	-0.95	-0.18	0.30	-0.21	-0.20	-0.11	

\*Crude stock change data from Kayrros. Data are available for selected countries and include only, and not all, above-ground storage.

\*\*JODI data adjusted for monthly gaps in reporting, latest data for January 2023, plus Fujairah and Singapore inventories.

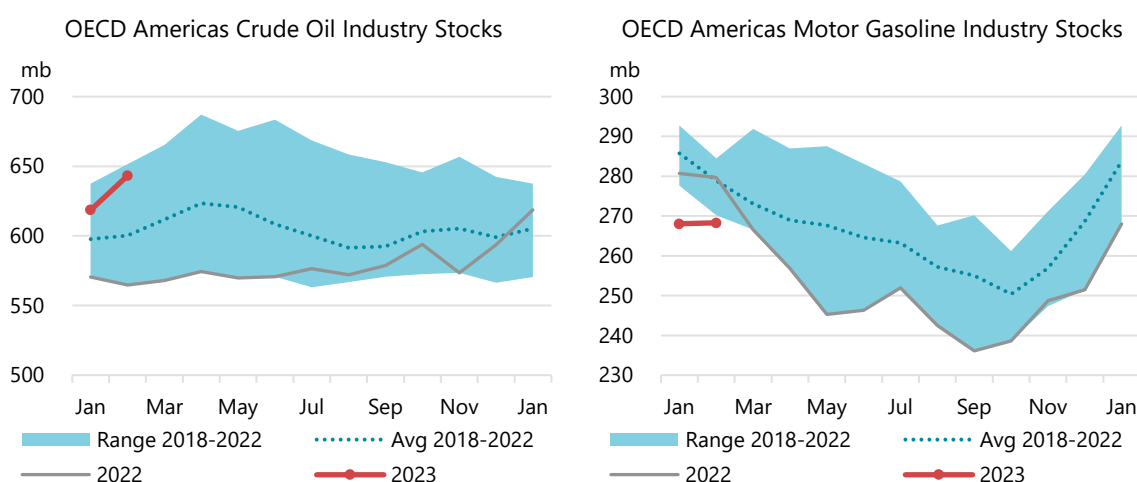
Sources: IEA, EIA, PAJ, Euroilstock, Kayrros, JODI, Kpler, FEDCom/S&P Global Platts and Enterprise Singapore.

## Recent OECD industry stock changes

### OECD Americas

Commercial stocks in OECD Americas swelled counter-seasonally by 21.9 mb in February when they typically draw by 26.4 mb. At 1 536 mb, inventories exceeded the five-year average for the first time in 23 months, by 35.3 mb. Crude oil stocks climbed by 24.6 mb to their highest level since May 2021. NGL and Feedstock inventories rose by 7.6 mb.

Oil product stocks fell by 10.3 mb, one-third of the five-year average move (-29 mb). Seasonally lower other products (-13.3 mb) led the decline, while gasoline and middle distillates rose counter-seasonally by 0.2 mb and 4.2 mb, respectively. Fuel oil inventories fell by 1.5 mb, in line with the five-year average. Product stocks fell less than the seasonal average despite lower refinery activity on weak US oil demand.



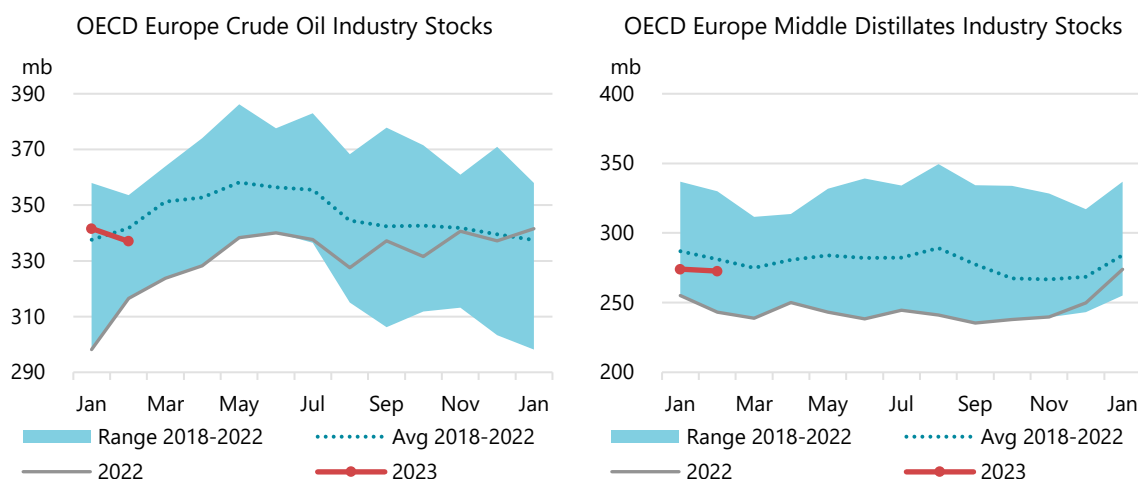
Weekly data from the US Energy Information Administration (EIA) show a 32.4 mb stock draw in March compared with a 1.7 mb typical increase. Total product supplies were in line with the five-year average, but monthly oil exports were 3 mb/d higher than the seasonal trend and at a new record high. Crude oil and other oils declined counter-seasonally by 9 mb and by 1.5 mb, respectively. Petroleum product inventories fell by 21.9 mb. The largest decline came from gasoline (-15.9 mb), indicating higher-than-expected demand. Middle distillate stocks dropped by 8.4 mb, largely in line

with the five-year average. Fuel oil inventories decreased counter-seasonally by 1.3 mb while other products rose by 3.6 mb. The US started the mandated Strategic Petroleum Reserve (SPR) release for this year at the end of March (0.6 mb). A total of 26 mb will be made available by end-June.

## OECD Europe

In February, commercial stocks in OECD Europe fell by 8.6 mb, after building for the past three months. At 957.1 mb, inventories remained 18.2 mb below the five-year average. Oil stocks in Italy and Germany declined by 6.1 mb and 4.1 mb, respectively while France built by 5 mb. Crude oil, NGLs and feedstocks decreased counter-seasonally by 5.4 mb in total. Higher refinery intake (+300 kb/d y-o-y), mainly in France (+240 kb/d y-o-y) and the Netherlands (+230 kb/d), partially explains the stock draw. In addition, crude oil stocks in Poland declined by 4.3 mb, as the crude oil supply contract between PKN Orlen and Rosneft expired in January.

Oil product stocks also fell, by 3.2 mb. Draws were lower than the five-year average (-6.2 mb) as middle distillate inventories posted a smaller decline (-1.4 mb) than the seasonal trend (-5.7 mb). However, this was the first decline in five months for middle distillates. Gasoline stocks inched up by 0.8 mb, in line with the five-year average. Fuel oil and other products fell by 0.6 mb and 2 mb, respectively.



Preliminary data from *Euroilstock* for 16 countries in Europe show a 1 mb stock draw in March. Crude oil inventories built by 2 mb, led by the UK (+2.2 mb). Oil product stocks fell by 3 mb. Middle distillates, fuel oil and naphtha fell by 1 mb each, while gasoline was unchanged. The largest decline was observed in France (-2.1 mb), primarily from middle distillates (-1.5 mb), as refinery operations were disrupted due to nationwide strikes. As a result, government stocks were made available to secure supplies to the market. By contrast, product inventories rose in Italy (+1.5 mb) and the Netherlands (+1.1 mb).

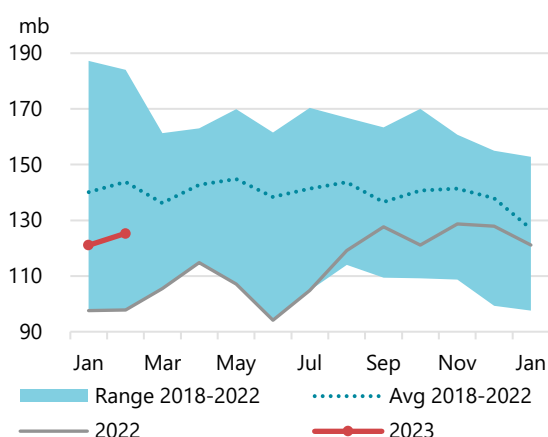
## OECD Asia Oceania

Industry stocks in OECD Asia Oceania declined by 3.7 mb in February. The decrease was led by Japan (-11.3 mb) while stocks built in Korea (+7.2 mb). Korean stocks hit their highest level since April 2021. At 346.7 mb, regional inventories remained 24.6 mb below the five-year average. Crude oil stocks increased by 4.2 mb, thanks to larger-than-usual builds in Korea (+6.4 mb). NGL and feedstock inventories declined by 3.5 mb.

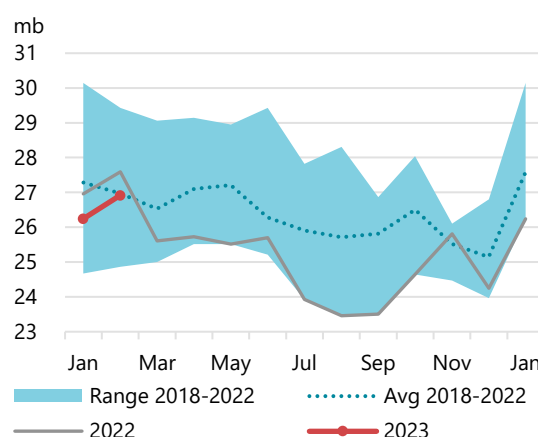


Petroleum product stocks fell by 4.4 mb, in line with the five-year average (-3.7 mb). Middle distillate inventories led the decline with a 3.9 mb decrease, mainly in Japan (-5.1 mb). At 60.7 mb, they were the lowest in nine months. Fuel oil increased by a mere 0.6 mb and other products drew by 1.7 mb, largely in line with the seasonal trends. Gasoline stocks increased counter-seasonally by 0.7 mb, to their highest in 12 months, on a 1.1 mb increase in Australia.

OECD Asia Oceania Crude Oil Industry Stocks

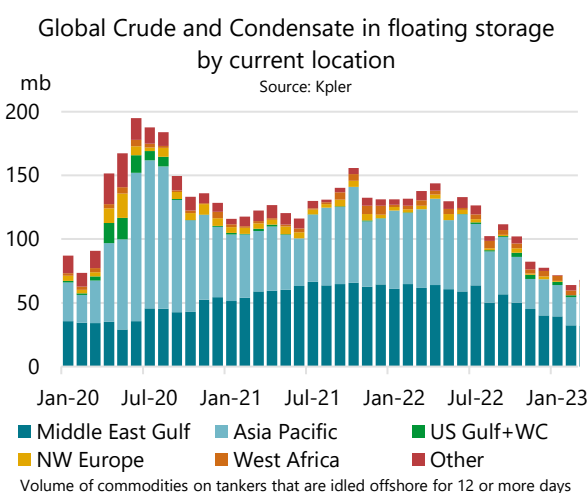
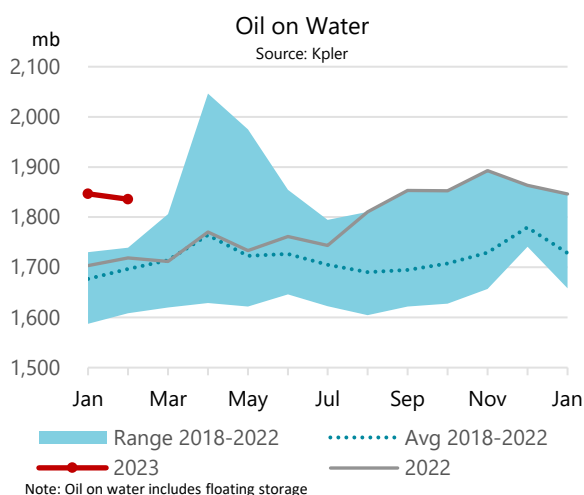


OECD Asia Oceania Motor Gasoline Industry Stocks



Preliminary data for March from the *Petroleum Association of Japan* show a 5.5 mb stock draw in March compared with the five-year average increase of 0.6 mb. Although refinery intake fell by 80 kb/d y-o-y, crude oil inventories declined counter-seasonally by 2.2 mb when they usually rise by 4.2 mb. In addition, unfinished oil products drew by 3.1 mb. Oil products decreased marginally by 0.3 mb. Gasoline and middle distillates fell by 0.6 mb and 1.1 mb, respectively, in line with the seasonal norm. By contrast, fuel oil and other products rose counter-seasonally by 0.4 mb and 1 mb, respectively.

## Other stock developments

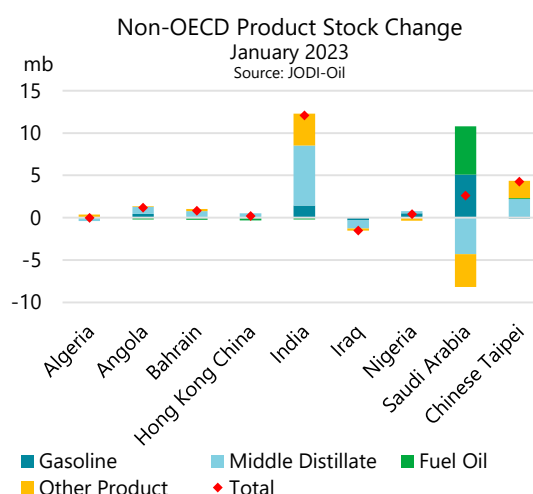
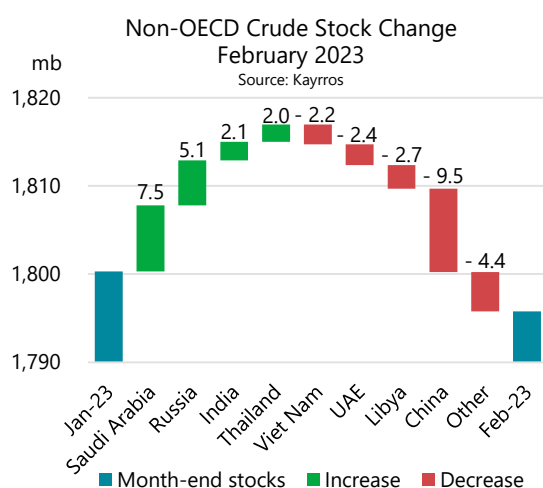
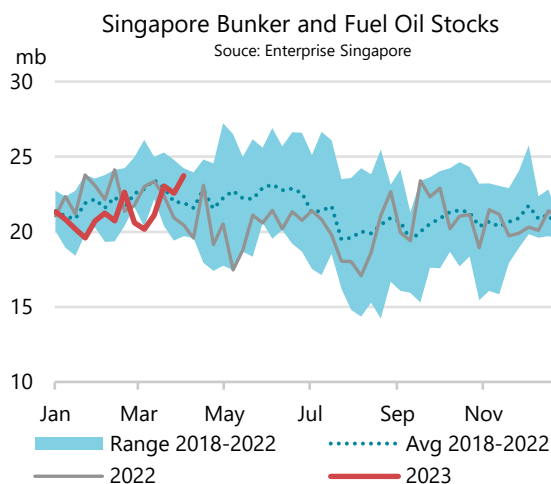


Oil on water, including floating storage, fell for a third consecutive month in February, by 11.5 mb to 1 836 mb, according to vessel tracking data from *Kpler*. Volumes at sea were the lowest since September 2022 but remained 139.5 mb higher than the five-year average. Crude oil increased by 4.3 mb while oil products declined by 15.8 mb. Seaborne product exports plunged by 330 kb/d in February on lower shipments from the US (-250 kb/d) and Russia (-260 kb/d). Short-term floating

crude oil storage decreased by 7 mb to 65.1 mb, half the level of a year ago. Oil products held in offshore storage edged down by 0.3 mb to 61 mb.

In Fujairah, independent product stocks declined by 1.4 mb in March, to 20.4 mb, according to *FEDCom and S&P Global Platts*. Heavy distillates and residues dropped by 2.2 mb to 10.7 mb and light distillates fell by 0.5 mb to 6.8 mb. Middle distillates increased by 1.3 mb to 2.9 mb, their highest in three months.

Independent product stocks in Singapore, the world's largest bunkering hub, built by 2.8 mb to 48 mb in March, according to data from *Enterprise Singapore*. Middle distillates led the increase, rising by 2.3 mb. At 9.6 mb, the inventories hit a 17-month high. Heavy distillates rose by 2 mb to 22.9 mb, the highest since February 2022. By contrast, light distillates declined by 1.4 mb to 15.5 mb.

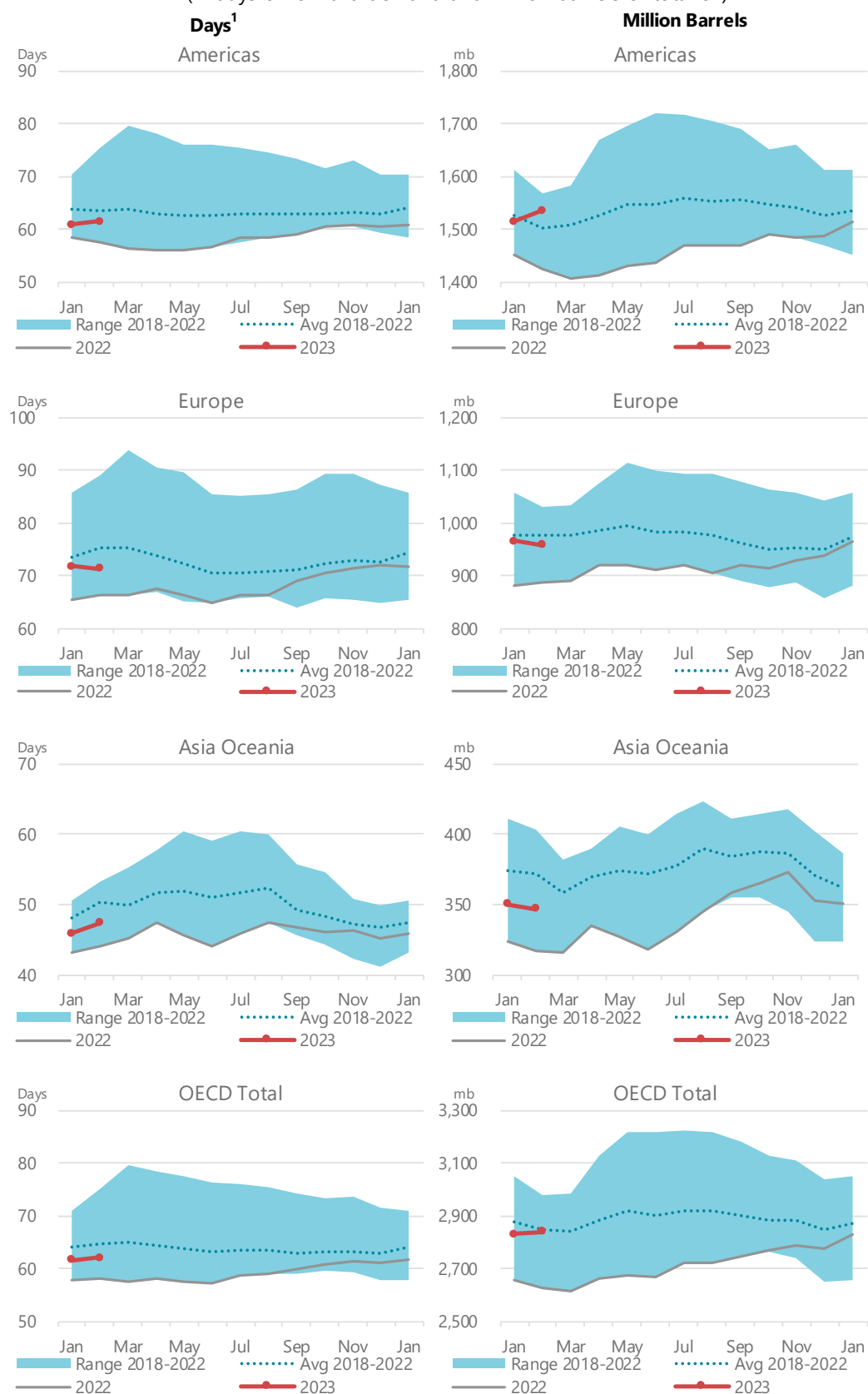


Observed crude stocks in floating-roof storage tanks in non-OECD countries fell by 4.5 mb in February, according to satellite data from *Kayrros*. Chinese crude stocks plunged by 9.5 mb as the Hengli refinery in Dalian reduced imports. Crude stocks in Saudi Arabia increased by 7.5 mb due to relatively lower crude exports, but most of the overhang was cleared in March. Russian stocks rose by 5.1 mb. Storages at the CPC terminal neared tank tops as exports were disrupted due to the bad weather conditions in mid-February. Non-OECD crude stocks rose by 2.6 mb in March, according to the *Kayrros* data.

In January, oil product stocks surged by 20.1 mb in 11 non-OECD economies reporting to the *JODI-Oil* database. The stock builds were led by India (+12.1 mb), mainly in middle distillates (+7.1 mb), thanks to the highest refinery output since February 2022. Product stocks in Chinese Taipei rose by 4.2 mb as middle distillates and other products built by 2.2 mb and 2 mb, respectively. In Saudi Arabia, gasoline (+5.1 mb) and fuel oil (+5.7 mb) inventories swelled, but they were partially offset by middle distillates (-4.3 mb) and other products (-3.9 mb).

## Regional OECD End-of-Month Industry Stocks

(in days of forward demand and million barrels of total oil)



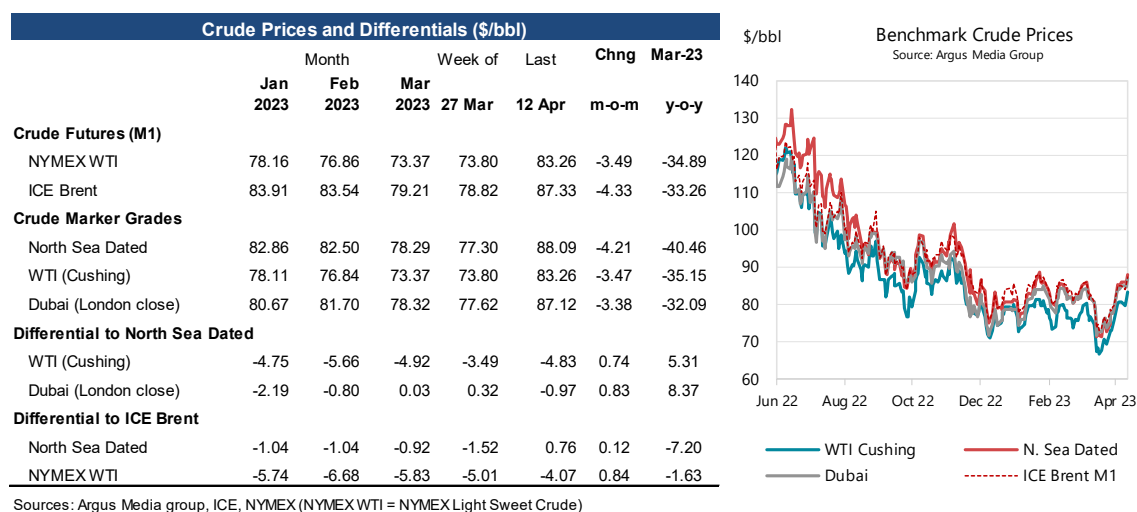
<sup>1</sup> Days of forward demand are based on average OECD demand over the next three months.

# Prices

## Overview

Oil prices sank further during March as escalating banking sector stress in the US and Europe triggered an investor stampede out of risky assets. North Sea Dated fell about \$4/bbl to \$79.21/bbl m-o-m, albeit correcting up after slumping to a 15-month low of \$71.36/bbl in mid-March. This was Dated's seventh monthly decline in nine, putting prices around \$50/bbl below their June peak. Oil recovered towards month-end as the panic subsided in the wake of emergency US policy measures guaranteeing uninsured depositors. A weaker greenback - the US Dollar Index fell by about 2% m-o-m in March to near six-month lows – lent further support to prices, as did the loss of 450 kb/d of Iraqi oil flows from Kurdistan after an international court ruling led to the shut-in of the Kirkuk-Ceyhan pipeline. Oil's rebound extended into early April, rising \$7/bbl after OPEC+ announced production cuts totalling more than 1.6 mb/d. At the time of writing, ICE Brent traded around \$87/bbl.

Price differentials and curve structure were relatively stable. Dated ceded about \$1/bbl m-o-m to WTI and Dubai, as French refinery outages slowed the call on an already comfortably supplied Atlantic Basin. WTI was bolstered by a reversal of the US inventory builds of recent months, amid booming crude exports and the tailing-off of refinery maintenance outages. Forward curves remained inverted, with Dubai's backwardation outstripping WTI's and Brent's - a testament to tighter East of Suez balances.



March saw the collapses of the Silicon Valley, Signature and First Republic Banks, as well as the government-orchestrated sale of Credit Suisse to UBS, causing a general loss of confidence in the banking sector. As depositors withdrew funds from regional banks over solvency fears, the flight out of risky assets into safe havens sent risk premiums soaring and bond yields plunging. Importantly, investors priced a U-turn in monetary policy as mounting financial stress was seen weighing on the real economy, with the resulting slowdown moderating inflation. This led to market expectations of an imminent end to the Federal Reserve's rate hikes that commenced one year ago - so far totalling 4.75%. Fixed income markets are pricing one more rate hike at most, before the Fed would resort to lowering rates during 2H23. The policy-sensitive 2-year US Treasury yield plunged by almost a full point to four percent in March, having traded in an unprecedented 1.5% monthly range.

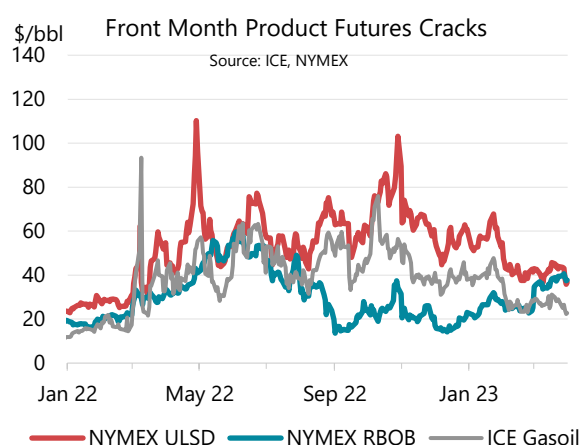
The crisis of confidence sparked fears of contagion spreading from the financial sector to the broader economy, reviving recession worries. Most economists see a mild US recession materialising over

the next 12 months. Economic data in developed economies remained mostly supportive, with consumer confidence underpinned by a historically tight labour market. Post-Chinese New Year holiday data readings also appeared to corroborate China's reopening bounce evident from real time mobility indicators at the start of the year.

## Futures markets

Front-month WTI and Brent futures fell by about \$4/bbl m-o-m, with risk aversion surging amid a loss of confidence in the banking system. Gamma option hedging exacerbated the price decline, as falling prices and heightened volatility forced banks to sell more oil to hedge their short put option positions. Brent futures only briefly managed to hold above their 50- and 100-day moving averages, capitulating in early March amid the crumbling sentiment. Underscoring its bearish price-technical picture, Brent ended the month about \$3/bbl below its 50- and 100-day resistance levels, but subsequently conquered these on April's first day of trading after OPEC+'s surprise output cut sent prices soaring. Brent remains about \$7/bbl below its 200-day moving average.

WTI futures gained about \$1/bbl m-o-m against Brent with sustained exports and rising US refinery runs following maintenance tightening stocks locally. Inventories at WTI's Cushing, Oklahoma delivery hub drew throughout March according to weekly EIA data – reversing course after continuous builds in January and February. The announcement by the White House that it would take years to replenish the Strategic Petroleum Reserve (SPR) – currently at a 40-year low of 370 mb – failed to make a dent in WTI's price recovery.

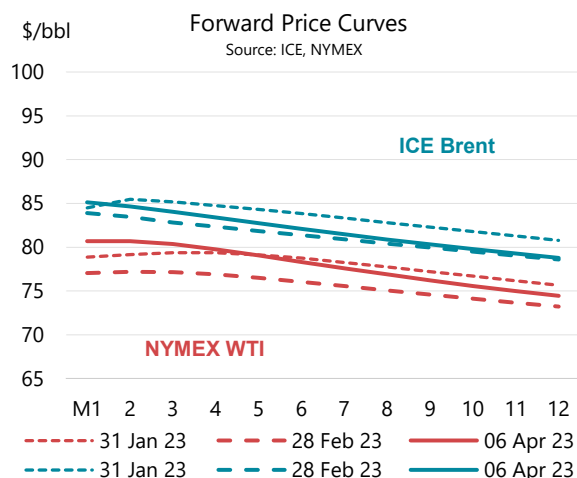
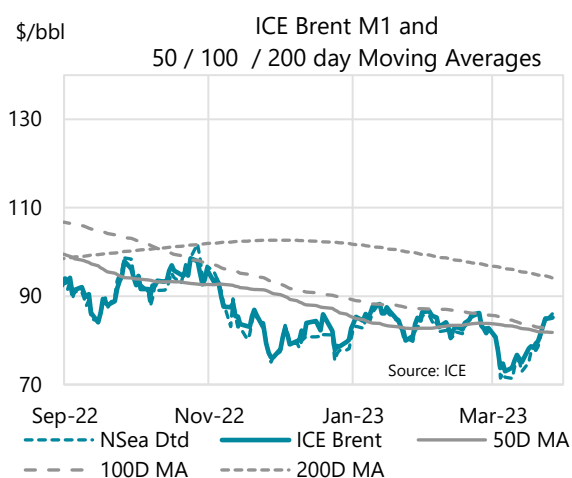


French strikes that crippled almost all the country's 1.1 mb/d of refining capacity and a switch to summer-specifications buttressed product cracks, especially for gasoline. RBOB versus WTI front-month cracks soared by \$12/bbl m-o-m to \$37/bbl, a seasonally adjusted all-time high. US gasoline inventories fell to 227 mb in March, an eight-year seasonal low. Conversely, diesel cracks were virtually unchanged, as tepid demand counterbalanced the post-embargo supply squeeze. Echoing the divergence between the two products, front-month RBOB gasoline traded above ULSD on NYMEX for the first time in almost a year.

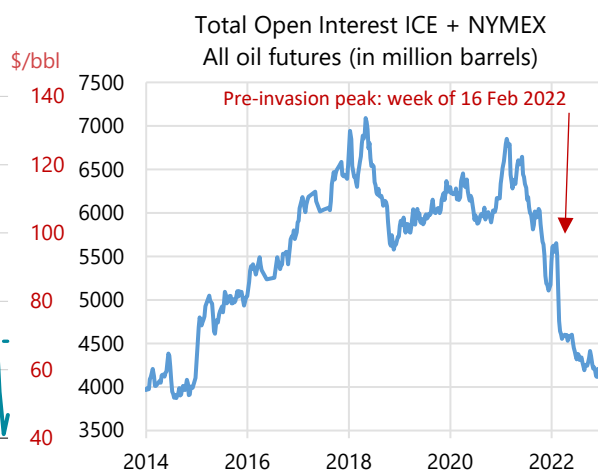
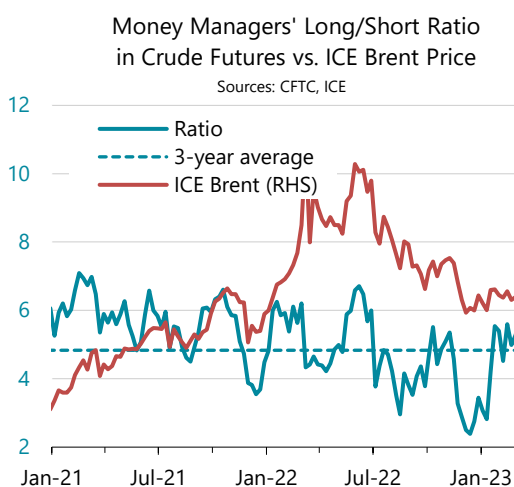
As outright prices gyrated, prompt prices held their premiums to forward prices, reflecting market expectations of a gradual easing of current tight balances. The 1-12-months backwardation was about \$5-6/bbl for WTI and Brent, and \$7/bbl for Dubai.

According to the Commitments of Traders Report, March saw massive speculative selling, mirrored by longer positioning in the producer and swap dealer categories. Money manager net long crude holdings collapsed, with WTI and Brent fund positions falling by about 100 mb each amid soaring risk aversion and momentum-driven selling. The ratio of long to short crude future holdings by money managers fell by almost three points to 2.7 at month-end, having sunk to 2.1 earlier, the lowest level since the early days of the pandemic. Speculative short covering probably contributed to oil's 6% price surge on 2 April in the wake of OPEC's surprise production cut. Among commercials, the lower

prices prompted the unwinding of in-the-money hedges by producers while oil buyers such as airlines - looking to protect themselves against future price rises – added new long hedges.



Total open interest in the five main ICE and NYMEX contracts stabilised at around 5 000 mb - almost 1 000 mb higher year-to-date. Lower trading costs and reduced exchange margins have prompted a nascent reversal of 2022's trader exodus, amid a general normalisation of oil futures markets after last year's unprecedented price volatility.



### Dated assessments look to Texas as North Sea liquidity dwindles

Price assessment agencies S&P Global Platts and Argus Media will incorporate WTI Midland - a light sweet crude from Texas' Permian Basin - in their respective Dated Brent and North Sea Dated basket assessments from June 2023. The change occurs one year after WTI's inclusion was announced and two-and-a-half years after it was first proposed. The addition of Midland – a crude of similar quality to the existing streams in the respective baskets (Brent, Forties, Oseberg, Ekofisk and Troll) – means a vast geographic expansion of volumes deliverable against the Dated assessments, beyond their traditional North Sea nucleus.

Dwindling North Sea oil production has driven regular revamps of the benchmark. Successive modifications over the past four decades broadened the basket for the assessments beyond the original

15-day Brent specification by including additional North Sea grades and lengthening the assessment window. The North Sea's inexorable output decline has defeated these efforts, prompting the present quantum leap of blending WTI deliveries into the Dated complex.

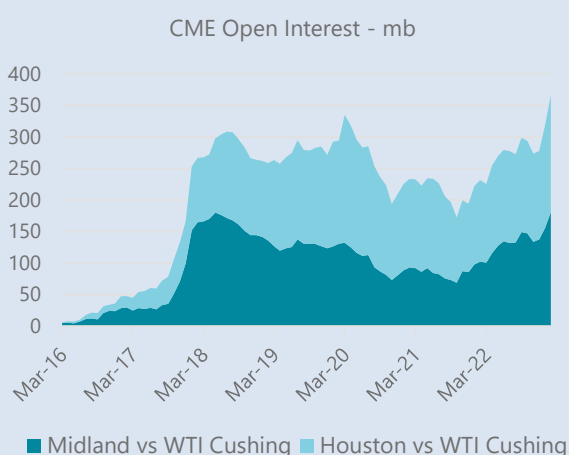
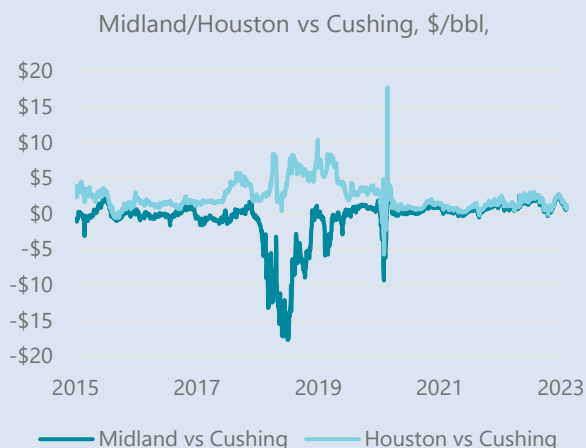
Pivoting westward resolves the volume decay in one fell swoop and consolidates Dated's status as a key global crude price benchmark. WTI exports to Europe averaged ~1.2 mb/d in recent months and reached 1.8 mb/d in March 2023, double the production of the current North Sea basket grades.

The development epitomises the US role in reshaping global oil markets in the wake of the shale oil revolution of the 2010s that sent US production soaring. The lifting of the US crude export ban in 2015 and the construction of several new pipelines that connected the Permian Basin to the US Gulf Coast around 2020 unlocked the inland market to seaborne trade. US crude exports have since ballooned, averaging 3.6 mb/d in 2022 according to US Census Bureau data and surging to a weekly record of 5.6 mb/d in February 2023.

Since Russia's invasion of Ukraine, Europe has overtaken Asia as the main destination for US crude shipments, as sanctions compelled Europe's refiners to replace Russian crude flows. At the same time, the release of more than 220 mb of crude oil from the US SPR during 2022 eased US balances, thereby making more oil available for export.

Since mid-2020, Midland has traded in a relatively narrow \$0-2/bbl premium range to Cushing, with the 2023-30 forward curve also at a steady \$1/bbl. This stability contrasts sharply with earlier Midland blowouts, particularly in 2018-19 when a lack of takeaway capacity for the Permian supply glut sent Midland to a discount of more than \$15/bbl. The construction of new pipeline infrastructure connecting the Permian directly to the US Gulf Coast eventually relieved the chokepoint.

Over-the-counter (OTC) and futures trading have flourished in tandem with the emergence of Midland and Houston as global price hubs, as producers and refiners have sought to hedge the location basis risk with WTI Cushing (the delivery point of the CME's benchmark crude future). Open interest in CME's WTI Midland versus Cushing futures has risen steadily since the US began to export crude and is currently at an all-time high of 200 mb. Volumes for Midland's sister contract WTI Houston versus Cushing are comparable. For reference, this is not far below the open interest levels of the CME's refined product RBOB gasoline and ULSD futures, at 312 mb and 270 mb, respectively.





Liquidity in the Midland/Houston versus Cushing derivatives and futures market looks set to climb further as Midland's incorporation into the Dated complex will cement the US hubs in their status amongst the global price benchmarks. Vice versa, a deep derivatives market that facilitates the hedging of transatlantic flows will smooth Midland's inclusion in the Dated basket.

Prompt Month Oil Futures Prices (monthly and weekly averages, \$/bbl)											
	Mar 2023					Week Commencing:					Last
	Jan 2023	Feb 2023	Mar 2023	m-o-m Chg	y-o-y Chg	27 Feb	06 Mar	13 Mar	20 Mar	27 Mar	12 Apr
<b>NYMEX</b>											
Light Sweet Crude Oil (WTI) 1st contract	78.16	76.86	73.37	(3.49)	(34.89)	77.65	77.42	69.77	69.42	73.80	83.26
Light Sweet Crude Oil (WTI) 12th contract	77.21	75.78	72.40	(3.38)	(16.27)	73.98	74.31	68.37	68.32	72.04	76.47
RBOB	104.34	101.96	110.37	8.40	(28.03)	108.60	112.87	105.74	108.05	112.78	120.65
ULSD	135.56	118.78	114.90	(3.88)	(38.50)	120.07	116.49	112.59	113.38	113.38	113.53
ULSD (\$/mmbtu)	24.42	21.40	20.70	(0.70)	(6.94)	21.63	20.99	20.28	20.42	20.43	20.45
NYMEX Natural Gas (\$/mmbtu)	3.42	2.44	2.41	(0.03)	(2.57)	2.81	2.56	2.49	2.22	2.09	2.09
<b>ICE</b>											
Brent 1st contract	83.91	83.54	79.21	(4.33)	(33.26)	84.25	83.30	75.92	75.34	78.82	87.33
Brent 12th; contract	81.40	80.50	77.13	(3.37)	(16.10)	79.03	78.90	73.26	73.29	76.64	80.54
Gasoil	124.31	110.34	106.35	(3.99)	(44.70)	112.96	109.91	103.89	104.06	102.99	105.12
<b>Prompt Month Differentials</b>											
NYMEX WTI - ICE Brent	(5.74)	(6.68)	(5.83)	0.84	(1.63)	(6.59)	(5.88)	(6.15)	(5.92)	(5.01)	(4.07)
NYMEX WTI 1st vs. 12th	0.96	1.08	0.97	(0.11)	(18.62)	3.68	3.11	1.40	1.10	1.77	6.79
ICE Brent 1st - 12th	2.51	3.04	2.08	(0.96)	(17.16)	5.21	4.40	2.65	2.05	2.17	6.79
NYMEX ULSD - WTI	57.39	41.92	41.52	(0.40)	(3.61)	42.42	39.07	42.82	43.96	39.58	30.27
NYMEX RBOB - WTI	26.18	25.10	36.99	11.89	6.86	30.94	35.45	35.97	38.63	38.98	37.39
NYMEX 3-2-1 Crack (RBOB)	36.58	30.71	38.50	7.80	3.37	34.77	36.66	38.25	40.41	39.18	35.02
NYMEX ULSD - Natural Gas (\$/mmbtu)	21.00	18.96	18.29	(0.67)	(4.36)	18.82	18.43	17.79	18.20	18.34	18.36
ICE Gasoil - ICE Brent	40.40	26.80	27.15	0.34	(11.44)	28.71	26.61	27.97	28.72	24.17	17.79

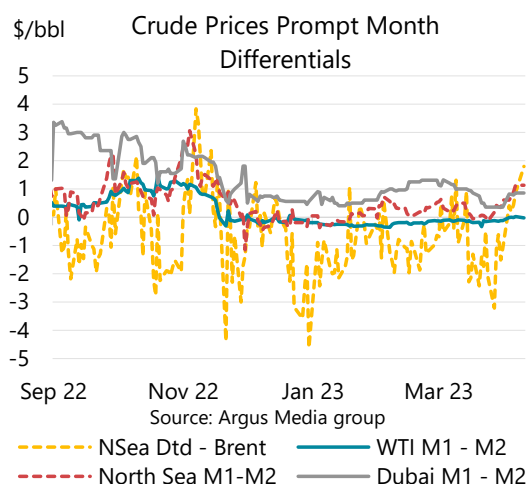
Source: ICE, NYMEX.

## Spot crude oil prices

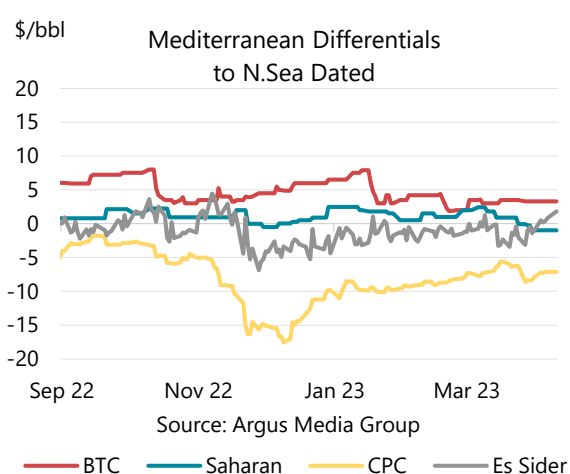
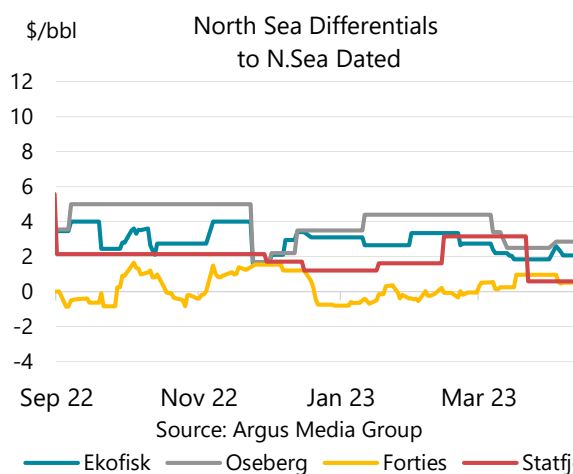
Physical crude prices declined in March as the banking crisis sent North Sea Dated to a 15-month low at \$71.36/bbl mid-month. Prices subsequently clawed back some of their losses, flirting with \$80/bbl by month-end, due to dwindling US inventories and the shut-in of 450 kb/d of Iraq crude production. In early April, the cuts announced by OPEC+ propelled prices even higher, returning to their early March peak of \$85/bbl. Dated fell by \$4.21/bbl m-o-m to \$78.29/bbl and was trading at \$88.09/bbl at the time of writing. WTI Cushing dropped slightly less, by \$3.47/bbl m-o-m, to \$73.37/bbl. Dubai weakened by \$3.63/bbl m-o-m to \$78.42/bbl but recovered to around \$85/bbl in early April.

In March, North Sea Dated continued to trade at a discount to ICE Brent for the fourth month in a row, narrowing by \$0.12/bbl m-o-m to -\$0.92/bbl. However, after OPEC+ cuts were announced in early April, Dated surged to a premium, and is now trading \$0.75/bbl above the prompt future.

Spot demand for Middle Eastern crudes was soft in March. Purchases for May delivery remained subdued as Asian refiners continue to work through a heavy maintenance season that is expected to continue through June. In March, the Dubai M1 versus M3 time spread flattened like the other marker grades, losing \$0.41/bbl. Conversely, Dated M1-M3 lost only \$0.07/bbl. The arrival of US sour crudes in Asia pressured the Dubai spot market.



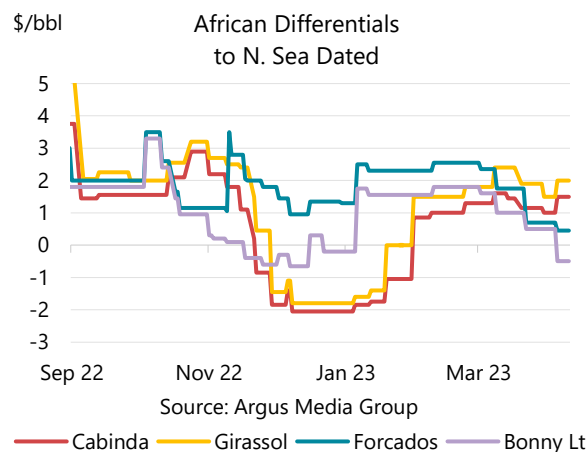
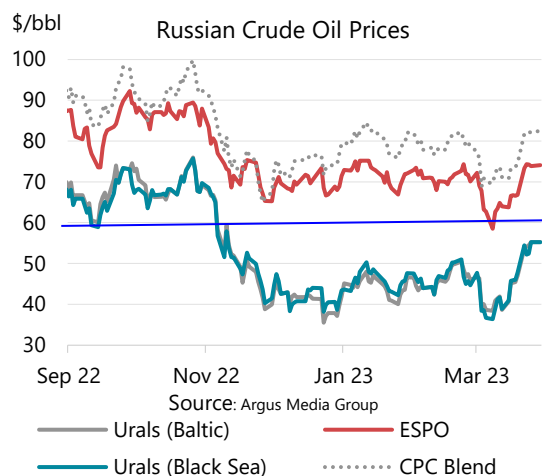
Typically, when the Dubai curve is flat, Middle Eastern suppliers (who index prices to the average of Dubai plus Oman quotes) tend to cut their Official Selling Prices (OSP) to remain competitive. However, OSP prices increased for both April and May, prompting refiners East of Suez to pick up cheaper cargoes elsewhere. The Brent to Dubai EFS swap spread, a key marker for West-to-East arbitrage, narrowed by \$1.20/bbl to a two-year low of \$2.48/bbl, making Dubai-linked deals even less attractive to buyers versus Atlantic Basin crude. Dubai traded at a premium to Brent in mid-March, and the narrowing gap between the price of Brent versus Dubai has opened arbitrage opportunities for Atlantic Basin cargoes.



Amid ample supply from the US, weaker seasonal refinery demand in Europe and the strikes in France added considerable pressure to sweet North Sea grades. Spreads versus North Sea Dated for Statfjord, Ekofisk and Oseberg softened, by -\$0.20/bbl, -\$1.06/bbl and -\$1.41/bbl, respectively, averaging a premium of around \$2.45/bbl. Forties, a relatively sour grade, was less affected, as its differential widened sharply by \$0.78/bbl m-o-m, moving the spread back into a \$0.62/bbl premium. Germany and Poland cleared many Forties cargoes after the Druzhba pipeline shut off shipments in February.

In the Mediterranean, physical spreads failed to sustain their early-month momentum due to the backlog in shipments after the French refinery and port strikes halted imports. About half of Mediterranean crude shipments go to Europe. At the same time, the shut-off of exports from Iraq's Kurdistan region helped support some regional sour grades. The BTC/Azeri premium was broadly steady, lower by just \$0.10/bbl m-o-m to \$3.27/bbl against North Sea Dated, amid a notable uptick

in exports to India. By contrast, the CPC discount narrowed by \$1.65/bbl m-o-m to -\$7.07/bbl. Es Sider was mostly flat, up \$0.05/bbl m-o-m to -\$0.30/bbl. Differentials for Saharan Blend were unchanged m-o-m at a \$1.04/bbl premium. However, the spread collapsed at month-end as a direct result of the French refinery strikes and is now trading at -\$1.25/bbl discount to Dated.

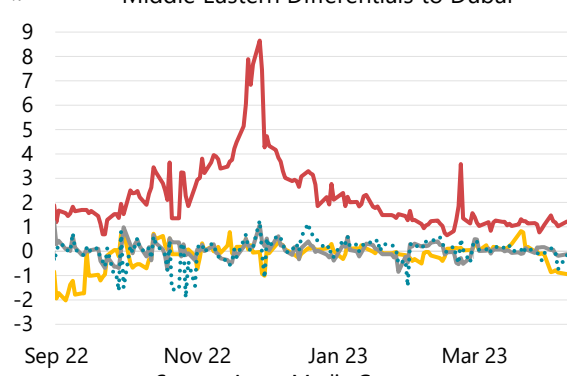


ESPO blend gained relative to Dubai over the month, narrowing by \$0.57/bbl m-o-m to -\$10.88/bbl. Increased interest from Indian buyers, as well as Chinese state-owned Sinopec, who picked up many previously unsold cargoes, lent support to prices. Differentials for Urals to North Sea Dated strengthened. FOB Primorsk was up by \$4.81/bbl to -\$33.83/bbl, while FOB Novorossiysk was up \$2.98/bbl to -\$34.50/bbl. Both saw sharp increases of an additional \$3/bbl in early April. Urals is now trading precariously close to the \$60/bbl price cap (see *G7 price caps – Russian oil export price review*).

West African sweet grades mostly declined in March, as stiff competition from the overhang in the Atlantic basin combined with muted demand from European refiners pressured Nigerian spot differentials lower. Brass River shed \$0.75/bbl m-o-m, falling to a -\$0.48/bbl discount, while Bonny Light lost \$0.73/bbl m-o-m to \$0.99/bbl before moving to a discount in early April. At the same time, Forcados fell by \$0.92/bbl m-o-m to \$1.55/bbl, while Qua Iboe dropped by \$0.65/bbl m-o-m to \$1.06/bbl, with both giving up roughly \$1/bbl more in early April. By contrast, Angolan crudes continued to gain strength against Dated. Girassol moved up by \$0.46/bbl to \$2.02/bbl, while Cabinda rose \$0.28/bbl to a \$1.30/bbl premium. Renewed interest from Atlantic buyers helped widen Angolan differentials, due to their medium composition and favourable gasoline margins.

In the Middle East, differentials against Dubai for sour crudes were mixed. Asian refiners pulled back on purchases ahead of their refinery maintenance season, replacing some Middle Eastern crudes with cheaper US sour. Spot differentials for Murban were down \$0.18/bbl m-o-m to \$1.18/bbl, likewise the spread for Oman fell \$0.11/bbl to \$0.07/bbl. Qatar's Al-Shaheen rose by \$0.30/bbl to a \$0.19/bbl premium. However, in early April the spread fell by almost \$1/bbl, thereby moving back into a \$0.94/bbl discount. Upper Zakum was mostly flat (+\$0.04/bbl m-o-m) to \$0.08/bbl.

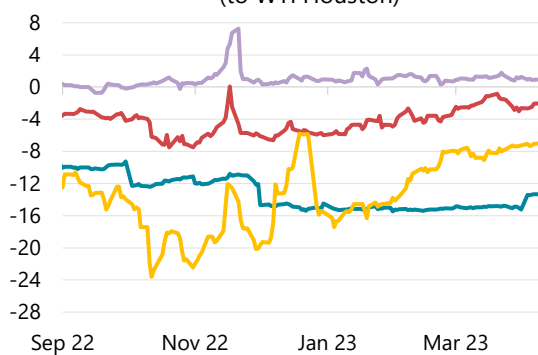
Middle Eastern Differentials to Dubai



Source: Argus Media Group

— Al Shaheen — Murban  
— Upper Zakum — Oman

Sweet-Sour Crude Price Differentials (to WTI Houston)



Source: Argus Media Group

— LLS M1 — Mars — Maya USGC — WCS USGC

WTI Cushing gained support on falling inventories, as US Gulf coast refineries returned from maintenance at full steam and ExxonMobil's Beaumont 250 kb/d refinery expansion started up. Exports continued their record-breaking-streak, hitting 4.5 mb/d in March according to *Kpler*, of which 1.8 mb/d headed to Europe. It will be difficult to maintain this momentum as SPR releases have largely run their course. Coastal prices did not hold up as well. WTI Houston versus WTI Cushing narrowed by \$0.96/bbl m-o-m to \$1.48/bbl, while WTI Midland fell by \$0.95/bbl to \$1.28/bbl. Both dropped another \$0.65/bbl in early April as French refinery strikes reduced European demand. In recent times, France has been one of the largest importers of WTI, with the grade making up roughly 17% of the country's total crude imports in 2022. Meanwhile, Asian demand lifted US Gulf sour differentials. The Mars discount to WTI Houston decreased by \$1.71/bbl to -\$2.02/bbl. At the same time, WCS to WTI Houston narrowed sharply for a second month, by \$3.56/bbl to -\$9.46/bbl.

## Spot Crude Oil Prices and Differentials

(monthly and weekly averages, \$/bbl)

	Mar 2023						Week Commencing:					Last:
	Jan 2023	Feb 2023	Mar 2023	m-o-m Chg	y-o-y Chg		27 Feb	06 Mar	13 Mar	20 Mar	27 Mar	12 Apr
<b>Crudes</b>												
North Sea Dated	82.86	82.50	78.29	-4.21	-40.46		83.76	83.40	74.93	73.69	77.30	88.09
North Sea Mth 1	84.19	83.74	79.51	-4.23	-37.95		84.52	84.21	76.47	75.06	78.85	88.23
North Sea Mth 2	84.23	83.43	79.26	-4.17	-34.20		84.03	83.90	76.31	75.06	78.47	87.17
WTI (Cushing) Mth 1	78.11	76.84	73.37	-3.47	-35.15		77.65	77.42	69.77	69.42	73.80	83.26
WTI (Cushing) Mth 2	78.40	77.06	73.50	-3.56	-32.51		77.79	77.54	69.92	69.52	73.94	83.09
WTI (Houston) Mth 1	79.59	79.28	74.86	-4.43	-35.40		79.72	79.21	71.43	70.67	74.75	84.06
Urals FOB Primorsk	42.81	43.86	44.46	0.60	-40.22		47.86	47.80	42.23	40.24	44.71	56.59
Dubai (1st month)	80.41	82.05	78.42	-3.63	-32.07		82.37	82.48	77.61	73.96	77.15	85.49
<b>Differentials to Futures</b>												
North Sea Dated vs. ICE Brent	-1.04	-1.04	-0.92	0.12	-7.20		-0.48	0.10	-0.99	-1.65	-1.52	0.76
WTI (Cushing) Mth1 vs. NYMEX	-0.05	-0.02	0.00	0.02	-0.26		0.00	0.00	0.00	0.00	0.00	0.00
<b>Differentials to Physical Markers</b>												
WTI (Houston) vs. North Sea Mth 2	-4.64	-4.14	-4.40	-0.26	-1.20		-4.32	-4.70	-4.88	-4.39	-3.72	-3.11
WTI (Houston) vs. WTI (Cushing)	1.47	2.44	1.48	-0.96	-0.25		2.07	1.79	1.67	1.25	0.94	0.80
Urals FOB Prim vs. North Sea Dated	-40.05	-38.65	-33.83	4.81	0.24		-35.90	-35.60	-32.70	-33.45	-32.59	-31.50
Dubai vs. ICE Brent	-3.49	-1.49	-0.79	0.70	2.18		-1.88	-0.82	1.69	-1.38	-1.67	-1.84
Dubai vs. WTI (Cushing) Mth 2	2.02	4.99	4.92	-0.07	0.44		4.58	4.94	7.69	4.44	3.22	2.40
<b>Prompt Month Differentials</b>												
Forward North Sea Mth1-Mth2	-0.04	0.32	0.25	-0.07	-3.75		0.49	0.31	0.17	0.00	0.38	1.06
Forward WTI Cushing Mth1-Mth2	-0.28	-0.22	-0.13	0.09	-2.64		-0.13	-0.12	-0.15	-0.10	-0.13	0.17
Forward Dubai Mth1-Mth2	0.58	1.11	0.78	-0.33	-3.98		1.23	1.10	0.95	0.49	0.35	0.72

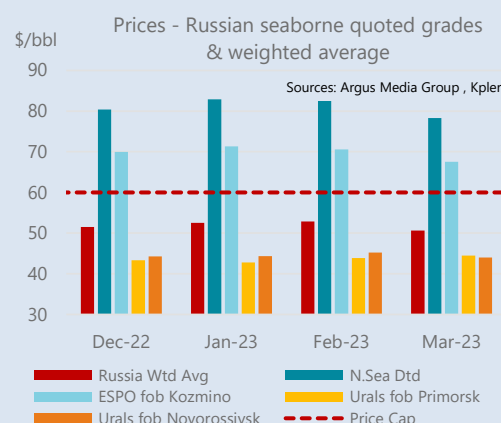
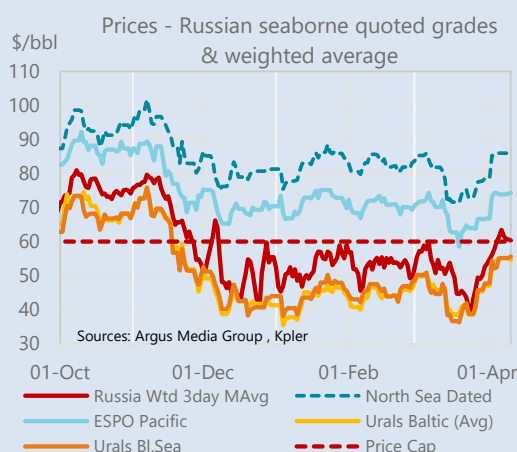
Source: Argus Media group, ICE, NYMEX

### G7 price caps - Russian oil export price review

The March average FOB price for seaborne Russian crude exports fell ~\$2/bbl versus February to \$50.67/bbl. Announced OPEC+ production cuts in early April drove up Russian oil prices. The weighted average beat the \$60/bbl cap starting 5 April. While ESPO leapt to around \$74/bbl, Urals FOB Baltic and Black Sea only just exceeded \$55/bbl, remaining eligible for EU services access. Discounts on most Russian crudes versus North Sea Dated narrowed from February through April, and more so on the sour barrels, reflecting demand for the deeply discounted supply as well as an expected tightening in sour crude markets generally. In March, losses in ESPO, loaded on Russia's Pacific coast (-\$3.10/bbl m-o-m) and Urals exported via the Black Sea (-\$1.23/bbl m-o-m) primarily dragged down the average the weighted average crude price.

	Russian Crude FOB Export Prices (\$/bbl)					Discounts to North Sea Dated		
	Jan-23	Feb-23	Mar-23	Jan - Feb	Feb - Mar	Jan-23	Feb-23	Mar-23
<b>N.Sea Dtd</b>	<b>82.86</b>	<b>82.50</b>	<b>78.29</b>	<b>-0.36</b>	<b>-4.21</b>			
Price Cap	60.00	60.00	60.00					
<b>Russia Wtd Avg</b>	<b>52.72</b>	<b>52.49</b>	<b>50.67</b>	<b>-0.23</b>	<b>-1.82</b>	<b>-30.14</b>	<b>-30.01</b>	<b>-27.63</b>
Urals fob Primorsk	42.81	43.86	44.46	1.04	0.60	-40.05	-38.65	-33.83
Urals fob Novorossiysk	44.37	45.23	44.00	0.86	-1.23	-38.50	-37.28	-34.30
ESPO fob Kozmino	71.34	70.60	67.53	-0.74	-3.07	-11.52	-11.90	-10.76

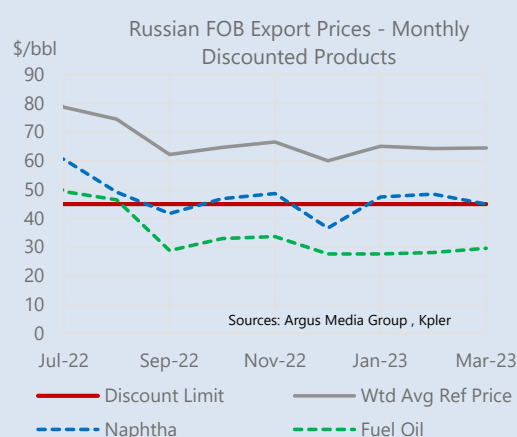
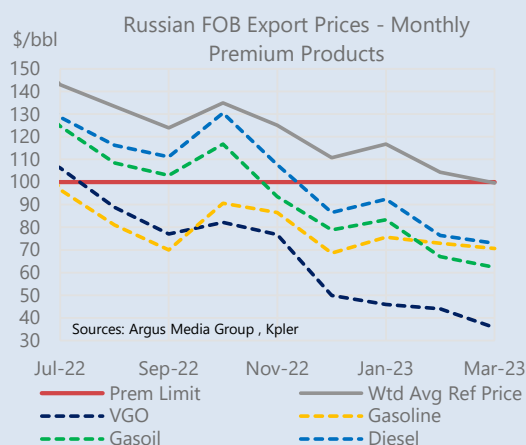
Sources: Argus Media, Kpler. Russia Wtd Avg includes Urals from Baltic ports and the Black Sea, Siberian Light and Espos.



Argus price assessments for premium products in the Baltic and Black Sea (gasoil, diesel, gasoline and VGO) remained well below the \$100/bbl price cap in March. With the announced cuts to Russian crude exports in early April, Russian premium product prices rose faster than Urals and boosted their cracks (gasoline +\$2.60/bbl, diesel +\$1.60/bbl, gasoil +\$1.10/bbl versus the March average value), but remained below the \$100/bbl price cap at \$70-90/bbl and VGO below \$50/bbl.

In March, discounted products (naphtha and 3.5% sulphur fuel oil from Baltic and Black Sea ports) were below the \$45/bbl price cap, with 3.5% fuel making gains while naphtha fell \$3.50/bbl to below \$45/bbl. Baltic cracks versus Urals for naphtha deteriorated in March versus February (-\$3/bbl m-o-m) and into April (-\$7.50/bbl m-o-m). For 3.5% fuel, Baltic cracks were relatively stable versus Urals from February to April (around -\$13.60/bbl).

Russian FOB Export Prices (\$/bbl)											
	Jan-23	Feb-23	Mar-23	Jan - Feb	Feb - Mar		Jan-23	Feb-23	Mar-23	Jan - Feb	Feb - Mar
Premium Products						Discounted Products					
Ref. Price	116.76	104.38	99.61	-12.38	-4.77	Ref. Price	65.06	64.34	64.55	-0.72	0.21
Price Cap	100.00	100.00	100.00			Price Cap	45.00	45.00	45.00		
Avg Price	81.78	68.71	62.39	-13.07	-6.32	Avg Price	35.22	33.41	34.94	-1.80	1.53
Gasoline	75.68	72.90	70.66	-2.78	-2.24	Naphtha	47.40	48.42	44.92	1.02	-3.49
Diesel	92.43	76.39	73.01	-16.04	-3.38	Fuel Oil	27.60	28.13	29.58	0.53	1.45
Gasoil	83.27	67.01	62.37	-16.26	-4.64	Sources: Argus Media Group, Kpler					
VGO	45.90	44.02	35.69	-1.88	-8.32	Note: Weighted avg prices from Baltic and Black Sea ports.					



Note: The EU's eighth sanctions package on Russia (6 October 2022) introduced price caps on Russian crude and product purchases below which deals must sit for EU operators to now provide maritime services. It aims to limit Russia's oil revenues while maintaining the flow of its oil to global markets and completes the EU's sixth sanctions package that banned use of EU maritime services to transport Russian oil. The EU agreed price caps of \$60/bbl for crude on 3 December and on 3 February \$100/bbl for "premium" products (priced above crude) and \$45/bbl for "discounted" products (priced at a discount to crude).

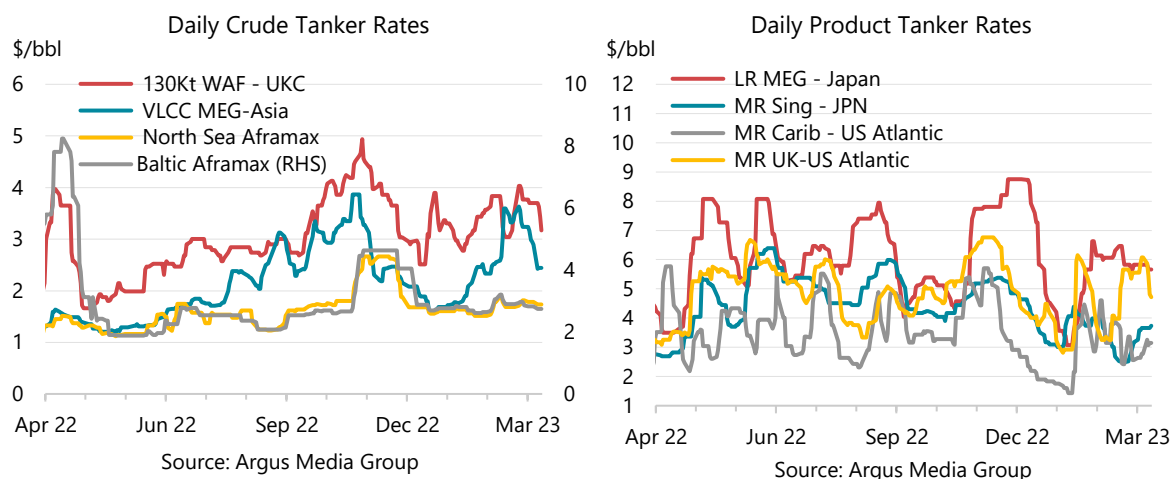
Argus Media Group publishes assessments of free-on-board prices (FOB, excluding freight and insurance costs) for Russian crudes amounting to ~86% of seaborne exports: Urals from Baltic ports (41%), Black Sea Urals (11%), ESPO (26%), Siberian Light (2%), Sakhalin Blend (2%) and Sokol (4%). They also publish discounts to European product prices for Russian product sold FOB Black Sea or Baltic.

The IEA calculates a weighted average Russian seaborne crude oil export price based on Argus' assessments and Kpler's seaborne export volumes by grade (pipeline flows are exempt from sanctions). This weighted average is considered by the coalition in their bi-monthly review of their price cap's effectiveness.

The weighted average reference prices in the above product price tables and charts represent the average of the European product prices to which Argus' discounts are applied for Russian cargos on a product-by-product basis. It is provided to allow a measure of the current discounts on Russian product prices.

## Freight

The tanker market continued to gain momentum in March, on the back of record US exports. Freight rates rebounded for both crude and product shipments, except for clean shipments within Asia. Charters for Medium Range (MR) vessels in the region dropped by \$0.94/bbl, having peaked in February at \$3.99/bbl. The decline was a result of weakening product exports in Asia, as seasonal refinery maintenance and healthy domestic demand slowed flows from regional exporters.



Dirty tanker rates were firm across all routes. VLCC rates moved higher by \$0.97/bbl m-o-m to \$3.14/bbl (their highest since Nov 2022), as a wave of US sour crudes sailed on VLCC's to China. Suezmax rates from West Africa to Northwest Europe rose by \$0.38/bbl m-o-m to \$3.60/bbl. Aframax rates for both the Baltic and North Sea rose by around \$0.2/bbl, as the French port strikes disrupted offloading and left ships waiting to discharge. As of 9 April, close to 9 mb of crude oil were tied up in floating storage outside France.

Freight Costs											
(monthly and weekly averages, \$/bbl)											
	Mar-23						Week Commencing				
	Mar-22	Jan 22	Feb 23	Mar 23	m-o-m chg	y-o-y chg	06-Mar	13-Mar	20-Mar	27-Mar	03-Apr
<b>Crude Tankers</b>											
VLCC MEG-Asia	1.33	1.07	2.16	3.14	0.97	1.81	3.09	3.39	3.40	3.04	2.44
130Kt WAF - UKC	1.87	1.25	3.22	3.60	0.38	1.73	3.37	3.26	3.91	3.71	3.48
Baltic Aframax	5.33	1.14	2.71	2.95	0.23	-2.38	3.07	2.90	2.95	2.83	2.75
North Sea Aframax	1.26	0.77	1.57	1.76	0.19	0.50	1.80	1.69	1.77	1.79	1.74
<b>Product Tankers</b>											
LR MEG - Japan	4.49	2.40	4.87	6.00	1.13	1.51	6.13	6.27	5.76	5.82	5.70
MR Sing - JPN	2.80	1.74	3.99	3.05	-0.94	0.25	3.03	2.51	2.85	3.55	3.68
MR Carib - US Atlantic	2.60	1.64	3.15	3.14	0.00	0.55	3.69	2.93	2.96	2.69	3.16
MR UK-US Atlantic	3.07	2.24	4.41	4.82	0.41	1.76	3.73	5.11	5.53	5.83	5.21

Source: Argus Media group

Long-range product tanker rates from the Middle East to Asia moved higher by \$1.13/bbl m-o-m, to \$6.00/bbl as Kuwait ramps up its new Al Zour refinery, sending more than 250 kb/d of product East in March. At the same time, rates for MR shipments in the Atlantic basin jumped by \$0.41/bbl, while MR tanker rates for inter-regional American trips were unchanged at \$3.14/bbl.



# Tables

**Table 1**  
**WORLD OIL SUPPLY AND DEMAND**  
(million barrels per day)

	2019	2020	1Q21	2Q21	3Q21	4Q21	2021	1Q22	2Q22	3Q22	4Q22	2022	1Q23	2Q23	3Q23	4Q23	2023
<b>OECD DEMAND</b>																	
Americas	25.4	22.4	22.9	24.4	24.8	25.1	24.3	24.8	25.0	25.3	24.9	25.0	24.6	25.2	25.5	25.0	25.1
Europe	14.3	12.4	12.0	12.7	13.9	14.0	13.1	13.2	13.4	14.1	13.3	13.5	13.0	13.6	14.1	13.6	13.6
Asia Oceania	7.9	7.2	7.7	7.0	7.1	7.8	7.4	7.9	7.0	7.2	7.7	7.4	7.8	7.1	7.4	7.9	7.6
<b>Total OECD</b>	<b>47.7</b>	<b>42.0</b>	<b>42.6</b>	<b>44.1</b>	<b>45.8</b>	<b>46.9</b>	<b>44.8</b>	<b>45.8</b>	<b>45.4</b>	<b>46.6</b>	<b>46.0</b>	<b>45.9</b>	<b>45.4</b>	<b>45.9</b>	<b>47.0</b>	<b>46.5</b>	<b>46.2</b>
<b>NON-OECD DEMAND</b>																	
FSU	4.7	4.6	4.6	4.7	5.0	5.1	4.9	4.7	4.7	5.1	5.1	4.9	4.8	4.7	4.9	4.9	4.8
Europe	0.8	0.7	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
China	14.1	14.2	14.9	15.6	15.6	15.6	15.4	15.4	14.4	14.8	15.4	15.0	15.8	15.9	16.3	16.6	16.2
Other Asia	14.1	12.7	13.7	13.0	12.8	13.9	13.4	14.1	14.0	13.5	14.0	13.9	14.4	14.2	13.9	14.6	14.3
Americas	6.3	5.5	5.7	5.8	6.1	6.1	5.9	5.9	6.1	6.3	6.2	6.1	6.0	6.2	6.3	6.3	6.2
Middle East	8.8	8.1	8.2	8.4	8.9	8.4	8.5	8.6	9.1	9.5	9.0	9.0	8.8	9.3	9.7	9.1	9.2
Africa	4.1	3.8	4.1	4.0	3.9	4.1	4.0	4.2	4.2	4.1	4.3	4.2	4.3	4.2	4.1	4.3	4.2
<b>Total Non-OECD</b>	<b>52.9</b>	<b>49.5</b>	<b>51.9</b>	<b>52.3</b>	<b>53.1</b>	<b>54.0</b>	<b>52.8</b>	<b>53.7</b>	<b>53.3</b>	<b>54.1</b>	<b>54.7</b>	<b>54.0</b>	<b>54.9</b>	<b>55.3</b>	<b>56.0</b>	<b>56.6</b>	<b>55.7</b>
<b>Total Demand<sup>1</sup></b>	<b>100.6</b>	<b>91.5</b>	<b>94.5</b>	<b>96.4</b>	<b>98.8</b>	<b>100.9</b>	<b>97.7</b>	<b>99.6</b>	<b>98.7</b>	<b>100.7</b>	<b>100.7</b>	<b>99.9</b>	<b>100.4</b>	<b>101.2</b>	<b>103.1</b>	<b>103.0</b>	<b>101.9</b>
<b>OECD SUPPLY</b>																	
Americas	24.8	23.9	23.4	24.3	24.3	25.2	24.3	24.9	25.3	26.1	26.3	25.6	26.4	26.8	27.1	27.2	26.9
Europe	3.4	3.6	3.6	3.1	3.4	3.4	3.4	3.3	3.0	3.1	3.2	3.2	3.3	3.2	3.2	3.3	3.2
Asia Oceania	0.5	0.5	0.5	0.5	0.6	0.5	0.5	0.5	0.5	0.4	0.5	0.5	0.5	0.4	0.5	0.5	0.5
<b>Total OECD<sup>2</sup></b>	<b>28.7</b>	<b>28.0</b>	<b>27.5</b>	<b>27.9</b>	<b>28.3</b>	<b>29.1</b>	<b>28.2</b>	<b>28.7</b>	<b>28.8</b>	<b>29.6</b>	<b>29.9</b>	<b>29.3</b>	<b>30.2</b>	<b>30.4</b>	<b>30.7</b>	<b>30.9</b>	<b>30.5</b>
<b>NON-OECD SUPPLY</b>																	
FSU	14.6	13.5	13.4	13.7	13.7	14.3	13.8	14.4	13.4	13.7	14.1	13.9	14.1	13.2	13.2	13.2	13.4
Europe	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
China	3.9	4.0	4.1	4.1	4.1	4.0	4.1	4.2	4.2	4.1	4.1	4.2	4.3	4.3	4.3	4.2	4.3
Other Asia	3.3	3.0	3.0	2.9	2.8	2.8	2.9	2.8	2.7	2.7	2.7	2.7	2.7	2.7	2.6	2.6	2.7
Americas	5.3	5.3	5.3	5.3	5.4	5.2	5.3	5.4	5.5	5.8	5.9	5.6	6.0	6.1	6.2	6.3	6.1
Middle East	3.0	3.0	3.1	3.1	3.1	3.1	3.1	3.1	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2
Africa	1.5	1.4	1.3	1.4	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
<b>Total Non-OECD<sup>2</sup></b>	<b>31.8</b>	<b>30.3</b>	<b>30.2</b>	<b>30.5</b>	<b>30.5</b>	<b>30.8</b>	<b>30.5</b>	<b>31.4</b>	<b>30.4</b>	<b>30.9</b>	<b>31.4</b>	<b>31.0</b>	<b>31.6</b>	<b>30.9</b>	<b>30.8</b>	<b>30.8</b>	<b>31.0</b>
Processing gains <sup>3</sup>	2.4	2.1	2.1	2.2	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.4	2.4	2.4	2.4
Global Biofuels	2.8	2.7	2.2	3.0	3.2	2.7	2.8	2.5	3.1	3.3	2.9	2.9	2.6	3.2	3.5	3.1	3.1
<b>Total Non-OPEC Supply</b>	<b>65.6</b>	<b>63.1</b>	<b>62.1</b>	<b>63.6</b>	<b>64.3</b>	<b>65.0</b>	<b>63.8</b>	<b>64.9</b>	<b>64.6</b>	<b>66.1</b>	<b>66.6</b>	<b>65.5</b>	<b>66.7</b>	<b>66.8</b>	<b>67.4</b>	<b>67.3</b>	<b>67.1</b>
<b>OPEC<sup>4</sup></b>																	
Crude	29.6	25.7	25.4	25.6	27.0	27.8	26.4	28.5	28.7	29.6	29.4	29.1	29.2				
NGLs	5.3	5.1	5.1	5.2	5.2	5.2	5.2	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.4	5.4	5.4
<b>Total OPEC</b>	<b>35.0</b>	<b>30.8</b>	<b>30.5</b>	<b>30.7</b>	<b>32.1</b>	<b>33.0</b>	<b>31.6</b>	<b>33.8</b>	<b>34.0</b>	<b>34.9</b>	<b>34.7</b>	<b>34.4</b>	<b>34.5</b>				
<b>Total Supply</b>	<b>100.6</b>	<b>93.9</b>	<b>92.6</b>	<b>94.3</b>	<b>96.4</b>	<b>98.0</b>	<b>95.3</b>	<b>98.7</b>	<b>98.7</b>	<b>101.0</b>	<b>101.2</b>	<b>99.9</b>	<b>101.3</b>				
<b>STOCK CHANGES AND MISCELLANEOUS</b>																	
<b>Reported OECD</b>																	
Industry	0.1	0.4	-1.2	-0.5	-1.2	-1.3	-1.1	-0.4	0.6	0.9	0.3	0.4					
Government	0.0	0.0	0.1	-0.2	-0.1	-0.3	-0.2	-0.5	-1.1	-1.1	-0.3	-0.7					
<b>Total</b>	<b>0.0</b>	<b>0.4</b>	<b>-1.2</b>	<b>-0.7</b>	<b>-1.4</b>	<b>-1.6</b>	<b>-1.2</b>	<b>-0.8</b>	<b>-0.5</b>	<b>-0.2</b>	<b>0.0</b>	<b>-0.4</b>					
Floating storage/Oil in transit	0.1	0.0	-0.5	-0.4	-0.3	1.1	0.0	-0.5	0.5	1.0	0.1	0.3					
Miscellaneous to balance <sup>5</sup>	-0.1	1.9	-0.2	-0.9	-0.7	-2.3	-1.1	0.5	-0.1	-0.5	0.4	0.1					
<b>Total Stock Ch. &amp; Misc</b>	<b>0.0</b>	<b>2.3</b>	<b>-1.9</b>	<b>-2.1</b>	<b>-2.4</b>	<b>-2.9</b>	<b>-2.3</b>	<b>-0.9</b>	<b>0.0</b>	<b>0.3</b>	<b>0.6</b>	<b>0.0</b>	<b>0.9</b>				
<b>Memo items:</b>																	
Call on OPEC crude & stock changes <sup>6</sup>	29.6	23.3	27.3	27.6	29.3	30.7	28.7	29.4	28.8	29.3	28.8	29.1	28.3	29.1	30.3	30.4	29.5

<sup>1</sup> Measured as deliveries from refineries and primary stocks, comprises inland deliveries, international marine bunkers, refinery fuel, crude for direct burning, oil from non-conventional sources and other sources of supply. Includes biofuels.

<sup>2</sup> Comprises crude oil, condensates, NGLs, oil from non-conventional sources and other sources of supply.

<sup>3</sup> Net volumetric gains and losses in the refining process and marine transportation losses.

<sup>4</sup> OPEC include current members throughout the time series.

<sup>5</sup> Includes changes in non-reported stocks in OECD and non-OECD.

<sup>6</sup> Total demand minus total non-OPEC supply minus OPEC NGLs.

For the purpose of this and the following tables :

- OECD comprises of Australia, Austria, Belgium, Canada, Chile, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Japan, Korea, Latvia, Lithuania, Luxembourg, Mexico, Netherlands, Norway, New Zealand, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland, Republic of Turkey, UK, US.

- OPEC comprises of Algeria, Angola, Congo, Equatorial Guinea, Gabon, Iran, Iraq, Kuwait, Libya, Neutralzone, Nigeria, Saudi Arabia, UAE, Venezuela.

- OPEC+ comprises of OPEC members throughout time series plus Sudan, South Sudan, Russia, Oman, Mexico, Malaysia, Kazakhstan, Brunei, Bahrain, Azerbaijan.

**Table 1a**  
**WORLD OIL SUPPLY AND DEMAND: CHANGES FROM LAST MONTH'S TABLE 1**  
(million barrels per day)

	2019	2020	1Q21	2Q21	3Q21	4Q21	2021	1Q22	2Q22	3Q22	4Q22	2022	1Q23	2Q23	3Q23	4Q23	2023
<b>OECD DEMAND</b>																	
Americas	-	-	-	-	-	-	-	-	-	-	-	-	-0.4	-	0.1	-0.1	-0.1
Europe	-	-	-	-	-	-	-	-	-	-	-	-	-0.1	-	-	-	-0.1
Asia Oceania	-	-	-	-	-	-	-	-	-	-	-	-	-0.1	-	-	-	-
<b>Total OECD</b>	-	-	-	-	-	-	-	-	-	-	-	-	<b>-0.6</b>	-	<b>0.1</b>	<b>-0.1</b>	<b>-0.2</b>
<b>NON-OECD DEMAND</b>																	
FSU	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Europe	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
China	-	-	-	-	-	-	-	-	-	-	-	-	0.6	0.1	0.2	-0.1	0.2
Other Asia	-	-	-	-	-	-	-	-	-	-	-	-	-0.1	-0.1	-0.1	-0.1	-0.1
Americas	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Middle East	-	-	-	-	-	-	-	-	-0.1	-0.1	-0.1	-0.1	0.1	-0.1	-0.1	-0.1	-0.1
Africa	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total Non-OECD</b>	-	-	-	-	-	-	-	-	<b>-0.1</b>	<b>-0.1</b>	<b>-0.1</b>	<b>-0.1</b>	<b>0.7</b>	<b>-0.1</b>	-	<b>-0.3</b>	<b>0.1</b>
<b>Total Demand</b>	-	-	-	-	-	-	-	-	<b>-0.1</b>	<b>-0.1</b>	<b>-0.1</b>	<b>-0.1</b>	<b>0.1</b>	<b>-0.1</b>	<b>0.1</b>	<b>-0.4</b>	<b>-0.1</b>
<b>OECD SUPPLY</b>																	
Americas	-	-	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-	-0.1	-0.1	-0.1	-0.1
Europe	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Asia Oceania	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total OECD</b>	-	-	<b>-0.1</b>	<b>-0.1</b>	<b>-0.1</b>	<b>-0.1</b>	<b>-0.1</b>	<b>-0.1</b>	<b>-0.1</b>	<b>-0.1</b>	<b>-0.1</b>	<b>-0.1</b>	-	<b>-0.1</b>	<b>-0.1</b>	<b>-0.1</b>	<b>-0.1</b>
<b>NON-OECD SUPPLY</b>																	
FSU	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.3	0.3	0.1
Europe	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
China	-	-	-	-	-	-	-	-	-	-	-	-	0.1	0.1	-	0.1	0.1
Other Asia	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Americas	-	-	-	-	-	-	-	-	-	-	0.1	-	-	-	-	-	-
Middle East	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Africa	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total Non-OECD</b>	-	-	-	-	-	-	-	-	-	-	<b>0.1</b>	-	<b>0.1</b>	-	<b>0.3</b>	<b>0.4</b>	<b>0.2</b>
Processing gains	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Global Biofuels	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total Non-OPEC Supply</b>	-	-	<b>-0.1</b>	<b>-0.1</b>	<b>-0.1</b>	<b>-0.1</b>	<b>-0.1</b>	<b>-0.1</b>	<b>-0.1</b>	<b>-0.1</b>	<b>-0.1</b>	<b>-0.1</b>	<b>0.1</b>	<b>-0.1</b>	<b>0.2</b>	<b>0.2</b>	<b>0.1</b>
<b>OPEC</b>																	
Crude	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NGLs	-	-	0.1	-	-	-	-	-	-	-0.1	-0.1	-	-	-	-	-	-
<b>Total OPEC</b>	-	-	<b>0.1</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total Supply</b>	-	-	-	-	-	<b>-0.1</b>	-	<b>-0.1</b>	<b>-0.2</b>	<b>-0.2</b>	<b>-0.1</b>	<b>-0.1</b>	-	-	-	-	-
<b>STOCK CHANGES AND MISCELLANEOUS</b>																	
<b>REPORTED OECD</b>																	
Industry	-	-	-	-	-	-	-	-	-	-	-0.2	-0.1	-	-	-	-	-
Government	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total</b>	-	-	-	-	-	-	-	-	-	-	<b>-0.2</b>	<b>-0.1</b>	-	-	-	-	-
Floating storage/Oil in transit	-	-	-	0.1	-	-	-	-	-	-	0.1	-	-	-	-	-	-
Miscellaneous to balance	-	-	-	-0.1	-	-0.1	-	-0.1	-0.1	-0.1	0.2	-	-	-	-	-	-
<b>Total Stock Ch. &amp; Misc</b>	-	-	-	-	-	<b>-0.1</b>	-	<b>-0.1</b>	<b>-0.1</b>	<b>-0.1</b>	-	<b>-0.1</b>	-	-	-	-	-
<b>Memo items:</b>																	
Call on OPEC crude & stock changes	-	-	-	-	-	0.1	-	0.1	0.1	0.1	-	0.1	-	-	-0.1	-0.6	-0.2

Note: When submitting monthly oil statistics, OECD member countries may update data for prior periods. Similar updates to non-OECD data can also occur.

**Table 1b**  
**WORLD OIL SUPPLY AND DEMAND (Including OPEC+ based on current agreement<sup>1</sup>)**  
(million barrels per day)

	2019	2020	1Q21	2Q21	3Q21	4Q21	2021	1Q22	2Q22	3Q22	4Q22	2022	1Q23	2Q23	3Q23	4Q23	2023
<b>Total Demand</b>	<b>100.6</b>	<b>91.5</b>	<b>94.5</b>	<b>96.4</b>	<b>98.8</b>	<b>100.9</b>	<b>97.7</b>	<b>99.6</b>	<b>98.7</b>	<b>100.7</b>	<b>100.7</b>	<b>99.9</b>	<b>100.4</b>	<b>101.2</b>	<b>103.1</b>	<b>103.0</b>	<b>101.9</b>
<b>OECD SUPPLY</b>																	
Americas <sup>2</sup>	22.8	21.9	21.5	22.3	22.4	23.3	22.4	22.9	23.3	24.0	24.2	23.6	24.3	24.6	24.9	25.0	24.7
Europe	3.4	3.6	3.6	3.1	3.4	3.4	3.4	3.3	3.0	3.1	3.2	3.2	3.3	3.2	3.2	3.3	3.2
Asia Oceania	0.5	0.5	0.5	0.5	0.6	0.5	0.5	0.5	0.5	0.4	0.5	0.5	0.5	0.4	0.5	0.5	0.5
<b>Total OECD (non-OPEC+)</b>	<b>26.7</b>	<b>26.0</b>	<b>25.6</b>	<b>25.9</b>	<b>26.3</b>	<b>27.2</b>	<b>26.3</b>	<b>26.7</b>	<b>26.8</b>	<b>27.6</b>	<b>27.9</b>	<b>27.3</b>	<b>28.1</b>	<b>28.2</b>	<b>28.5</b>	<b>28.8</b>	<b>28.4</b>
<b>NON-OECD SUPPLY</b>																	
FSU <sup>3</sup>	0.4	0.4	0.4	0.4	0.4	0.3	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Europe	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
China	3.9	4.0	4.1	4.1	4.1	4.0	4.1	4.2	4.2	4.1	4.1	4.2	4.3	4.3	4.3	4.2	4.3
Other Asia <sup>4</sup>	2.5	2.3	2.2	2.2	2.2	2.1	2.2	2.1	2.1	2.0	2.0	2.1	2.0	2.0	2.0	2.0	2.0
Latin America	5.3	5.3	5.3	5.3	5.4	5.2	5.3	5.4	5.5	5.8	5.9	5.6	6.0	6.1	6.2	6.3	6.1
Middle East <sup>5</sup>	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
Africa <sup>6</sup>	1.2	1.2	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
<b>Total Non-OECD (non-OPEC+)</b>	<b>15.3</b>	<b>15.1</b>	<b>15.1</b>	<b>15.1</b>	<b>15.2</b>	<b>14.8</b>	<b>15.0</b>	<b>15.2</b>	<b>15.2</b>	<b>15.4</b>	<b>15.5</b>	<b>15.3</b>	<b>15.8</b>	<b>15.9</b>	<b>15.9</b>	<b>15.9</b>	<b>15.9</b>
Processing Gains	2.4	2.1	2.1	2.2	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.4	2.4	2.4	2.4
Global Biofuels	2.8	2.7	2.2	3.0	3.2	2.7	2.8	2.5	3.1	3.3	2.9	2.9	2.6	3.2	3.5	3.1	3.1
<b>Total Non-OPEC+</b>	<b>47.2</b>	<b>45.9</b>	<b>45.0</b>	<b>46.2</b>	<b>47.0</b>	<b>47.0</b>	<b>46.3</b>	<b>46.7</b>	<b>47.4</b>	<b>48.5</b>	<b>48.6</b>	<b>47.8</b>	<b>48.8</b>	<b>49.7</b>	<b>50.3</b>	<b>50.2</b>	<b>49.8</b>
<b>OPEC+ CRUDE</b>																	
Algeria	1.0	0.9	0.9	0.9	0.9	1.0	0.9	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Angola	1.4	1.3	1.1	1.1	1.1	1.1	1.1	1.2	1.2	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
Azerbaijan	0.7	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.5	0.6	0.5	0.5	0.5	0.6	0.5
Bahrain	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Brunei	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Congo	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Equatorial Guinea	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Gabon	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Iran	2.4	2.0	2.3	2.4	2.5	2.5	2.4	2.5	2.5	2.5	2.6	2.5	2.6	2.7	2.7	2.7	2.6
Iraq	4.7	4.0	3.9	3.9	4.1	4.2	4.0	4.3	4.4	4.5	4.5	4.4	4.4	4.2	4.2	4.2	4.3
Kazakhstan	1.6	1.5	1.5	1.5	1.4	1.7	1.5	1.6	1.4	1.4	1.6	1.5	1.6	1.5	1.5	1.6	1.6
Kuwait	2.7	2.4	2.3	2.4	2.4	2.5	2.4	2.6	2.7	2.8	2.7	2.7	2.7	2.6	2.5	2.5	2.6
Libya	1.1	0.4	1.2	1.2	1.2	1.1	1.1	1.1	0.8	1.0	1.2	1.0	1.2	1.2	1.2	1.2	1.2
Malaysia	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Mexico	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.6	1.6	1.6	1.6	1.6	1.7	1.7	1.7	1.7	1.7
Nigeria	1.7	1.5	1.4	1.3	1.3	1.2	1.3	1.3	1.2	1.0	1.1	1.1	1.3	1.3	1.3	1.3	1.3
Oman	0.8	0.8	0.7	0.7	0.8	0.8	0.8	0.8	0.8	0.9	0.9	0.8	0.8	0.8	0.8	0.8	0.8
Russia	10.4	9.4	9.3	9.5	9.7	10.0	9.6	10.0	9.4	9.8	9.8	9.8	9.7	9.1	9.0	9.0	9.2
Saudi Arabia	9.9	9.2	8.5	8.6	9.6	9.9	9.2	10.2	10.4	10.9	10.6	10.5	10.4	10.1	10.0	10.0	10.1
South Sudan	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Sudan	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
UAE	3.2	2.9	2.7	2.7	2.8	2.9	2.8	3.1	3.3	3.4	3.4	3.3	3.3	3.2	3.2	3.2	3.2
Venezuela	0.9	0.5	0.5	0.5	0.6	0.8	0.6	0.7	0.7	0.7	0.7	0.7	0.7	0.8	0.8	0.8	0.8
<b>OPEC+ Crude</b>	<b>45.9</b>	<b>40.6</b>	<b>40.0</b>	<b>40.5</b>	<b>42.0</b>	<b>43.3</b>	<b>41.5</b>	<b>44.1</b>	<b>43.4</b>	<b>44.6</b>	<b>44.6</b>	<b>44.2</b>	<b>44.4</b>	<b>43.2</b>	<b>42.9</b>	<b>42.8</b>	<b>43.3</b>
OPEC+ NGLs & Condensate	7.4	7.3	7.4	7.4	7.3	7.6	7.4	7.7	7.7	7.7	7.9	7.8	8.0	7.8	7.8	7.9	7.9
OPEC+ Nonconventionals	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
<b>Total OPEC+</b>	<b>53.4</b>	<b>47.9</b>	<b>47.6</b>	<b>48.1</b>	<b>49.4</b>	<b>51.0</b>	<b>49.0</b>	<b>52.0</b>	<b>51.3</b>	<b>52.4</b>	<b>52.6</b>	<b>52.1</b>	<b>52.5</b>	<b>51.1</b>	<b>50.8</b>	<b>50.8</b>	<b>51.3</b>
<b>Total Supply Oil</b>	<b>100.6</b>	<b>93.9</b>	<b>92.6</b>	<b>94.3</b>	<b>96.4</b>	<b>98.0</b>	<b>95.3</b>	<b>98.7</b>	<b>98.7</b>	<b>101.0</b>	<b>101.2</b>	<b>99.9</b>	<b>101.3</b>	<b>100.8</b>	<b>101.1</b>	<b>101.0</b>	<b>101.1</b>
<b>Memo items:</b>																	
Call on OPEC+ crude & stock changes	45.9	38.2	41.9	42.6	44.3	46.2	43.8	45.0	43.5	44.3	44.1	44.2	43.5	43.6	44.8	44.9	44.2

<sup>1</sup> From Apr 2023, OPEC+ supply reflects latest OPEC+ deal and individual country's sustainable capacity. Libya, Iran, Venezuela held at most recent level through 2023.

<sup>2</sup> OECD Americas excludes Mexico.

<sup>3</sup> FSU excludes Russia, Kazakhstan, Azerbaijan.

<sup>4</sup> Other Asia excludes Brunei, Malaysia.

<sup>5</sup> Middle East excludes Oman, Bahrain.

<sup>6</sup> Africa excludes Sudan, South Sudan.

**Table 2**  
**SUMMARY OF GLOBAL OIL DEMAND**

	2020	1Q21	2Q21	3Q21	4Q21	2021	1Q22	2Q22	3Q22	4Q22	2022	1Q23	2Q23	3Q23	4Q23	2023
<b>Demand (mb/d)</b>																
Americas	22.45	22.93	24.39	24.79	25.13	24.32	24.77	24.98	25.33	24.95	25.01	24.62	25.15	25.52	25.04	25.09
Europe	12.41	11.96	12.67	13.89	13.95	13.13	13.19	13.43	14.06	13.34	13.51	12.98	13.62	14.11	13.56	13.57
Asia Oceania	7.17	7.68	7.00	7.07	7.78	7.38	7.85	6.98	7.22	7.68	7.43	7.81	7.14	7.40	7.86	7.55
<b>Total OECD</b>	<b>42.03</b>	<b>42.57</b>	<b>44.06</b>	<b>45.75</b>	<b>46.86</b>	<b>44.82</b>	<b>45.81</b>	<b>45.40</b>	<b>46.62</b>	<b>45.97</b>	<b>45.95</b>	<b>45.42</b>	<b>45.92</b>	<b>47.03</b>	<b>46.46</b>	<b>46.21</b>
Asia	26.93	28.55	28.61	28.35	29.56	28.77	29.54	28.45	28.28	29.37	28.91	30.21	30.18	30.14	31.22	30.44
Middle East	8.07	8.16	8.43	8.89	8.44	8.48	8.57	9.12	9.51	8.98	9.05	8.83	9.28	9.68	9.06	9.21
Americas	5.45	5.74	5.80	6.13	6.09	5.94	5.92	6.09	6.28	6.21	6.12	6.04	6.18	6.33	6.28	6.21
FSU	4.56	4.63	4.74	4.99	5.05	4.86	4.73	4.72	5.08	5.06	4.90	4.83	4.70	4.94	4.90	4.84
Africa	3.77	4.06	3.97	3.92	4.11	4.01	4.21	4.16	4.12	4.29	4.20	4.27	4.20	4.15	4.32	4.23
Europe	0.72	0.76	0.76	0.78	0.79	0.77	0.78	0.77	0.79	0.80	0.78	0.78	0.78	0.79	0.80	0.79
<b>Total Non-OECD</b>	<b>49.51</b>	<b>51.91</b>	<b>52.31</b>	<b>53.06</b>	<b>54.05</b>	<b>52.84</b>	<b>53.75</b>	<b>53.30</b>	<b>54.07</b>	<b>54.72</b>	<b>53.96</b>	<b>54.95</b>	<b>55.32</b>	<b>56.04</b>	<b>56.58</b>	<b>55.73</b>
<b>World</b>	<b>91.54</b>	<b>94.47</b>	<b>96.37</b>	<b>98.81</b>	<b>100.90</b>	<b>97.66</b>	<b>99.56</b>	<b>98.70</b>	<b>100.69</b>	<b>100.68</b>	<b>99.91</b>	<b>100.36</b>	<b>101.24</b>	<b>103.07</b>	<b>103.04</b>	<b>101.94</b>
of which:																
United States <sup>1</sup>	18.19	18.58	20.13	20.30	20.54	19.89	20.22	20.27	20.47	20.16	20.28	20.01	20.32	20.57	20.22	20.28
Europe 5 <sup>2</sup>	6.91	6.67	7.06	7.66	7.81	7.31	7.42	7.60	7.87	7.41	7.58	7.23	7.61	7.87	7.47	7.55
China	14.20	14.87	15.58	15.58	15.64	15.42	15.39	14.40	14.82	15.39	15.00	15.84	15.94	16.27	16.58	16.16
Japan	3.36	3.77	3.07	3.17	3.66	3.41	3.70	3.03	3.19	3.56	3.37	3.72	3.05	3.23	3.59	3.39
India	4.58	5.04	4.49	4.52	5.02	4.77	5.25	5.16	4.88	5.29	5.15	5.44	5.32	5.10	5.55	5.35
Russia	3.42	3.50	3.59	3.77	3.75	3.66	3.65	3.60	3.94	3.85	3.76	3.70	3.54	3.75	3.65	3.66
Brazil	2.87	2.91	2.92	3.13	3.06	3.01	2.95	3.00	3.17	3.15	3.07	3.03	3.09	3.22	3.22	3.14
Saudi Arabia	3.45	3.24	3.53	3.76	3.44	3.49	3.34	3.83	3.97	3.73	3.72	3.46	3.85	4.05	3.75	3.78
Canada	2.17	2.22	2.13	2.35	2.34	2.26	2.24	2.21	2.38	2.30	2.28	2.18	2.27	2.41	2.31	2.30
Korea	2.45	2.54	2.49	2.59	2.69	2.58	2.73	2.49	2.54	2.57	2.58	2.59	2.56	2.63	2.68	2.62
Mexico	1.60	1.63	1.66	1.61	1.72	1.65	1.76	1.99	1.96	1.95	1.92	1.89	2.03	1.99	1.97	1.97
Iran	1.76	1.90	1.81	1.81	1.81	1.83	1.91	1.84	1.83	1.82	1.85	1.92	1.85	1.84	1.82	1.86
<b>Total</b>	<b>64.95</b>	<b>66.86</b>	<b>68.45</b>	<b>70.25</b>	<b>71.48</b>	<b>69.27</b>	<b>70.57</b>	<b>69.40</b>	<b>71.02</b>	<b>71.18</b>	<b>70.54</b>	<b>70.99</b>	<b>71.44</b>	<b>72.94</b>	<b>72.81</b>	<b>72.05</b>
% of World	71.0%	70.8%	71.0%	71.1%	70.8%	70.9%	70.9%	70.3%	70.5%	70.7%	70.6%	70.7%	70.6%	70.8%	70.7%	70.7%
<b>Annual Change (% per annum)</b>																
Americas	-11.6	-5.5	22.7	9.7	9.1	8.3	8.0	2.5	2.2	-0.7	2.9	-0.6	0.7	0.7	0.4	0.3
Europe	-13.3	-10.2	15.3	8.1	11.7	5.7	10.3	6.0	1.2	-4.4	2.9	-1.6	1.5	0.3	1.6	0.5
Asia Oceania	-9.8	-2.6	5.6	4.4	5.5	3.0	2.3	-0.2	2.1	-1.3	0.7	-0.5	2.3	2.4	2.4	1.6
<b>Total OECD</b>	<b>-11.8</b>	<b>-6.4</b>	<b>17.5</b>	<b>8.3</b>	<b>9.2</b>	<b>6.6</b>	<b>7.6</b>	<b>3.0</b>	<b>1.9</b>	<b>-1.9</b>	<b>2.5</b>	<b>-0.8</b>	<b>1.2</b>	<b>0.9</b>	<b>1.1</b>	<b>0.6</b>
Asia	-4.4	11.8	9.4	3.8	3.1	6.8	3.4	-0.6	-0.3	-0.6	0.5	2.3	6.1	6.6	6.3	5.3
Middle East	-8.7	-1.8	12.9	5.8	4.2	5.1	5.0	8.2	7.0	6.4	6.6	3.0	1.8	1.7	0.9	1.8
Americas	-13.5	2.7	18.4	10.2	6.0	9.0	3.1	4.9	2.4	1.9	3.1	1.9	1.5	0.9	1.2	1.4
FSU	-3.5	0.0	14.5	5.5	6.8	6.5	2.1	-0.4	2.0	0.1	0.9	2.1	-0.4	-2.8	-3.1	-1.1
Africa	-8.8	-0.8	15.7	6.0	6.3	6.4	3.7	4.7	5.3	4.6	4.6	1.3	1.0	0.6	0.5	0.8
Europe	-7.5	4.1	12.3	5.9	4.5	6.6	2.6	1.8	1.4	1.2	1.7	-0.2	1.6	0.2	0.8	0.6
<b>Total Non-OECD</b>	<b>-6.5</b>	<b>6.2</b>	<b>11.8</b>	<b>5.2</b>	<b>4.2</b>	<b>6.7</b>	<b>3.5</b>	<b>1.9</b>	<b>1.9</b>	<b>1.2</b>	<b>2.1</b>	<b>2.2</b>	<b>3.8</b>	<b>3.6</b>	<b>3.4</b>	<b>3.3</b>
<b>World</b>	<b>-9.0</b>	<b>0.1</b>	<b>14.3</b>	<b>6.6</b>	<b>6.5</b>	<b>6.7</b>	<b>5.4</b>	<b>2.4</b>	<b>1.9</b>	<b>-0.2</b>	<b>2.3</b>	<b>0.8</b>	<b>2.6</b>	<b>2.4</b>	<b>2.3</b>	<b>2.0</b>
<b>Annual Change (mb/d)</b>																
Americas	-2.95	-1.34	4.51	2.18	2.09	1.87	1.83	0.60	0.55	-0.18	0.69	-0.15	0.17	0.18	0.09	0.08
Europe	-1.90	-1.36	1.68	1.04	1.46	0.71	1.23	0.75	0.17	-0.61	0.38	-0.20	0.20	0.05	0.22	0.07
Asia Oceania	-0.78	-0.21	0.37	0.30	0.40	0.22	0.18	-0.01	0.15	-0.10	0.05	-0.04	0.16	0.18	0.18	0.12
<b>Total OECD</b>	<b>-5.63</b>	<b>-2.90</b>	<b>6.56</b>	<b>3.52</b>	<b>3.96</b>	<b>2.79</b>	<b>3.24</b>	<b>1.34</b>	<b>0.87</b>	<b>-0.89</b>	<b>1.13</b>	<b>-0.39</b>	<b>0.53</b>	<b>0.41</b>	<b>0.49</b>	<b>0.26</b>
Asia	-1.23	3.01	2.45	1.05	0.88	1.84	0.98	-0.16	-0.07	-0.19	0.14	0.67	1.73	1.86	1.84	1.53
Middle East	-0.77	-0.15	0.96	0.48	0.34	0.41	0.41	0.69	0.62	0.54	0.56	0.26	0.16	0.17	0.08	0.17
Americas	-0.85	0.15	0.90	0.57	0.34	0.49	0.18	0.28	0.15	0.12	0.18	0.11	0.09	0.06	0.07	0.08
FSU	-0.16	0.00	0.60	0.26	0.32	0.30	0.10	-0.02	0.10	0.00	0.04	0.10	-0.02	-0.14	-0.15	-0.06
Africa	-0.36	-0.03	0.54	0.22	0.24	0.24	0.15	0.19	0.21	0.19	0.18	0.05	0.04	0.02	0.02	0.03
Europe	-0.06	0.03	0.08	0.04	0.03	0.05	0.02	0.01	0.01	0.01	0.01	0.00	0.01	0.00	0.01	0.00
<b>Total Non-OECD</b>	<b>-3.43</b>	<b>3.01</b>	<b>5.53</b>	<b>2.62</b>	<b>2.16</b>	<b>3.33</b>	<b>1.84</b>	<b>0.99</b>	<b>1.01</b>	<b>0.67</b>	<b>1.12</b>	<b>1.20</b>	<b>2.02</b>	<b>1.96</b>	<b>1.87</b>	<b>1.76</b>
<b>World</b>	<b>-9.06</b>	<b>0.11</b>	<b>12.09</b>	<b>6.14</b>	<b>6.12</b>	<b>5.08</b>	<b>2.33</b>	<b>1.88</b>	<b>-0.22</b>	<b>2.25</b>	<b>0.81</b>	<b>2.55</b>	<b>2.37</b>	<b>2.36</b>	<b>2.03</b>	<b>2.03</b>
<b>Revisions to Oil Demand from Last Month's Report (mb/d)</b>																
Americas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.03	-0.01	-0.36	0.03	0.06	-0.10	-0.09
Europe	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.15	-0.01	0.00	-0.05	-0.05
Asia Oceania	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.07	0.01	0.01	0.02	-0.01
<b>Total OECD</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-0.03</b>	<b>-0.01</b>	<b>-0.58</b>	<b>0.02</b>	<b>0.06</b>	<b>-0.13</b>	<b>-0.15</b>
Asia	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.01	0.51	-0.01	0.12	-0.16	0.11
Middle East	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.07	-0.11	-0.11	-0.08	0.05	-0.08	-0.08	-0.10	-0.05
Americas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.01
FSU	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	-0.01	-0.01	-0.02	0.00
Africa	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00	-0.01	0.00	0.01
Europe	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Total Non-OECD</b>	<b>-</b>	<b>-0.00</b>	<b>-0.00</b>	<b>-0.00</b>	<b>-</b>	<b>-0.00</b>	<b>-</b>	<b>-0.07</b>	<b>-0.07</b>	<b>-0.12</b>	<b>-0.07</b>	<b>0.67</b>	<b>-0.10</b>	<b>0.02</b>	<b>-0.28</b>	<b>0.07</b>
<b>World</b>	<b>-</b>	<b>-0.00</b>	<b>-0.00</b>	<b>-0.00</b>	<b>-</b>	<b>-0.00</b>	<b>-</b>	<b>-0.07</b>	<b>-0.07</b>	<b>-0.14</b>	<b>-0.07</b>	<b>0.10</b>	<b>-0.08</b>	<b>0.08</b>	<b>-0.41</b>	<b>-0.08</b>
<b>Revisions to Oil Demand Growth from Last Month's Report (mb/d)</b>																
World	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.07	-0.07	-0.14	-0.07	0.10	-0.01	0.15	-0.27	-0.01

<sup>1</sup> US figures exclude US territories.

<sup>2</sup> France, Germany, Italy, Spain and UK.

**Table 2a**  
**OECD REGIONAL OIL DEMAND<sup>1</sup>**  
(million barrels per day)

	Latest month vs.									
	2021	2022	1Q22	2Q22	3Q22	4Q22	Nov 22	Dec 22	Jan 23 <sup>2</sup>	Dec 22 Jan 22
<b>Americas</b>										
LPG and ethane	3.69	3.84	4.18	3.62	3.78	3.79	3.85	3.83	3.98	0.15 -0.51
Naphtha	0.25	0.21	0.22	0.21	0.20	0.20	0.21	0.21	0.22	0.01 -0.03
Motor gasoline	10.34	10.44	10.04	10.70	10.59	10.42	10.54	10.26	9.80	-0.46 0.35
Jet and kerosene	1.56	1.83	1.69	1.87	1.89	1.86	1.86	1.91	1.83	-0.08 0.17
Gasoil/diesel oil	5.06	5.19	5.33	5.14	5.09	5.20	5.36	4.92	5.04	0.12 -0.12
Residual fuel oil	0.55	0.56	0.59	0.54	0.61	0.52	0.56	0.48	0.50	0.02 -0.06
Other products	2.85	2.94	2.72	2.91	3.17	2.94	3.01	2.77	2.69	-0.08 0.12
<b>Total</b>	<b>24.31</b>	<b>25.01</b>	<b>24.77</b>	<b>24.98</b>	<b>25.33</b>	<b>24.95</b>	<b>25.39</b>	<b>24.38</b>	<b>24.06</b>	<b>-0.32 -0.08</b>
<b>Europe</b>										
LPG and ethane	1.10	1.03	1.11	0.95	1.09	0.98	0.98	1.06	1.13	0.07 0.09
Naphtha	1.12	0.97	1.15	1.01	0.87	0.84	0.85	0.84	0.96	0.12 -0.28
Motor gasoline	1.93	2.04	1.88	2.08	2.16	2.04	2.08	2.03	1.82	-0.21 0.08
Jet and kerosene	0.86	1.27	1.02	1.29	1.49	1.29	1.21	1.25	1.20	-0.05 0.24
Gasoil/diesel oil	6.25	6.23	6.16	6.10	6.37	6.30	6.37	6.33	5.37	-0.97 -0.27
Residual fuel oil	0.76	0.82	0.79	0.84	0.85	0.81	0.80	0.82	0.79	-0.03 0.00
Other products	1.10	1.13	1.07	1.16	1.23	1.07	1.12	0.96	0.96	0.00 -0.07
<b>Total</b>	<b>13.13</b>	<b>13.51</b>	<b>13.19</b>	<b>13.43</b>	<b>14.06</b>	<b>13.34</b>	<b>13.41</b>	<b>13.30</b>	<b>12.23</b>	<b>-1.07 -0.21</b>
<b>Asia Oceania</b>										
LPG and ethane	0.77	0.82	0.94	0.77	0.74	0.83	0.84	0.95	0.95	-0.01 0.02
Naphtha	1.95	1.86	1.93	1.78	1.90	1.84	1.88	1.93	1.96	0.03 -0.07
Motor gasoline	1.35	1.35	1.28	1.30	1.42	1.40	1.34	1.50	1.26	-0.24 -0.02
Jet and kerosene	0.61	0.69	0.87	0.51	0.53	0.84	0.75	1.09	1.03	-0.06 0.07
Gasoil/diesel oil	1.89	1.93	1.95	1.86	1.90	2.00	1.99	2.09	1.83	-0.27 -0.06
Residual fuel oil	0.45	0.48	0.52	0.45	0.47	0.50	0.50	0.54	0.55	0.01 0.00
Other products	0.36	0.30	0.36	0.31	0.25	0.27	0.26	0.28	0.24	-0.03 -0.10
<b>Total</b>	<b>7.38</b>	<b>7.43</b>	<b>7.85</b>	<b>6.98</b>	<b>7.22</b>	<b>7.68</b>	<b>7.56</b>	<b>8.38</b>	<b>7.82</b>	<b>-0.57 -0.17</b>
<b>OECD</b>										
LPG and ethane	5.56	5.70	6.23	5.34	5.61	5.60	5.67	5.84	6.06	0.22 -0.40
Naphtha	3.33	3.04	3.30	3.00	2.97	2.89	2.95	2.98	3.13	0.15 -0.38
Motor gasoline	13.62	13.83	13.20	14.08	14.17	13.86	13.95	13.79	12.88	-0.91 0.41
Jet and kerosene	3.03	3.79	3.59	3.67	3.91	3.98	3.82	4.25	4.06	-0.19 0.47
Gasoil/diesel oil	13.20	13.35	13.43	13.09	13.37	13.50	13.72	13.35	12.24	-1.11 -0.46
Residual fuel oil	1.76	1.87	1.91	1.82	1.93	1.83	1.86	1.85	1.84	0.00 -0.05
Other products	4.32	4.37	4.15	4.38	4.65	4.29	4.39	4.01	3.89	-0.12 -0.05
<b>Total</b>	<b>44.82</b>	<b>45.95</b>	<b>45.81</b>	<b>45.40</b>	<b>46.62</b>	<b>45.97</b>	<b>46.36</b>	<b>46.06</b>	<b>44.10</b>	<b>-1.96 -0.46</b>

<sup>1</sup> Demand, measured as deliveries from refineries and primary stocks, comprises inland deliveries, international bunkers and refinery fuel. It includes crude for direct burning, oil from non-conventional sources and other sources of supply. Jet/kerosene comprises jet kerosene and non-aviation kerosene. Gasoil comprises diesel, light heating oil and other gasoils. Americas comprises US 50 states, US territories, Mexico, Canada and Chile.

<sup>2</sup> Latest official OECD submissions (MOS).

**Table 2b**  
**OIL DEMAND IN SELECTED OECD COUNTRIES<sup>1</sup>**  
(million barrels per day)

	2021	2022	1Q22	2Q22	3Q22	4Q22	Nov 22	Dec 22	Jan 23 <sup>2</sup>	Latest month vs.	
										Dec 22	Jan 22
<b>United States<sup>3</sup></b>											
LPG and ethane	2.88	3.06	3.37	2.89	2.95	3.01	3.07	3.03	3.23	0.21	-0.39
Naphtha	0.19	0.14	0.15	0.14	0.13	0.13	0.14	0.13	0.14	0.01	-0.02
Motor gasoline	8.82	8.78	8.47	9.00	8.88	8.75	8.85	8.57	8.28	-0.29	0.30
Jet and kerosene	1.38	1.56	1.46	1.61	1.60	1.58	1.61	1.61	1.55	-0.06	0.11
Gasoil/diesel oil	3.97	3.96	4.14	3.89	3.86	3.96	4.06	3.72	3.90	0.18	-0.18
Residual fuel oil	0.31	0.34	0.38	0.31	0.39	0.30	0.35	0.26	0.28	0.02	-0.06
Other products	2.35	2.44	2.24	2.43	2.65	2.43	2.51	2.18	2.16	-0.02	0.05
<b>Total</b>	<b>19.89</b>	<b>20.28</b>	<b>20.22</b>	<b>20.27</b>	<b>20.47</b>	<b>20.16</b>	<b>20.59</b>	<b>19.49</b>	<b>19.54</b>	<b>0.05</b>	<b>-0.19</b>
<b>Japan</b>											
LPG and ethane	0.40	0.43	0.49	0.40	0.37	0.45	0.44	0.55	0.55	0.00	0.05
Naphtha	0.70	0.62	0.63	0.56	0.62	0.65	0.66	0.65	0.67	0.02	-0.02
Motor gasoline	0.73	0.71	0.67	0.68	0.75	0.72	0.68	0.77	0.65	-0.12	-0.01
Jet and kerosene	0.37	0.38	0.58	0.25	0.24	0.47	0.41	0.68	0.63	-0.05	-0.01
Diesel	0.42	0.43	0.43	0.41	0.43	0.44	0.44	0.45	0.38	-0.07	-0.02
Other gasoil	0.32	0.33	0.37	0.30	0.30	0.34	0.34	0.38	0.34	-0.04	-0.02
Residual fuel oil	0.25	0.27	0.29	0.24	0.26	0.28	0.28	0.29	0.33	0.04	0.02
Other products	0.22	0.21	0.23	0.18	0.22	0.21	0.20	0.22	0.22	0.00	0.00
<b>Total</b>	<b>3.41</b>	<b>3.37</b>	<b>3.70</b>	<b>3.03</b>	<b>3.19</b>	<b>3.56</b>	<b>3.45</b>	<b>4.00</b>	<b>3.77</b>	<b>-0.23</b>	<b>-0.02</b>
<b>Germany</b>											
LPG and ethane	0.12	0.11	0.11	0.11	0.10	0.09	0.09	0.09	0.09	0.00	-0.02
Naphtha	0.32	0.30	0.35	0.33	0.25	0.25	0.27	0.23	0.26	0.02	-0.11
Motor gasoline	0.45	0.45	0.43	0.46	0.48	0.45	0.48	0.43	0.42	-0.01	0.01
Jet and kerosene	0.13	0.19	0.15	0.20	0.22	0.21	0.18	0.20	0.18	-0.02	0.03
Diesel	0.71	0.71	0.68	0.68	0.74	0.72	0.77	0.69	0.59	-0.10	-0.05
Other gasoil	0.27	0.29	0.29	0.25	0.31	0.31	0.30	0.32	0.25	-0.07	-0.01
Residual fuel oil	0.05	0.05	0.06	0.05	0.05	0.04	0.04	0.04	0.04	0.00	-0.04
Other products	0.07	0.07	0.06	0.07	0.10	0.06	0.06	0.02	0.06	0.03	0.00
<b>Total</b>	<b>2.13</b>	<b>2.17</b>	<b>2.15</b>	<b>2.15</b>	<b>2.26</b>	<b>2.13</b>	<b>2.19</b>	<b>2.03</b>	<b>1.87</b>	<b>-0.16</b>	<b>-0.19</b>
<b>Italy</b>											
LPG and ethane	0.11	0.11	0.13	0.10	0.10	0.11	0.11	0.13	0.12	0.00	0.01
Naphtha	0.09	0.08	0.10	0.07	0.06	0.07	0.07	0.07	0.07	0.00	-0.02
Motor gasoline	0.17	0.18	0.16	0.19	0.20	0.18	0.19	0.18	0.15	-0.03	0.01
Jet and kerosene	0.06	0.09	0.07	0.10	0.11	0.08	0.08	0.08	0.07	-0.01	0.01
Diesel	0.48	0.49	0.48	0.49	0.50	0.50	0.52	0.48	0.42	-0.06	-0.01
Other gasoil	0.07	0.05	0.04	0.05	0.06	0.06	0.05	0.06	0.02	-0.04	-0.01
Residual fuel oil	0.09	0.10	0.09	0.10	0.11	0.10	0.09	0.09	0.09	0.00	0.01
Other products	0.11	0.12	0.10	0.13	0.13	0.11	0.12	0.10	0.10	0.00	0.01
<b>Total</b>	<b>1.18</b>	<b>1.22</b>	<b>1.17</b>	<b>1.23</b>	<b>1.28</b>	<b>1.21</b>	<b>1.22</b>	<b>1.19</b>	<b>1.06</b>	<b>-0.13</b>	<b>-0.00</b>
<b>France</b>											
LPG and ethane	0.11	0.10	0.12	0.10	0.10	0.07	0.07	0.08	0.11	0.03	-0.01
Naphtha	0.14	0.10	0.13	0.09	0.10	0.08	0.08	0.09	0.12	0.04	-0.03
Motor gasoline	0.21	0.23	0.21	0.24	0.26	0.23	0.23	0.24	0.22	-0.02	0.03
Jet and kerosene	0.09	0.12	0.10	0.11	0.15	0.13	0.14	0.14	0.14	0.00	0.04
Diesel	0.73	0.73	0.71	0.75	0.75	0.72	0.73	0.68	0.64	-0.03	0.01
Other gasoil	0.13	0.11	0.16	0.07	0.11	0.12	0.12	0.14	0.14	-0.01	-0.03
Residual fuel oil	0.03	0.04	0.03	0.04	0.04	0.04	0.04	0.04	0.04	0.00	0.00
Other products	0.10	0.10	0.08	0.11	0.12	0.09	0.10	0.08	0.07	-0.01	0.00
<b>Total</b>	<b>1.55</b>	<b>1.53</b>	<b>1.54</b>	<b>1.50</b>	<b>1.62</b>	<b>1.47</b>	<b>1.49</b>	<b>1.49</b>	<b>1.48</b>	<b>-0.01</b>	<b>0.02</b>
<b>United Kingdom</b>											
LPG and ethane	0.11	0.11	0.12	0.12	0.10	0.09	0.09	0.09	0.09	-0.01	-0.03
Naphtha	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00
Motor gasoline	0.25	0.27	0.26	0.28	0.28	0.28	0.29	0.27	0.23	-0.04	-0.03
Jet and kerosene	0.18	0.27	0.24	0.27	0.29	0.27	0.26	0.26	0.28	0.02	0.06
Diesel	0.47	0.49	0.46	0.51	0.48	0.49	0.50	0.48	0.38	-0.11	-0.06
Other gasoil	0.13	0.10	0.11	0.09	0.12	0.07	0.07	0.07	0.07	0.00	-0.02
Residual fuel oil	0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.01	0.01	0.00	0.00
Other products	0.10	0.11	0.11	0.10	0.11	0.11	0.10	0.11	0.10	-0.01	0.01
<b>Total</b>	<b>1.26</b>	<b>1.36</b>	<b>1.31</b>	<b>1.39</b>	<b>1.40</b>	<b>1.33</b>	<b>1.34</b>	<b>1.30</b>	<b>1.16</b>	<b>-0.14</b>	<b>-0.07</b>
<b>Canada</b>											
LPG and ethane	0.45	0.41	0.43	0.39	0.45	0.38	0.39	0.39	0.37	-0.02	-0.13
Naphtha	0.04	0.05	0.05	0.05	0.05	0.05	0.04	0.05	0.05	0.00	0.00
Motor gasoline	0.76	0.78	0.73	0.78	0.81	0.80	0.80	0.81	0.69	-0.12	-0.01
Jet and kerosene	0.09	0.14	0.10	0.13	0.17	0.15	0.11	0.17	0.14	-0.03	0.05
Diesel	0.29	0.28	0.30	0.25	0.28	0.30	0.33	0.29	0.24	-0.05	-0.04
Other gasoil	0.28	0.28	0.30	0.27	0.26	0.27	0.29	0.27	0.28	0.01	-0.01
Residual fuel oil	0.03	0.03	0.04	0.03	0.03	0.03	0.02	0.04	0.03	-0.01	-0.02
Other products	0.31	0.31	0.29	0.30	0.33	0.31	0.32	0.39	0.35	-0.04	0.07
<b>Total</b>	<b>2.26</b>	<b>2.28</b>	<b>2.24</b>	<b>2.21</b>	<b>2.38</b>	<b>2.30</b>	<b>2.31</b>	<b>2.42</b>	<b>2.15</b>	<b>-0.26</b>	<b>-0.10</b>

<sup>1</sup> Demand, measured as deliveries from refineries and primary stocks, comprises inland deliveries, international bunkers and refinery fuel. It includes crude for direct burning, oil from non-conventional sources and other sources of supply. Jet/kerosene comprises jet kerosene and non-aviation kerosene. Gasoil comprises diesel, light heating oil and other gasoils.

<sup>2</sup> Latest official OECD submissions (MOS).

<sup>3</sup> US figures exclude US territories.

**Table 3**  
**WORLD OIL PRODUCTION**  
(million barrels per day)

	2021	2022	2023	4Q22	1Q23	2Q23	3Q23	4Q23	Jan 23	Feb 23	Mar 23
<b>OPEC</b>											
<b>Crude Oil</b>											
Saudi Arabia	9.15	10.53		10.57	10.42				10.41	10.43	10.43
Iran	2.42	2.55		2.63	2.64				2.63	2.65	2.65
Iraq	4.03	4.45		4.50	4.39				4.42	4.40	4.35
UAE	2.76	3.32		3.37	3.31				3.30	3.32	3.32
Kuwait	2.42	2.70		2.71	2.68				2.68	2.68	2.68
Angola	1.12	1.14		1.08	1.05				1.11	1.06	0.97
Nigeria	1.31	1.15		1.13	1.27				1.25	1.30	1.27
Libya	1.15	0.99		1.17	1.15				1.14	1.16	1.16
Algeria	0.91	1.01		1.02	1.01				1.01	1.02	1.01
Congo	0.27	0.26		0.26	0.27				0.28	0.27	0.27
Gabon	0.18	0.19		0.18	0.20				0.20	0.20	0.20
Equatorial Guinea	0.10	0.08		0.06	0.05				0.06	0.05	0.05
Venezuela	0.61	0.70		0.68	0.71				0.72	0.69	0.73
<b>Total Crude Oil</b>	<b>26.43</b>	<b>29.06</b>		<b>29.37</b>	<b>29.17</b>				<b>29.21</b>	<b>29.23</b>	<b>29.09</b>
of which Neutral Zone <sup>1</sup>	0.25	0.28		0.27	0.26				0.26	0.24	0.28
<b>Total NGLs<sup>2</sup></b>	<b>5.16</b>	<b>5.30</b>	<b>5.36</b>	<b>5.28</b>	<b>5.35</b>	<b>5.35</b>	<b>5.36</b>	<b>5.38</b>	<b>5.35</b>	<b>5.35</b>	<b>5.35</b>
<b>Total OPEC<sup>3</sup></b>	<b>31.59</b>	<b>34.36</b>		<b>34.65</b>	<b>34.52</b>				<b>34.56</b>	<b>34.58</b>	<b>34.44</b>
<b>NON-OPEC<sup>4</sup></b>											
<b>OECD</b>											
<b>Americas</b>											
United States	16.76	17.85	18.84	18.29	18.54	18.87	18.99	18.97	18.39	18.55	18.67
Mexico	1.95	2.01	2.14	2.02	2.09	2.14	2.17	2.16	2.09	2.08	2.11
Canada	5.59	5.76	5.86	5.95	5.77	5.73	5.90	6.04	5.61	5.92	5.81
Chile	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
<b>Europe</b>											
UK	3.39	3.15	3.22	3.20	3.28	3.18	3.16	3.28	3.18	3.32	3.33
Norway	0.88	0.83	0.79	0.81	0.83	0.79	0.71	0.81	0.76	0.90	0.85
Others	2.05	1.90	2.00	1.97	2.01	1.96	2.01	2.03	1.98	1.99	2.05
<b>Asia Oceania</b>											
Australia	0.45	0.43	0.44	0.42	0.43	0.43	0.44	0.44	0.44	0.43	0.43
Others	0.51	0.48	0.47	0.48	0.47	0.44	0.47	0.50	0.46	0.49	0.46
<b>Total OECD</b>	<b>28.22</b>	<b>29.26</b>	<b>30.55</b>	<b>29.94</b>	<b>30.16</b>	<b>30.38</b>	<b>30.69</b>	<b>30.95</b>	<b>29.74</b>	<b>30.37</b>	<b>30.39</b>
<b>NON-OECD</b>											
<b>Former USSR</b>											
Russia	13.77	13.90	13.41	14.09	14.09	13.23	13.16	13.17	14.19	14.22	13.86
Azerbaijan	10.87	11.09	10.56	11.21	11.14	10.43	10.34	10.34	11.20	11.27	10.95
Kazakhstan	0.70	0.67	0.65	0.67	0.64	0.65	0.65	0.67	0.65	0.65	0.63
Others	1.85	1.82	1.88	1.91	1.99	1.84	1.85	1.85	2.02	1.98	1.96
<b>Asia</b>											
China	0.35	0.32	0.31	0.31	0.32	0.31	0.31	0.31	0.32	0.32	0.32
Malaysia	6.91	6.89	6.92	6.82	7.00	6.95	6.89	6.83	7.03	6.98	7.01
India	4.06	4.18	4.27	4.13	4.32	4.28	4.26	4.21	4.32	4.32	4.33
Indonesia	0.57	0.56	0.55	0.57	0.56	0.55	0.55	0.54	0.57	0.56	0.56
Others	0.73	0.70	0.69	0.69	0.68	0.68	0.69	0.69	0.69	0.66	0.69
<b>Europe</b>											
Americas	0.68	0.63	0.62	0.63	0.64	0.63	0.62	0.61	0.64	0.63	0.63
Brazil	0.88	0.81	0.79	0.80	0.80	0.80	0.78	0.77	0.80	0.80	0.80
Argentina	0.11	0.11	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Colombia	5.30	5.64	6.13	5.90	5.99	6.11	6.16	6.26	6.07	5.98	5.93
Ecuador	3.00	3.12	3.42	3.23	3.32	3.40	3.44	3.50	3.37	3.36	3.25
Others	0.64	0.71	0.77	0.74	0.75	0.77	0.78	0.79	0.75	0.76	0.76
<b>Middle East</b>											
Oman	0.74	0.76	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.77	0.78
Qatar	0.48	0.47	0.46	0.46	0.44	0.47	0.47	0.47	0.47	0.41	0.44
Others	0.43	0.59	0.70	0.69	0.70	0.69	0.69	0.71	0.70	0.69	0.70
<b>Africa</b>											
Egypt	3.08	3.20	3.19	3.21	3.20	3.20	3.18	3.18	3.17	3.19	3.23
Others	0.98	1.07	1.05	1.08	1.07	1.05	1.03	1.03	1.07	1.07	1.07
Egypt	1.82	1.84	1.85	1.84	1.85	1.85	1.85	1.85	1.85	1.85	1.85
Others	0.28	0.29	0.29	0.29	0.27	0.30	0.30	0.30	0.24	0.27	0.30
<b>Total Non-OECD</b>	<b>1.33</b>	<b>1.29</b>	<b>1.27</b>	<b>1.29</b>	<b>1.26</b>	<b>1.27</b>	<b>1.27</b>	<b>1.28</b>	<b>1.25</b>	<b>1.27</b>	<b>1.27</b>
Processing gains <sup>5</sup>	0.59	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60
Global biofuels	0.74	0.69	0.67	0.69	0.66	0.67	0.67	0.68	0.65	0.67	0.67
<b>TOTAL NON-OPEC</b>	<b>63.76</b>	<b>65.54</b>	<b>67.05</b>	<b>66.58</b>	<b>66.74</b>	<b>66.83</b>	<b>67.36</b>	<b>67.27</b>	<b>66.40</b>	<b>67.08</b>	<b>66.77</b>
<b>TOTAL SUPPLY</b>	<b>95.35</b>	<b>99.90</b>		<b>101.24</b>	<b>101.26</b>				<b>100.96</b>	<b>101.66</b>	<b>101.21</b>

<sup>1</sup> Neutral Zone production is already included in Saudi Arabia and Kuwait production with their respective shares.

<sup>2</sup> Includes condensates reported by OPEC countries, oil from non-conventional sources, e.g. GTL in Nigeria and non-oil inputs to Saudi Arabian MTBE.

<sup>3</sup> OPEC data based on today's membership throughout the time series.

<sup>4</sup> Comprises crude oil, condensates, NGLs and oil from non-conventional sources.

<sup>5</sup> Net volumetric gains and losses in refining and marine transportation losses.



**Table 3a**  
**OIL SUPPLY IN OECD COUNTRIES<sup>1</sup>**  
(thousand of barrels per day)

	2021	2022	2023	4Q22	1Q23	2Q23	3Q23	4Q23	Jan 23	Feb 23	Mar 23
<b>United States</b>											
Alaska	437	437	428	442	442	426	411	434	448	445	433
California	380	343	319	335	322	320	317	314	318	326	323
Texas	4766	5043	5284	5204	5261	5281	5285	5309	5237	5278	5269
Federal Gulf of Mexico <sup>2</sup>	1707	1743	1905	1801	1887	1919	1900	1915	1914	1871	1874
Other US Lower 48	3963	4318	4610	4520	4551	4620	4635	4634	4544	4558	4552
NGLs <sup>3</sup>	5425	5881	6209	5898	5984	6217	6353	6277	5850	5971	6130
Other Hydrocarbons	80	86	87	85	89	92	88	82	78	97	92
<b>Total</b>	<b>16759</b>	<b>17850</b>	<b>18843</b>	<b>18286</b>	<b>18537</b>	<b>18874</b>	<b>18989</b>	<b>18966</b>	<b>18390</b>	<b>18547</b>	<b>18674</b>
<b>Canada</b>											
Alberta Light/Medium/Heavy	436	491	513	503	518	515	512	508	516	523	516
Alberta Bitumen	1921	1995	2055	2061	2025	1922	2140	2131	2117	1955	1997
Saskatchewan	444	455	448	458	454	450	446	442	457	455	452
Other Crude	455	433	433	434	419	455	456	401	451	425	381
NGLs	976	1035	1069	1083	1072	1065	1065	1072	1079	1071	1067
Other Upgraders	180	181	181	189	173	178	172	199	133	200	187
Synthetic Crudes	1181	1167	1163	1218	1113	1148	1107	1283	858	1291	1207
<b>Total</b>	<b>5593</b>	<b>5757</b>	<b>5862</b>	<b>5947</b>	<b>5775</b>	<b>5733</b>	<b>5899</b>	<b>6036</b>	<b>5611</b>	<b>5921</b>	<b>5807</b>
<b>Mexico</b>											
Crude	1780	1843	1997	1865	1944	1994	2029	2020	1934	1929	1969
NGLs	170	158	139	150	144	141	138	135	148	144	140
<b>Total</b>	<b>1954</b>	<b>2006</b>	<b>2141</b>	<b>2019</b>	<b>2093</b>	<b>2139</b>	<b>2171</b>	<b>2160</b>	<b>2086</b>	<b>2078</b>	<b>2113</b>
<b>UK</b>											
Brent Fields	25	23	20	21	24	23	16	18	25	24	23
Forties Fields	211	210	181	218	207	164	166	188	201	214	206
Ninian Fields	24	20	25	27	27	26	25	24	25	28	27
Flotta Fields	50	39	34	32	35	33	35	34	36	35	35
Other Fields	508	471	465	449	480	483	412	484	411	534	500
NGLs	67	66	61	63	62	61	60	60	61	63	61
<b>Total</b>	<b>885</b>	<b>830</b>	<b>786</b>	<b>810</b>	<b>834</b>	<b>790</b>	<b>714</b>	<b>808</b>	<b>758</b>	<b>898</b>	<b>852</b>
<b>Norway<sup>4</sup></b>											
Ekofisk-Ula Area	141	122	118	136	127	120	108	118	123	130	128
Oseberg-Troll Area	211	192	218	188	207	217	223	226	195	211	216
Statfjord-Gullfaks Area	262	250	241	262	248	245	239	233	240	254	251
Haltenbanken Area	278	237	242	231	240	239	239	251	241	239	241
Sleipner-Frigg Area	816	788	967	844	923	946	995	1002	889	914	964
Other Fields	92	119	18	122	72	0	8	-6	106	53	54
NGLs	250	190	197	183	192	198	195	202	188	194	193
<b>Total</b>	<b>2050</b>	<b>1899</b>	<b>2001</b>	<b>1966</b>	<b>2008</b>	<b>1964</b>	<b>2007</b>	<b>2027</b>	<b>1981</b>	<b>1995</b>	<b>2046</b>
<b>Other OECD Europe</b>											
Denmark	66	65	65	63	62	61	65	70	65	62	61
Italy	97	83	81	74	80	81	81	80	75	82	83
Türkiye	66	69	84	72	78	82	86	91	78	77	79
Other	103	81	86	77	88	87	85	83	89	89	88
NGLs	7	7	6	7	6	6	6	6	6	6	6
Non-Conventional Oils	114	121	114	128	118	114	112	112	124	114	117
<b>Total</b>	<b>452</b>	<b>426</b>	<b>436</b>	<b>420</b>	<b>434</b>	<b>431</b>	<b>435</b>	<b>442</b>	<b>437</b>	<b>430</b>	<b>435</b>
<b>Australia</b>											
Gippsland Basin	5	6	10	10	10	10	10	10	10	10	10
Cooper-Eromanga Basin	23	18	16	17	17	17	16	16	17	17	17
Carnarvon Basin	113	108	95	107	94	74	106	104	105	104	75
Other Crude	193	179	177	180	176	167	168	198	163	180	186
NGLs	109	102	99	107	99	100	98	97	98	98	101
<b>Total</b>	<b>444</b>	<b>413</b>	<b>397</b>	<b>421</b>	<b>397</b>	<b>367</b>	<b>399</b>	<b>425</b>	<b>393</b>	<b>410</b>	<b>390</b>
<b>Other OECD Asia Oceania</b>											
New Zealand	18	16	15	15	16	15	15	15	16	16	16
Japan	4	3	3	3	3	3	3	3	3	3	3
NGLs	11	11	9	9	10	9	9	9	11	9	9
Non-Conventional Oils	37	38	37	35	37	37	37	37	38	35	38
<b>Total</b>	<b>71</b>	<b>68</b>	<b>65</b>	<b>63</b>	<b>66</b>	<b>65</b>	<b>64</b>	<b>64</b>	<b>69</b>	<b>63</b>	<b>66</b>
<b>OECD</b>											
Crude Oil	19598	20202	21165	20773	21046	21005	21239	21363	21051	21058	21031
NGLs	7022	7458	7797	7509	7578	7805	7933	7867	7450	7566	7717
Non-Conventional Oils <sup>5</sup>	1596	1598	1587	1660	1534	1573	1520	1717	1236	1742	1645
<b>Total</b>	<b>28216</b>	<b>29259</b>	<b>30548</b>	<b>29942</b>	<b>30158</b>	<b>30383</b>	<b>30693</b>	<b>30947</b>	<b>29736</b>	<b>30366</b>	<b>30393</b>

<sup>1</sup> Subcategories refer to crude oil only unless otherwise noted.

<sup>2</sup> Only production from Federal waters is included.

<sup>3</sup> To the extent possible, condensates from natural gas processing plants are included with NGLs, while field condensates are aggregated with crude oil.

<sup>4</sup> North Sea production is grouped into crude streams that include all fields being processed through the named field complex, i.e. the name corresponds to the crude stream not just the field of that name.

<sup>5</sup> Does not include biofuels.

**Table 3b**  
**WORLD OIL PRODUCTION (Including OPEC+ based on current agreement<sup>1</sup>)**  
(million barrels per day)

	2021	2022	2023	1Q22	2Q22	3Q22	4Q22	1Q23	Jan 23	Feb 23	Mar 23
<b>OPEC+</b>											
<b>Crude Oil</b>											
Algeria	0.91	1.01	0.98	0.99	1.01	1.02	1.02	1.01	1.01	1.02	1.01
Angola	1.12	1.14	1.07	1.16	1.17	1.15	1.08	1.05	1.11	1.06	0.97
Azerbaijan	0.59	0.56	0.53	0.58	0.56	0.55	0.55	0.53	0.53	0.53	0.52
Bahrain	0.17	0.19	0.19	0.18	0.19	0.20	0.19	0.17	0.14	0.17	0.20
Brunei	0.08	0.07	0.07	0.08	0.07	0.07	0.07	0.07	0.07	0.07	0.07
Congo	0.27	0.26	0.27	0.27	0.26	0.26	0.26	0.27	0.28	0.27	0.27
Equatorial Guinea	0.10	0.08	0.07	0.09	0.09	0.09	0.06	0.05	0.06	0.05	0.05
Gabon	0.18	0.19	0.18	0.19	0.18	0.20	0.18	0.20	0.20	0.20	0.20
Iran	2.42	2.55	2.65	2.55	2.46	2.55	2.63	2.64	2.63	2.65	2.65
Iraq	4.03	4.45	4.27	4.29	4.45	4.54	4.50	4.39	4.42	4.40	4.35
Kazakhstan	1.52	1.50	1.57	1.63	1.43	1.35	1.60	1.64	1.68	1.63	1.62
Kuwait	2.42	2.70	2.59	2.61	2.67	2.80	2.71	2.68	2.68	2.68	2.68
Libya	1.15	0.99	1.17	1.08	0.77	0.96	1.17	1.15	1.14	1.16	1.16
Malaysia	0.42	0.40	0.38	0.41	0.39	0.38	0.40	0.40	0.40	0.39	0.39
Mexico	1.66	1.62	1.70	1.64	1.62	1.62	1.62	1.66	1.65	1.64	1.69
Nigeria	1.31	1.15	1.27	1.30	1.15	1.00	1.13	1.27	1.25	1.30	1.27
Oman	0.75	0.85	0.81	0.82	0.84	0.88	0.85	0.84	0.84	0.84	0.84
Russia	9.62	9.75	9.23	10.04	9.40	9.78	9.78	9.73	9.74	9.87	9.58
Saudi Arabia	9.15	10.53	10.13	10.17	10.44	10.92	10.57	10.42	10.41	10.43	10.43
South Sudan	0.15	0.14	0.12	0.14	0.14	0.15	0.14	0.12	0.11	0.12	0.12
Sudan	0.06	0.06	0.05	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
UAE	2.76	3.32	3.22	3.13	3.33	3.45	3.37	3.31	3.30	3.32	3.32
Venezuela	0.61	0.70	0.77	0.72	0.74	0.66	0.68	0.71	0.72	0.69	0.73
<b>Total Crude Oil</b>	<b>41.47</b>	<b>44.20</b>	<b>43.31</b>	<b>44.12</b>	<b>43.43</b>	<b>44.63</b>	<b>44.62</b>	<b>44.38</b>	<b>44.43</b>	<b>44.55</b>	<b>44.17</b>
<i>of which Neutral Zone</i>	<i>0.25</i>	<i>0.19</i>		<i>0.27</i>	<i>0.28</i>	<i>0.31</i>	<i>0.27</i>	<i>0.26</i>	<i>0.26</i>	<i>0.24</i>	<i>0.28</i>
<b>Total NGLs</b>	<b>7.54</b>	<b>7.87</b>	<b>8.00</b>	<b>7.86</b>	<b>7.84</b>	<b>7.81</b>	<b>7.97</b>	<b>8.09</b>	<b>8.14</b>	<b>8.10</b>	<b>8.04</b>
<b>TOTAL OPEC+</b>	<b>49.01</b>	<b>52.1</b>	<b>51.3</b>	<b>52.0</b>	<b>51.3</b>	<b>52.4</b>	<b>52.6</b>	<b>52.5</b>	<b>52.6</b>	<b>52.6</b>	<b>52.2</b>
<b>NON-OPEC+</b>											
<b>OECD</b>											
<b>Americas<sup>2</sup></b>											
United States	16.76	17.85	18.84	17.17	17.70	18.24	18.29	18.54	18.39	18.55	18.67
Canada	5.59	5.76	5.86	5.71	5.57	5.79	5.95	5.77	5.61	5.92	5.81
Chile	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
<b>Europe</b>	<b>3.39</b>	<b>3.15</b>	<b>3.22</b>	<b>3.32</b>	<b>3.03</b>	<b>3.08</b>	<b>3.20</b>	<b>3.28</b>	<b>3.18</b>	<b>3.32</b>	<b>3.33</b>
UK	0.88	0.83	0.79	0.91	0.85	0.75	0.81	0.83	0.76	0.90	0.85
Norway	2.05	1.90	2.00	1.98	1.74	1.91	1.97	2.01	1.98	1.99	2.05
Others	0.45	0.43	0.44	0.43	0.43	0.42	0.42	0.43	0.44	0.43	0.43
<b>Asia Oceania</b>	<b>0.51</b>	<b>0.48</b>	<b>0.47</b>	<b>0.49</b>	<b>0.51</b>	<b>0.43</b>	<b>0.48</b>	<b>0.47</b>	<b>0.46</b>	<b>0.49</b>	<b>0.46</b>
Australia	0.44	0.41	0.40	0.42	0.45	0.37	0.42	0.40	0.39	0.41	0.39
Others	0.07	0.07	0.07	0.07	0.07	0.07	0.06	0.07	0.07	0.08	0.07
<b>Total OECD (non-OPEC+)</b>	<b>26.26</b>	<b>27.25</b>	<b>28.41</b>	<b>26.70</b>	<b>26.81</b>	<b>27.55</b>	<b>27.92</b>	<b>28.07</b>	<b>27.65</b>	<b>28.29</b>	<b>28.28</b>
<b>Non-OECD</b>											
<b>FSU</b>	<b>0.35</b>	<b>0.32</b>	<b>0.31</b>	<b>0.34</b>	<b>0.30</b>	<b>0.31</b>	<b>0.31</b>	<b>0.32</b>	<b>0.32</b>	<b>0.32</b>	<b>0.32</b>
<b>Asia</b>											
China	4.06	4.18	4.27	4.23	4.23	4.12	4.13	4.32	4.32	4.32	4.33
India	0.73	0.70	0.69	0.72	0.71	0.70	0.69	0.68	0.69	0.66	0.69
Indonesia	0.68	0.63	0.62	0.65	0.63	0.62	0.63	0.64	0.64	0.63	0.63
Others	0.77	0.72	0.69	0.73	0.72	0.71	0.72	0.71	0.71	0.71	0.71
<b>Europe</b>	<b>0.11</b>	<b>0.11</b>	<b>0.10</b>	<b>0.11</b>	<b>0.11</b>	<b>0.10</b>	<b>0.10</b>	<b>0.10</b>	<b>0.10</b>	<b>0.10</b>	<b>0.10</b>
<b>Americas</b>											
Brazil	3.00	3.12	3.42	3.08	3.00	3.16	3.23	3.32	3.37	3.36	3.25
Argentina	0.64	0.71	0.77	0.69	0.70	0.72	0.74	0.75	0.75	0.76	0.76
Colombia	0.74	0.76	0.78	0.75	0.76	0.76	0.78	0.78	0.78	0.77	0.78
Ecuador	0.48	0.47	0.46	0.47	0.45	0.47	0.46	0.44	0.47	0.41	0.44
Others	0.43	0.59	0.70	0.44	0.55	0.66	0.69	0.70	0.70	0.69	0.70
<b>Middle East</b>	<b>1.92</b>	<b>1.93</b>	<b>1.95</b>	<b>1.91</b>	<b>1.94</b>	<b>1.94</b>	<b>1.94</b>	<b>1.95</b>	<b>1.95</b>	<b>1.95</b>	<b>1.95</b>
Qatar	1.82	1.84	1.85	1.82	1.84	1.84	1.84	1.85	1.85	1.85	1.85
Others	0.10	0.10	0.09	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.09
<b>Africa</b>	<b>1.12</b>	<b>1.09</b>	<b>1.09</b>	<b>1.10</b>	<b>1.10</b>	<b>1.09</b>	<b>1.09</b>	<b>1.09</b>	<b>1.09</b>	<b>1.09</b>	<b>1.09</b>
Egypt	0.59	0.60	0.60	0.59	0.61	0.60	0.60	0.60	0.60	0.60	0.60
Others	0.52	0.49	0.49	0.51	0.48	0.49	0.49	0.49	0.49	0.49	0.49
<b>Total non-OECD (non-OPEC+)</b>	<b>15.03</b>	<b>15.32</b>	<b>15.85</b>	<b>15.22</b>	<b>15.20</b>	<b>15.36</b>	<b>15.51</b>	<b>15.79</b>	<b>15.88</b>	<b>15.75</b>	<b>15.73</b>
Processing gains	2.25	2.31	2.36	2.28	2.29	2.33	2.32	2.30	2.28	2.29	2.32
Global biofuels	2.79	2.95	3.13	2.51	3.08	3.30	2.90	2.64	2.58	2.68	2.66
<b>TOTAL NON-OPEC+</b>	<b>46.33</b>	<b>47.83</b>	<b>49.75</b>	<b>46.72</b>	<b>47.39</b>	<b>48.54</b>	<b>48.65</b>	<b>48.79</b>	<b>48.39</b>	<b>49.02</b>	<b>48.99</b>
<b>TOTAL SUPPLY</b>	<b>95.35</b>	<b>99.90</b>	<b>101.06</b>	<b>98.70</b>	<b>98.65</b>	<b>100.97</b>	<b>101.24</b>	<b>101.26</b>	<b>100.96</b>	<b>101.66</b>	<b>101.21</b>

<sup>1</sup> From Apr 2023, OPEC+ supply reflects latest OPEC+ deal and individual country's sustainable capacity. Libya, Iran, Venezuela held at most recent level through 2023.

<sup>2</sup> Excludes Mexico.

**Table 4**  
**OECD STOCKS AND QUARTERLY STOCK CHANGES**

	RECENT MONTHLY STOCKS <sup>2</sup> in Million Barrels					PRIOR YEARS' STOCKS <sup>2</sup> in Million Barrels			STOCK CHANGES in mb/d			
	Oct2022	Nov2022	Dec2022	Jan2023	Feb2023 <sup>3</sup>	Feb2020	Feb2021	Feb2022	1Q2022	2Q2022	3Q2022	4Q2022
<b>OECD INDUSTRY-CONTROLLED STOCKS<sup>1</sup></b>												
<b>OECD Americas</b>												
Crude	593.9	573.5	593.7	618.6	643.2	604.2	651.5	564.7	-0.23	0.03	0.09	0.16
Motor Gasoline	238.7	248.7	251.5	268.1	268.3	281.2	270.2	279.6	0.08	-0.22	-0.11	0.17
Middle Distillate	175.1	185.6	184.1	190.0	194.2	205.7	216.1	190.9	-0.20	0.01	-0.05	0.11
Residual Fuel Oil	36.0	35.5	37.6	39.0	37.5	36.9	39.0	34.7	0.03	0.01	-0.01	0.04
Total Products <sup>4</sup>	735.1	750.8	732.8	739.2	728.9	760.6	751.7	705.4	-0.48	0.23	0.32	0.01
<b>Total<sup>5</sup></b>	<b>1488.7</b>	<b>1484.5</b>	<b>1487.2</b>	<b>1514.0</b>	<b>1535.9</b>	<b>1532.7</b>	<b>1568.5</b>	<b>1424.7</b>	<b>-0.64</b>	<b>0.32</b>	<b>0.35</b>	<b>0.20</b>
<b>OECD Europe</b>												
Crude	331.5	340.6	337.1	341.6	337.0	341.3	348.1	316.5	0.23	0.18	-0.03	0.00
Motor Gasoline	86.3	87.0	87.4	92.0	92.9	98.0	102.1	92.2	0.06	-0.06	0.01	0.00
Middle Distillate	238.0	239.7	249.8	274.1	272.6	293.6	330.0	243.2	-0.05	-0.01	-0.03	0.16
Residual Fuel Oil	67.0	69.1	70.2	66.8	66.2	66.4	65.9	63.3	0.04	0.02	0.02	0.04
Total Products <sup>4</sup>	498.5	503.2	517.4	542.4	539.2	575.1	603.0	495.8	0.06	0.09	0.03	0.18
<b>Total<sup>5</sup></b>	<b>914.7</b>	<b>928.7</b>	<b>936.2</b>	<b>965.7</b>	<b>957.2</b>	<b>999.7</b>	<b>1029.8</b>	<b>886.6</b>	<b>0.37</b>	<b>0.24</b>	<b>0.08</b>	<b>0.19</b>
<b>OECD Asia Oceania</b>												
Crude	121.1	128.7	127.9	121.1	125.3	124.4	145.2	97.9	0.07	-0.12	0.36	0.00
Motor Gasoline	24.7	25.8	24.3	26.2	26.9	26.4	29.4	27.6	0.02	0.00	-0.02	0.01
Middle Distillate	68.8	72.3	62.4	64.6	60.7	69.0	69.0	60.9	-0.09	0.06	0.01	0.00
Residual Fuel Oil	18.6	19.5	16.5	15.7	16.2	20.0	17.3	18.0	-0.02	0.01	0.00	0.00
Total Products <sup>4</sup>	182.1	184.1	164.4	168.8	164.4	173.6	176.8	165.3	-0.05	0.08	0.03	-0.04
<b>Total<sup>5</sup></b>	<b>364.9</b>	<b>373.3</b>	<b>353.2</b>	<b>350.3</b>	<b>346.7</b>	<b>359.9</b>	<b>380.4</b>	<b>317.0</b>	<b>-0.09</b>	<b>0.02</b>	<b>0.44</b>	<b>-0.06</b>
<b>Total OECD</b>												
Crude	1046.5	1042.8	1058.8	1081.3	1105.5	1069.9	1144.8	979.1	0.07	0.09	0.42	0.16
Motor Gasoline	349.6	361.5	363.2	386.3	388.1	405.6	401.7	399.4	0.16	-0.28	-0.12	0.18
Middle Distillate	481.9	497.5	496.2	528.7	527.5	568.3	615.0	494.9	-0.33	0.06	-0.07	0.26
Residual Fuel Oil	121.6	124.1	124.4	121.4	119.9	123.2	122.2	116.0	0.05	0.04	0.01	0.08
Total Products <sup>4</sup>	1415.7	1438.0	1414.6	1450.4	1432.5	1509.3	1531.5	1366.4	-0.47	0.40	0.38	0.15
<b>Total<sup>5</sup></b>	<b>2768.3</b>	<b>2786.5</b>	<b>2776.6</b>	<b>2830.0</b>	<b>2839.7</b>	<b>2892.3</b>	<b>2978.7</b>	<b>2628.3</b>	<b>-0.36</b>	<b>0.57</b>	<b>0.88</b>	<b>0.33</b>
<b>OECD GOVERNMENT-CONTROLLED STOCKS<sup>6</sup></b>												
<b>OECD Americas</b>												
Crude	398.6	388.4	372.0	371.6	371.6	635.0	637.8	578.9	-0.31	-0.80	-0.84	-0.48
Products	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.00	0.00	0.00	0.00
<b>OECD Europe</b>												
Crude	193.4	195.9	193.0	191.3	191.4	207.0	207.4	198.8	-0.02	-0.04	-0.01	-0.01
Products	251.7	256.2	269.6	274.1	273.2	276.0	281.8	274.8	-0.09	-0.14	-0.04	0.19
<b>OECD Asia Oceania</b>												
Crude	343.7	346.4	342.8	345.0	345.3	377.4	374.6	370.1	-0.03	-0.11	-0.17	0.01
Products	36.0	35.9	35.6	35.3	35.2	38.9	38.8	38.0	-0.01	-0.01	0.00	-0.02
<b>Total OECD</b>												
Crude	935.6	930.7	907.9	907.9	908.3	1219.4	1219.7	1147.8	-0.35	-0.94	-1.02	-0.49
Products	289.7	294.0	307.2	311.3	310.4	316.9	322.7	314.8	-0.11	-0.14	-0.04	0.17
<b>Total<sup>5</sup></b>	<b>1226.2</b>	<b>1226.1</b>	<b>1217.0</b>	<b>1221.6</b>	<b>1220.8</b>	<b>1538.0</b>	<b>1544.2</b>	<b>1464.1</b>	<b>-0.46</b>	<b>-1.08</b>	<b>-1.06</b>	<b>-0.31</b>

<sup>1</sup> Stocks are primary national territory stocks on land (excluding utility stocks and including pipeline and entropot stocks where known) and include stocks held by industry to meet IEA, EU and national emergency reserve commitments and are subject to government control in emergencies.

<sup>2</sup> Closing stock levels.

<sup>3</sup> Estimated.

<sup>4</sup> Total products includes gasoline, middle distillates, fuel oil and other products.

<sup>5</sup> Total includes NGLs, refinery feedstocks, additives/oxygenates and other hydrocarbons.

<sup>6</sup> Includes government-owned stocks and stock holding organisation stocks held for emergency purposes.

**Table 4a**  
**INDUSTRY STOCKS<sup>1</sup> ON LAND IN SELECTED COUNTRIES**

(million barrels)

	September			October			November			December			January		
	2021	2022	%	2021	2022	%	2021	2022	%	2021	2022	%	2022	2023	%
<b>United States<sup>2</sup></b>															
Crude	420.3	428.8	2.0	436.6	439.4	0.6	433.4	416.3	-3.9	421.2	429.6	2.0	414.3	459.8	11.0
Motor Gasoline	227.0	209.6	-7.7	216.7	211.0	-2.6	220.6	221.3	0.3	232.2	224.3	-3.4	251.8	239.7	-4.8
Middle Distillate	176.8	147.6	-16.5	175.8	148.2	-15.7	171.2	160.1	-6.5	168.1	156.0	-7.2	165.3	160.3	-3.0
Residual Fuel Oil	27.8	27.3	-1.8	28.7	29.8	3.8	27.9	29.1	4.3	25.8	30.7	19.0	26.7	32.1	20.2
Other Products	261.3	264.9	1.4	256.4	263.2	2.7	244.8	258.5	5.6	222.3	238.0	7.1	195.4	221.2	13.2
Total Products	692.9	649.4	-6.3	677.6	652.2	-3.7	664.5	669.0	0.7	648.4	649.0	0.1	639.2	653.3	2.2
Other <sup>3</sup>	137.7	136.8	-0.7	138.8	139.1	0.2	135.8	140.7	3.6	129.1	143.0	10.8	136.4	141.4	3.7
<b>Total</b>	<b>1250.9</b>	<b>1215.0</b>	<b>-2.9</b>	<b>1253.0</b>	<b>1230.7</b>	<b>-1.8</b>	<b>1233.7</b>	<b>1226.0</b>	<b>-0.6</b>	<b>1198.7</b>	<b>1221.6</b>	<b>1.9</b>	<b>1189.9</b>	<b>1254.5</b>	<b>5.4</b>
<b>Japan</b>															
Crude	70.8	86.2	21.8	72.8	79.1	8.7	78.1	82.7	5.9	72.9	81.0	11.1	69.2	75.5	9.1
Motor Gasoline	10.2	9.7	-4.9	11.6	9.7	-16.4	10.4	11.0	5.8	10.4	10.1	-2.9	11.3	11.2	-0.9
Middle Distillate	36.2	31.4	-13.3	36.6	34.5	-5.7	36.9	37.0	0.3	33.0	31.4	-4.8	30.8	30.8	0.0
Residual Fuel Oil	7.4	6.8	-8.1	6.9	7.3	5.8	6.5	7.3	12.3	7.3	7.1	-2.7	7.0	6.3	-10.0
Other Products	37.7	39.1	3.7	39.1	39.8	1.8	36.4	38.8	6.6	33.0	36.3	10.0	34.6	34.2	-1.2
Total Products	91.5	87.0	-4.9	94.2	91.3	-3.1	90.2	94.1	4.3	83.7	84.9	1.4	83.7	82.5	-1.4
Other <sup>3</sup>	51.4	51.2	-0.4	49.9	50.7	1.6	50.9	49.7	-2.4	51.1	49.8	-2.5	47.6	49.3	3.6
<b>Total</b>	<b>213.7</b>	<b>224.4</b>	<b>5.0</b>	<b>216.9</b>	<b>221.1</b>	<b>1.9</b>	<b>219.2</b>	<b>226.5</b>	<b>3.3</b>	<b>207.7</b>	<b>215.7</b>	<b>3.9</b>	<b>200.5</b>	<b>207.3</b>	<b>3.4</b>
<b>Germany</b>															
Crude	45.3	47.8	5.5	46.4	52.0	12.1	47.0	49.8	6.0	46.3	49.4	6.7	46.1	51.9	12.6
Motor Gasoline	9.6	10.5	9.4	10.6	10.4	-1.9	10.6	10.1	-4.7	10.7	11.1	3.7	11.0	11.9	8.2
Middle Distillate	21.8	24.0	10.1	21.2	24.2	14.2	22.4	24.1	7.6	21.8	26.5	21.6	23.2	33.1	42.7
Residual Fuel Oil	8.1	9.2	13.6	8.1	9.3	14.8	8.5	9.0	5.9	8.4	9.0	7.1	8.5	8.5	0.0
Other Products	10.3	10.9	5.8	10.7	10.7	0.0	10.4	10.8	3.8	10.6	10.1	-4.7	10.2	10.3	1.0
Total Products	49.8	54.6	9.6	50.6	54.6	7.9	51.9	54.0	4.0	51.5	56.7	10.1	52.9	63.8	20.6
Other <sup>3</sup>	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	0.0	0.0
<b>Total</b>	<b>95.1</b>	<b>102.4</b>	<b>7.7</b>	<b>97.0</b>	<b>106.6</b>	<b>9.9</b>	<b>98.9</b>	<b>103.8</b>	<b>5.0</b>	<b>97.8</b>	<b>106.1</b>	<b>8.5</b>	<b>99.0</b>	<b>115.7</b>	<b>16.9</b>
<b>Italy</b>															
Crude	33.6	40.0	19.0	31.8	34.4	8.2	36.1	40.5	12.2	33.0	37.1	12.4	29.9	35.7	19.4
Motor Gasoline	9.6	11.1	15.6	11.7	10.2	-12.8	11.3	9.7	-14.2	10.0	9.9	-1.0	12.7	11.7	-7.9
Middle Distillate	26.6	22.8	-14.3	25.1	24.0	-4.4	23.8	23.4	-1.7	23.7	23.8	0.4	26.4	26.9	1.9
Residual Fuel Oil	7.0	8.1	15.7	7.1	8.1	14.1	7.5	7.9	5.3	7.1	8.6	21.1	7.5	8.3	10.7
Other Products	11.0	11.6	5.5	11.1	11.3	1.8	10.9	10.8	-0.9	10.0	11.1	11.0	11.2	12.2	8.9
Total Products	54.2	53.6	-1.1	55.0	53.6	-2.5	53.5	51.8	-3.2	50.8	53.4	5.1	57.8	59.1	2.2
Other <sup>3</sup>	14.8	14.3	-3.4	15.4	13.9	-9.7	14.5	13.5	-6.9	13.1	14.0	6.9	13.5	15.0	11.1
<b>Total</b>	<b>102.6</b>	<b>107.9</b>	<b>5.2</b>	<b>102.2</b>	<b>101.9</b>	<b>-0.3</b>	<b>104.1</b>	<b>105.8</b>	<b>1.6</b>	<b>96.9</b>	<b>104.5</b>	<b>7.8</b>	<b>101.2</b>	<b>109.8</b>	<b>8.5</b>
<b>France</b>															
Crude	12.2	11.6	-4.9	12.6	15.9	26.2	11.9	13.7	15.1	8.8	10.8	22.7	9.2	10.1	9.8
Motor Gasoline	4.0	4.6	15.0	4.0	4.7	17.5	4.1	4.6	12.2	4.5	4.1	-8.9	5.1	6.2	21.6
Middle Distillate	19.5	17.2	-11.8	17.0	19.5	14.7	18.0	21.0	16.7	18.6	21.3	14.5	20.1	23.7	17.9
Residual Fuel Oil	2.0	2.5	25.0	1.6	1.9	18.8	1.7	2.4	41.2	0.9	1.7	88.9	1.3	1.7	30.8
Other Products	3.2	4.0	25.0	3.3	3.6	9.1	3.4	3.6	5.9	3.4	4.0	17.6	3.4	4.0	17.6
Total Products	28.7	28.3	-1.4	25.9	29.7	14.7	27.2	31.6	16.2	27.4	31.1	13.5	29.9	35.6	19.1
Other <sup>3</sup>	7.0	7.6	8.6	7.0	7.7	10.0	6.5	7.9	21.5	6.9	7.9	14.5	7.2	7.7	6.9
<b>Total</b>	<b>47.9</b>	<b>47.5</b>	<b>-0.8</b>	<b>45.5</b>	<b>53.3</b>	<b>17.1</b>	<b>45.6</b>	<b>53.2</b>	<b>16.7</b>	<b>43.1</b>	<b>49.8</b>	<b>15.5</b>	<b>46.3</b>	<b>53.4</b>	<b>15.3</b>
<b>United Kingdom</b>															
Crude	24.9	27.9	12.0	24.8	21.1	-14.9	23.4	21.6	-7.7	26.2	22.7	-13.4	22.7	25.4	11.9
Motor Gasoline	8.7	9.4	8.0	9.5	8.9	-6.3	9.8	8.8	-10.2	10.1	8.2	-18.8	10.6	8.9	-16.0
Middle Distillate	21.4	19.1	-10.7	21.3	17.5	-17.8	22.1	18.0	-18.6	21.0	19.1	-9.0	20.4	20.4	0.0
Residual Fuel Oil	1.3	1.4	7.7	1.3	1.4	7.7	1.6	1.6	0.0	1.3	1.5	15.4	1.2	1.3	8.3
Other Products	7.1	7.1	0.0	6.5	6.6	1.5	6.1	6.9	13.1	6.1	6.1	0.0	6.0	5.8	-3.3
Total Products	38.5	37.0	-3.9	38.6	34.4	-10.9	39.6	35.3	-10.9	38.5	34.9	-9.4	38.2	36.4	-4.7
Other <sup>3</sup>	8.2	7.5	-8.5	9.0	9.0	0.0	9.1	8.7	-4.4	8.1	8.3	2.5	7.6	8.0	5.3
<b>Total</b>	<b>71.6</b>	<b>72.4</b>	<b>1.1</b>	<b>72.4</b>	<b>64.5</b>	<b>-10.9</b>	<b>72.1</b>	<b>65.6</b>	<b>-9.0</b>	<b>72.8</b>	<b>65.9</b>	<b>-9.5</b>	<b>68.5</b>	<b>69.8</b>	<b>1.9</b>
<b>Canada<sup>4</sup></b>															
Crude	133.3	116.1	-12.9	138.0	120.3	-12.8	137.5	123.2	-10.4	132.4	129.5	-2.2	121.7	123.5	1.5
Motor Gasoline	14.4	15.1	4.9	14.9	15.6	4.7	15.9	15.6	-1.9	15.8	15.6	-1.3	17.3	17.2	-0.6
Middle Distillate	17.5	16.7	-4.6	16.9	16.9	0.0	17.8	16.5	-7.3	18.5	18.7	1.1	18.8	20.9	11.2
Residual Fuel Oil	2.4	2.4	0.0	2.6	2.0	-23.1	2.2	2.4	9.1	2.0	2.7	35.0	1.7	2.4	41.2
Other Products	11.2	13.3	18.8	10.8	12.8	18.5	11.4	13.2	15.8	11.2	12.3	9.8	12.5	11.8	-5.6
Total Products	45.5	47.5	4.4	45.2	47.3	4.6	47.3	47.7	0.8	47.5	49.3	3.8	50.3	52.3	4.0
Other <sup>3</sup>	25.3	20.7	-18.2	25.3	20.4	-19.4	23.8	19.5	-18.1	21.7	17.4	-19.8	19.4	14.7	-24.2
<b>Total</b>	<b>204.1</b>	<b>184.3</b>	<b>-9.7</b>	<b>208.5</b>	<b>188.0</b>	<b>-9.8</b>	<b>208.6</b>	<b>190.4</b>	<b>-8.7</b>	<b>201.6</b>	<b>196.2</b>	<b>-2.7</b>	<b>191.4</b>	<b>190.5</b>	<b>-0.5</b>

<sup>1</sup> Stocks are primary national territory stocks on land (excluding utility stocks and including pipeline and entropot stocks where known) and include stocks held by industry to meet IEA, EU and national emergency reserve commitments and are subject to government control in emergencies.

<sup>2</sup> US figures exclude US territories.

<sup>3</sup> Other includes NGLs, refinery feedstocks, additives/oxygenates and other hydrocarbons.

<sup>4</sup> Canadian stock information for recent months is the administration's best estimate. Data are usually finalised three months after first publication.

**Table 5**  
**TOTAL STOCKS ON LAND IN OECD COUNTRIES<sup>1</sup>**  
(millions of barrels<sup>2</sup> and 'days')

	End December 2021		End March 2022		End June 2022		End September 2022		End December 2022 <sup>3</sup>	
	Stock Level	Days Fwd <sup>2</sup> Demand	Stock Level	Days Fwd Demand	Stock Level	Days Fwd Demand	Stock Level	Days Fwd Demand	Stock Level	Days Fwd Demand
<b>OECD Americas</b>										
Canada	201.7	90	185.7	84	187.9	79	184.3	80	196.3	-
Chile	10.8	28	10.3	27	9.9	26	10.6	28	10.6	-
Mexico	36.7	22	35.7	20	36.6	20	36.7	21	36.6	-
United States <sup>4</sup>	1794.3	89	1721.7	85	1675.0	82	1633.5	81	1595.7	-
<b>Total<sup>4</sup></b>	<b>2065.6</b>	<b>84</b>	<b>1975.5</b>	<b>80</b>	<b>1931.5</b>	<b>77</b>	<b>1887.2</b>	<b>76</b>	<b>1861.2</b>	<b>76</b>
<b>OECD Asia Oceania</b>										
Australia	37.6	36	40.0	37	38.3	35	35.8	32	38.7	-
Israel	-	-	-	-	-	-	-	-	-	-
Japan	519.4	140	500.5	165	502.8	158	522.4	147	513.9	-
Korea	168.8	62	174.6	70	165.9	65	174.5	68	173.8	-
New Zealand	6.8	44	6.2	43	6.2	40	5.5	30	5.3	-
<b>Total</b>	<b>732.6</b>	<b>93</b>	<b>721.4</b>	<b>103</b>	<b>713.3</b>	<b>99</b>	<b>738.1</b>	<b>96</b>	<b>731.7</b>	<b>94</b>
<b>OECD Europe<sup>5</sup></b>										
Austria	20.9	85	24.1	98	20.0	80	17.4	72	21.3	-
Belgium	43.3	68	42.9	74	44.8	75	45.4	78	45.7	-
Czech Republic	22.5	107	22.2	100	22.3	101	22.6	105	23.1	-
Denmark	22.7	161	20.3	135	21.7	141	21.1	142	23.6	-
Estonia	2.5	90	2.6	77	2.3	75	2.3	81	3.4	-
Finland	36.2	189	38.4	209	41.0	205	40.4	218	38.0	-
France	151.6	98	148.8	99	144.6	89	142.3	97	154.9	-
Germany	268.9	125	269.0	125	267.8	119	266.5	125	272.6	-
Greece	29.4	107	29.2	104	29.8	88	30.4	99	31.9	-
Hungary	27.0	143	28.0	152	29.2	160	28.6	174	28.7	-
Ireland	10.8	70	10.6	72	10.3	69	10.3	66	11.0	-
Italy	112.5	96	116.3	94	119.3	94	123.3	102	120.0	-
Latvia	2.6	76	2.8	79	2.8	68	2.8	78	2.9	-
Lithuania	8.2	137	9.8	161	8.4	117	8.2	116	8.3	-
Luxembourg	0.6	11	0.5	11	0.7	14	0.6	14	0.5	-
Netherlands	109.5	130	123.9	139	127.1	144	125.2	138	139.8	-
Norway	21.4	112	26.3	171	25.5	106	26.0	148	27.2	-
Poland	80.6	112	82.8	113	82.4	112	82.1	113	83.8	-
Portugal	20.9	89	21.3	84	22.5	85	21.1	100	20.0	-
Slovak Republic	12.2	134	12.8	135	13.2	141	13.5	137	13.1	-
Slovenia	5.2	108	4.6	86	4.8	92	4.5	88	4.9	-
Spain	104.9	84	106.6	81	107.9	83	111.5	87	109.5	-
Sweden	30.1	99	28.2	104	30.2	94	32.7	109	34.6	-
Switzerland	31.5	168	30.2	173	29.9	150	28.2	140	27.4	-
Republic of Türkiye	87.4	96	87.6	86	87.8	80	86.6	83	88.6	-
United Kingdom	72.8	55	68.6	49	67.3	48	72.4	54	65.9	-
<b>Total</b>	<b>1336.2</b>	<b>101</b>	<b>1358.4</b>	<b>101</b>	<b>1363.8</b>	<b>97</b>	<b>1366.2</b>	<b>102</b>	<b>1400.7</b>	<b>108</b>
<b>Total OECD</b>	<b>4134.4</b>	<b>90</b>	<b>4055.3</b>	<b>90</b>	<b>4008.6</b>	<b>86</b>	<b>3991.5</b>	<b>87</b>	<b>3993.6</b>	<b>88</b>
<b>DAYS OF IEA Net Imports<sup>6</sup> -</b>	<b>156</b>	<b>-</b>	<b>156</b>	<b>-</b>	<b>243</b>	<b>-</b>	<b>241</b>	<b>-</b>	<b>241</b>	<b>-</b>

<sup>1</sup> Total Stocks are industry and government-controlled stocks (see breakdown in the table below). Stocks are primary national territory stocks on land (excluding utility stocks and including pipeline and entropot stocks where known) they include stocks held by industry to meet IEA, EU and national emergency reserves commitments and are subject to government control in emergencies.

<sup>2</sup> Note that days of forward demand represent the stock level divided by the forward quarter average daily demand and is very different from the days of net imports used for the calculation of IEA Emergency Reserves.

<sup>3</sup> End December 2022 forward demand figures are IEA Secretariat forecasts.

<sup>4</sup> US figures exclude US territories. Total includes US territories.

<sup>5</sup> Data not available for Iceland.

<sup>6</sup> Reflects stock levels and prior calendar year's net imports adjusted according to IEA emergency reserve definitions (see [www.iea.org/netimports.asp](http://www.iea.org/netimports.asp)). Net exporting IEA countries are excluded.

<b>TOTAL OECD STOCKS</b>						
<b>CLOSING STOCKS</b>	<b>Total</b>	<b>Government<sup>1</sup></b>	<b>Industry</b>	<b>Total</b>	<b>Government<sup>1</sup></b>	<b>Industry</b>
		<b>controlled</b>			<b>controlled</b>	
		<b>Millions of Barrels</b>			<b>Days of Fwd. Demand<sup>2</sup></b>	
4Q2019	4429	1535	2894	98	34	64
1Q2020	4518	1537	2981	121	41	80
2Q2020	4778	1561	3217	113	37	76
3Q2020	4732	1551	3181	110	36	74
4Q2020	4578	1541	3037	108	36	72
1Q2021	4472	1546	2926	102	35	67
2Q2021	4407	1524	2884	97	33	63
3Q2021	4282	1513	2770	92	32	59
4Q2021	4134	1484	2651	90	32	58
1Q2022	4055	1442	2613	90	32	58
2Q2022	4009	1343	2665	86	29	57
3Q2022	3991	1245	2746	87	27	60
4Q2022	3994	1217	2777	88	27	61

<sup>1</sup> Includes government-owned stocks and stock holding organisation stocks held for emergency purposes.

<sup>2</sup> Days of forward demand calculated using actual demand except in 4Q2022 (where latest forecasts are used).

**Table 6**  
**IEA MEMBER COUNTRY DESTINATIONS OF SELECTED CRUDE STREAMS<sup>1</sup>**  
(million barrels per day)

											Year Earlier	
	2020	2021	2022	1Q22	2Q22	3Q22	4Q22	Nov 22	Dec 22	Jan 23	Jan 22	change
Saudi Light & Extra Light												
Americas	0.26	0.34	0.46	0.44	0.46	0.52	0.41	0.44	0.44	0.38	0.36	0.02
Europe	0.59	0.48	0.62	0.53	0.68	0.60	0.67	0.58	0.86	0.92	0.51	0.41
Asia Oceania	1.39	1.30	1.51	1.57	1.36	1.53	1.58	1.66	1.61	1.57	1.65	-0.08
Saudi Medium												
Americas	0.14	0.01	-	-	-	-	-	-	-	-	-	-
Europe	0.02	0.01	0.02	0.00	0.04	0.03	0.01	-	0.03	-	-	-
Asia Oceania	0.25	0.21	0.23	0.20	0.26	0.26	0.23	0.26	0.26	0.26	0.25	0.01
Canada Heavy												
Americas	2.39	2.59	2.61	2.69	2.54	2.58	2.63	2.62	2.55	2.73	2.49	0.24
Europe	0.03	0.03	0.08	0.03	0.09	0.08	0.11	0.09	0.14	0.02	0.02	0.00
Asia Oceania	0.00	0.02	0.01	0.01	0.01	0.01	-	-	-	-	-	-
Iraqi Basrah Light <sup>2</sup>												
Americas	0.11	0.08	0.21	0.16	0.30	0.25	0.13	0.21	-	0.34	0.21	0.13
Europe	0.58	0.62	0.69	0.61	0.64	0.82	0.69	0.76	0.66	0.71	0.46	0.25
Asia Oceania	0.22	0.17	0.23	0.17	0.20	0.26	0.26	0.35	0.22	0.25	0.12	0.13
Kuwait Blend												
Americas	-	-	-	-	-	-	-	-	-	-	-	-
Europe	0.04	-	-	-	-	-	-	-	-	-	-	-
Asia Oceania	0.55	0.48	0.48	0.58	0.42	0.47	0.46	0.51	0.45	0.54	0.61	-0.07
Iranian Light												
Americas	-	-	-	-	-	-	-	-	-	-	-	-
Europe	-	-	-	-	-	-	-	-	-	-	-	-
Asia Oceania	-	-	-	-	-	-	-	-	-	-	-	-
Iranian Heavy <sup>3</sup>												
Americas	-	-	-	-	-	-	-	-	-	-	-	-
Europe	-	-	-	-	-	-	-	-	-	-	-	-
Asia Oceania	-	-	-	-	-	-	-	-	-	-	-	-
BFOE												
Americas	-	0.00	-	-	-	-	-	-	-	-	-	-
Europe	0.42	0.36	0.41	0.38	0.44	0.44	0.38	0.31	0.48	0.52	0.48	0.04
Asia Oceania	0.03	0.05	0.03	0.02	0.06	0.02	-	-	-	-	-	-
Kazakhstan												
Americas	-	0.01	-	-	-	-	-	-	-	-	-	-
Europe	0.74	0.69	0.73	0.86	0.69	0.67	0.70	0.62	0.92	1.05	0.92	0.13
Asia Oceania	0.07	0.09	0.13	0.14	0.16	0.09	0.14	0.14	0.17	0.10	0.10	0.00
Venezuelan 22 API and heavier												
Americas	-	-	-	-	-	-	-	-	-	-	-	-
Europe	0.04	-	0.01	-	-	0.04	0.02	0.03	0.03	-	-	-
Asia Oceania	-	-	-	-	-	-	-	-	-	-	-	-
Mexican Maya												
Americas	0.48	0.40	0.40	0.36	0.47	0.40	0.36	0.28	0.35	0.44	0.40	0.04
Europe	0.16	0.14	0.10	0.11	0.07	0.09	0.12	0.17	0.10	0.10	0.13	-0.03
Asia Oceania	0.12	0.14	0.06	0.08	0.05	0.04	0.08	0.04	0.09	0.03	0.09	-0.06
Russian Urals												
Americas	-	-	-	-	-	-	-	-	-	-	-	-
Europe	1.12	1.05	0.74	1.08	0.79	0.71	0.40	0.47	0.25	0.22	1.31	-1.09
Asia Oceania	-	0.01	-	-	-	-	-	-	-	-	-	-
Cabinda and Other Angola												
North America	0.01	-	0.00	-	-	0.00	-	-	-	-	-	-
Europe	0.12	0.03	0.23	0.06	0.26	0.29	0.30	0.36	0.26	0.42	0.03	0.39
Pacific	-	-	0.00	-	-	0.01	0.01	-	-	-	-	-
Nigerian Light <sup>4</sup>												
Americas	-	0.02	0.00	-	-	0.01	-	-	-	-	-	-
Europe	0.49	0.41	0.41	0.47	0.43	0.29	0.46	0.64	0.51	0.58	0.38	0.20
Asia Oceania	0.02	0.01	0.01	-	-	0.02	0.02	-	0.03	-	-	-
Libya Light and Medium												
Americas	-	0.02	-	-	-	-	-	-	-	-	-	-
Europe	0.19	0.80	0.63	0.66	0.56	0.52	0.76	0.69	0.72	0.65	0.50	0.15
Asia Oceania	0.01	0.02	0.01	0.02	0.02	0.01	0.01	0.03	0.01	0.02	0.03	-0.01

<sup>1</sup> Data based on monthly submissions from IEA countries to the crude oil import register (in '000 bbl), subject to availability. May differ from Table 8 of the Report. IEA Americas includes United States and Canada. IEA Europe includes all countries in OECD Europe except Estonia, Hungary, Slovenia and Latvia. IEA Asia Oceania includes Australia, New Zealand, Korea and Japan.

<sup>2</sup> Iraqi Total minus Kirkuk.

<sup>3</sup> Iranian Total minus Iranian Light.

<sup>4</sup> 33° API and lighter (e.g., Bonny Light, Escravos, Qua Iboe and Oso Condensate).

**Table 7**  
**REGIONAL OECD IMPORTS<sup>1,2</sup>**  
(thousand barrels per day)

	2020	2021	2022	1Q22	2Q22	3Q22	4Q22	Nov 22	Dec 22	Jan 23	Year Earlier	
											Jan 22	% change
<b>Crude Oil</b>												
Americas	1896	2077	2115	2096	2075	2161	2128	2304	2119	2061	2095	-2%
Europe	8349	8516	9094	8892	9196	9298	8987	9113	9228	8670	8853	-2%
Asia Oceania	5579	5519	5839	6101	5363	6197	5694	5978	5776	5580	6182	-10%
<b>Total OECD</b>	<b>15823</b>	<b>16113</b>	<b>17048</b>	<b>17089</b>	<b>16633</b>	<b>17656</b>	<b>16810</b>	<b>17395</b>	<b>17122</b>	<b>16311</b>	<b>17130</b>	<b>-5%</b>
<b>LPG</b>												
Americas	28	21	25	39	21	24	18	31	10	42	30	39%
Europe	422	404	508	470	503	497	562	556	578	569	471	21%
Asia Oceania	559	563	580	681	569	533	539	575	552	678	664	2%
<b>Total OECD</b>	<b>1009</b>	<b>988</b>	<b>1113</b>	<b>1189</b>	<b>1093</b>	<b>1054</b>	<b>1119</b>	<b>1163</b>	<b>1141</b>	<b>1289</b>	<b>1166</b>	<b>11%</b>
<b>Naphtha</b>												
Americas	7	8	7	6	6	7	8	4	18	9	7	30%
Europe	409	512	305	399	409	225	192	151	191	216	426	-49%
Asia Oceania	1003	1146	1047	1078	971	1063	1074	1075	1059	1100	1166	-6%
<b>Total OECD</b>	<b>1419</b>	<b>1667</b>	<b>1358</b>	<b>1482</b>	<b>1386</b>	<b>1295</b>	<b>1274</b>	<b>1230</b>	<b>1268</b>	<b>1325</b>	<b>1599</b>	<b>-17%</b>
<b>Gasoline<sup>3</sup></b>												
Americas	576	805	675	485	890	733	590	576	613	563	403	40%
Europe	109	106	101	102	125	108	69	61	65	54	109	-51%
Asia Oceania	116	146	169	157	175	173	171	180	156	185	158	17%
<b>Total OECD</b>	<b>801</b>	<b>1057</b>	<b>945</b>	<b>745</b>	<b>1190</b>	<b>1014</b>	<b>830</b>	<b>818</b>	<b>834</b>	<b>801</b>	<b>669</b>	<b>20%</b>
<b>Jet &amp; Kerosene</b>												
Americas	159	165	134	120	123	115	177	162	207	148	127	17%
Europe	337	334	453	306	429	538	536	566	447	363	254	43%
Asia Oceania	60	71	90	71	76	69	141	139	162	184	70	162%
<b>Total OECD</b>	<b>556</b>	<b>570</b>	<b>677</b>	<b>497</b>	<b>629</b>	<b>722</b>	<b>855</b>	<b>867</b>	<b>816</b>	<b>694</b>	<b>451</b>	<b>54%</b>
<b>Gasoil/Diesel</b>												
Americas	134	197	99	158	76	41	120	163	148	162	124	31%
Europe	1192	1192	1220	1093	1145	1152	1486	1327	1605	1301	1115	17%
Asia Oceania	328	352	324	299	352	314	329	343	342	314	266	18%
<b>Total OECD</b>	<b>1654</b>	<b>1740</b>	<b>1642</b>	<b>1551</b>	<b>1572</b>	<b>1507</b>	<b>1935</b>	<b>1833</b>	<b>2095</b>	<b>1778</b>	<b>1505</b>	<b>18%</b>
<b>Heavy Fuel Oil</b>												
Americas	143	102	122	139	135	82	132	189	89	126	62	102%
Europe	295	374	260	302	253	244	241	254	193	125	262	-52%
Asia Oceania	88	119	89	117	96	68	75	64	71	111	135	-18%
<b>Total OECD</b>	<b>526</b>	<b>594</b>	<b>470</b>	<b>559</b>	<b>484</b>	<b>393</b>	<b>448</b>	<b>507</b>	<b>353</b>	<b>361</b>	<b>459</b>	<b>-21%</b>
<b>Other Products</b>												
Americas	591	580	497	496	534	502	457	468	407	462	442	4%
Europe	574	575	608	667	557	625	582	619	548	613	577	6%
Asia Oceania	207	233	206	221	182	218	202	200	182	198	200	-1%
<b>Total OECD</b>	<b>1372</b>	<b>1389</b>	<b>1311</b>	<b>1384</b>	<b>1274</b>	<b>1345</b>	<b>1242</b>	<b>1287</b>	<b>1137</b>	<b>1272</b>	<b>1219</b>	<b>4%</b>
<b>Total Products</b>												
Americas	1639	1878	1558	1443	1786	1502	1502	1594	1492	1512	1195	27%
Europe	3339	3497	3455	3339	3421	3388	3669	3535	3627	3240	3214	1%
Asia Oceania	2360	2630	2503	2624	2420	2438	2532	2576	2524	2769	2659	4%
<b>Total OECD</b>	<b>7338</b>	<b>8005</b>	<b>7517</b>	<b>7407</b>	<b>7627</b>	<b>7329</b>	<b>7702</b>	<b>7705</b>	<b>7644</b>	<b>7520</b>	<b>7069</b>	<b>6%</b>
<b>Total Oil</b>												
Americas	3534	3955	3674	3540	3861	3663	3630	3898	3611	3573	3290	9%
Europe	11688	12013	12549	12231	12617	12686	12656	12648	12856	11910	12067	-1%
Asia Oceania	7939	8150	8342	8725	7783	8635	8225	8554	8300	8349	8842	-6%
<b>Total OECD</b>	<b>23161</b>	<b>24118</b>	<b>24564</b>	<b>24496</b>	<b>24260</b>	<b>24985</b>	<b>24512</b>	<b>25100</b>	<b>24766</b>	<b>23831</b>	<b>24198</b>	<b>-2%</b>

1 Based on Monthly Oil Questionnaire data submitted by OECD countries in tonnes and converted to barrels conversion factors available at <https://www.iea.org/articles/oil-market-report-glossary#>.

2 Excludes intra-regional trade.

3 Includes additives.



**Table 7a**  
**REGIONAL OECD IMPORTS FROM NON-OECD COUNTRIES<sup>1,2</sup>**  
(thousand barrels per day)

	2020	2021	2022	1Q22	2Q22	3Q22	4Q22	Nov 22	Dec 22	Jan 23	Year Earlier	
											Jan 22	% change
<b>Crude Oil</b>												
Americas	1835	1982	2049	2033	2012	2093	2056	2230	2050	1968	2029	-3%
Europe	7115	7264	7529	7550	7681	7618	7270	7256	7522	6848	7550	-9%
Asia Oceania	5051	4910	5260	5480	4849	5659	5052	5409	5097	4978	5552	-10%
<b>Total OECD</b>	<b>14002</b>	<b>14156</b>	<b>14838</b>	<b>15062</b>	<b>14542</b>	<b>15370</b>	<b>14379</b>	<b>14894</b>	<b>14670</b>	<b>13794</b>	<b>15131</b>	<b>-9%</b>
<b>LPG</b>												
Americas	22	20	25	37	21	24	18	31	10	42	24	74%
Europe	252	242	255	253	249	236	284	287	285	234	228	3%
Asia Oceania	58	47	62	90	53	55	53	87	25	43	74	-42%
<b>Total OECD</b>	<b>331</b>	<b>309</b>	<b>343</b>	<b>379</b>	<b>323</b>	<b>315</b>	<b>354</b>	<b>405</b>	<b>321</b>	<b>319</b>	<b>326</b>	<b>-2%</b>
<b>Naphtha</b>												
Americas	1	4	3	3	2	2	6	2	15	6	5	26%
Europe	390	425	271	338	332	224	190	151	191	195	331	-41%
Asia Oceania	832	975	945	942	929	953	959	964	937	1016	947	7%
<b>Total OECD</b>	<b>1223</b>	<b>1404</b>	<b>1219</b>	<b>1283</b>	<b>1263</b>	<b>1179</b>	<b>1155</b>	<b>1117</b>	<b>1143</b>	<b>1218</b>	<b>1283</b>	<b>-5%</b>
<b>Gasoline<sup>3</sup></b>												
Americas	195	248	174	111	233	214	137	103	204	184	77	137%
Europe	104	100	84	84	103	90	58	53	52	39	83	-53%
Asia Oceania	98	141	169	157	174	173	171	180	156	185	158	17%
<b>Total OECD</b>	<b>397</b>	<b>489</b>	<b>427</b>	<b>352</b>	<b>511</b>	<b>477</b>	<b>366</b>	<b>337</b>	<b>413</b>	<b>407</b>	<b>318</b>	<b>28%</b>
<b>Jet &amp; Kerosene</b>												
Americas	55	63	47	43	33	25	89	58	105	76	51	47%
Europe	297	298	393	303	381	464	423	409	405	354	252	40%
Asia Oceania	60	71	89	71	76	69	141	139	162	184	70	162%
<b>Total OECD</b>	<b>413</b>	<b>433</b>	<b>530</b>	<b>416</b>	<b>489</b>	<b>558</b>	<b>654</b>	<b>606</b>	<b>672</b>	<b>614</b>	<b>374</b>	<b>64%</b>
<b>Gasoil/Diesel</b>												
Americas	103	134	43	87	26	12	48	64	75	117	61	92%
Europe	1062	1109	1108	1026	1062	1037	1305	1179	1374	1121	1061	6%
Asia Oceania	323	352	324	299	352	314	329	343	342	314	266	18%
<b>Total OECD</b>	<b>1488</b>	<b>1595</b>	<b>1475</b>	<b>1412</b>	<b>1439</b>	<b>1364</b>	<b>1682</b>	<b>1586</b>	<b>1791</b>	<b>1552</b>	<b>1388</b>	<b>12%</b>
<b>Heavy Fuel Oil</b>												
Americas	110	86	90	109	101	56	96	128	70	109	62	74%
Europe	279	347	239	282	239	215	220	227	171	104	240	-56%
Asia Oceania	88	119	89	117	96	68	75	64	70	111	135	-18%
<b>Total OECD</b>	<b>477</b>	<b>552</b>	<b>418</b>	<b>508</b>	<b>436</b>	<b>339</b>	<b>391</b>	<b>419</b>	<b>311</b>	<b>324</b>	<b>437</b>	<b>-26%</b>
<b>Other Products</b>												
Americas	514	530	420	455	471	397	359	370	322	338	403	-16%
Europe	352	398	421	481	379	433	394	449	312	325	402	-19%
Asia Oceania	130	155	133	148	114	141	131	152	106	119	146	-18%
<b>Total OECD</b>	<b>996</b>	<b>1083</b>	<b>975</b>	<b>1083</b>	<b>964</b>	<b>971</b>	<b>884</b>	<b>971</b>	<b>741</b>	<b>782</b>	<b>951</b>	<b>-18%</b>
<b>Total Products</b>												
Americas	1000	1085	803	844	887	730	753	756	802	871	684	27%
Europe	2735	2920	2772	2767	2745	2701	2873	2756	2791	2373	2596	-9%
Asia Oceania	1590	1860	1812	1824	1792	1773	1858	1930	1798	1972	1796	10%
<b>Total OECD</b>	<b>5325</b>	<b>5864</b>	<b>5386</b>	<b>5434</b>	<b>5424</b>	<b>5203</b>	<b>5485</b>	<b>5442</b>	<b>5392</b>	<b>5216</b>	<b>5076</b>	<b>3%</b>
<b>Total Oil</b>												
Americas	2835	3067	2852	2876	2900	2824	2810	2986	2852	2839	2714	5%
Europe	9850	10183	10301	10317	10425	10318	10144	10012	10313	9220	10146	-9%
Asia Oceania	6641	6769	7072	7304	6642	7431	6911	7338	6896	6951	7348	-5%
<b>Total OECD</b>	<b>19327</b>	<b>20020</b>	<b>20224</b>	<b>20497</b>	<b>19966</b>	<b>20573</b>	<b>19864</b>	<b>20336</b>	<b>20061</b>	<b>19010</b>	<b>20207</b>	<b>-6%</b>

1 Based on Monthly Oil Questionnaire data submitted by OECD countries in tonnes and converted to barrels

conversion factors available at <https://www.iea.org/articles/oil-market-report-glossary#>.

2 Excludes intra-regional trade.

3 Includes additives.

**Table 7b**  
**INTER-REGIONAL OECD TRANSFERS<sup>1,2</sup>**  
(thousand barrels per day)

	2020	2021	2022	1Q22	2Q22	3Q22	4Q22	Nov 22	Dec 22	Jan 23	Year Earlier	
											Jan 22	% change
<b>Crude Oil</b>												
Americas	60	95	66	64	62	68	72	74	68	93	66	41%
Europe	1234	1252	1565	1342	1515	1681	1717	1857	1706	1822	1303	40%
Asia Oceania	527	610	578	621	514	538	641	570	678	602	630	-5%
<b>Total OECD</b>	<b>1821</b>	<b>1957</b>	<b>2210</b>	<b>2027</b>	<b>2091</b>	<b>2286</b>	<b>2430</b>	<b>2500</b>	<b>2453</b>	<b>2517</b>	<b>1999</b>	<b>26%</b>
<b>LPG</b>												
Americas	6	1	1	2	0	0	0	0	0	0	6	-100%
Europe	171	162	253	217	254	261	278	269	293	335	244	38%
Asia Oceania	501	516	518	591	517	478	486	488	527	635	590	8%
<b>Total OECD</b>	<b>678</b>	<b>679</b>	<b>771</b>	<b>810</b>	<b>771</b>	<b>739</b>	<b>764</b>	<b>757</b>	<b>820</b>	<b>970</b>	<b>840</b>	<b>16%</b>
<b>Naphtha</b>												
Americas	6	4	3	2	4	4	2	2	2	3	2	37%
Europe	20	87	35	61	77	1	1	0	0	20	95	-79%
Asia Oceania	170	172	101	136	42	110	115	111	123	84	219	-62%
<b>Total OECD</b>	<b>196</b>	<b>263</b>	<b>139</b>	<b>200</b>	<b>123</b>	<b>115</b>	<b>119</b>	<b>113</b>	<b>125</b>	<b>107</b>	<b>317</b>	<b>-66%</b>
<b>Gasoline<sup>3</sup></b>												
Americas	382	557	501	375	656	518	452	473	409	379	325	17%
Europe	5	6	17	18	22	18	11	8	12	15	26	-44%
Asia Oceania	18	5	0	0	0	0	0	0	0	0	0	732%
<b>Total OECD</b>	<b>404</b>	<b>567</b>	<b>518</b>	<b>393</b>	<b>679</b>	<b>536</b>	<b>464</b>	<b>481</b>	<b>422</b>	<b>394</b>	<b>352</b>	<b>12%</b>
<b>Jet &amp; Kerosene</b>												
Americas	103	102	87	78	90	90	88	105	102	72	75	-4%
Europe	40	35	60	3	48	74	113	156	42	9	2	380%
Asia Oceania	0	0	0	0	1	0	0	0	0	0	0	na
<b>Total OECD</b>	<b>144</b>	<b>138</b>	<b>147</b>	<b>81</b>	<b>139</b>	<b>164</b>	<b>201</b>	<b>261</b>	<b>144</b>	<b>81</b>	<b>77</b>	<b>5%</b>
<b>Gasoil/Diesel</b>												
Americas	31	63	56	71	50	29	72	99	73	46	63	-27%
Europe	131	82	112	67	83	114	181	148	231	180	55	230%
Asia Oceania	4	0	0	0	0	0	0	0	0	0	0	na
<b>Total OECD</b>	<b>166</b>	<b>146</b>	<b>167</b>	<b>138</b>	<b>133</b>	<b>143</b>	<b>254</b>	<b>247</b>	<b>304</b>	<b>226</b>	<b>117</b>	<b>92%</b>
<b>Heavy Fuel Oil</b>												
Americas	33	16	31	31	34	25	35	61	19	17	0	na
Europe	16	26	21	20	14	28	22	27	22	20	22	-7%
Asia Oceania	0	0	0	0	0	0	0	0	1	0	0	na
<b>Total OECD</b>	<b>49</b>	<b>42</b>	<b>52</b>	<b>50</b>	<b>48</b>	<b>53</b>	<b>57</b>	<b>88</b>	<b>42</b>	<b>37</b>	<b>22</b>	<b>70%</b>
<b>Other Products</b>												
Americas	78	50	77	41	64	105	98	98	84	124	39	216%
Europe	222	178	186	187	178	192	189	169	235	288	174	65%
Asia Oceania	77	78	73	73	69	77	71	48	76	78	54	44%
<b>Total OECD</b>	<b>377</b>	<b>306</b>	<b>336</b>	<b>301</b>	<b>310</b>	<b>374</b>	<b>358</b>	<b>315</b>	<b>396</b>	<b>490</b>	<b>268</b>	<b>83%</b>
<b>Total Products</b>												
Americas	639	793	755	600	899	772	748	838	691	641	511	25%
Europe	604	577	683	572	676	688	795	779	836	867	618	40%
Asia Oceania	770	771	691	801	628	665	673	646	726	797	863	-8%
<b>Total OECD</b>	<b>2013</b>	<b>2141</b>	<b>2130</b>	<b>1973</b>	<b>2203</b>	<b>2125</b>	<b>2217</b>	<b>2263</b>	<b>2252</b>	<b>2304</b>	<b>1992</b>	<b>16%</b>
<b>Total Oil</b>												
Americas	699	888	822	663	961	840	820	912	759	733	576	27%
Europe	1838	1829	2249	1914	2191	2368	2513	2636	2542	2689	1921	40%
Asia Oceania	1297	1381	1270	1422	1141	1203	1314	1216	1404	1398	1494	-6%
<b>Total OECD</b>	<b>3834</b>	<b>4098</b>	<b>4340</b>	<b>3999</b>	<b>4294</b>	<b>4411</b>	<b>4647</b>	<b>4764</b>	<b>4705</b>	<b>4821</b>	<b>3991</b>	<b>21%</b>

<sup>1</sup> Based on Monthly Oil Questionnaire data submitted by OECD countries in tonnes and converted to barrels conversion factors available at <https://www.iea.org/articles/oil-market-report-glossary#>.

<sup>2</sup> Excludes intra-regional trade.

<sup>3</sup> Includes additives.

**Table 8**  
**REGIONAL OECD CRUDE IMPORTS BY SOURCE<sup>1</sup>**  
(thousand barrels per day)

	2020	2021	2022	1Q22	2Q22	3Q22	4Q22	Nov 22	Dec 22	Jan 23	Year Earlier	
											Jan 22	change
<b>OECD Americas</b>												
Venezuela	-	-	-	-	-	-	-	-	-	40	-	-
Other Central & South America	745	719	845	780	802	917	878	1010	845	816	768	47
North Sea	59	92	64	64	62	60	72	74	68	93	66	27
Other OECD Europe	1	3	-	-	-	-	-	-	-	-	-	-
Non-OECD Europe	-	-	-	-	-	-	-	-	-	-	-	-
Former Soviet Union	91	229	43	103	27	25	19	6	-	33	63	-30
Saudi Arabia	588	427	535	571	569	487	516	505	567	483	554	-71
Kuwait	21	21	27	24	25	14	42	39	48	12	46	-34
Iran	-	3	1	6	-	-	-	-	-	-	16	-
Iraq	177	152	244	225	229	277	245	265	276	252	254	-1
Oman	-	-	-	-	-	-	-	-	-	-	-	-
United Arab Emirates	5	17	12	10	19	19	-	-	-	-	30	-
Other Middle East	-	-	-	-	-	-	-	-	-	-	-	-
West Africa <sup>2</sup>	145	228	186	171	211	201	160	173	169	232	143	89
Other Africa	45	161	153	144	131	139	196	232	146	100	156	-55
Asia	17	25	5	-	-	21	-	-	-	-	-	-
Other	3	-	-	-	-	-	-	-	-	-	-	-
<b>Total</b>	<b>1896</b>	<b>2077</b>	<b>2115</b>	<b>2096</b>	<b>2075</b>	<b>2161</b>	<b>2128</b>	<b>2304</b>	<b>2119</b>	<b>2061</b>	<b>2095</b>	<b>-34</b>
<b>of which Non-OECD</b>	<b>1835</b>	<b>1982</b>	<b>2049</b>	<b>2033</b>	<b>2012</b>	<b>2093</b>	<b>2056</b>	<b>2230</b>	<b>2050</b>	<b>1968</b>	<b>2029</b>	<b>-61</b>
<b>OECD Europe</b>												
Canada	95	83	129	79	139	125	173	147	182	98	88	10
Mexico + USA	1139	1169	1436	1263	1376	1556	1544	1709	1525	1724	1215	509
Venezuela	44	-	15	-	-	35	23	37	33	-	-	-
Other Central & South America	208	219	407	217	402	562	443	328	448	517	198	319
Non-OECD Europe	25	23	15	20	12	12	15	18	16	22	20	2
Former Soviet Union	3504	3538	3179	4060	3197	2951	2527	2731	2357	1945	4246	-2301
Saudi Arabia	756	518	764	523	779	867	882	790	1054	1061	518	543
Kuwait	48	0	-	-	-	-	-	-	-	-	-	-
Iran	6	1	-	-	-	-	-	-	-	-	-	-
Iraq	814	912	989	881	1013	1121	940	990	914	962	793	170
Oman	-	-	-	-	-	-	-	-	-	0	-	-
United Arab Emirates	-	-	48	-	31	86	76	78	88	67	-	-
Other Middle East	8	9	7	-	6	11	10	-	-	-	-	-
West Africa <sup>2</sup>	1074	822	1003	807	1169	971	1063	1080	1224	1203	760	443
Other Africa	596	1197	1074	996	1038	981	1280	1201	1387	990	948	42
Asia	0	0	1	5	-	-	-	-	-	-	-	-
Other	11	1	3	3	8	-	-	-	-	19	9	10
<b>Total</b>	<b>8329</b>	<b>8493</b>	<b>9071</b>	<b>8855</b>	<b>9170</b>	<b>9278</b>	<b>8978</b>	<b>9109</b>	<b>9228</b>	<b>8610</b>	<b>8796</b>	<b>-185</b>
<b>of which Non-OECD</b>	<b>7115</b>	<b>7264</b>	<b>7529</b>	<b>7550</b>	<b>7681</b>	<b>7618</b>	<b>7270</b>	<b>7256</b>	<b>7522</b>	<b>6848</b>	<b>7550</b>	<b>-702</b>
<b>OECD Asia Oceania</b>												
Canada	1	16	6	9	6	10	-	-	-	-	-	-
Mexico + USA	477	496	538	582	452	486	633	570	678	602	614	-12
Venezuela	-	-	-	-	-	-	-	-	-	-	-	-
Other Central & South America	91	110	120	129	102	140	109	142	101	105	141	-36
North Sea	49	98	34	30	56	42	8	-	-	-	17	-
Other OECD Europe	-	-	-	-	-	-	-	-	-	-	-	-
Non-OECD Europe	-	-	-	-	-	-	-	-	-	-	-	-
Former Soviet Union	300	335	238	405	272	116	161	178	171	126	423	-297
Saudi Arabia	1867	1766	1991	2029	1862	2040	2033	1925	2228	2125	2156	-31
Kuwait	584	506	534	624	472	516	524	554	542	571	633	-62
Iran	-	-	-	-	-	-	-	-	-	-	-	-
Iraq	224	167	220	172	204	262	241	287	217	235	124	110
Oman	22	32	40	28	39	68	26	33	15	32	16	16
United Arab Emirates	1096	1083	1287	1145	1200	1509	1288	1263	1276	1118	1081	37
Other Middle East	387	362	370	442	326	424	289	291	287	295	471	-176
West Africa <sup>2</sup>	65	71	64	52	61	88	55	29	45	14	60	-45
Other Africa	42	56	37	42	31	32	43	30	40	48	50	-2
Non-OECD Asia	161	175	122	126	130	97	134	154	128	116	128	-13
Other	210	241	234	277	151	367	142	512	47	191	259	-67
<b>Total</b>	<b>5577</b>	<b>5515</b>	<b>5835</b>	<b>6093</b>	<b>5363</b>	<b>6197</b>	<b>5689</b>	<b>5967</b>	<b>5776</b>	<b>5580</b>	<b>6173</b>	<b>-593</b>
<b>of which Non-OECD</b>	<b>5051</b>	<b>4910</b>	<b>5260</b>	<b>5480</b>	<b>4849</b>	<b>5659</b>	<b>5052</b>	<b>5409</b>	<b>5097</b>	<b>4978</b>	<b>5552</b>	<b>-573</b>
<b>Total OECD Trade</b>	<b>15801</b>	<b>16085</b>	<b>17022</b>	<b>17044</b>	<b>16608</b>	<b>17636</b>	<b>16795</b>	<b>17379</b>	<b>17122</b>	<b>16251</b>	<b>17064</b>	<b>-813</b>
<b>of which Non-OECD</b>	<b>14002</b>	<b>14156</b>	<b>14838</b>	<b>15062</b>	<b>14542</b>	<b>15370</b>	<b>14379</b>	<b>14894</b>	<b>14670</b>	<b>13794</b>	<b>15131</b>	<b>-1337</b>

<sup>1</sup> Based on Monthly Oil Questionnaire data submitted by OECD countries in tonnes, and converted to barrels at 7.37 barrels per tonne. Data will differ from Table 6 which is based on submissions in barrels.

<sup>2</sup> West Africa includes Angola, Nigeria, Gabon, Equatorial Guinea, Congo and Democratic Republic of Congo.

**Table 9**  
**REGIONAL OECD GASOLINE IMPORTS BY SOURCE<sup>1</sup>**  
(thousand barrels per day)

	2020	2021	2022	1Q22	2Q22	3Q22	4Q22	Nov 22	Dec 22	Jan 23	Year Earlier	
											Jan 22	change
<b>OECD Americas</b>												
Venezuela	-	-	-	-	-	-	-	-	-	-	-	-
Other Central & South America	40	41	45	12	44	61	62	52	123	93	9	84
ARA (Belgium Germany Netherlands)	149	194	170	126	255	199	100	106	84	86	109	-24
Other Europe	213	327	293	222	364	266	320	333	295	281	197	84
FSU	56	83	8	31	3	0	-	-	-	-	12	-
Saudi Arabia	6	24	27	6	62	19	20	24	20	-	-	-
Algeria	4	1	1	-	-	2	1	4	-	-	-	-
Other Middle East & Africa	13	13	14	8	14	22	13	11	11	10	5	5
Singapore	1	4	2	-	-	4	2	-	7	2	-	-
OECD Asia Oceania	21	37	38	27	39	54	32	34	31	13	19	-6
Non-OECD Asia (excl. Singapore)	72	81	76	53	108	107	38	13	42	48	52	-4
Other	-	0	0	-	0	-	0	-	1	30	-	-
<b>Total<sup>2</sup></b>	<b>576</b>	<b>805</b>	<b>675</b>	<b>485</b>	<b>890</b>	<b>733</b>	<b>590</b>	<b>576</b>	<b>613</b>	<b>563</b>	<b>403</b>	<b>160</b>
<b>of which Non-OECD</b>	<b>195</b>	<b>248</b>	<b>174</b>	<b>111</b>	<b>233</b>	<b>214</b>	<b>137</b>	<b>103</b>	<b>204</b>	<b>184</b>	<b>77</b>	<b>106</b>
<b>OECD Europe</b>												
OECD Americas	3	5	16	17	21	17	11	7	11	15	23	-8
Venezuela	0	2	2	2	2	3	2	3	-	2	4	-2
Other Central & South America	4	7	10	14	4	14	6	6	6	2	5	-3
Non-OECD Europe	16	10	8	5	6	14	6	12	2	12	9	3
FSU	31	8	9	7	24	3	2	2	2	1	12	-11
Saudi Arabia	8	3	1	0	1	2	-	-	-	-	-	-
Algeria	1	-	6	-	12	7	4	2	-	4	-	-
Other Middle East & Africa	3	5	7	11	9	6	5	6	5	4	4	0
Singapore	2	0	2	1	2	1	3	3	5	2	1	1
OECD Asia Oceania	1	1	1	1	1	1	1	1	1	-	3	-
Non-OECD Asia (excl. Singapore)	0	3	3	3	2	4	3	1	2	3	3	0
Other	37	62	36	41	41	37	26	17	32	10	45	-35
<b>Total<sup>2</sup></b>	<b>107</b>	<b>106</b>	<b>101</b>	<b>102</b>	<b>125</b>	<b>108</b>	<b>69</b>	<b>61</b>	<b>65</b>	<b>54</b>	<b>109</b>	<b>-55</b>
<b>of which Non-OECD</b>	<b>104</b>	<b>100</b>	<b>84</b>	<b>84</b>	<b>103</b>	<b>90</b>	<b>58</b>	<b>53</b>	<b>52</b>	<b>39</b>	<b>83</b>	<b>-43</b>
<b>OECD Asia Oceania</b>												
OECD Americas	4	1	0	0	0	0	0	0	0	0	-	-
Venezuela	-	-	-	-	-	-	-	-	-	-	-	-
Other Central & South America	-	-	-	-	-	-	-	-	-	-	-	-
ARA (Belgium Germany Netherlands)	4	4	0	0	0	-	0	0	0	0	0	0
Other Europe	10	0	0	0	0	-	0	0	0	0	-	-
FSU	0	-	-	-	-	-	-	-	-	-	-	-
Saudi Arabia	-	-	-	-	-	-	-	-	-	-	-	-
Algeria	-	-	-	-	-	-	-	-	-	-	-	-
Other Middle East & Africa	1	-	-	-	-	-	-	-	-	-	-	-
Singapore	51	100	126	135	122	121	125	146	119	143	125	18
Non-OECD Asia (excl. Singapore)	37	29	30	14	44	35	26	26	27	31	23	8
Other	9	12	13	9	9	16	20	9	10	10	9	2
<b>Total<sup>2</sup></b>	<b>116</b>	<b>146</b>	<b>169</b>	<b>157</b>	<b>175</b>	<b>173</b>	<b>171</b>	<b>180</b>	<b>156</b>	<b>185</b>	<b>158</b>	<b>27</b>
<b>of which Non-OECD</b>	<b>98</b>	<b>141</b>	<b>169</b>	<b>157</b>	<b>174</b>	<b>173</b>	<b>171</b>	<b>180</b>	<b>156</b>	<b>185</b>	<b>158</b>	<b>27</b>
<b>Total OECD Trade<sup>2</sup></b>	<b>799</b>	<b>1057</b>	<b>945</b>	<b>745</b>	<b>1190</b>	<b>1014</b>	<b>830</b>	<b>818</b>	<b>834</b>	<b>801</b>	<b>669</b>	<b>132</b>
<b>of which Non-OECD</b>	<b>397</b>	<b>489</b>	<b>427</b>	<b>352</b>	<b>511</b>	<b>477</b>	<b>366</b>	<b>337</b>	<b>413</b>	<b>407</b>	<b>318</b>	<b>90</b>

<sup>1</sup> Based on Monthly Oil Questionnaire data submitted by OECD countries in tonnes.

<sup>2</sup> Total figure excludes intra-regional trade.

**Table 10**  
**REGIONAL OECD GASOIL/DIESEL IMPORTS BY SOURCE<sup>1</sup>**  
(thousand barrels per day)

	2020	2021	2022	1Q22	2Q22	3Q22	4Q22	Nov 22	Dec 22	Jan 23	Year Earlier	
											Jan 22	change
<b>OECD Americas</b>												
Venezuela	-	-	-	-	-	-	-	-	-	-	-	-
Other Central and South America	34	28	6	3	6	12	3	0	6	10	7	3
ARA (Belgium Germany Netherlands)	11	34	15	40	6	3	11	19	13	8	24	-17
Other Europe	4	5	2	2	3	0	3	6	4	0	0	0
FSU	12	25	6	25	-	-	-	-	-	-	-	-
Saudi Arabia	8	15	9	18	15	-	5	5	9	1	6	-5
Algeria	-	-	-	-	-	-	-	-	-	-	-	-
Other Middle East and Africa	9	25	4	8	-	-	8	18	6	11	-	-
Singapore	-	2	1	2	-	-	2	1	5	2	7	-5
OECD Asia Oceania	16	25	39	29	42	26	58	74	56	37	39	-1
Non-OECD Asia (excl. Singapore)	34	27	5	0	2	-	17	15	35	67	0	67
Other	6	12	11	31	3	-	13	24	15	25	41	-15
<b>Total<sup>2</sup></b>	<b>134</b>	<b>197</b>	<b>99</b>	<b>158</b>	<b>76</b>	<b>41</b>	<b>120</b>	<b>163</b>	<b>148</b>	<b>162</b>	<b>124</b>	<b>39</b>
<b>of which Non-OECD</b>	<b>103</b>	<b>134</b>	<b>43</b>	<b>87</b>	<b>26</b>	<b>12</b>	<b>48</b>	<b>64</b>	<b>75</b>	<b>117</b>	<b>61</b>	<b>56</b>
<b>OECD Europe</b>												
OECD Americas	99	40	82	31	61	97	136	107	187	166	18	149
Venezuela	-	-	-	-	-	-	-	-	-	-	-	-
Other Central and South America	3	1	1	1	1	3	0	-	-	-	-	-
Non-OECD Europe	30	35	43	39	46	43	45	41	36	13	40	-27
FSU	627	611	528	595	472	506	538	559	603	414	550	-136
Saudi Arabia	193	140	166	98	163	186	216	251	182	234	175	59
Algeria	2	-	-	-	-	-	-	-	-	-	-	-
Other Middle East and Africa	71	158	161	137	160	147	199	184	169	200	208	-8
Singapore	17	19	37	39	50	28	33	24	39	28	4	24
OECD Asia Oceania	32	42	30	36	22	18	45	41	44	14	37	-23
Non-OECD Asia (excl. Singapore)	101	126	153	88	149	105	268	111	344	231	60	170
Other	15	20	18	30	20	19	6	10	1	1	23	-22
<b>Total<sup>2</sup></b>	<b>1190</b>	<b>1191</b>	<b>1220</b>	<b>1092</b>	<b>1145</b>	<b>1152</b>	<b>1486</b>	<b>1327</b>	<b>1605</b>	<b>1301</b>	<b>1115</b>	<b>186</b>
<b>of which Non-OECD</b>	<b>1062</b>	<b>1109</b>	<b>1108</b>	<b>1026</b>	<b>1062</b>	<b>1037</b>	<b>1305</b>	<b>1179</b>	<b>1374</b>	<b>1121</b>	<b>1061</b>	<b>61</b>
<b>OECD Asia Oceania</b>												
OECD Americas	4	0	0	-	-	-	0	-	0	0	-	-
Venezuela	-	-	-	-	-	-	-	-	-	-	-	-
Other Central and South America	0	-	-	-	-	-	-	-	-	-	-	-
ARA (Belgium Germany Netherlands)	0	0	0	0	0	0	0	0	0	0	-	-
Other Europe	-	0	-	-	-	-	-	-	-	-	-	-
FSU	2	1	-	-	-	-	-	-	-	-	-	-
Saudi Arabia	-	-	-	-	-	-	-	-	-	-	-	-
Algeria	-	-	-	-	-	-	-	-	-	-	-	-
Other Middle East and Africa	13	4	6	-	11	14	-	-	-	-	-	-
Singapore	91	109	112	123	117	112	97	111	83	98	83	15
Non-OECD Asia (excl. Singapore)	208	229	193	168	217	177	210	223	242	209	179	30
Other	9	8	12	8	7	11	22	8	17	6	4	2
<b>Total<sup>2</sup></b>	<b>328</b>	<b>352</b>	<b>324</b>	<b>299</b>	<b>352</b>	<b>314</b>	<b>329</b>	<b>343</b>	<b>342</b>	<b>314</b>	<b>266</b>	<b>48</b>
<b>of which Non-OECD</b>	<b>323</b>	<b>352</b>	<b>324</b>	<b>299</b>	<b>352</b>	<b>314</b>	<b>329</b>	<b>343</b>	<b>342</b>	<b>314</b>	<b>266</b>	<b>48</b>
<b>Total OECD Trade<sup>2</sup></b>	<b>1652</b>	<b>1740</b>	<b>1642</b>	<b>1550</b>	<b>1572</b>	<b>1507</b>	<b>1935</b>	<b>1833</b>	<b>2095</b>	<b>1778</b>	<b>1505</b>	<b>273</b>
<b>of which Non-OECD</b>	<b>1488</b>	<b>1595</b>	<b>1475</b>	<b>1412</b>	<b>1439</b>	<b>1364</b>	<b>1682</b>	<b>1586</b>	<b>1791</b>	<b>1552</b>	<b>1388</b>	<b>164</b>

<sup>1</sup> Based on Monthly Oil Questionnaire data submitted by OECD countries in tonnes.

<sup>2</sup> Total figure excludes intra-regional trade.

**Table 11**  
**REGIONAL OECD JET AND KEROSENE IMPORTS BY SOURCE<sup>1</sup>**  
(thousand barrels per day)

	2020	2021	2022	1Q22	2Q22	3Q22	4Q22	Nov 22	Dec 22	Jan 23	Year Earlier	
											Jan 22	change
<b>OECD Americas</b>												
Venezuela	-	-	-	-	-	-	-	-	-	-	-	-
Other Central and South America	5	1	0	-	-	-	1	-	-	-	-	-
ARA (Belgium Germany Netherlands)	-	5	0	-	0	-	0	-	-	-	-	-
Other Europe	4	7	1	0	1	-	4	-	11	-	-	-
FSU	0	4	1	3	-	-	-	-	-	-	2	-
Saudi Arabia	6	6	1	5	-	-	1	-	2	-	1	-
Algeria	1	4	0	-	-	-	1	4	-	-	-	-
Other Middle East and Africa	11	18	16	11	10	6	38	19	43	28	11	17
Singapore	4	2	1	2	2	1	2	2	3	-	2	-
OECD Asia Oceania	100	91	85	78	90	90	85	105	91	72	75	-3
Non-OECD Asia (excl. Singapore)	23	27	24	17	18	17	44	32	52	37	21	16
Other	4	1	3	5	4	1	1	-	4	11	14	-4
<b>Total<sup>2</sup></b>	<b>159</b>	<b>165</b>	<b>134</b>	<b>120</b>	<b>123</b>	<b>115</b>	<b>177</b>	<b>162</b>	<b>207</b>	<b>148</b>	<b>127</b>	<b>21</b>
<b>of which Non-OECD</b>	<b>55</b>	<b>63</b>	<b>47</b>	<b>43</b>	<b>33</b>	<b>25</b>	<b>89</b>	<b>58</b>	<b>105</b>	<b>76</b>	<b>51</b>	<b>24</b>
<b>OECD Europe</b>												
OECD Americas	13	3	6	1	4	6	11	14	3	6	0	5
Venezuela	-	-	-	-	-	-	-	-	-	-	-	-
Other Central and South America	0	0	0	-	1	1	-	-	-	-	-	-
Non-OECD Europe	0	0	3	-	4	4	5	11	4	2	-	-
FSU	21	27	16	20	12	16	14	17	12	18	15	2
Saudi Arabia	40	27	54	37	58	62	61	62	49	69	46	23
Algeria	9	5	4	3	8	5	-	-	-	-	-	-
Other Middle East and Africa	155	155	174	154	186	210	145	151	116	128	161	-33
Singapore	10	11	13	6	11	26	10	3	16	6	3	3
OECD Asia Oceania	27	32	54	2	44	68	102	142	39	3	1	2
Non-OECD Asia (excl. Singapore)	50	62	122	78	95	125	188	166	207	128	27	101
Other	10	9	5	4	2	14	0	0	1	2	0	1
<b>Total<sup>2</sup></b>	<b>336</b>	<b>333</b>	<b>452</b>	<b>306</b>	<b>425</b>	<b>538</b>	<b>536</b>	<b>566</b>	<b>447</b>	<b>361</b>	<b>254</b>	<b>107</b>
<b>of which Non-OECD</b>	<b>297</b>	<b>298</b>	<b>393</b>	<b>303</b>	<b>381</b>	<b>464</b>	<b>423</b>	<b>409</b>	<b>405</b>	<b>354</b>	<b>252</b>	<b>102</b>
<b>OECD Asia Oceania</b>												
OECD Americas	-	0	0	0	0	-	0	0	0	-	-	-
Venezuela	-	-	-	-	-	-	-	-	-	-	-	-
Other Central and South America	-	-	-	-	-	-	-	-	-	-	-	-
ARA (Belgium Germany Netherlands)	-	0	0	-	-	-	0	-	0	-	-	-
Other Europe	-	0	0	-	1	-	-	-	-	-	-	-
FSU	-	-	-	-	-	-	-	-	-	-	-	-
Saudi Arabia	-	-	-	-	-	-	-	-	-	-	-	-
Algeria	-	-	-	-	-	-	-	-	-	-	-	-
Other Middle East and Africa	-	1	0	-	0	-	0	0	0	0	-	-
Singapore	14	16	34	26	28	42	39	49	26	25	22	3
Non-OECD Asia (excl. Singapore)	28	34	38	20	38	20	73	71	83	117	18	98
Other	18	21	18	25	9	7	29	19	53	42	30	13
<b>Total<sup>2</sup></b>	<b>60</b>	<b>71</b>	<b>90</b>	<b>71</b>	<b>76</b>	<b>69</b>	<b>141</b>	<b>139</b>	<b>162</b>	<b>184</b>	<b>70</b>	<b>114</b>
<b>of which Non-OECD</b>	<b>60</b>	<b>71</b>	<b>89</b>	<b>71</b>	<b>76</b>	<b>69</b>	<b>141</b>	<b>139</b>	<b>162</b>	<b>184</b>	<b>70</b>	<b>114</b>
<b>Total OECD Trade<sup>2</sup></b>	<b>555</b>	<b>570</b>	<b>676</b>	<b>497</b>	<b>624</b>	<b>722</b>	<b>855</b>	<b>867</b>	<b>816</b>	<b>693</b>	<b>451</b>	<b>242</b>
<b>of which Non-OECD</b>	<b>413</b>	<b>433</b>	<b>530</b>	<b>416</b>	<b>489</b>	<b>558</b>	<b>654</b>	<b>606</b>	<b>672</b>	<b>614</b>	<b>374</b>	<b>240</b>

<sup>1</sup> Based on Monthly Oil Questionnaire data submitted by OECD countries in tonnes.

<sup>2</sup> Total figure excludes intra-regional trade.

**Table 12**  
**REGIONAL OECD RESIDUAL FUEL OIL IMPORTS BY SOURCE<sup>1</sup>**  
(thousand barrels per day)

	2020	2021	2022	1Q22	2Q22	3Q22	4Q22	Nov 22	Dec 22	Jan 23	Year Earlier	
											Jan 22	change
<b>OECD Americas</b>												
Venezuela	-	-	-	-	-	-	-	-	-	-	-	-
Other Central and South America	52	34	53	55	53	36	69	90	64	69	13	56
ARA (Belgium Germany Netherlands)	12	6	12	6	11	14	18	35	-	9	-	-
Other Europe	21	10	19	25	23	11	18	26	19	8	-	-
FSU	43	34	21	46	24	4	9	6	2	0	50	-49
Saudi Arabia	2	0	7	1	12	8	6	15	2	9	-	-
Algeria	2	7	4	-	10	4	1	3	-	10	-	-
Other Middle East and Africa	10	8	4	6	1	3	5	10	2	13	-	-
Singapore	1	0	-	-	-	-	-	-	-	-	-	-
OECD Asia Oceania	-	0	-	-	-	-	-	-	-	-	-	-
Non-OECD Asia (excl. Singapore)	-	2	2	-	-	2	6	4	0	8	-	-
Other	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total<sup>2</sup></b>	<b>143</b>	<b>102</b>	<b>122</b>	<b>139</b>	<b>135</b>	<b>82</b>	<b>132</b>	<b>189</b>	<b>89</b>	<b>126</b>	<b>62</b>	<b>63</b>
<b>of which Non-OECD</b>	<b>110</b>	<b>86</b>	<b>90</b>	<b>109</b>	<b>101</b>	<b>56</b>	<b>96</b>	<b>128</b>	<b>70</b>	<b>109</b>	<b>62</b>	<b>46</b>
<b>OECD Europe</b>												
OECD Americas	12	24	13	13	6	21	11	13	9	4	18	-14
Venezuela	-	-	-	-	-	-	-	-	-	-	-	-
Other Central and South America	6	4	5	1	3	6	10	21	10	2	2	0
Non-OECD Europe	13	12	31	17	35	47	25	4	18	23	23	0
FSU	141	247	121	216	119	89	63	42	93	51	152	-101
Saudi Arabia	2	-	-	-	-	-	-	-	-	1	-	-
Algeria	2	2	5	-	13	4	2	7	-	7	-	-
Other Middle East and Africa	13	14	21	11	34	9	31	46	2	1	13	-13
Singapore	3	3	2	5	0	2	0	-	1	2	7	-4
OECD Asia Oceania	4	3	8	7	7	7	11	14	14	16	4	12
Non-OECD Asia (excl. Singapore)	-	-	2	-	-	3	6	7	5	16	-	-
Other	93	59	45	30	33	51	67	100	40	1	43	-42
<b>Total<sup>2</sup></b>	<b>288</b>	<b>368</b>	<b>254</b>	<b>300</b>	<b>251</b>	<b>238</b>	<b>227</b>	<b>254</b>	<b>192</b>	<b>124</b>	<b>262</b>	<b>-138</b>
<b>of which Non-OECD</b>	<b>279</b>	<b>347</b>	<b>239</b>	<b>282</b>	<b>239</b>	<b>215</b>	<b>220</b>	<b>227</b>	<b>171</b>	<b>104</b>	<b>240</b>	<b>-136</b>
<b>OECD Asia Oceania</b>												
OECD Americas	-	-	-	-	-	-	-	-	-	-	-	-
Venezuela	-	-	-	-	-	-	-	-	-	-	-	-
Other Central and South America	0	-	-	-	-	-	-	-	-	-	-	-
ARA (Belgium Germany Netherlands)	-	0	0	-	0	-	0	-	1	-	-	-
Other Europe	-	-	0	-	-	-	0	-	-	-	-	-
FSU	5	0	-	-	-	-	-	-	-	-	-	-
Saudi Arabia	1	13	16	12	29	15	7	22	-	10	8	2
Algeria	-	-	-	-	-	-	-	-	-	-	-	-
Other Middle East and Africa	38	30	7	6	6	2	13	4	19	8	-	-
Singapore	18	29	22	34	21	19	14	15	24	33	63	-30
Non-OECD Asia (excl. Singapore)	26	47	44	64	39	32	40	23	27	59	63	-5
Other	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total<sup>2</sup></b>	<b>88</b>	<b>119</b>	<b>89</b>	<b>117</b>	<b>96</b>	<b>68</b>	<b>75</b>	<b>64</b>	<b>71</b>	<b>111</b>	<b>135</b>	<b>-24</b>
<b>of which Non-OECD</b>	<b>88</b>	<b>119</b>	<b>89</b>	<b>117</b>	<b>96</b>	<b>68</b>	<b>75</b>	<b>64</b>	<b>70</b>	<b>111</b>	<b>135</b>	<b>-24</b>
<b>Total OECD Trade<sup>2</sup></b>	<b>519</b>	<b>588</b>	<b>464</b>	<b>556</b>	<b>482</b>	<b>387</b>	<b>434</b>	<b>507</b>	<b>352</b>	<b>361</b>	<b>459</b>	<b>-99</b>
<b>of which Non-OECD</b>	<b>477</b>	<b>552</b>	<b>418</b>	<b>508</b>	<b>436</b>	<b>339</b>	<b>391</b>	<b>419</b>	<b>311</b>	<b>324</b>	<b>437</b>	<b>-113</b>

<sup>1</sup> Based on Monthly Oil Questionnaire data submitted by OECD countries in tonnes.

<sup>2</sup> Total figure excludes intra-regional trade.

**Table 13**  
**AVERAGE IEA CIF CRUDE COST AND SPOT CRUDE AND PRODUCT PRICES**

(\$/bbl)

	2020	2021	2022	2Q22	3Q22	4Q22	1Q23	Oct 22	Nov 22	Dec 22	Jan 23	Feb 23	Mar 23
<b>CRUDE PRICES</b>													
<b>IEA CIF Average Import<sup>1</sup></b>													
IEA Europe	42.91	70.67	100.22	111.08	102.36	89.43		92.21	91.79	84.84	82.72		
IEA Americas	37.31	64.78	90.77	106.20	92.16	77.18		81.53	78.56	71.47	68.27		
IEA Asia Oceania	46.28	70.41	102.56	113.01	111.62	96.43		102.95	94.84	91.9	86.82		
<b>IEA Total</b>	<b>42.19</b>	<b>68.87</b>	<b>98.2</b>	<b>110.17</b>	<b>101.9</b>	<b>87.97</b>		<b>91.95</b>	<b>89.14</b>	<b>83.17</b>	<b>79.73</b>		
<b>SPOT PRICES<sup>2</sup></b>													
North Sea Dated	41.76	70.82	101.10	102.12	113.90	100.66	88.36	93.11	91.10	80.36	82.86	82.50	78.29
North Sea Dated M1	42.90	71.51	101.17	101.45	114.15	100.16	89.54	94.52	92.28	81.31	84.19	83.74	79.51
WTI (Cushing) M1	39.25	68.10	94.67	95.18	108.77	91.91	82.82	87.26	84.78	76.50	78.11	76.84	73.37
WTI (Houston) M1	40.71	69.01	96.27	96.77	109.96	94.04	84.33	89.60	86.27	77.21	79.59	79.28	74.86
Urals	41.21	69.00	76.58	89.49	79.11	75.41	62.46	73.28	65.40	47.87	45.83	46.78	47.60
Dubai M1	42.36	69.35	96.32	96.06	108.12	96.79	84.68	91.08	86.12	77.09	80.41	82.05	78.42
<b>PRODUCT PRICES<sup>2</sup></b>													
<b>Northwest Europe</b>													
Gasoline	44.64	80.07	117.16	146.06	114.30	99.41	96.17	110.80	102.07	84.51	97.41	96.35	94.89
Diesel	49.34	78.41	142.39	160.84	145.21	139.55	113.71	162.68	134.75	120.56	124.73	109.89	106.98
Jet/Kero	45.80	77.31	139.96	165.15	142.09	130.90	114.74	138.99	132.07	121.11	128.40	112.29	104.39
Naphtha	40.18	71.58	86.64	97.26	77.03	72.63	77.95	75.57	75.15	66.76	77.51	80.77	75.90
HSFO	33.99	61.18	76.72	92.98	70.72	59.67	60.51	60.23	61.74	56.80	60.32	60.62	60.60
0.5% Fuel Oil	48.50	76.78	107.14	126.09	106.56	87.19	83.99	94.38	88.73	77.95	85.56	85.41	81.33
<b>Mediterranean Europe</b>													
Gasoline	45.57	80.50	119.90	147.99	117.35	103.89	100.36	108.74	112.24	89.60	100.32	99.83	100.85
Diesel	48.82	77.93	136.16	156.54	136.06	130.46	112.08	148.51	129.87	112.15	123.96	108.43	104.41
Jet/Kero	45.57	77.19	140.07	164.87	142.30	131.28	114.89	139.44	132.50	121.36	128.65	112.51	104.39
Naphtha	39.04	70.65	84.74	94.95	75.37	70.36	75.83	73.55	73.01	64.08	75.83	78.84	73.22
HSFO	34.17	60.05	73.58	89.63	65.84	56.73	56.97	57.51	58.64	53.81	55.53	56.03	59.10
<b>US Gulf Coast</b>													
Gasoline	47.30	86.49	123.12	153.69	119.07	103.04	105.58	116.16	102.36	90.55	106.15	103.64	106.68
Diesel	50.26	84.73	145.79	167.83	146.96	141.65	120.39	159.40	141.16	124.37	133.56	116.17	112.42
Jet/Kero	46.30	77.95	140.06	163.46	140.49	134.73	125.00	148.53	133.22	122.36	148.09	117.43	111.18
Naphtha	40.12	72.24	91.33	105.15	84.63	76.09	80.92	81.05	76.50	70.75	84.75	80.36	78.04
HSFO	34.71	59.90	77.10	93.04	76.51	55.48	57.10	52.59	59.87	54.18	55.23	57.56	58.34
0.5% Fuel Oil	49.88	79.69	113.04	133.17	112.20	92.69	90.54	100.80	94.68	82.69	91.63	93.47	87.17
<b>Singapore</b>													
Gasoline	45.28	78.49	110.99	137.95	106.08	89.89	95.15	91.16	93.11	85.09	95.49	95.86	94.25
Diesel	49.60	77.80	135.52	159.99	138.17	126.25	108.44	137.25	127.61	113.75	116.12	107.64	102.80
Jet/Kero	45.06	75.29	126.96	147.63	129.57	118.30	106.38	123.40	121.01	110.22	115.07	106.77	98.86
Naphtha	40.94	71.02	83.96	92.73	74.63	70.92	74.21	71.86	74.22	66.34	72.52	76.98	73.19
HSFO	38.33	63.20	77.81	98.18	69.96	58.60	62.36	57.46	61.74	56.28	58.90	62.14	65.41
0.5% Fuel Oil	52.85	80.81	116.91	139.05	116.26	97.77	90.95	105.77	99.25	88.14	92.84	94.11	86.64

<sup>1</sup> IEA CIF Average Import price for Jan is an estimate.

IEA Europe includes all countries in OECD Europe except Estonia, Hungary and Slovenia.

IEA Americas includes United States and Canada.

IEA Asia Oceania includes Australia, New Zealand, Korea and Japan.

<sup>2</sup> Copyright © 2023 Argus Media Limited - All rights Reserved. Currently, no 0.5% Fuel Oil assessment for Mediterranean is available.



**Table 14**  
**MONTHLY AVERAGE END-USER PRICES FOR PETROLEUM PRODUCTS**

March 2023

	NATIONAL CURRENCY <sup>1</sup>						US DOLLARS					
	Total	% change from		Ex-Tax	% change from		Total	% change from		Ex-Tax	% change from	
	Price	Feb-23	Mar-22	Price	Feb-23	Mar-22	Price	Feb-23	Mar-22	Price	Feb-23	Mar-22
<b>GASOLINE <sup>2</sup> (per litre)</b>												
France	1.909	-	- 3.9	0.900	-	- 6.7	2.045	0.1	- 6.6	0.964	0.1	- 9.4
Germany	1.822	0.3	- 15.2	0.808	0.5	- 29.8	1.951	0.3	- 17.6	0.865	0.6	- 31.8
Italy	1.854	- 0.4	- 8.9	0.792	- 0.8	- 21.0	1.986	- 0.4	- 11.5	0.848	- 0.7	- 23.3
Spain	1.636	- 0.2	- 8.6	0.879	- 0.3	- 12.6	1.752	- 0.2	- 11.2	0.941	- 0.3	- 15.1
United Kingdom	1.469	- 0.8	- 8.3	0.694	- 1.4	- 9.6	1.783	- 0.4	- 15.5	0.842	- 1.0	- 16.8
Japan	167.5	- 0.1	- 4.1	95.7	- 0.1	- 6.3	1.253	- 0.8	- 15.0	0.716	- 0.8	- 16.9
Canada	1.531	1.9	- 15.2	1.066	2.5	- 17.3	1.119	0.2	- 21.6	0.779	0.8	- 23.5
United States	0.904	0.9	- 19.0	0.772	1.0	- 21.6	0.904	0.9	- 19.0	0.772	1.0	- 21.6
<b>AUTOMOTIVE DIESEL FOR NON COMMERCIAL USE (per litre)</b>												
France	1.822	- 1.0	- 10.2	0.909	- 1.7	- 16.0	1.951	- 1.0	- 12.7	0.974	- 1.7	- 18.4
Germany	1.723	- 2.2	- 20.7	0.903	- 3.5	- 33.5	1.845	- 2.2	- 23.0	0.967	- 3.5	- 35.3
Italy	1.806	- 2.5	- 9.3	0.863	- 4.2	- 19.9	1.934	- 2.4	- 11.9	0.924	- 4.2	- 22.2
Spain	1.574	- 3.2	- 10.5	0.922	- 4.5	- 14.2	1.686	- 3.1	- 13.0	0.988	- 4.4	- 16.6
United Kingdom	1.666	- 1.8	- 2.3	0.858	- 2.8	0.5	2.022	- 1.4	- 10.0	1.041	- 2.4	- 7.4
Japan	147.7	- 0.1	- 4.3	102.3	- 0.1	- 5.5	1.105	- 0.8	- 15.1	0.765	- 0.8	- 16.3
Canada	1.699	- 2.6	- 13.8	1.260	- 3.2	- 15.3	1.242	- 4.2	- 20.2	0.921	- 4.8	- 21.6
United States	1.113	- 4.5	- 17.5	0.959	- 5.2	- 19.9	1.113	- 4.5	- 17.5	0.959	- 5.2	- 19.9
<b>DOMESTIC HEATING OIL (per litre)</b>												
France	1.290	- 1.5	- 20.4	0.918	- 1.8	- 23.0	1.381	- 1.5	- 22.6	0.984	- 1.7	- 25.2
Germany	1.101	- 2.7	- 31.1	0.783	- 3.2	- 38.9	1.179	- 2.7	- 33.0	0.839	- 3.2	- 40.6
Italy	1.552	- 1.7	- 13.4	0.869	- 2.5	- 18.5	1.662	- 1.7	- 15.9	0.931	- 2.5	- 20.8
Spain	1.063	- 2.7	- 19.7	0.782	- 3.0	- 21.6	1.139	- 2.7	- 22.0	0.838	- 3.0	- 23.9
United Kingdom	0.801	- 4.5	- 30.5	0.661	- 5.2	- 33.0	0.972	- 4.1	- 36.0	0.802	- 4.8	- 38.3
Japan <sup>3</sup>	110.9	- 0.1	- 1.9	98.1	- 0.1	- 2.0	0.830	- 0.8	- 13.0	0.733	- 0.8	- 13.1
Canada	1.646	- 7.9	- 11.2	1.463	- 8.1	- 11.4	1.203	- 9.4	- 17.8	1.069	- 9.6	- 18.0
United States	-	-	-	-	-	-	-	-	-	-	-	-
<b>LOW SULPHUR FUEL OIL FOR INDUSTRY <sup>4</sup> (per kg)</b>												
France	0.647	- 3.8	- 26.3	0.507	- 4.8	- 31.3	0.693	- 3.7	- 28.4	0.543	- 4.7	- 33.2
Germany	-	-	-	-	-	-	-	-	-	-	-	-
Italy	0.631	- 3.1	- 23.6	0.600	- 3.3	- 24.5	0.676	- 3.1	- 25.7	0.642	- 3.2	- 26.6
Spain	0.570	- 1.7	- 10.3	0.553	- 1.8	- 10.6	0.611	- 1.7	- 12.8	0.593	- 1.7	- 13.1
United Kingdom	-	-	-	-	-	-	-	-	-	-	-	-
Japan	-	-	-	-	-	-	-	-	-	-	-	-
Canada	-	-	-	-	-	-	-	-	-	-	-	-
United States	-	-	-	-	-	-	-	-	-	-	-	-

<sup>1</sup> Prices for France, Germany, Italy and Spain are in Euros; UK in British Pounds, Japan in Yen, Canada in Canadian Dollars

<sup>2</sup> Unleaded premium (95 RON) for France, Germany, Italy, Spain, UK; regular unleaded for Canada, Japan and the United States.

<sup>3</sup> Kerosene for Japan.

<sup>4</sup> VAT excluded from prices for low sulphur fuel oil when refunded to industry.

**Table 15**  
**IEA Global Indicator Refining Margins**

\$/bbl	2020	2021	2022	2Q22	3Q22	4Q22	1Q23	Oct 22	Nov 22	Dec 22	Jan 23	Feb 23	Mar 23
<b>NW Europe</b>													
Light sweet hydroskimming	1.11	2.54	10.02	15.29	8.94	10.81	8.41	18.20	8.00	6.12	11.21	7.28	6.81
Light sweet cracking	2.07	3.51	16.18	22.17	15.19	18.77	14.08	28.10	15.32	12.75	18.20	11.95	12.13
Light sweet cracking + Petchem	3.23	6.55	18.41	26.45	16.98	19.60	14.69	27.95	16.36	14.38	18.44	12.24	13.37
Medium sour cracking*	4.30	6.11	39.13	59.43	37.59	38.87	19.33	51.37	43.03	21.16	24.48	15.99	17.52
Mediumsour cracking + Petchem*	5.44	9.07	41.30	63.59	39.33	39.69	19.94	51.22	44.03	22.79	24.72	16.27	18.75
<b>Mediterranean</b>													
Light sweet hydroskimming	2.36	2.90	9.05	13.88	7.56	10.84	8.45	16.58	9.22	6.59	11.21	7.49	6.74
Light sweet cracking	3.34	4.97	16.79	23.71	15.85	19.14	15.80	25.52	17.62	14.12	20.05	13.91	13.54
Medium sour cracking	5.70	5.68	21.64	30.24	20.49	24.36	21.78	30.72	22.78	19.42	27.89	18.75	18.82
<b>US Gulf Coast</b>													
Light sweet cracking	4.28	11.04	26.64	38.22	26.72	25.10	25.53	33.60	22.71	18.86	29.74	21.25	25.41
Medium sour cracking	6.61	15.79	35.70	47.39	35.32	35.01	33.40	43.51	32.36	29.05	40.17	29.26	30.92
Heavy sour coking	9.73	19.98	45.91	55.43	46.40	49.73	44.90	62.38	48.59	38.16	54.39	40.66	40.14
<b>US Midwest</b>													
Light sweet cracking	3.74	12.33	29.85	40.42	34.23	30.81	25.23	44.90	33.72	13.94	27.06	22.25	26.10
Heavy sour coking	13.26	26.02	50.57	60.64	53.96	55.59	46.84	71.61	59.49	35.85	54.29	42.94	43.57
<b>Singapore</b>													
Light sweet cracking	0.20	3.10	11.48	18.69	10.93	8.75	9.94	9.10	8.27	8.92	13.13	9.43	7.75
Light sweet cracking + Petchem	2.03	4.82	12.94	20.69	12.83	10.05	10.83	10.28	9.18	10.77	13.84	10.15	8.93
Medium sour cracking	1.80	3.92	12.87	23.35	7.91	10.83	11.35	9.01	12.17	11.19	14.78	10.21	9.52
Medium sour cracking + Petchem	3.61	5.61	14.31	25.33	9.79	12.11	12.23	10.17	13.07	13.01	15.48	10.93	10.69

Source: IEA, Argus Media Ltd prices.

Methodology notes are available at <https://www.iea.org/topics/oil-market-report#methodology>

\*From 1 December, the basis has changed from Urals NWE to Argus Brent Sour

**Table 16**  
**REFINED PRODUCT YIELDS BASED ON TOTAL INPUT (% VOLUME)<sup>1</sup>**

	Nov-22	Dec-22	Jan-23	Jan-22	Jan 23 vs Previous Month	Jan 23 vs Previous Year	Jan 23 vs 5 Year Average	5 Year Average
<b>OECD Americas</b>								
Naphtha	1.0	0.9	1.1	1.1	0.3	0.0	-0.2	1.3
Motor gasoline	46.4	46.3	46.6	46.9	0.3	-0.4	-0.2	46.7
Jet/kerosene	8.8	8.7	9.1	8.5	0.4	0.6	0.2	8.8
Gasoil/diesel oil	29.4	28.6	28.0	28.0	-0.6	0.0	-0.5	28.5
Residual fuel oil	2.9	3.3	3.4	3.2	0.1	0.2	0.4	3.0
Petroleum coke	4.2	4.2	4.2	4.2	0.0	0.0	-0.2	4.4
Other products	11.3	11.3	11.3	11.4	0.0	-0.1	0.4	11.0
<b>OECD Europe</b>								
Naphtha	8.3	8.4	8.9	8.5	0.5	0.5	0.1	8.9
Motor gasoline	20.6	20.8	21.8	21.3	1.0	0.5	0.7	21.1
Jet/kerosene	7.5	7.6	8.3	7.4	0.7	0.9	0.4	7.9
Gasoil/diesel oil	41.1	41.6	40.3	39.8	-1.3	0.5	0.3	40.0
Residual fuel oil	8.0	8.0	7.5	9.3	-0.5	-1.8	-2.1	9.5
Petroleum coke	1.6	1.5	1.7	1.6	0.1	0.0	0.2	1.5
Other products	15.2	14.2	13.8	14.5	-0.5	-0.7	0.1	13.7
<b>OECD Asia Oceania</b>								
Naphtha	16.7	16.1	16.5	16.0	0.3	0.5	0.3	16.1
Motor gasoline	21.2	21.8	21.2	21.3	-0.6	-0.1	0.0	21.2
Jet/kerosene	14.0	14.0	15.0	14.2	1.0	0.8	-0.3	15.4
Gasoil/diesel oil	30.4	30.8	30.0	29.7	-0.8	0.2	0.6	29.4
Residual fuel oil	8.9	8.4	8.2	8.3	-0.2	-0.1	0.8	7.4
Petroleum coke	0.3	0.5	0.4	0.4	0.0	0.0	0.0	0.4
Other products	11.3	11.3	10.9	12.3	-0.4	-1.4	-1.3	12.2
<b>OECD Total</b>								
Naphtha	5.9	6.0	6.3	6.1	0.3	0.2	-0.1	6.4
Motor gasoline	34.1	33.7	34.1	34.2	0.4	-0.1	0.2	33.9
Jet/kerosene	9.2	9.3	9.9	9.2	0.6	0.7	0.1	9.8
Gasoil/diesel oil	33.2	33.3	32.4	32.0	-0.9	0.3	0.0	32.3
Residual fuel oil	5.5	5.7	5.6	6.1	-0.2	-0.5	-0.3	5.9
Petroleum coke	2.8	2.7	2.7	2.7	0.1	0.0	0.0	2.7
Other products	12.5	12.3	12.1	12.6	-0.2	-0.5	0.0	12.1

<sup>1</sup> Due to processing gains and losses, yields in % will not always add up to 100%

**Table 17**  
**WORLD BIOFUELS PRODUCTION**  
(thousand barrels per day)

	2020	2021	2022	3Q22	4Q22	1Q23	Jan 23	Feb 23	Mar 23
<b>ETHANOL</b>									
<b>OECD Americas</b>	<b>934</b>	<b>1008</b>	<b>1034</b>	<b>1000</b>	<b>1043</b>	<b>1041</b>	<b>1042</b>	<b>1041</b>	<b>1041</b>
United States	906	979	1002	968	1012	1005	1006	1004	1004
Other <sup>1</sup>	28	28	32	32	32	36			
<b>OECD Europe</b>	<b>95</b>	<b>101</b>	<b>106</b>	<b>116</b>	<b>97</b>	<b>103</b>	<b>93</b>	<b>108</b>	<b>108</b>
France	18	18	20	26	11	21	22	20	20
Germany	12	12	13	14	13	17	24	12	12
Spain	9	10	10	10	10	8	4	11	11
United Kingdom	6	9	9	9	9	7	1	10	10
Other <sup>1</sup>	50	53	54	56	54	51			
<b>OECD Asia Oceania</b>	<b>4</b>	<b>4</b>	<b>4</b>	<b>4</b>	<b>4</b>	<b>4</b>	<b>3</b>	<b>5</b>	<b>5</b>
Australia	4	4	4	4	4	4	3	4	4
Other <sup>1</sup>	0	0	0	0	0	0			
<b>Total OECD Ethanol</b>	<b>1033</b>	<b>1113</b>	<b>1144</b>	<b>1120</b>	<b>1144</b>	<b>1148</b>	<b>1139</b>	<b>1153</b>	<b>1153</b>
<b>Total Non-OECD Ethanol</b>	<b>751</b>	<b>718</b>	<b>756</b>	<b>1121</b>	<b>701</b>	<b>365</b>	<b>379</b>	<b>368</b>	<b>348</b>
Brazil	560	515	528	893	472	117	131	121	100
China <sup>1</sup>	69	76	81	79	86	136			
Argentina <sup>1</sup>	15	18	21	21	21	22			
Other	106	110	126	128	120	90	248	248	248
<b>TOTAL ETHANOL</b>	<b>1783</b>	<b>1832</b>	<b>1900</b>	<b>2241</b>	<b>1845</b>	<b>1513</b>	<b>1518</b>	<b>1522</b>	<b>1501</b>
<b>BIODIESEL</b>									
<b>OECD Americas</b>	<b>160</b>	<b>167</b>	<b>213</b>	<b>222</b>	<b>226</b>	<b>250</b>	<b>241</b>	<b>255</b>	<b>255</b>
United States	153	160	202	211	216	239	239	239	239
Other <sup>1</sup>	7	7	10	10	10	11			
<b>OECD Europe</b>	<b>274</b>	<b>302</b>	<b>312</b>	<b>312</b>	<b>301</b>	<b>294</b>	<b>239</b>	<b>323</b>	<b>323</b>
France	48	51	51	50	48	51	50	51	51
Germany	62	64	64	62	63	58	46	65	65
Italy <sup>1</sup>	28	24	25	30	23	24			
Spain	24	31	31	32	31	30	23	33	33
Other	112	133	141	139	137	132	99	149	149
<b>OECD Asia Oceania</b>	<b>12</b>	<b>12</b>	<b>12</b>	<b>14</b>	<b>10</b>	<b>11</b>	<b>9</b>	<b>12</b>	<b>12</b>
Australia	0	0	0	0	0	0	0	0	0
Other <sup>1</sup>	12	12	12	14	10	11			
<b>Total OECD Biodiesel</b>	<b>446</b>	<b>482</b>	<b>536</b>	<b>548</b>	<b>537</b>	<b>555</b>	<b>488</b>	<b>590</b>	<b>590</b>
<b>Total Non-OECD Biodiesel</b>	<b>422</b>	<b>472</b>	<b>513</b>	<b>513</b>	<b>513</b>	<b>571</b>	<b>571</b>	<b>571</b>	<b>571</b>
Brazil	111	116	108	116	108	109	91	100	135
Argentina <sup>1</sup>	27	36	42	42	42	40			
Other <sup>1</sup>	285	319	364	355	363	422			
<b>TOTAL BIODIESEL</b>	<b>868</b>	<b>954</b>	<b>1050</b>	<b>1062</b>	<b>1050</b>	<b>1126</b>	<b>1059</b>	<b>1161</b>	<b>1161</b>
<b>GLOBAL BIOFUELS</b>	<b>2651</b>	<b>2785</b>	<b>2950</b>	<b>3302</b>	<b>2895</b>	<b>2639</b>	<b>2577</b>	<b>2683</b>	<b>2663</b>

<sup>1</sup> monthly data not available.

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## Oil Market Team

Editor	Toril Bosoni +33 (0)1 40 57 67 18 Toril.Bosoni@iea.org	Special Advisor	Joel R. Couse +33 (0) 1 40 57 67 22 Joel.Couse@iea.org
Demand / Prices	Alexander Bressers +33 (0)1 40 57 65 16 Alexander.Bressers@iea.org	Data Management	Luis Fernando Rosa +33 (0)1 40 57 65 56 LuisFernando.Rosa@iea.org
Demand	Ciarán Healy +33 (0)1 40 57 67 58 Ciaran.Healy@iea.org	Data Scientist	Tsuyoshi Deguchi +33 (0)1 40 57 65 78 Tsuyoshi.Deguchi@iea.org
OPEC+ Supply	Peg Mackey +33 (0)1 40 57 65 81 Peg.Mackey@iea.org	Data Officer	Julien Canu +33 (0)1 40 57 65 42 Julien.Canu@iea.org
Non-OPEC+ Supply	Jacob Messing +33 (0)1 40 57 66 98 Jacob.Messing@iea.org	OIM Assistant	Deven Moonesawmy +33 (0)1 40 57 65 03 Deven.Moonesawmy@iea.org
Refining	David Martin +33 (0)1 40 57 66 05 David.Martin@iea.org	Data Enquiries to Oil Market Report: OilMarketReport@iea.org	
Stocks	Yuya Akizuki +33 (0)1 40 57 67 30 Yuya.Akizuki@iea.org	Subscription & Delivery Enquiries +33 (0)1 40 57 66 90 OMRSubscriptions@iea.org	
Prices	Jenny Thomson +33 (0)1 40 57 67 11 Jenny.Thomson@iea.org	Media Enquiries/IEA Press Office +33 (0)1 40 57 66 94 ieapressoffice@iea.org	

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