

Oil Market Report

15 November 2022

- Demand growth will slow to 1.6 mb/d in 2023, down from 2.1 mb/d this year, as mounting economic headwinds impede gains. The GDP outlook has worsened and 4Q22 global oil use will contract (-240 kb/d) compared with last year. China's persistently weak economy, Europe's energy crisis, burgeoning product cracks and the strong US dollar are all weighing heavily on consumption.
- World oil supply rose 410 kb/d in October to 101.7 mb/d but is forecast to fall by 1 mb/d for the remainder of the year as OPEC+ cuts and an EU ban on Russian crude come into effect. Annual growth of 4.6 mb/d this year is set to boost global production to 99.9 mb/d. Modest gains of just 740 kb/d in 2023 will push supply to 100.7 mb/d.
- Global refinery throughputs in October fell by 500 kb/d m-o-m to 80.4 mb/d, with a 1.1 mb/d decline in the Atlantic Basin partly offset by higher runs East of Suez. New refinery capacity coming online will go some way to offset potential losses from Russia. Refinery runs are forecast to increase by 2.3 mb/d in 2022 and 1.4 mb/d next year. Diesel cracks surged to new records, keeping margins at elevated levels.
- Russian oil exports rose by 165 kb/d to 7.7 mb/d in October as shipments to the EU, China and India held up and lower flows to Türkiye were more than offset by increases to yet to be identified destinations. Crude oil exports to the EU crude were 1.5 mb/d, 1 mb/d below pre-war levels. Product exports were down 300 kb/d, to 1 mb/d, including 600 kb/d of diesel. Export revenues rose by \$1.7 bn to \$17.3 bn.
- Global observed inventories fell by 14.2 mb in September as OECD and non-OECD stocks plunged by 45.5 mb and 19.3 mb, respectively, but were partially offset by a surge in oil on the water of 50.6 mb. OECD industry oil stocks declined by 8 mb, while government stocks drew by 37.4 mb. OECD total oil stocks fell below 4 000 mb for the first time since 2004.
- In October, North Sea Dated posted its first increase in four months, rising \$3.35/bbl to \$93.11/bbl as signs of a tight market prevailed over economic uncertainty. Oil prices remain about 30% below their June peak. Brent backwardation weakened slightly while open interest continued to languish near seven-year lows. Freight rates rose on higher exports and as the shift away from Russian barrels increased tension on available fleet capacity.



Publishing Schedule – 2023

Wednesday	18 January
Wednesday	15 February
Wednesday	15 March
Friday	14 April
Tuesday	16 May
Wednesday	14 June ^(1,2)
Thursday	13 July
Friday	11 August ⁽³⁾
Wednesday	13 September
Thursday	12 October
Tuesday	14 November
Thursday	14 December

The 2023 Edition of the **Market Report _Oil 2023** will be released on **14th June 2023**.

⁽¹⁾ The 14th June **OMR** will comprise the usual data and projections through end-2024, but with abridged text.

⁽²⁾ Supply/demand forecasts will be ‘rolled out’ to 2024 in the report dated **14 June 2023**.

⁽³⁾ The *Annual Statistical Supplement 2023 Edition* will be published in conjunction with the **August OMR**.

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Diesel tensions

Oil markets remain finely balanced going into the winter months, with OECD stocks trending at the lowest levels since 2004. The approaching EU embargoes on Russian crude and oil product imports and a ban on maritime services will add further pressure on global oil balances, and, in particular, on already exceptionally tight diesel markets. A proposed oil price cap may help alleviate tensions, yet a myriad of uncertainties and logistical challenges remain.

Diesel prices and cracks (differential to crude oil price) surged to record levels in October, and are now 70% and 425% higher, respectively, than year-ago levels while benchmark Brent prices increased just 11% during the same period. Distillate inventories are at multi-decade lows. French refinery strikes last month and upcoming embargoes propelled diesel prices in Rotterdam, Europe's main trading hub, to more than \$80/bbl above North Sea Dated at one point, before easing somewhat. Diesel premiums in the United States have also soared ahead of the winter heating season in the Northeast.

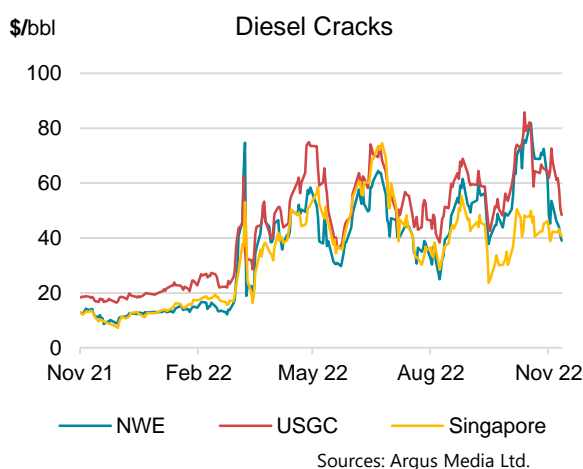
High diesel prices are fuelling inflation, adding pressure on the global economy and world oil demand, which is now expected to contract by 240 kb/d in 4Q22. Demand is forecast to expand by 2.1 mb/d in 2022 before slowing to 1.6 mb/d next year. Growth will come from jet fuel and LPG/ethane for petrochemicals. But global diesel/gasoil growth is forecast to ease from 1.5 mb/d

in 2021, to 400 kb/d in 2022 before posting a small decline in 2023 under the weight of persistently high prices, a slowing economy and despite increased gas-to-oil switching.

Diesel markets were already in deficit before Russia's invasion of Ukraine due to the closure of 3.5 mb/d refinery distillation capacity since the start of the Covid-19 pandemic, resulting in a net decline of 1 mb/d. With the post pandemic recovery in 2021, demand jumped for diesel and gasoil - the main engines of industrial activity and economic growth. Lower Chinese product exports also tightened the market, but a recent change in policy is making more diesel available. A net 2.7 mb/d of new distillation capacity is slated to come online globally from 4Q22 to end-2023, which could offset lower exports from Russia following the embargo.

By October, EU countries had reduced Russian crude oil imports by 1.1 mb/d to 1.4 mb/d, and diesel flows by 50 kb/d to 560 kb/d. When the crude and product embargoes come into full force in December and February, respectively, an additional 1.1 mb/d of crude and 1 mb/d of diesel, naphtha and fuel oil will have to be replaced. For crude oil, no significant buying from Russia outside China, India, and Türkiye has appeared despite massive discounts. A further rerouting of trade should help ease pressures but a shortage of tankers is a major concern, especially for ice-class vessels required to load out of Baltic ports during winter.

The competition for non-Russian diesel barrels will be fierce, with EU countries having to bid cargoes from the US, Middle East and India away from their traditional buyers. Increased refinery capacity will eventually help ease diesel tensions. However, until then, if prices go too high, further demand destruction may be inevitable for the market imbalances to clear.

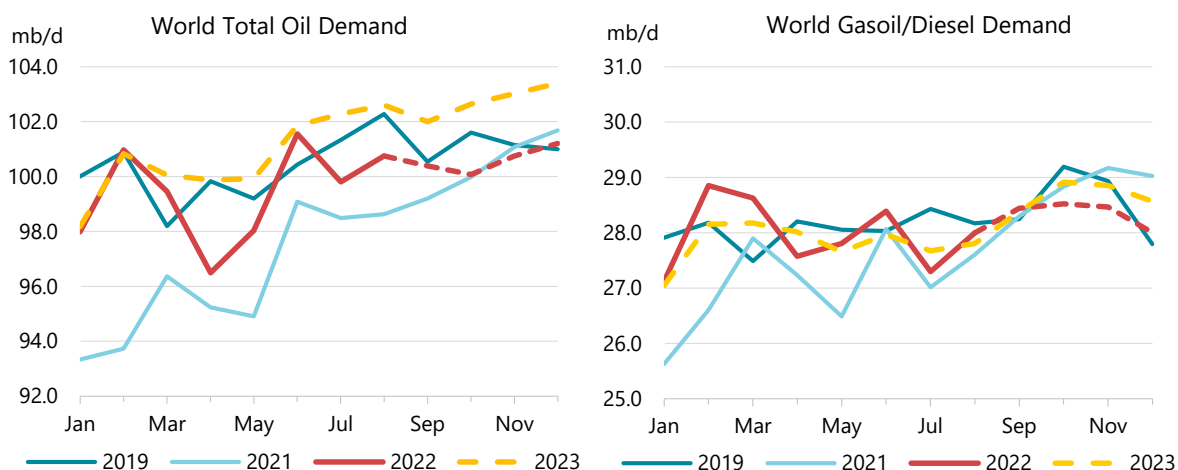


Demand

Overview

Oil's global demand outlook continues to face a myriad of headwinds in the shape of rising recession odds, China's persistently weak economy, Europe's energy crisis, soaring product crack values and a strong US dollar. Combined, these have weighed on deliveries for most of 2022 and will continue to do so for the foreseeable future, pushing global oil demand into year-on-year (y-o-y) contraction in 4Q22 for both OECD (-150 kb/d) and non-OECD economies (-100 kb/d). Demand will remain lacklustre during 1Q23, will regain meaningful momentum in 2Q23, going beyond 2019 levels in the process.

Total demand growth for 2022 and 2023 is forecast at 2.1 mb/d and 1.6 mb/d, respectively. Compared to last month's *Report*, this year's growth estimate has been increased by 180 kb/d, largely due to revisions in Chinese demand, while 2023 has been reduced by 40 kb/d.



Economic indicators remain unremittingly weak amid fears that hawkish central bank policies to combat soaring inflation may push the global economy into recession. In view of this worsening climate, 2023 GDP growth estimates for most major economies have been revised lower. By itself, this would result in a downward adjustment to 2023 global oil demand of 150 kb/d. About half of this downgrade relates to China, with its growth prospects handicapped by an unprecedented property slump and ongoing lockdowns. In this regard, October's Party Congress brought no relief, restating its commitment to the nation's zero-Covid policy and steering away from economic reform. Events of early November, which saw infections climb to six-month highs accompanied by a surge in restrictions, underscore China's challenging outlook and we therefore see September's demand revival as transient. Even so, a gradual easing of lockdown restrictions is expected, with early November's relaxation of quarantine controls hinting at a more general relaxation during 2023. This results in a return to y-o-y demand growth, at about 780 kb/d (albeit, with large base effects from the April-May 2022 lockdowns).

This increasingly ominous global outlook, along with very high prices, is set to significantly curtail diesel demand in 2023. However, within middle distillates, these negative developments will be offset by the continued rebound in jet fuel consumption, which collapsed during the 2020 pandemic, as well as additional gasoil used to displace expensive natural gas and the projected post-lockdown

recovery in Chinese consumption. Overall, middle distillate use is set to grow by 800 kb/d in 2023, with total gasoil deliveries almost flat and gains concentrated in jet/kerosene.

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	13 128	13 840	14 438	14 692	597	254	4.3	1.8
Naphtha	6 434	6 982	6 963	7 247	- 19	285	-0.3	4.1
Motor Gasoline	23 645	25 617	25 926	25 984	310	58	1.2	0.2
Jet Fuel & Kerosene	4 708	5 191	6 069	6 856	877	788	16.9	13.0
Gas/Diesel Oil	26 119	27 658	28 083	28 096	425	13	1.5	0.0
Residual Fuel Oil	5 624	6 160	6 422	6 636	262	214	4.2	3.3
Other Products	11 857	12 214	11 877	11 874	- 337	- 3	-2.8	0.0
Total Products	91 515	97 663	99 777	101 385	2 114	1 608	2.2	1.6

Lower industrial activity is set to curb gasoil demand globally. In particular, OECD diesel demand is forecast to fall by 210 kb/d in 2023. The majority (150 kb/d) of this drop will be in Europe, where high gas prices are severely undermining manufacturing operations. In contrast, the Chinese (gasoil +140 kb/d) and Indian (gasoil +90 kb/d) economies will be the major sources of growth.

The latest data indicate that non-road gasoil is already being supported by extra use in heat, steam and power generation, which will increase by a total of about 150 kb/d y-o-y in 2023. This is especially relevant for Europe where we see an annual rise of around 70 kb/d next year. Simultaneously, jet/kerosene demand will continue to climb and is expected to be 790 kb/d higher in 2023, reaching 86% of 2019, as air traffic closes in on pre-pandemic levels.

In sharp contrast to recent trends, growth in petrochemical feedstock requirements has been subdued this year. This reflects a combination of the global slowdown, unwinding of exceptional pandemic-era demand for goods and the negative impacts of high energy costs. Producers in all regions are reportedly being forced to cut rates and extend outages and, as a result, we expect 4Q22 naphtha demand to tumble by 110 kb/d y-o-y. Overall use of the product may edge lower during 2022 (-20 kb/d), despite a large increase in available naphtha-cracking capacity, before regaining some lost ground in 2023 (+290 kb/d).

Global Demand by Region								
(thousand barrels per day)								
	Demand				Annual Chg (kb/d)		Annual Chg (%)	
	2020	2021	2022	2023	2022	2023	2022	2023
Africa	3 766	3 994	4 140	4 119	146	- 21	3.7	-0.5
Americas	27 895	30 251	31 073	31 182	822	109	2.7	0.3
Asia/Pacific	34 085	36 189	36 276	37 813	87	1 536	0.2	4.2
Europe	13 136	13 899	14 445	14 489	546	44	3.9	0.3
FSU	4 559	4 848	4 854	4 734	7	- 120	0.1	-2.5
Middle East	8 074	8 482	8 988	9 049	507	61	6.0	0.7
World	91 515	97 663	99 777	101 385	2 114	1 608	2.2	1.6
OECD	42 028	44 826	46 118	46 398	1 292	281	2.9	0.6
Non-OECD	49 487	52 837	53 659	54 987	823	1 328	1.6	2.5

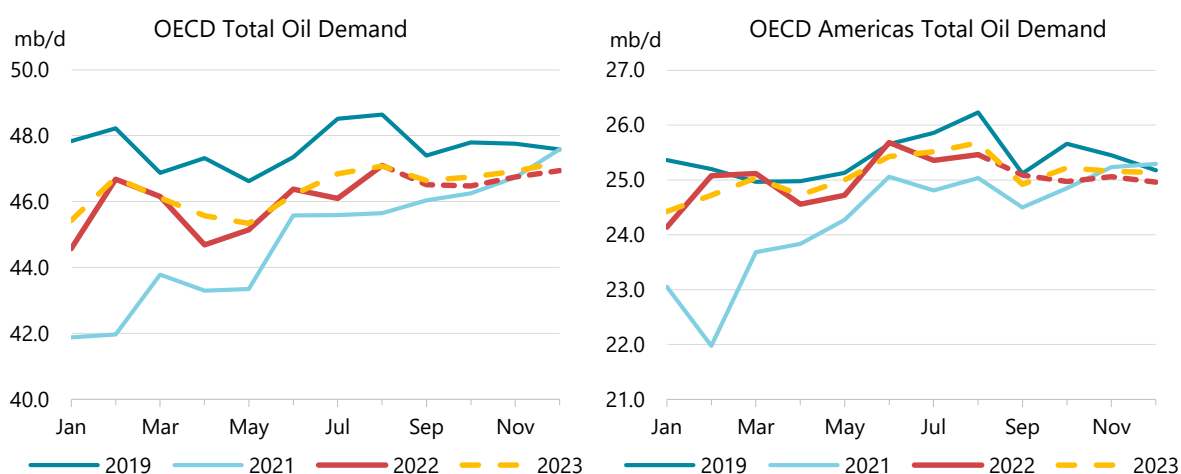
OECD oil demand set for 4Q22 slowdown

Total OECD demand is expected to contract y-o-y (-150 kb/d) in 4Q22. Declining road fuel demand (gasoline -330 kb/d, diesel -390 kb/d) and lower petrochemical operating rates (naphtha -210 kb/d)

will outweigh the impacts of the continuing recovery of jet fuel (+360 kb/d) and increased gas-to-oil switching (about +200 kb/d).

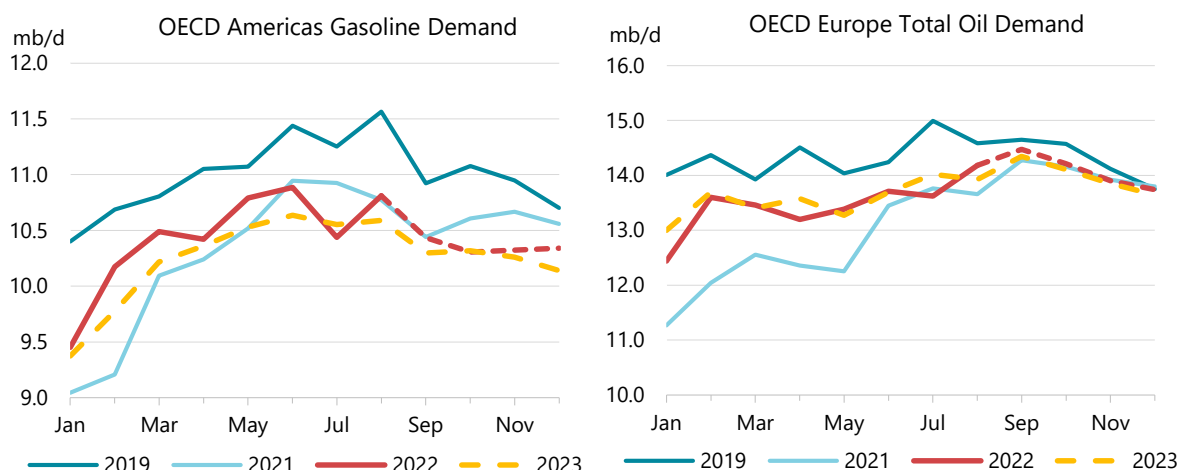
In contrast, deliveries gained 810 kb/d y-o-y in 3Q22, thanks to jet/kerosene (+720 kb/d) and despite declines in gasoline, diesel and naphtha. Final August data outpaced the typical seasonal rise, rising 1 mb/d month-on-month (m-o-m). Fuel use benefitted as prices receded from peak levels for gasoline and gasoil, and high air traffic levels were maintained.

Average 2022 demand is now expected to reach 46.1 mb/d, up 1.3 mb/d versus 2021. This expansion will slow to 280 kb/d in 2023 in line with the weaker economic outlook. While we continue to see the structural rebound in jet/kerosene (+380 kb/d), demand for other categories will fall by 100 kb/d.



Deliveries in the **OECD Americas** region will dip by 130 kb/d y-o-y in 4Q22. Gasoline demand continues to struggle and is expected to be 290 kb/d lower y-o-y. Use of most of the other major products is also forecast to decline, but LPG/ethane demand will rise by 300 kb/d on structural increases in petrochemical capacity, while jet/kerosene will continue its advance by 100 kb/d. 3Q22 demand rose 520 kb/d y-o-y, with higher LPG/ethane and jet/kerosene deliveries leading the gains. However, gasoline demand – which had already begun to decline – slowed by 150 kb/d compared to the robust level of 3Q21. Total oil consumption is now set to grow by 700 kb/d in 2022, easing to 70 kb/d in 2023. The primary engines of 2023 growth will be jet/kerosene (+160 kb/d), which will virtually complete its rebound in the region, and LPG/ethane (+60 kb/d), benefitting from the fuller utilisation of new capacity.

Developments in **US** demand dominate the outlook for the region overall. Constrained by declining gasoline and gasoil use, total growth slowed to a relative crawl in 3Q22 (+130 kb/d y-o-y) and will flip to a contraction of 170 kb/d in 4Q22. Preliminary weekly data from the EIA indicates that gasoline demand remained soft during September and October, despite lower prices. These averaged 16% below July in October according to *GlobalPetrolPrices.com (GPP)* data (but were nonetheless up by 11% y-o-y). While diesel prices remain elevated (more than 50% higher y-o-y), preliminary data indicate a jump in gasoil demand for October – possibly a testament to its less price-sensitive nature. The *S&P Global US Manufacturing PMI* continued to indicate expansion, at 50.4, in October. However, an easing compared to September (52) suggests that Federal Reserve actions and the gloomy global outlook are increasingly weighing on manufacturers. We therefore expect any recovery in gasoil use to be short-lived.

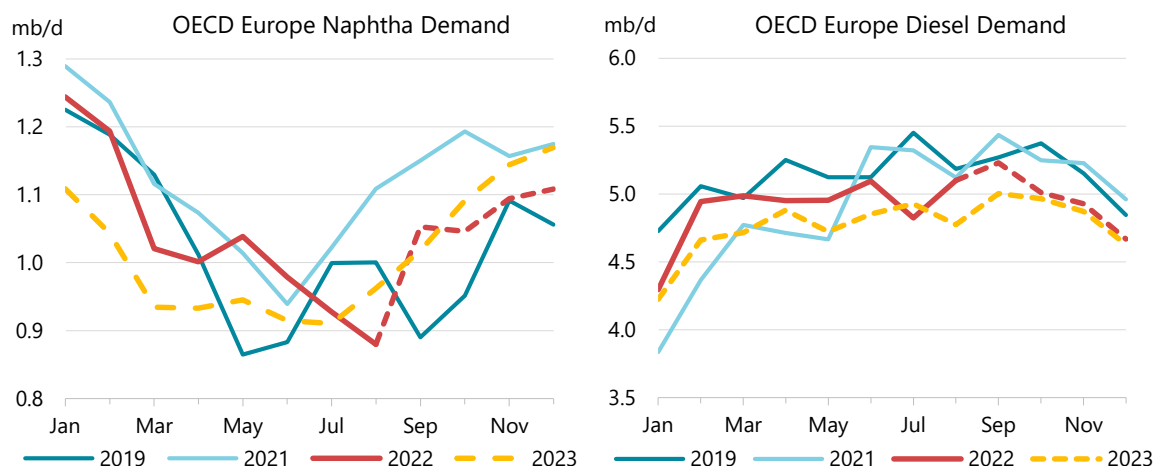


Petrochemical producers across OECD Americas appear to be subject to unusual pressure as burgeoning capacities have collided with anaemic global polymer demand. The resulting slackening in operating rates has limited increases in LPG/ethane demand. US LPG/ethane was flat y-o-y and 280 kb/d below our expectations in August, while naphtha demand was 60 kb/d lower.

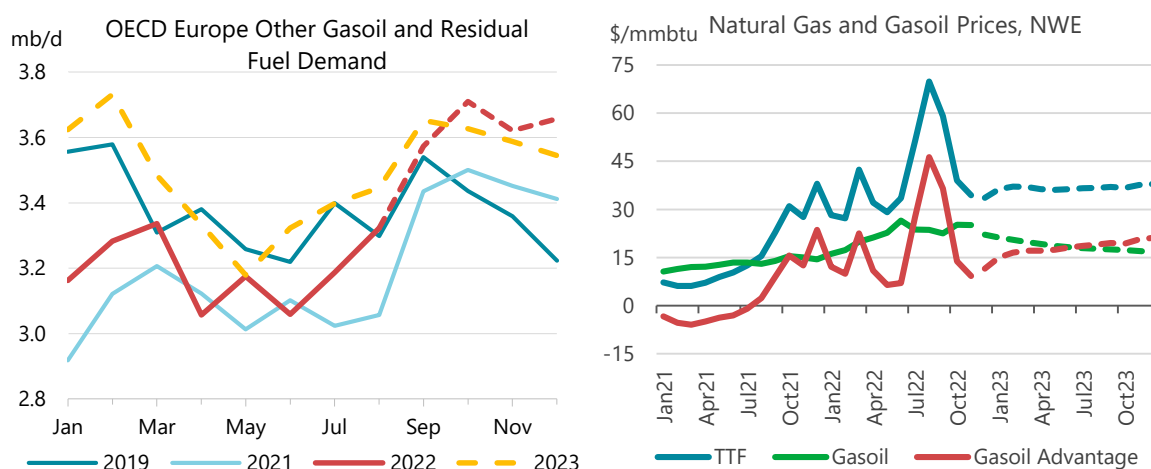
A similar slowdown is observed in **OECD Europe**, where y-o-y oil demand growth is set to come to a standstill in 4Q22. A combination of reduced deliveries of the major road fuels (-310 kb/d) and falling naphtha use (-90 kb/d) will largely balance higher jet/kerosene demand (+150 kb/d) and extra oil used to substitute for expensive natural gas (+200 kb/d). In 3Q22, deliveries rose 200 kb/d y-o-y. This was overwhelmingly because of stronger jet/kerosene demand (+460 kb/d). Oil use in 2022 will rise by 530 kb/d to 13.6 mb/d (still 650 kb/d below 2019), before stagnating in 2023 (+50 kb/d).

The dire outlook for European industry continues to undercut our oil demand forecasts, with GDP increases assumptions for major European economies further reduced since last month's *Report*. Growth for 2023 will go into reverse for Germany (-1%), the UK (-0.7%) and Italy (-0.2%) while France will see minimal gains (+0.2%). Dramatically weaker diesel use (-240 kb/d in 3Q22 and -280 kb/d in 4Q22) mirrors a sharp slowdown in industrial activity. German gasoil prices stood 38% higher y-o-y in October, but gasoline prices were less elevated (+16%) and actually fell slightly y-o-y in France and Italy. Mobility data indicate an annual rise in October in most countries, following a September lull. Unusually warm weather across much of the continent likely favoured leisure travel, bolstering our forecast for the month. An exception to this is France, where we estimate that product shortages relating to refinery strikes reduced total demand by around 6%.

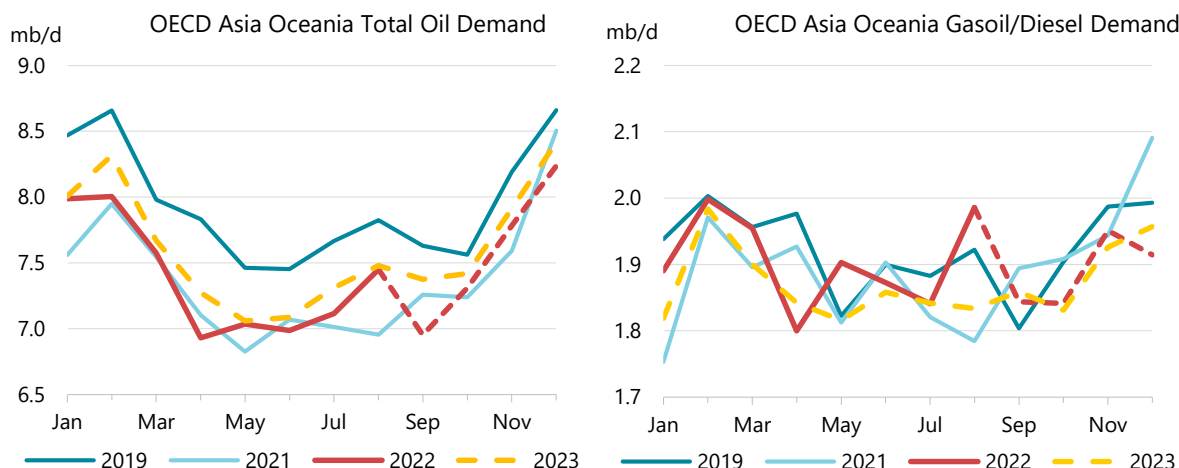
The *S&P Global Eurozone Manufacturing PMI* shows a deepening downturn in activity, reaching a post-pandemic low at 46.4 in October (down from 48.4 in September). Only one country in the bloc (Ireland) is still showing expansion as higher gas and electricity costs, tumbling export demand and pessimism about the 2023 outlook all stymie activity. Naphtha demand (-230 kb/d, -21.5% y-o-y in August) is also reeling as the industrial slowdown coincides with high feedstock and energy costs, forcing producers to slash rates and extend downtime. While European operators are far from alone in facing a challenging global market, higher gas costs increase their vulnerability to import competition. Furthermore, petrochemical players will need to replace Russia as a source of naphtha in early 2023 (Russia still accounts for around half of naphtha flows into Europe).



August data indicate that gas-to-oil switching was gathering pace in Europe, with other gasoil demand rising by 110 kb/d y-o-y, fuel oil by 80 kb/d and refinery fuels 50 kb/d. However, warm October weather has slowed heating demand and European nations successful refilling of gas storage has reduced prices in the short term. Therefore, we have lowered our estimates for non-road gasoil consumption by an average of 50 kb/d for 4Q22 compared with last month's *Report*. Although narrower than this time last month, forward prices continue to indicate a strong incentive for switching through 2023. Our expectations for next year therefore remain largely unchanged, with a y-o-y increase of 270 kb/d in 1H23 and levels close to those of 2H22 during 2H23.



OECD Asia Oceania deliveries dropped by 310 kb/d y-o-y in September, due largely to lower naphtha demand in both Japan (-180 kb/d) and Korea (-130 kb/d). Gasoil use also lagged 2021 levels (-50 kb/d). Overall, 3Q22 saw y-o-y growth of 100 kb/d. Growth is expected to stall in 4Q22, despite higher jet/kerosene (+110 kb/d) and fuel oil burn (+50 kb/d), supported by the cost of natural gas. Overall 2022 demand is forecast at 7.4 mb/d, 60 kb/d higher than 2021 but 560 kb/d lower than 2019. Uniquely among OECD regions, we expect growth to gather pace next year to 160 kb/d, reflecting the benefits of a potential Chinese reopening for the whole of East Asia and the fact that air traffic, and consequently jet fuel demand, still has some way to go to reach pre-pandemic levels.



Regional gasoil demand has been remarkably stable in recent years and remains close to pre-pandemic levels. Similarly, while gasoline demand remains about 170 kb/d below 2019, in the years since Covid-19, deliveries have been largely constant. We expect this stability to continue in 2023, with demand for the products very close to 2022 levels. This reflects the comparatively steady performance of the region's major economies. While these have been revised downwards since last month's *Report*, tempering demand increases, Japan (+0.9%), Korea (+1%) and Australia (+1.7%) are still set for considerably stronger growth than their European and North American peers. The *au Jibun Bank Japan Manufacturing PMI* shows slow expansion of 50.7 in October, almost unchanged from September, while the *S&P Global South Korea Manufacturing PMI* saw the decline in Korean manufacturing activity easing from 47.3 in September to 48.2 in October.

OECD Demand based on Adjusted Preliminary Submissions - September 2022																
(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
OECD Americas	10.43	-0.1	1.83	8.1	3.33	0.3	1.73	-5.5	3.92	11.2	0.60	9.6	3.25	3.0	25.09	2.4
US*	8.80	-1.7	1.56	4.1	2.50	-2.2	1.39	-7.7	3.10	11.8	0.41	10.1	2.67	3.2	20.45	0.9
Canada	0.78	2.1	0.16	47.8	0.25	-26.6	0.27	-2.2	0.44	15.9	0.04	102.2	0.39	3.2	2.34	2.8
Mexico	0.76	22.3	0.08	39.8	0.40	72.7	0.07	44.5	0.33	2.9	0.13	-5.9	0.16	0.0	1.93	22.3
OECD Europe	2.07	-4.0	1.46	34.9	5.23	-3.8	1.40	-0.4	1.09	7.1	0.88	9.5	2.35	-1.2	14.48	1.4
Germany	0.42	-12.3	0.20	10.4	0.70	-8.9	0.30	-5.0	0.10	-9.4	0.05	-12.1	0.41	-2.9	2.19	-6.6
United Kingdom	0.28	-2.9	0.31	61.6	0.48	-7.2	0.15	7.3	0.12	10.1	0.02	12.6	0.11	2.1	1.48	7.3
France	0.26	8.7	0.15	36.8	0.83	3.5	0.16	5.1	0.10	7.4	0.04	-7.9	0.29	4.5	1.82	6.7
Italy	0.20	7.4	0.13	51.3	0.53	1.1	0.07	-8.9	0.10	-3.9	0.10	5.7	0.19	-9.5	1.33	3.0
Spain	0.12	-10.5	0.15	40.0	0.43	-8.9	0.17	-5.8	0.06	30.1	0.15	17.7	0.18	1.3	1.26	1.1
OECD Asia & Oceania	1.35	2.2	0.52	15.5	1.38	-4.8	0.47	4.2	0.70	-3.0	0.46	10.9	2.07	-15.4	6.95	-4.2
Japan	0.72	-2.5	0.24	0.6	0.43	-3.1	0.31	1.3	0.33	-12.3	0.26	14.3	0.81	-18.1	3.09	-6.7
Korea	0.24	-3.5	0.14	1.0	0.36	-12.5	0.10	5.0	0.30	7.4	0.18	-0.5	1.10	-15.1	2.42	-8.7
Australia	0.27	21.3	0.12	116.1	0.52	-0.7	-	-	0.05	-2.7	0.02	62.2	0.10	-6.1	1.08	10.9
OECD Total	13.85	-0.5	3.82	18.1	9.93	-2.6	3.59	-2.4	5.71	8.5	1.94	9.8	7.67	-3.9	46.52	1.0

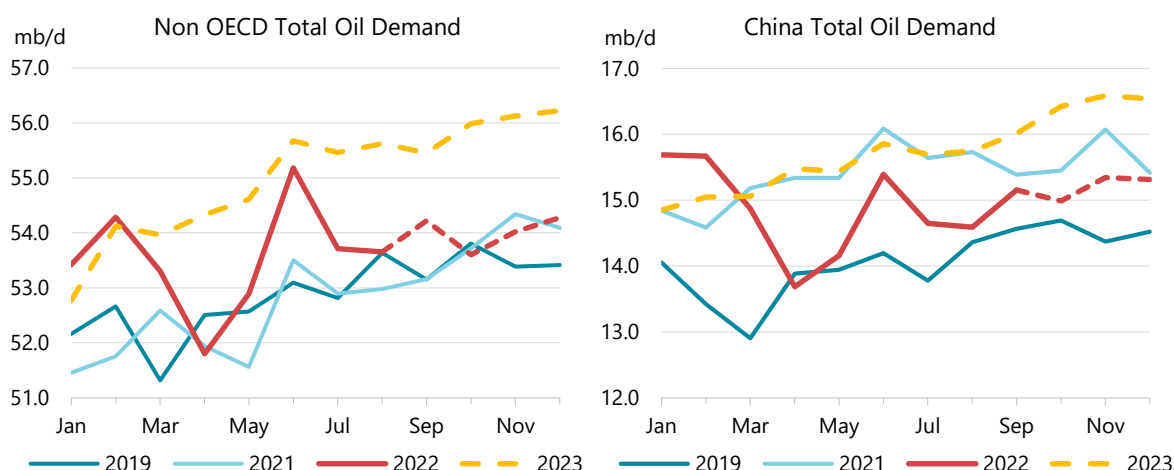
* Including US territories

Despite the comparatively benign economic outlook, local petrochemical producers are subject to the difficulties engulfing the sector around the world. Reduced polymer demand as manufacturing growth stalls and intensified competition from new plants have squeezed producers without feedstock advantages. In particular, the massive expansion of Chinese capacities severely restricts the potential for growth in its neighbours. OECD Asia Oceania naphtha demand is expected to rise by 50 kb/d in 2023, barely recovering lost ground from 2022, while LPG/ethane demand will fall by 15 kb/d.

Non-OECD outlook dominated by China

Non-OECD demand climbed by 220 kb/d m-o-m in September to 53.9 mb/d (+720 kb/d y-o-y), as strong Chinese deliveries outweighed lacklustre consumption in other regions.

Growth is expected to reverse during 4Q22, with oil use falling by 100 kb/d y-o-y, as the deteriorating macro-economic climate weighs on demand. This will be followed by a return to gains in 2Q23 as China's economy extends its recovery and due to strong baseline effects versus 2Q22. For 2023 as a whole we forecast y-o-y growth of 1.3 mb/d, to reach 55 mb/d, compared to 820 kb/d in 2022, when demand will average 53.7 mb/d.



China's apparent demand rose by 570 kb/d m-o-m in September, 360 kb/d above last month's forecast. The recovery reflected stronger refinery output, which rose by 5.9% m-o-m to its highest level since March, according to China's National Bureau of Statistics. The robustness of the latest data extended across the products range, with petrochemicals (LPG/ethane +380 kb/d m-o-m; naphtha +10 kb/d m-o-m) and road fuels (gasoline +100 kb/d m-o-m; gasoil +400 kb/d m-o-m) showing solid advances. Conversely, jet/kerosene (-240 kb/d m-o-m) was the main bearish outlier. Year-to-date refinery outputs were also revised higher, resulting in an upward adjustment to 2022 demand of an average of 140 kb/d, concentrated in naphtha and gasoil.

Firm LPG/ethane and naphtha demand (the latter's consumption exceeded 2 mb/d for the first time in September) correlates with the resilience of the Chinese petrochemical sector to narrow margins as well as the ongoing capacity additions. The revival in gasoline and diesel demand appears more tentative, as economic data remain poor. China's economy expanded by 3.9% y-o-y in the third quarter, bringing average growth for the first nine months to 3%, far below 2022's official 5.5% target. Other data releases pointed to rising unemployment, lacklustre retail sales and a worsening property slump. Total exports were unable to counterbalance the domestic economic malaise, slowing further in September as recession fears weighed on global demand and trade.

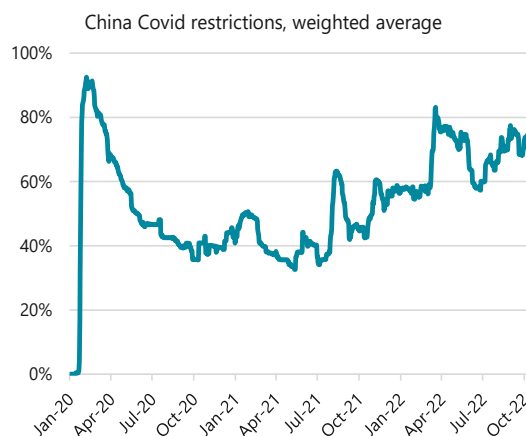
China's unbending zero-tolerance Covid-19 policy was evident in fresh lockdowns being imposed in districts in Wuhan, Zhuzhou and Guangzhou. Daily new infections climbed to above 10 000 in early November, their highest since the spring Omicron-related outbreak that sent Shanghai into full lockdown. A weighted average of provincial restrictions from *Oxford University's Blavatnik School of Government* (BSG) was little changed m-o-m in October, hovering only marginally below March/April curtailment levels.

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	2 354	2 501	201	147	9.4	6.2
Naphtha	1 479	1 679	1 889	2 053	209	165	12.4	8.7
Motor Gasoline	3 156	3 502	3 396	3 460	- 106	64	-3.0	1.9
Jet Fuel & Kerosene	755	733	514	713	- 220	200	-29.9	38.9
Gas/Diesel Oil	3 022	3 399	3 348	3 491	- 51	144	-1.5	4.3
Residual Fuel Oil	490	527	547	581	20	34	3.9	6.3
Other Products	3 466	3 434	2 907	2 930	- 526	23	-15.3	0.8
Total Products	14 204	15 427	14 954	15 730	- 473	776	-3.1	5.2

The long-awaited Communist Party 20th National Congress dashed hopes of a launch of any pro-growth policy initiatives to combat the overall weakness of the economy, nor did it indicate a departure from the country's rigid pandemic approach. Instead, President Xi, having secured a historic third five-year term, emphasised the priority of self-sufficiency and national security over economic reforms. The shift in focus, combined with the soft economic data, convinced investors that China is entering a new phase of structurally lower growth: Hong Kong's benchmark Hang Seng stock index slumped almost 10% post-Congress, to its lowest level in more than 13 years. The sharp weakening of the yuan – trading near a 15-year low against the US dollar – is another testament to investor unease with the direction of China's economy.



Sources: IEA, Oxford University BSG

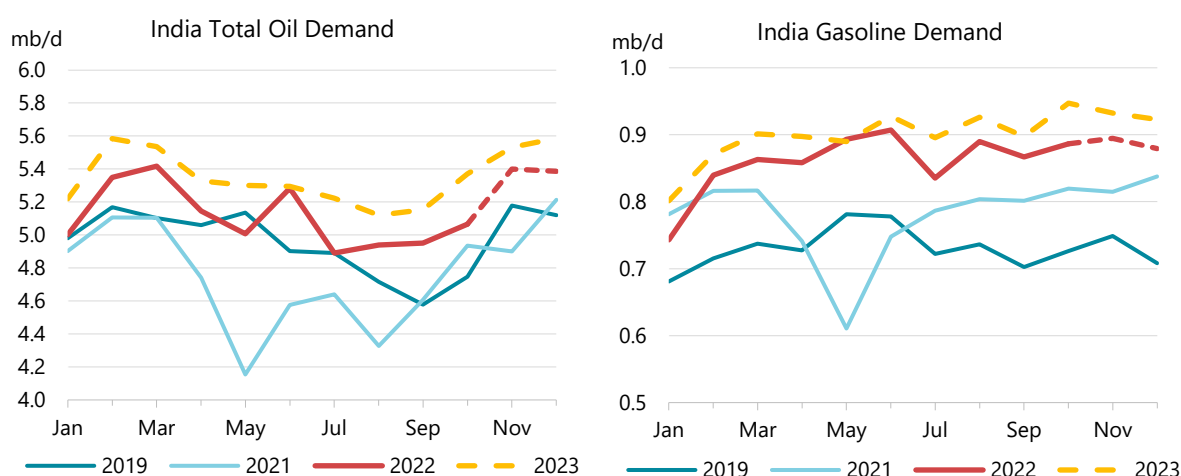
Jet/kerosene demand collapsed in September, falling more or less in line with flight tracking data from *Radarbox*, which showed a 31% m-o-m decline in average daily flights. October traffic then fell by a further 20% m-o-m to 5 600, its third consecutive monthly decline and heralding ongoing weakness in jet fuel deliveries. Air traffic is now down to about half of its July peak. Attesting to the disconnect between China and the rest of the world, the country's jet/kerosene consumption remains around 60% below its pre-pandemic level - the lowest of any major economy by a large margin. Owing to this persistent downturn, we have reduced our estimate for jet fuel demand for 2022 and 2023, by 50 kb/d and 30 kb/d, respectively.

Due to the exceptionally strong September figures, China's total oil consumption came close to moving back into y-o-y growth in September (-1.5% y-o-y, to 15.2 mb/d). However, we expect this revival to be transitory, as China's economic outlook remains unrelentingly negative, and we do not foresee a return to y-o-y growth until March 2023 and even then, only as a result of strong baseline effects in 2022. We have slightly increased our forecasts for 2022 and 2023, by 140 kb/d to 15 mb/d and 100 kb/d to 15.7 mb/d, respectively, largely on account of ongoing strength in the petrochemical sector.

Indian demand remained firm in the face of a weaker global environment, rising by 120 kb/d m-o-m in October, in line with typical post-monsoon seasonal strength. Deliveries were 130 kb/d higher y-o-y, driven by gasoil and gasoline, which constitute half of total oil demand and about 75% of growth.

GDP growth is lofty by international standards - estimated at about 7% for 2022, a consensus of analysts shows. Defying the weaker global trend once again, the *S&P Global India Manufacturing PMI* climbed by 0.2 to 55.3 in October. Strong domestic activity combined with a stable price environment makes for a heady demand cocktail, as fuel deliveries are buttressed by government-controlled retail gasoline and diesel prices that have not changed since June.

However, maintaining its extensive food and energy price controls will increasingly strain India's fiscal balances, especially with the rupee trading at all-time lows against the US dollar. In general, a more challenging global environment of slowing neighbouring economies and rising interest rates will weigh on domestic consumption, as post-Covid pent-up demand dissipates. Accordingly, we see slower growth lifting demand from 5.2 mb/d in 2022 (+390 kb/d y-o-y) to 5.4 mb/d in 2023 (+200 kb/d y-o-y).



India: Demand by Product								
(thousand barrels per day)								
	Demand				Annual Chg (kb/d)		Annual Chg (%)	
	2020	2021	2022	2023	2022	2023	2022	2023
LPG & Ethane	873	892	917	928	25	11	2.8	1.2
Naphtha	313	313	290	296	- 23	6	-7.3	2.0
Motor Gasoline	698	781	863	901	82	38	10.5	4.4
Jet Fuel & Kerosene	118	127	151	205	25	53	19.4	35.3
Gas/Diesel Oil	1 448	1 551	1 700	1 794	150	94	9.6	5.5
Residual Fuel Oil	146	152	161	159	9	- 2	5.7	-1.0
Other Products	984	950	1 069	1 070	119	1	12.5	0.1
Total Products	4 582	4 765	5 151	5 352	385	202	8.1	3.9

Pakistani deliveries grew by 20 kb/d m-o-m in September, stabilising after July and August's extreme weather-related weakness. This was in line with *Google* mobility data which displayed a similar resilience. Oil consumption was 130 kb/d, or 22%, lower y-o-y, as adverse weather and economic turmoil took their toll on gasoline and gasoil demand. For 2023 we see a moderate recovery of 30 kb/d.

Middle East oil consumption rose by 160 kb/d in August, as power generation remained the key driver. The largest contribution came from Saudi Arabian deliveries for gasoil (+80 kb/d m-o-m) and fuel oil (+40 kb/d m-o-m). This was partly offset by lower consumption in Iraq, where use of fuel oil and direct crude to power the nation's power grid, having soared all year, fell by 50 kb/d m-o-m in August (+200 kb/d y-o-y) after extreme temperatures passed their seasonal peak.

Russian demand in September rose by 80 kb/d m-o-m and by 140 kb/d y-o-y, to 3.9 mb/d. Gasoil remained the main contributor to growth by far, with its military component compensating for soft gasoline consumption. While jet/kerosene usage was largely unchanged m-o-m and y-o-y, air traffic at Moscow's Sheremetyevo airport showed a steep drop in flights of 20% m-o-m in October, to below pre-invasion levels.

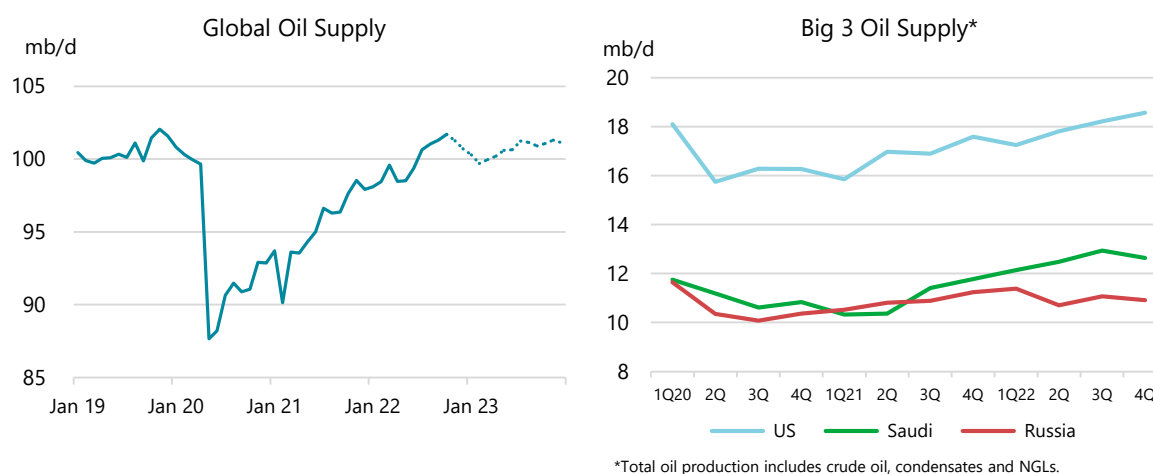
Argentinian demand fell by 20 kb/d in September amid rising retail prices for gasoline (+6% m-o-m) and diesel (+11% m-o-m). Official Brazilian data for July-September remain unavailable at the time of writing.

Non-OECD: Demand by Region								
(thousand barrels per day)								
	Demand				Annual Chg (kb/d)		Annual Chg (%)	
	2020	2021	2022	2023	2022	2023	2022	2023
Africa	3 766	3 994	4 140	4 119	146	- 21	3.7	-0.5
Asia	26 918	28 807	28 832	30 206	25	1 374	0.1	4.8
FSU	4 559	4 848	4 854	4 734	7	- 120	0.1	-2.5
Latin America	5 447	5 936	6 059	6 099	123	40	2.1	0.7
Middle East	8 074	8 482	8 988	9 049	507	61	6.0	0.7
Non-OECD Europe	723	770	786	780	16	- 6	2.0	-0.7
Total Products	49 487	52 837	53 659	54 987	823	1 328	1.6	2.5

Supply

Overview

A six-month uptrend that lifted world oil supply to a post-Covid high is set to reverse this month as the OPEC+ producer alliance turns down the taps. From May through October, global oil output increased by 3.2 mb/d, with both Saudi Arabia and the US ramping up and surpassing pre-pandemic rates. But from October through December, supply is forecast to drop by 1 mb/d as OPEC+ implements its decision to cut official production targets by 2 mb/d and an EU ban on Russian crude oil comes into effect. The actual OPEC+ reduction is expected to be less than half the headline amount as most of the bloc is already pumping far below quotas. Despite the anticipated declines, world production is forecast to outpace demand through the remainder of 2022.



For 2022 as a whole, global oil supply is forecast to rise by 4.6 mb/d year-on-year (y-o-y) to 99.9 mb/d. OPEC+ is on track to contribute 3 mb/d, with Saudi Arabia poised to deliver annual growth of 1.6 mb/d - equal to all the combined gains from non-OPEC+ for the year. The Kingdom will also beat its previous annual production record, set in 2018. Before its invasion of Ukraine, Russia was similarly expected to smash records. Now, however, it is projected to post annual growth of just 150 kb/d. Those limited gains have created a significant divergence in its production profile versus Saudi Arabia. Russia briefly ranked as the largest oil producer in the OPEC+ bloc at the start of last year, but the Kingdom leapt into the top slot in 3Q21 and in October pumped 1.8 mb/d more than Russia. As for producers outside the OPEC+ coalition (non-OPEC+), the US will provide close to 75% of the growth this year. Canada, Guyana and Brazil will also post solid increases, for much more modest volumes.

For 2023, world oil production is forecast to increase by just 740 kb/d y-o-y to 100.7 mb/d. Non-OPEC+ output will rise by 1.8 mb/d, led by the US (1 mb/d) and to a lesser extent Brazil (300 kb/d) and Norway (270 kb/d). If maintained through 2023, the OPEC+ decision to cut official production targets slows growth outside of Russia to just 340 kb/d. And as more buyers are expected to shun Russia supplies, the country's output is projected to fall by 1.4 mb/d.

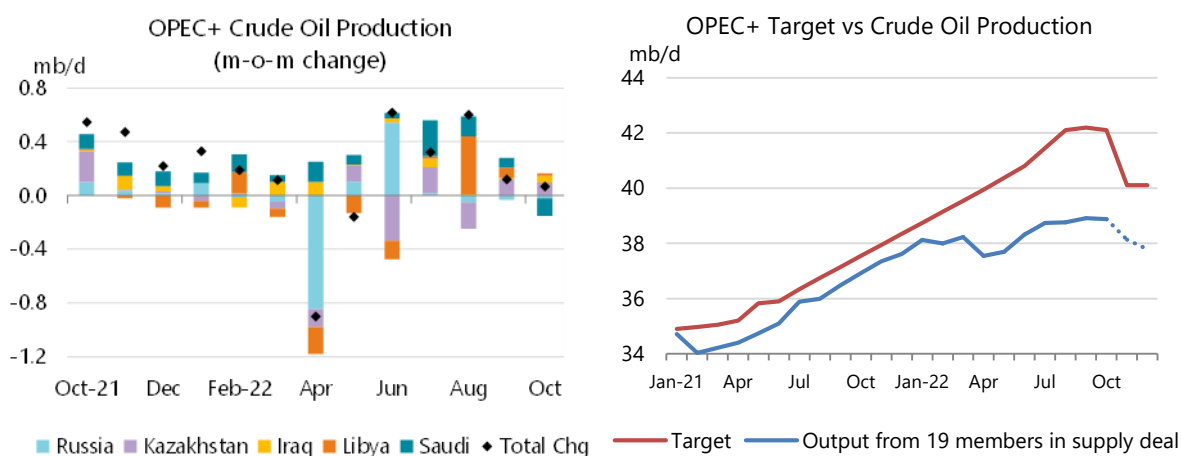
As for October, world oil supply rose 410 kb/d month-on-month (m-o-m) to 101.7 mb/d. Non-OPEC+ added 290 kb/d m-o-m, with strong gains in the US and smaller increases from North Sea and Ghana offset by losses in China. OPEC+ oil output (including condensates and NGLs) rose 130 kb/d led by

Kazakhstan, which rebounded from maintenance and operational issues. Russian oil output held broadly steady and was down 330 kb/d from pre-invasion levels.

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	7.2	7.4	7.3	7.3	7.3	7.3
Latin America	5.9	6.2	6.2	6.4	6.6	6.4	6.7	6.8	6.8	6.9	6.8
North America	24.4	25.0	25.4	26.1	26.5	25.7	26.5	26.7	27.1	27.4	26.9
China	4.1	4.2	4.2	4.1	4.1	4.2	4.3	4.2	4.2	4.1	4.2
Other Asia	3.4	3.3	3.2	3.1	3.1	3.2	3.1	3.1	3.1	3.0	3.1
Europe	3.5	3.4	3.1	3.2	3.4	3.3	3.5	3.5	3.4	3.6	3.5
FSU	13.8	14.4	13.4	13.7	13.8	13.8	12.8	12.5	12.4	12.4	12.5
Middle East	27.9	30.1	30.9	31.8	31.2	31.0	30.9	30.9	31.0	31.0	31.0
Total Oil Production	90.3	94.0	93.5	95.4	95.9	94.7	95.1	95.0	95.3	95.7	95.3
Processing Gains	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.4	2.4	2.4
Global Biofuels	2.8	2.4	3.0	3.3	3.0	2.9	2.6	3.1	3.4	3.0	3.0
Total Supply	95.3	98.7	98.8	101.0	101.2	99.9	100.0	100.5	101.1	101.1	100.7
OPEC Crude	31.5	33.8	34.1	34.9	34.7	34.4	34.6	34.5	34.5	34.5	34.5
OPEC NGLs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Non-OPEC OPEC+	17.4	18.2	17.2	17.5	17.6	17.6	16.7	16.3	16.2	16.3	16.4
Total OPEC+	49.0	52.0	51.3	52.4	52.3	52.0	51.2	50.9	50.8	50.8	50.9

OPEC+ crude oil supply

OPEC+ crude oil output from all 23 members edged up 70 kb/d to 44.92 mb/d in October, the highest level since April 2020. A rebound in Kazakhstan and increased flows from Iraq and Nigeria offset declines led by Saudi Arabia. Volumes from OPEC countries eased 30 kb/d to 29.80 mb/d while output from non-OPEC partners rose 100 kb/d to 15.12 mb/d. Production from the 19 members bound by the bloc's supply deal fell by 40 kb/d compared to a planned decrease of 100 kb/d for October.



However, starting this month, output should fall sharply as the bloc implements its biggest supply cut since Covid. Our current estimate is for a decrease of around 800 kb/d. That should narrow the gap between the bloc's supply and official target to roughly 2 mb/d from 3.2 mb/d in October. Russia, due to sanctions, will continue to lead those trailing far below quotas, while operational issues and capacity constraints will keep countries such as Nigeria, Angola and Malaysia well under their targets. The full group is due to meet to review policy on 4 December.

OPEC+ Crude Oil Production ¹						
(million barrels per day)						
	Sep 2022 Supply	Oct 2022 Supply	Oct Prod vs Target	Oct 2022 Target	Sustainable Capacity ²	Eff Spare Cap vs Oct ³
Algeria	1.03	1.04	-0.01	1.06	1.0	0.0
Angola	1.09	1.05	-0.48	1.53	1.2	0.1
Congo	0.27	0.25	-0.08	0.33	0.3	0.0
Equatorial Guinea	0.08	0.07	-0.06	0.13	0.1	0.0
Gabon	0.20	0.22	0.03	0.19	0.2	0.0
Iraq	4.55	4.60	-0.05	4.65	4.7	0.1
Kuwait	2.82	2.80	-0.01	2.81	2.8	0.0
Nigeria	0.96	1.01	-0.82	1.83	1.3	0.3
Saudi Arabia	11.03	10.90	-0.10	11.00	12.2	1.3
UAE	3.48	3.46	0.28	3.18	4.1	0.7
Total OPEC-10	25.51	25.40	-1.29	26.69	28.0	2.6
Iran ⁴	2.49	2.51			3.8	
Libya ⁴	1.16	1.18			1.2	0.0
Venezuela ⁴	0.67	0.71			0.8	0.0
Total OPEC	29.83	29.80			33.7	2.7
Azerbaijan	0.54	0.55	-0.17	0.72	0.6	0.0
Kazakhstan	1.36	1.46	-0.25	1.71	1.7	0.2
Mexico ⁵	1.62	1.64		1.75	1.7	0.0
Oman	0.88	0.88	0.00	0.88	0.9	0.0
Russia	9.74	9.72	-1.29	11.00	10.2	
Others ⁶	0.88	0.87	-0.23	1.11	0.9	0.1
Total Non-OPEC	15.02	15.12	-1.94	17.16	15.9	0.3
OPEC+ 19 in cut deal*	38.92	38.88	-3.22	42.10	42.2	2.9
Total OPEC+	44.85	44.92			49.6	3.0

1 Excludes condensates.

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

3 Excludes shut in Iranian, Russian crude.

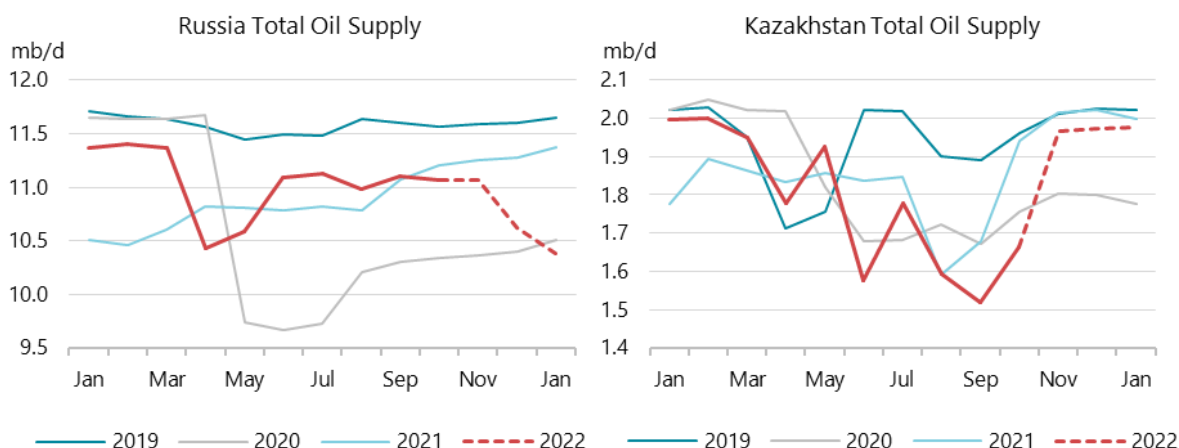
4 Iran, Libya, Venezuela exempt from cuts.

5 Mexico excluded from OPEC+ compliance.

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

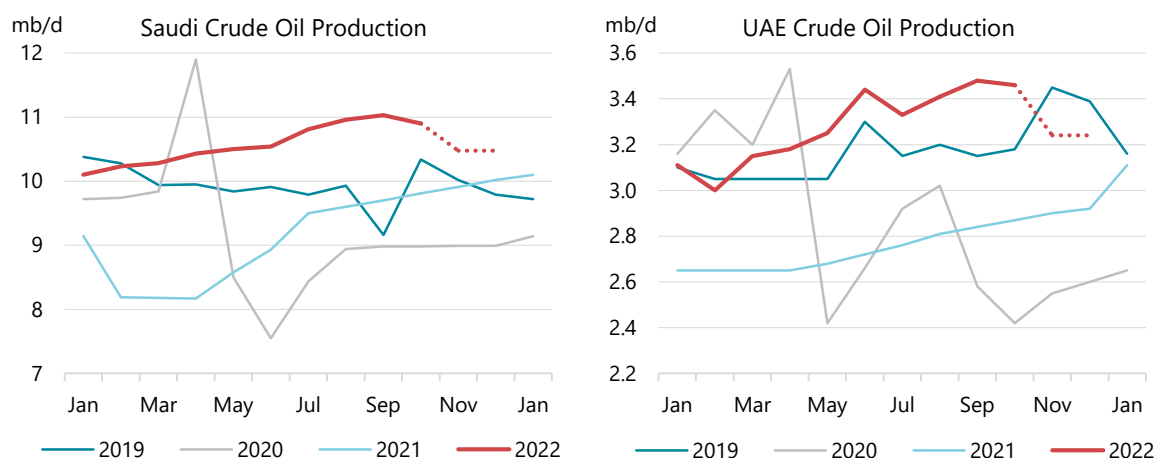
Crude oil supply from **Russia** dipped 20 kb/d to 9.72 mb/d in October, with output from top producers Rosneft and Lukoil reportedly easing m-o-m. Total supply of crude oil, condensates and NGLs edged down 40 kb/d to 11.07 mb/d. We expect Russian oil production to hold steady this month and assume that declines will resume in December when the EU embargo on Russian crude oil takes effect. On an annual basis, the implementation of the embargo at end-year will limit growth to just 150 kb/d in 2022. By the end of 1Q23, we forecast that close to 2 mb/d will be shut in versus pre-invasion levels, which would reduce total oil volumes to 9.6 mb/d on average in 2023.

Kazakhstan delivered the largest monthly increase, with crude oil supply rising 100 kb/d to 1.46 mb/d as the Kashagan field ramped up and maintenance finished at Karachaganak. The offshore Kashagan field, hit by a gas leak in August, gradually rose towards its 400 kb/d capacity during October and by this month, was pumping flat out. The field, Kazakhstan's second biggest, has been beset with issues at its upstream units and export outlet in the Russian port of Novorossiysk this year. At the time of writing, Kazakh crude/condensate production was running at roughly 2 mb/d compared to an average 1.62 mb/d in October.



Saudi Arabia delivered the bloc's biggest monthly decrease, with output down 130 kb/d to 10.9 mb/d. Further declines are on the way this month, with Riyadh's quota dropping to 10.48 mb/d. Saudi Aramco meanwhile reported that its 3Q22 net income climbed 39% to \$42.4 billion versus the same period a year ago. Capital spending in the quarter rose 19% on the year to \$9 billion. Aramco has said it plans to spend \$40 billion to \$50 billion on capex in 2022, most of it on upstream projects.

Production in the **UAE** dipped to 3.46 mb/d, still substantially above its OPEC+ target. From this month, however, crude supply is expected to fall by a further 160 kb/d in line with new OPEC+ cuts.

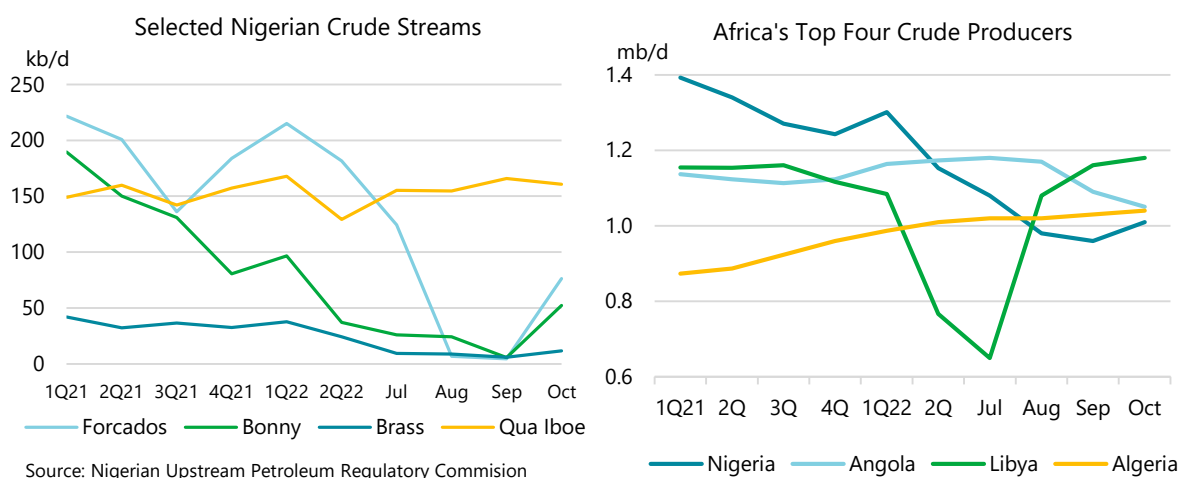


Iraq raised output by 50 kb/d to 4.6 mb/d as shipments from the south rose close to capacity. Baghdad has meanwhile appointed a new oil minister, Hayan Abdul Ghani, as part of a new cabinet announced at the end of last month, ending more than a year of deadlock and potentially providing momentum to delayed energy developments. Ghani, the former head of South Oil Co, will need to finalise crucial deals such as a \$27 billion mega-project signed last year with TotalEnergies.

Kuwait's oil sector also had a reshuffle along with a new government, including a new oil minister, former lawmaker Bader al Mulla. Ahmed Jaber al-Aydan was appointed as CEO of Kuwait Oil Company, which handles the upstream. A political stalemate and tough commercial terms have set back Kuwait's ability to sustain and eventually boost production capacity. Reviving and developing the country's ageing and complex oil fields (as well as those of the Neutral Zone) will require substantial investment to underpin the drilling effort along with more expensive Enhanced Oil Recovery technology. Kuwaiti oil output inched down to 2.8 mb/d in October.

Crude oil production in **Iran**, exempt from the OPEC+ supply pact, crept up 20 kb/d m-o-m to 2.51 mb/d. Talks to revive the 2015 Iran nuclear deal have stalled. Iran could be a source of significant supplies if sanctions were to be eased (our base case assumes sanctions are not lifted), with 1.2-1.3 mb/d of crude oil potentially restored in about six to eight months.

Combined crude oil output from African members of OPEC+ edged up 40 kb/d after a tentative recovery in Nigeria and continued gains in Libya offset a further decline in Angola. **Nigerian** supply rose 50 kb/d m-o-m to 1.01 mb/d after core grade Forcados returned following a three-month halt and Bonny Light showed signs of life. Chronic underinvestment, sabotage and oil theft had pushed output in September to the lowest monthly level in nearly 40 years, according to our data. If Forcados and Bonny continue to recover, Nigeria could eventually regain its rank as Africa's biggest crude oil producer.

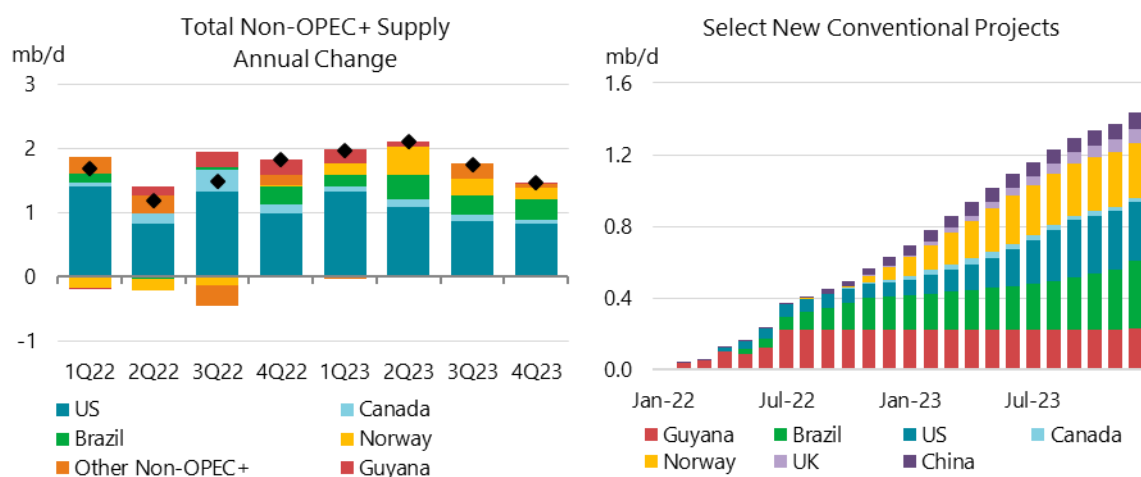


Libyan crude oil output edged up to 1.18 mb/d in October, the highest level since July 2021, as a deal that ended an oil blockade in July remains in place. On the upstream front, Russia's Tatneft has resumed upstream operations in the Ghadames Basin. Tatneft has halted work on several occasions due to security concerns.

After a stretch of stable output, **Angola** saw a third month of declines with supply falling 40 kb/d m-o-m to 1.05 mb/d due to operational issues and maintenance at Cabinda (Block 0) and Block 18. Technical issues and a lack of investment have knocked production from a peak of 1.8 mb/d in 2015, but the start-up last year of a number of fields had helped to stem some of the declines. More short-term lift could be provided from ExxonMobil's discovery at the offshore Buvuca South-1 well, part of the Block 15 redevelopment plan, which is expected to deliver 40 kb/d.

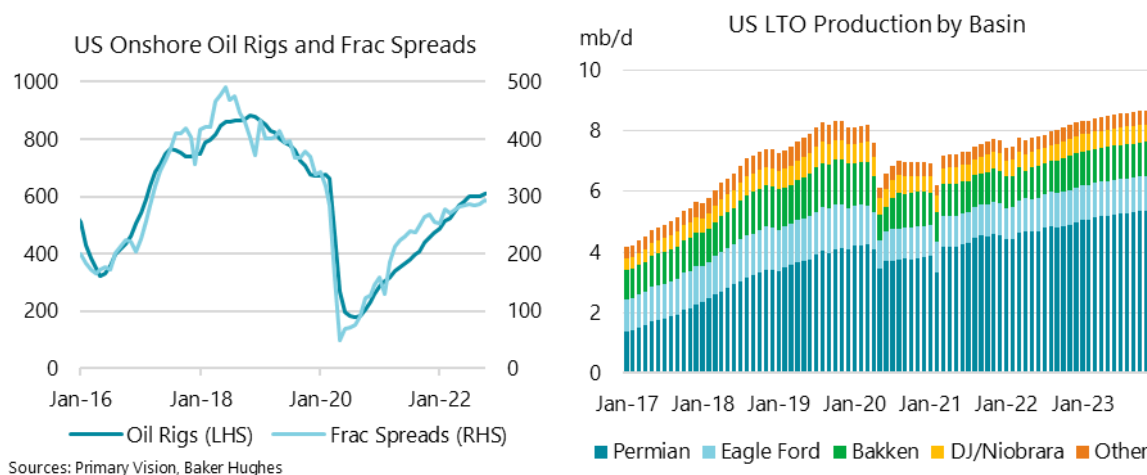
Non-OPEC+

A strong performance from the US has boosted non-OPEC+ oil supply by 2.5 mb/d year-to-date, with volumes touching 48.9 mb/d in October. From September to October, non-OPEC+ oil production rose 290 kb/d thanks to solid gains in the US and the North Sea returning from maintenance. For the year as a whole, non-OPEC+ supply is projected to rise 1.6 mb/d y-o-y to 47.9 mb/d. Further gains of 1.8 mb/d are forecast for 2023, lifting non-OPEC+ oil output to 49.7 mb/d. Pre-Covid sanctioned conventional projects provide over half the growth in 2023, as they add 260 kb/d in Brazil, 240 kb/d in Norway and 220 kb/d in both the US Gulf of Mexico (GoM) and Guyana.



Total oil supply in the **US** is forecast to increase by 1.1 mb/d this year and by 1 mb/d in 2023, to average 18 mb/d and 19 mb/d, respectively. In October, US output climbed 240 kb/d m-o-m, with GoM gaining 130 kb/d as operations were spared from hurricanes for another month, and Shell restarted two pipelines that were down for maintenance during part of September. NGL volumes also expanded by 90 kb/d, while lower 48 production was roughly flat.

In August, the latest month for which official data from the US Energy Information Administration (EIA) are available, total oil supply fell marginally by 10 kb/d m-o-m as a 110 kb/d drop in NGLs overshadowed crude gains of 100 kb/d. Lower 48 production accounted for the majority of the rise in crude oil, with Texas output 80 kb/d higher. Alaska fell 20 kb/d to 410 kb/d m-o-m due to summer maintenance, but was offset by a 20 kb/d increase in GoM.

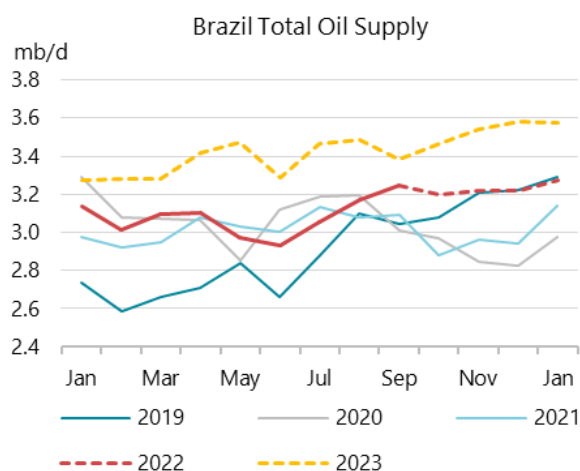
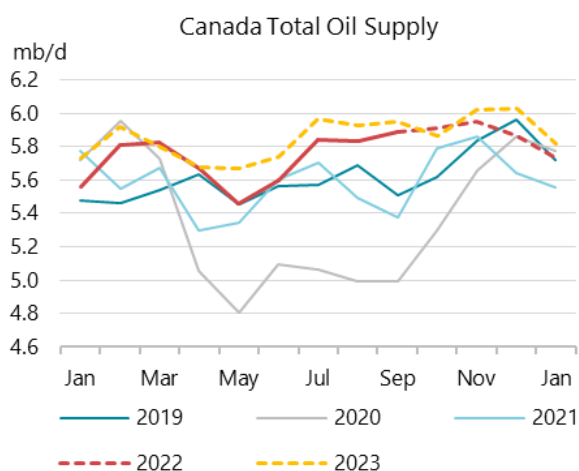


Sources: Primary Vision, Baker Hughes

Recent negative sentiment from the Dallas Fed Energy Survey was reiterated in 3Q22 earnings calls by oilfield service companies and shale producers as they highlighted cyclical constraints – the lack of spare fracking equipment/crews and higher cost escalation. Banks and consultancies also expressed concerns over well performance and future drilling inventory. These factors have led us to downgrade our LTO forecast by 80 kb/d this year and 140 kb/d in 2023. US LTO production is now expected to increase by 570 kb/d in 2022 and 660 kb/d next year.

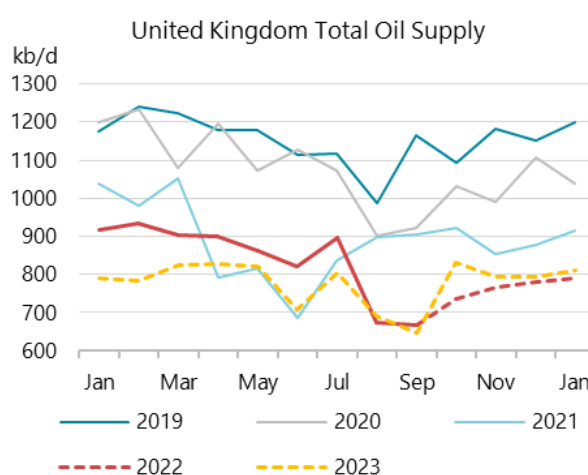
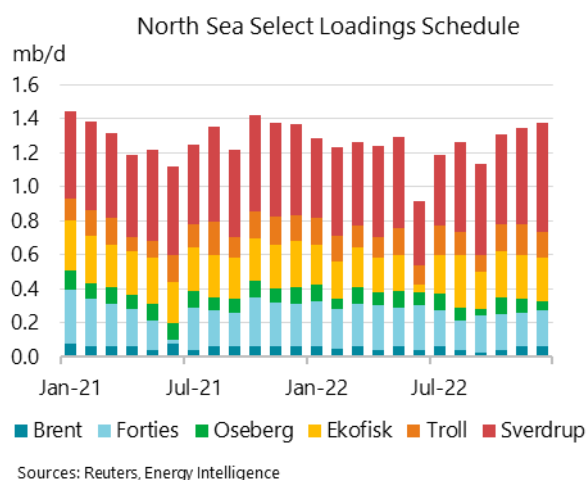
According to data from the Alberta Energy Regulator (AER), **Canadian** supply rose by 50 kb/d m-o-m in September to 5.9 mb/d as higher upgrader output offset losses in crude production. October volumes increased by a further 20 kb/d, yet through the end of the year supply is forecast to fall by

40 kb/d. Next year, output will average 5.9 mb/d, up 90 kb/d from 2022 as Terra Nova restarts (now slated for 1Q23) and oil sands increase in line with expansions and debottlenecking projects.



Brazil's Agencia Nacional do Petroleo has released a limited amount of oil statistics after a cyberattack had effectively halted all reporting for three months. According to the data, output rose in September by 70 kb/d to 3.2 mb/d – the highest monthly total since January 2020. Equinor's Peregrino field ramped up faster than expected since coming back online in July. Tupi and Mero also contributed to the recent growth. Next year, as additional Floating Production Storage and Offloading (FPSO) vessels are commissioned, Brazil's output is expected to increase by a further 300 kb/d to average 3.4 mb/d.

Elsewhere in Latin America, **Peruvian** production recovered by 10 kb/d in September, to 100 kb/d, as the Camisea gas field returned from maintenance. Through the end of the year, volumes are forecast to increase by 30 kb/d as Camisea fully ramps up and as PetroTal's drilling campaign in Block 95 of the Marañon Basin boosts output. In **Argentina**, production rose 10 kb/d m-o-m to 730 kb/d in September led by gains in the Neuquén basin. Total Argentinean supply is forecast to average 710 kb/d in 2022 and grow by 40 kb/d to 750 kb/d next year, as Neuquén LTO more than offsets conventional declines elsewhere in the country.

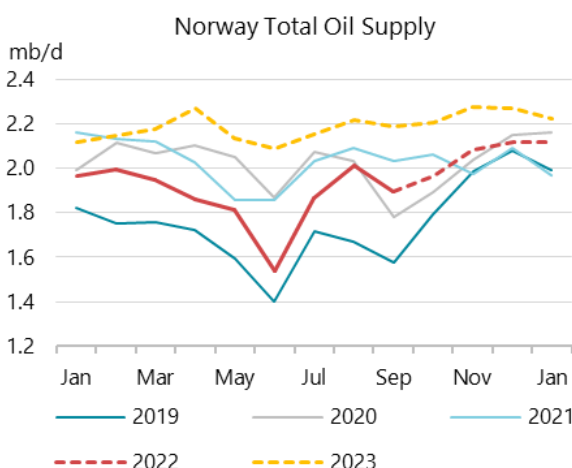


North Sea loadings (as measured by BFOE plus Troll and Johan Sverdrup) are scheduled at 1.38 mb/d in December, 30 kb/d higher than November, as Johan Sverdrup is set to increase steadily with the commissioning of its second phase. This is the longest loading program for Sverdrup since

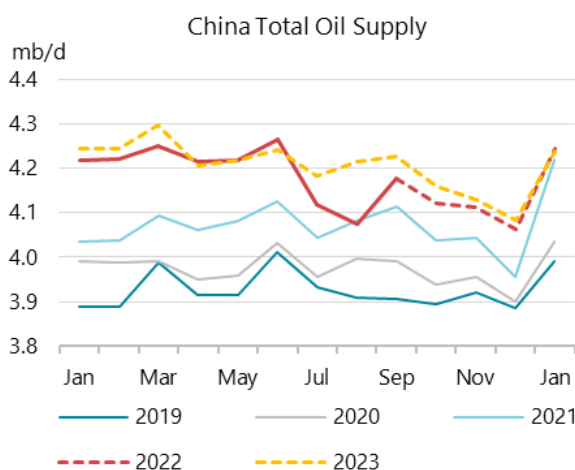
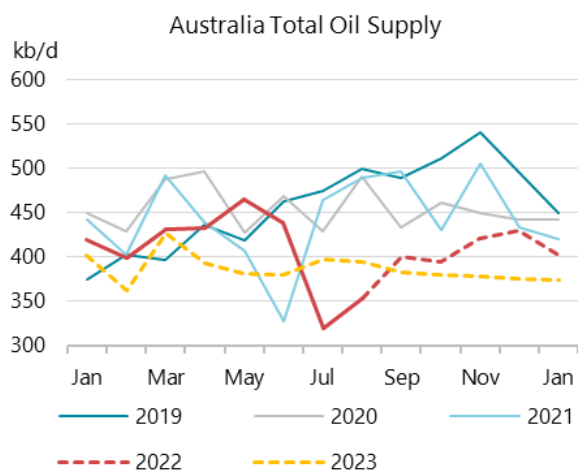
exports began in December 2019 and will come as good news to European refiners as it is the most suitable North Sea replacement for Urals. Outside of Johan Sverdrup, North Sea loadings are scheduled to decline by 40 kb/d m-o-m in December, or 6%, to 740 kb/d primarily due to shorter Oseberg and Troll programmes.

UK supply was flat m-o-m in September as maintenance continued, according to data from the UK North Sea Transition Authority. Production is expected to recover throughout 4Q22 as work finishes, with October rising 70 kb/d m-o-m to 740 kb/d and volumes reaching 780 kb/d by December. UK output is forecast to average 820 kb/d this year and 780 kb/d in 2023.

Data from the **Norwegian** Petroleum Directorate show output in September fell by 120 kb/d m-o-m to 1.9 mb/d due to maintenance on the Oseberg-Troll system and unplanned outages at Yme. Productions partially recovered in October by 70 kb/d, with Yme and Troll continuing to run at reduced rates. Through the end of the year, volumes will jump by 160 kb/d to 2.1 mb/d as supply recovers and Johan Sverdrup phase begins production. Next year, output is expected to grow by 270 kb/d to average 2.2 mb/d.



The latest monthly data from August show **Australian** production partially recovered by 30 kb/d m-o-m to 350 kb/d after cratering in by 120 kb/d July. For October, output was estimated at 400 kb/d, slightly below the annual average of 410 kb/d. Supply is forecast to continue to decline for the fourth straight year in 2023 to average 390 kb/d, down 20 kb/d y-o-y.

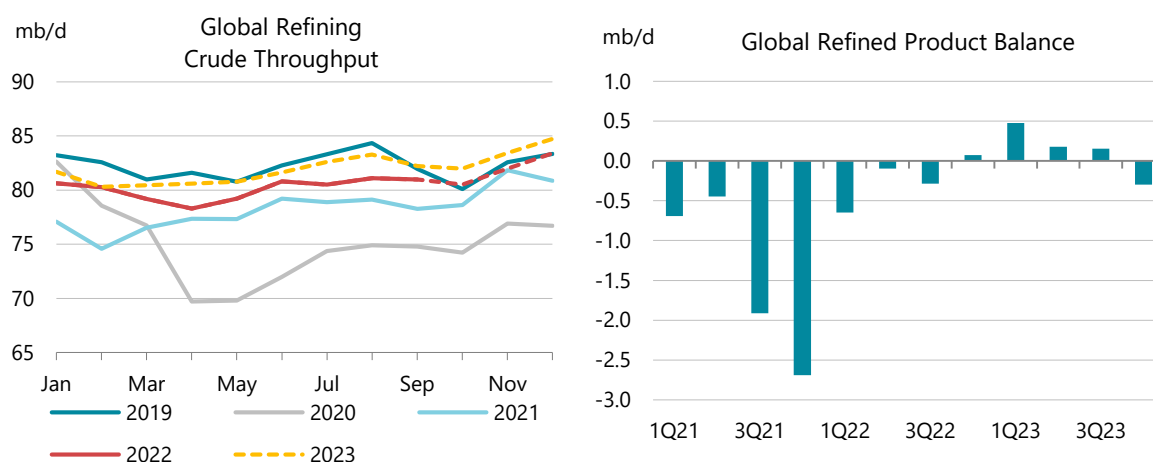


Elsewhere in Asia-Pacific, **Chinese** production rebounded in September, rising by 100 kb/d to 4.2 mb/d. Output is estimated 50 kb/d lower in October and is expected to lose another 60 kb/d through the end of the year. For the year as a whole, China's oil supply is set to rise by 110 kb/d y-o-y to 4.2 mb/d. Next year sees growth slow to 30 kb/d.

Refining

Overview

Global refinery throughputs dipped to 80.4 mb/d in October on peak seasonal maintenance and major industrial action in France. Runs were down by a relatively modest 500 kb/d m-o-m, but Atlantic Basin refining activity saw a more significant fall of 1.1 mb/d, partly offset by higher runs East of Suez. As the US is the pricing centre for gasoline and Europe for middle distillates, cracks for these products rallied. Diesel cracks were pushed to new all-time highs even as a milder start to the winter in Europe saw natural gas prices tumbling from the record highs reached this summer.



Global Refinery Crude Throughput ¹														
	(million barrels per day)													
	2019	2020	2021	1Q22	2Q22	Sep-22	3Q22	Oct-22	Nov-22	4Q22	2022	1Q23	2Q23	2023
Americas	19.1	16.6	17.8	18.4	18.7	18.8	19.0	18.4	18.7	18.7	18.7	18.4	19.1	18.9
Europe	12.2	10.7	11.0	11.0	11.6	11.7	11.8	11.0	11.6	11.6	11.5	11.2	11.4	11.5
Asia Oceania	6.8	5.9	5.8	6.2	5.8	6.1	6.2	5.7	6.2	6.1	6.1	6.1	5.6	5.9
Total OECD	38.1	33.2	34.5	35.6	36.1	36.6	37.0	35.1	36.5	36.4	36.3	35.7	36.1	36.3
FSU	6.8	6.4	6.7	6.5	5.9	6.4	6.4	6.4	6.3	6.4	6.3	6.0	5.2	5.5
Non-OECD Europe	0.5	0.4	0.4	0.4	0.5	0.6	0.6	0.6	0.5	0.6	0.5	0.6	0.5	0.5
China	13.4	13.7	14.4	14.2	12.9	13.9	13.2	14.2	14.3	14.3	13.6	14.1	14.2	14.3
Other Asia	10.3	9.3	9.5	10.3	10.5	9.9	10.0	10.4	10.2	10.3	10.3	10.5	10.4	10.5
Latin America	3.2	3.0	3.2	3.3	3.4	3.4	3.4	3.3	3.6	3.5	3.4	3.4	3.4	3.5
Middle East	7.8	7.1	7.6	7.7	8.1	8.4	8.3	8.4	8.5	8.6	8.2	8.6	9.0	9.1
Africa	2.0	1.9	1.9	1.9	1.8	1.9	1.8	1.9	1.9	1.9	1.9	2.0	2.0	2.2
Total Non-OECD	44.1	41.9	43.7	44.3	43.2	44.3	43.8	45.3	45.4	45.4	44.2	45.0	44.8	45.6
Total	82.2	75.0	78.2	79.9	79.3	80.9	80.8	80.4	81.9	81.9	80.5	80.7	80.9	81.9
Year-on-year change	-0.2	-7.1	3.2	3.9	1.5	2.7	2.1	1.9	0.1	1.5	2.3	0.8	1.6	1.4

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

As 2022 draws to a close, 2023 is likely to start off with even lower product inventories and a very thin safety cushion. Our forecast for 2023 demand and refinery throughputs shows a modest build in refined product inventories, but the overall picture for next year remains precarious. Will Russia be able and willing to find outlets for its products backed out of the EU when the embargo and price cap come into effect? Will Chinese refiners step up their activity levels to fill in the product supply gap, particularly in middle distillates? The range of uncertainty has never been so large. Additionally, crude oil balances in the second half of 2023 look particularly tight (assuming OPEC+ cuts stay in

place), showing a draw of 1.8 mb/d. Refinery throughputs are forecast to increase by just 1.4 mb/d next year, following a growth of 2.3 mb/d in 2022.

Between 4Q22 and end-2023, we expect a 2.7 mb/d of net increase in global refining capacity, but the gains in throughputs are more modest due to expected declines in Russia. In the first three quarters of 2022 refinery global refining capacity fell by 170 kb/d as shutdowns outweighed additions. In 4Q22, two major projects in China and the first phase of the Al-Zour refinery in Kuwait, as well as smaller expansions elsewhere, will contribute to a 700 kb/d net increase in capacity. In 2023, net additions are expected to total almost 2 mb/d, again, heavily weighted towards the second half of the year. Just three projects: Al-Zour's second and third phase (415 kb/d incremental), Nigeria's 650 kb/d Lekki and Mexico's 340 kb/d Olmeca plant will account for 70% of next year's net additions.

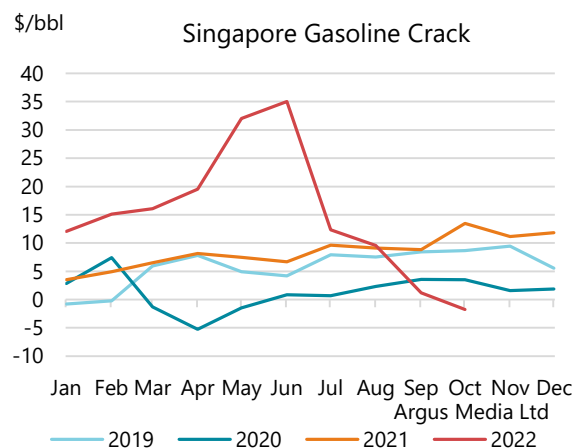
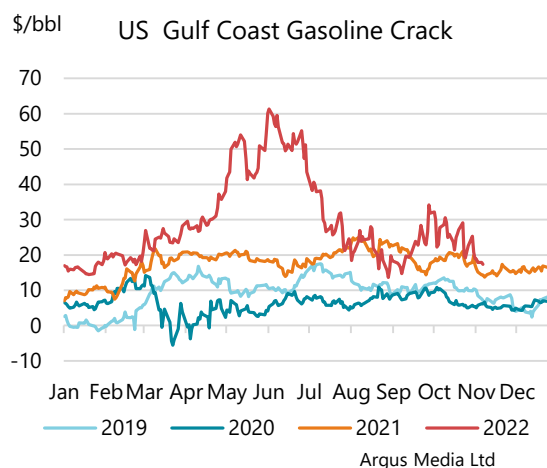
Product cracks and refinery margins

Crude oil prices in October reversed a three-month downtrend following the OPEC+ decision to cut output. Benchmark grades in Europe and the US were up by \$3/bbl even as heavy maintenance and strikes cut Atlantic Basin crude oil demand by 1.1 mb/d m-o-m. But the east of Suez benchmark Dubai spot price was flat m-o-m on a widening discount to Brent due to the continued influx of Russian crude and fuel oil into the region. Nevertheless, light and middle distillate cracks increased m-o-m in all regions, driven by product shortages.

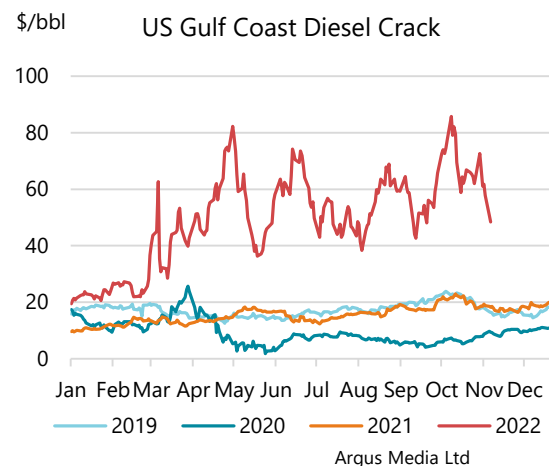
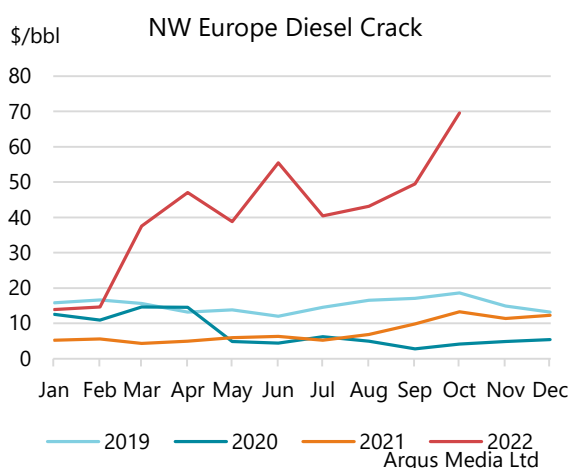
Product Prices and Differentials (\$/bbl)												
	Prices			Differentials				Week Starting				
	Aug	Sep	Oct	Aug	Sep	Oct	Sep-Oct chg	10-Oct	17-Oct	24-Oct	31-Oct	07-Nov
Northwest Europe												
Gasoline	111.23	98.47	110.80	to North Sea Dated								
				11.60	8.62	17.70	9.07	21.14	17.08	17.82	18.46	13.78
Diesel	142.81	139.29	162.68	43.18	49.44	69.57	20.13	72.67	75.88	70.67	52.11	42.94
Jet/Kero	142.85	134.91	138.99	43.22	45.06	45.89	0.83	49.05	47.45	43.45	39.29	38.50
Naphtha	74.18	70.37	75.54	-25.45	-19.48	-17.57	1.91	-18.17	-16.60	-17.72	-19.09	-20.39
HSFO	76.18	63.12	60.23	-23.45	-26.73	-32.88	-6.15	-34.53	-32.12	-34.80	-33.18	-31.71
0.5% Fuel Oil	106.23	96.12	94.38	6.60	6.28	1.27	-5.00	1.43	3.79	0.56	-2.09	-1.54
US Gulf Coast												
Gasoline	115.54	106.77	116.16	to WTI Houston								
				21.93	20.43	26.56	6.13	26.40	25.00	25.39	21.77	18.19
Diesel	148.23	140.22	159.40	54.62	53.88	69.80	15.92	77.87	70.87	64.79	66.21	55.96
Jet/Kero	139.74	136.19	148.53	46.13	49.85	58.93	9.08	63.35	57.35	55.34	54.09	46.20
Naphtha	87.05	75.70	81.05	-6.56	-10.64	-8.55	2.09	-7.83	-8.48	-10.42	-12.27	-13.38
HSFO	81.74	61.76	52.59	-11.86	-24.58	-37.01	-12.42	-40.02	-36.49	-37.16	-32.94	-28.15
0.5% Fuel Oil	111.24	99.54	100.80	17.64	13.21	11.20	-2.00	10.68	11.91	11.30	9.78	8.74
Singapore												
Gasoline	107.19	94.03	91.16	to Dubai								
				9.57	1.18	-1.76	-2.94	-2.63	0.06	-2.48	0.55	3.53
Diesel	139.12	129.66	137.25	41.50	36.80	44.33	7.52	45.29	46.36	43.10	42.26	41.90
Jet/Kero	131.73	121.58	123.40	34.12	28.72	30.48	1.75	31.28	32.81	30.22	29.88	33.92
Naphtha	72.73	68.22	71.86	-24.89	-24.64	-21.06	3.58	-23.13	-20.53	-20.51	-19.31	-18.48
HSFO	74.95	60.36	57.46	-22.67	-32.49	-35.45	-2.96	-36.20	-35.57	-36.87	-31.98	-29.03
0.5% Fuel Oil	110.92	101.48	105.77	13.30	8.62	12.85	4.23	13.83	13.40	10.67	9.60	10.47

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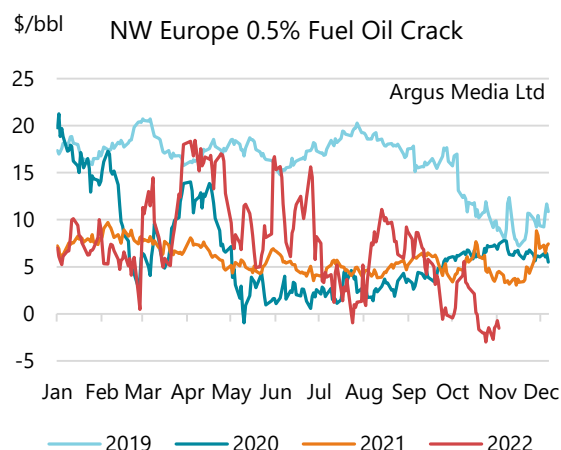
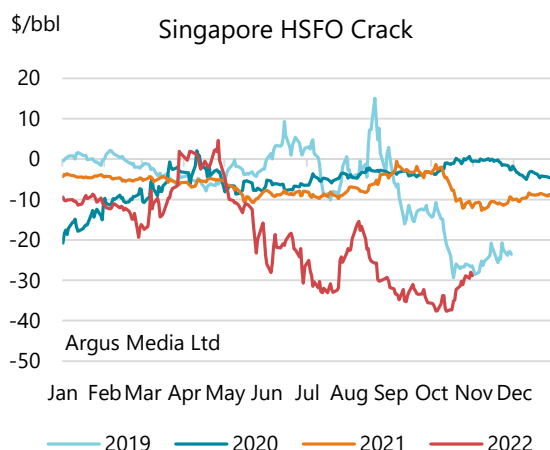
Despite a seasonal demand slowdown, gasoline cracks in the US and Europe got a substantial boost thanks to refinery undersupply. In Europe, cracks effectively doubled to \$18/bbl. In the US, cracks reached a three-month high. In Singapore, however, gasoline cracks were negative throughout the month for the first time since May 2020. While naphtha cracks strengthened somewhat, their very low levels are putting serious downward pressure on gasoline cracks in Singapore, which is a price benchmark for a rather fragmented regional market.



Diesel cracks surged to new records in Europe and the US, both on a daily and monthly average basis. In mid-October, the US Gulf Coast diesel crack was almost equal to the underlying WTI crude price. This is the third time this has happened, after Hurricane Rita in 2005 and the start of the Covid-19 lockdowns in March 2020. European jet cracks saw more modest increases than those on the US Gulf Coast.



High sulphur fuel oil cracks fell on gains in crude prices, secondary unit maintenance and generally poor conversion economics due to elevated energy prices. In Singapore, 0.5% fuel oil cracks strengthened but in Northwest Europe dropped to their lowest levels ever recorded, pricing in negative territory at the end of the month. This underscores the extreme premium that the market places on ultra-low sulphur products such as diesel, compared to higher sulphur and relatively similar material such as very low sulphur fuel oils. Again, conversion unit bottlenecks and lofty desulphurisation costs due to natural gas prices were at play, on top of demand-side drivers for middle distillates.



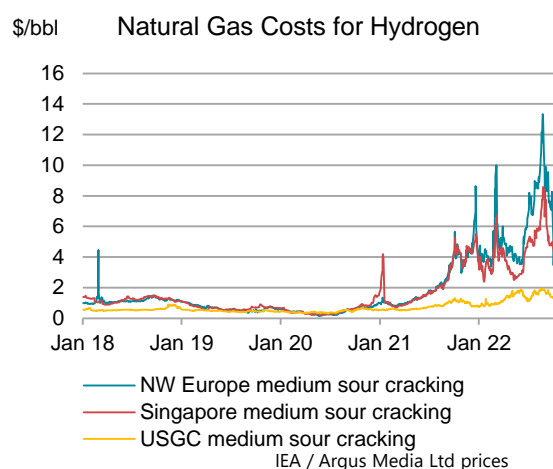
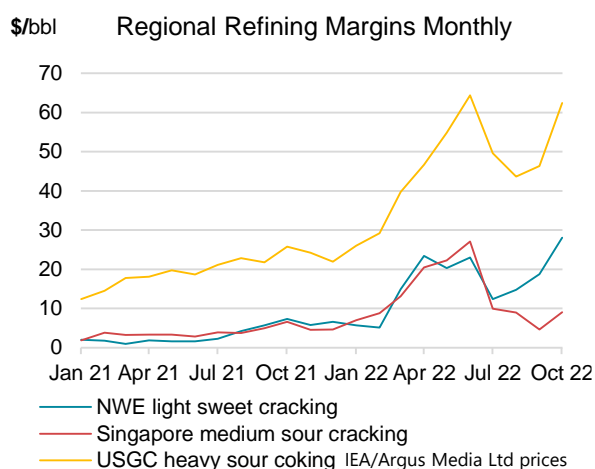
IEA Global Indicator Refining Margins

	Monthly Average				Change	Average for week starting:				
\$/bbl	Jul 22	Aug 22	Sep 22	Oct 22	Sep - Oct	10 Oct	17 Oct	24 Oct	31 Oct	07 Nov
NW Europe										
Light sweet hydroskimming	4.95	9.59	12.60	18.20	5.60	19.70	20.12	17.69	12.34	7.30
Light sweet cracking	12.43	14.76	18.74	28.10	9.36	30.27	30.47	28.06	20.32	14.64
Light sweet cracking + Petchem	15.19	16.73	19.25	27.95	8.70	30.07	30.54	28.07	20.80	15.54
Medium sour cracking	40.44	35.47	36.92	51.37	14.45	51.49	53.08	55.83	49.74	42.20
US Gulf Coast										
Light sweet cracking	29.39	25.62	25.24	33.60	8.37	36.07	33.34	31.10	29.41	23.93
Medium sour cracking	38.88	34.26	32.85	43.51	10.66	45.89	44.46	41.77	40.88	34.04
Heavy sour coking	49.64	43.63	46.34	62.38	16.05	67.93	62.10	60.35	60.40	51.47
Singapore										
Light sweet cracking	12.04	11.75	8.85	9.10	0.25	8.71	9.87	8.38	6.75	7.42
Light sweet cracking + Petchem	13.24	13.84	11.28	10.28	-1.00	9.79	11.16	9.44	7.73	8.31
Medium sour cracking	9.91	8.98	4.63	9.01	4.38	9.01	10.38	8.64	10.07	12.16
Medium sour cracking + Petchem	11.09	11.04	7.02	10.17	3.14	10.09	11.65	9.69	11.04	13.05

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>



Refinery margins were up m-o-m as higher cracks for premium products more than offset losses in fuel oil. Benchmark light sweet complex margins in Europe reached a new high, while US Gulf Coast

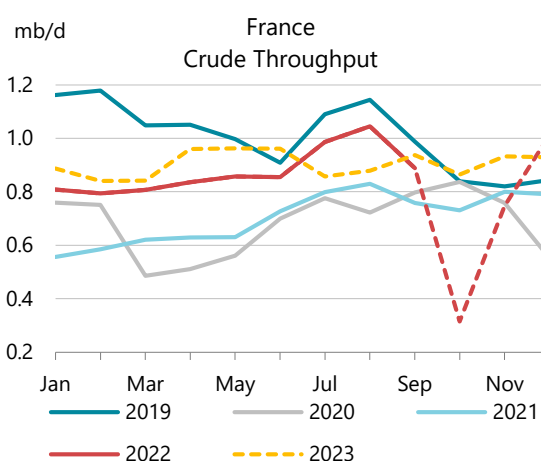
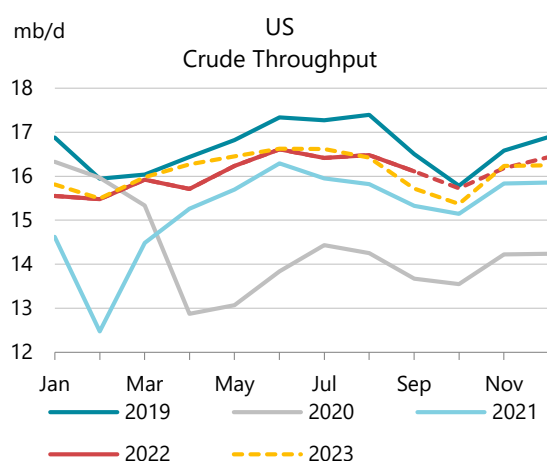
heavy sour cracking economics were just shy of June's record level. Over the course of October, milder weather in Europe drove down natural gas prices, and at the end of the month indicative hydrogen costs fell to their lowest level since summer 2021.

Regional refining developments

US refinery runs in October fell by 380 kb/d m-o-m to 15.6 mb/d as seasonal maintenance and accidents shut in over 2 mb/d of refining capacity. October outages were near peak historical rates for normal times, excluding the impact of weather events such as hurricanes and arctic storms. Judging by overall utilisation rates, refineries unaffected by shutdowns operated at close to 100% of available capacity.

At a meeting with the US Energy Secretary Jennifer Granholm last month, refiners reportedly expressed scepticism about the possibility of bringing back mothballed facilities. Nevertheless, extremely high product margins amid particularly poor local product supply and low inventories in the North East region incentivised PBF Energy to restart gasoline and diesel-producing secondary units at its 100 kb/d Paulsboro refinery in New Jersey that was shut during the Covid-19 pandemic. At the same time, the plan for restarting the 200 kb/d St Croix refinery in the US Virgin Islands is facing another setback as the Environmental Protection Agency's inspectors found the plant to be at a high risk of fire and explosions due to corrosion of the equipment. In addition, the resumption of industrial activities on the site needs the consent of the Department of Justice, which has issued fines totalling hundreds of millions of dollars due to the operator's failure to install the requested equipment.

US refinery throughputs are set to rebound in November and December, before a seasonal slowdown in 1Q23 due to scheduled maintenance.



In Europe, September data came in stronger than expected, particularly for **France**, where strikes appeared to have a more limited impact for that month. In contrast, we have revised down the October estimate for the country given the longer than expected strike action and ramp-up periods. Amongst France's six operating refineries, only Petroineos's Lavera plant was not affected by the industrial action. Strikes started to wind down in the second half of the month, but normal operating rates were not expected to be reached before mid-November. One of TotalEnergies' three refineries was in maintenance prior to the strikes and is currently finalising planned works. Workers at ExxonMobil's 250 kb/d Fawley plant in the **UK** have announced a strike for late November, but the scope is expected to be limited. Fawley is the main supplier of jet fuel to London's Heathrow airport,

one of the busiest in the world. In **Netherlands**, workers at BP's 380 kb/d Rotterdam plant are also threatening a strike action if their demands are not met.

Refinery Crude Throughput and Utilisation in OECD Countries

(million barrels per day)

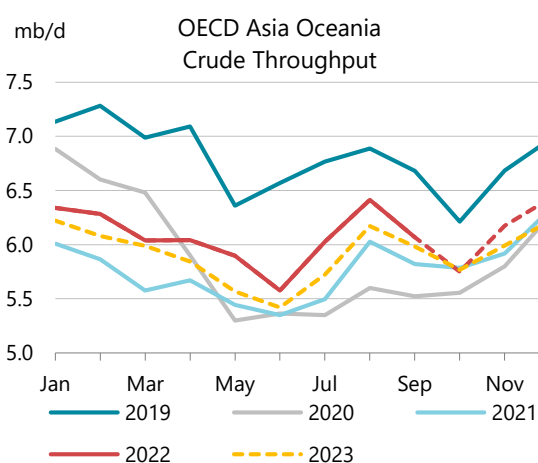
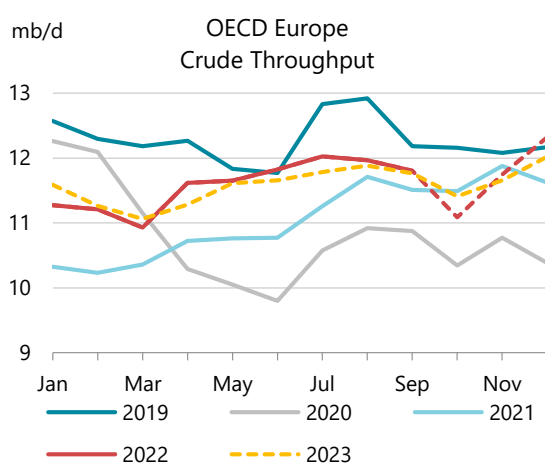
	Apr 22	May 22	Jun 22	Jul 22	Aug 22	Sep 22	Change from		Utilisation rate	
							Aug 22	Sep 21	Sep 22	Sep 21
US ¹	15.61	16.13	16.51	16.32	16.38	16.01	-0.37	0.78	91%	85%
Canada	1.57	1.65	1.72	1.85	1.79	1.84	0.05	0.15	97%	84%
Chile	0.19	0.13	0.10	0.11	0.15	0.17	0.02	-0.03	76%	84%
Mexico	0.89	0.82	0.71	0.83	0.81	0.78	-0.03	-0.01	47%	87%
OECD Americas¹	18.25	18.74	19.05	19.11	19.14	18.80	-0.33	0.90	88%	82%
France	0.83	0.85	0.85	0.98	1.03	0.88	-0.16	0.13	77%	66%
Germany	1.90	1.80	1.91	1.86	1.76	1.88	0.12	0.15	93%	86%
Italy	1.33	1.46	1.46	1.42	1.41	1.40	-0.01	0.07	81%	77%
Netherlands	1.02	1.06	1.11	1.02	1.02	1.06	0.04	0.02	87%	86%
Spain	1.33	1.37	1.35	1.34	1.30	1.28	-0.02	0.06	91%	87%
United Kingdom	1.10	1.08	0.99	0.96	1.05	1.04	-0.01	0.09	86%	79%
Other OECD Europe ²	4.01	3.93	4.06	4.35	4.30	4.17	-0.13	-0.22	83%	90%
OECD Europe	11.52	11.55	11.72	11.93	11.87	11.71	-0.16	0.30	85%	83%
Japan	2.72	2.65	2.42	2.57	2.91	2.74	-0.18	0.12	79%	76%
Korea	2.80	2.76	2.65	2.98	3.04	2.87	-0.18	0.22	81%	75%
Other Asia Oceania ³	0.51	0.48	0.49	0.47	0.45	0.46	0.01	-0.09	88%	75%
OECD Asia Oceania	6.03	5.89	5.57	6.02	6.40	6.06	-0.34	0.25	81%	76%
OECD Total	35.80	36.18	36.34	37.05	37.41	36.57	-0.84	1.44	86%	81%

¹ US includes US50, OECD Americas include Chile and US territories

² Includes Lithuania

³ Includes Israel

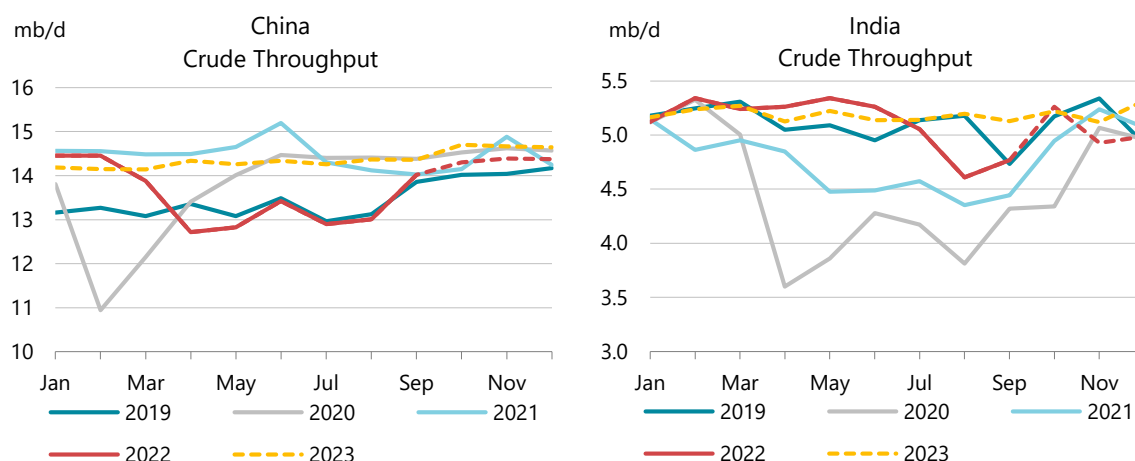
As Europe nears the 5 December ban on Russian crude oil, current importers are finalising their plans. PKN Orlen, which operates **Poland's** two refineries as well as plants in **Lithuania** and the **Czech Republic**, has said it is considering to continue pipeline imports of contracted volumes from Russian producer Tatneft while cancelling a similar contract with Rosneft. Another Russian major, Lukoil, refused a Vitol-financed offer from a US equity firm to purchase its 320 kb/d ISAB refinery in **Italy**. Following this, the Italian government said that the country's export credit agency SACE may finance the refinery and is set to discuss a plan with the refinery stakeholders in mid-November. Europe still imported 1.4 mb/d of Russian crude oil in October, of which 1.1 mb/d will need to be replaced by alternative sources (see *Calm before the storm: Russian exports up in October*).



In OECD Asia, September throughputs were down 340 kb/d m-o-m, evenly split between **Japan** and **Korea**. After further declines in October, regional refinery intake is expected to rebound in November, reaching peak seasonal rates in December. Following annual growth of 310 kb/d in 2022, runs in 2023 are set to reverse, falling by 170 kb/d on permanent closures two refineries in Japan totalling 240 kb/d of capacity.

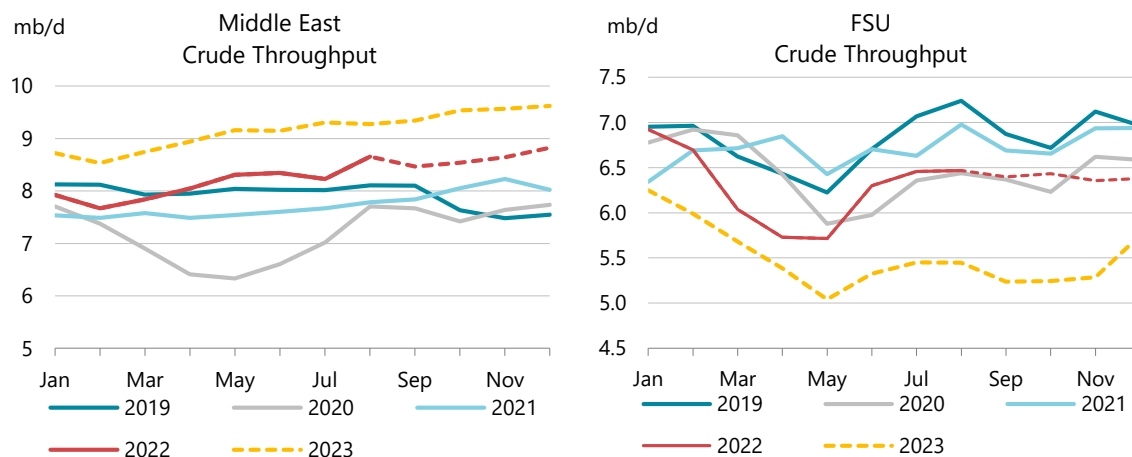
Chinese refinery throughputs surged 1 mb/d m-o-m in September, and that's before the start-up of two major projects in 4Q22. The y-o-y decline trend that started in December 2021 finally came to a halt as refinery runs rebounded to 13.9 mb/d. Combined net exports of diesel and jet fuel doubled to 740 kb/d compared to August, their highest since 1Q20, while gasoline exports fell by almost half. Meanwhile, implied crude oil balances showed a draw of around 400 kb/d, compared to a 950 kb/d decline in satellite-observed stocks from *Kayros*. In October, crude oil imports increased by around 300 kb/d m-o-m, but runs are also estimated to have gained 300 kb/d, implying that stocks could be drawing at the same rate as in September.

While China clearly has the extra refining capacity to increase throughputs and product exports to help alleviate global shortages, the flip side of the coin is that its refiners will need to pull in larger volumes of crude oil from international markets, sustaining upward pressure on crude oil prices. Meanwhile, the country's Ministry of Commerce announced that the 2023 independent refinery crude oil import quotas will be capped at 4.8 mb/d, unchanged from this year. As of October, only 62% of 2022 crude oil import quotas have been used, according to *Platts* calculations. There is scope for independent refiners to accelerate purchases for the remainder of the year. Also, there continue to be mixed signals regarding Chinese diesel exports next year. After positive expectations arising from the incremental product export quotas issued late September, there are now concerns that new regulations issued this month on diesel fuel transportation may affect the product flow.



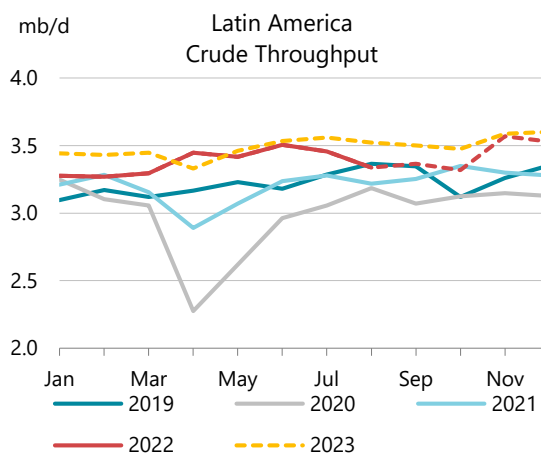
Indian refinery runs rose modestly in September, still affected by large-scale shutdowns. Throughputs increased by only 160 kb/d to 4.8 mb/d but are set to ramp up from October onwards. In early November the government increased the windfall tax on diesel and jet fuel exports. In general, Indian state-owned refiners have not been able to benefit fully from the high margin environment, having to absorb retail and marketing losses due to capped fuel prices. **Malaysia's** 300 kb/d Pengerang refinery was hit by a fire at the end of October, but the impact on operations has not been clarified. **Sri Lanka's** energy minister said the country will not continue purchasing Russian crude oil, which is less suitable to the setup of the country's sole refinery than its staple Middle Eastern grades.

In the Middle East, August throughputs were reported higher on a somewhat erratic uptick in **Iraqi** numbers that surged 180 kb/d m-o-m. Meanwhile, the long-expected 140 kb/d Kerbala refinery reportedly started processing crude in October. **Kuwait's** Al-Zour refinery officially confirmed its first phase start-up.

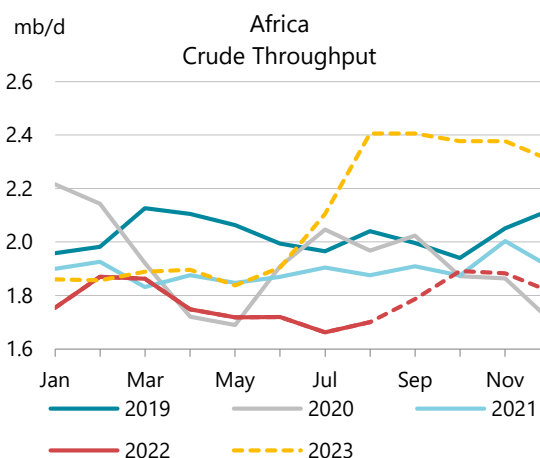


Russian refinery runs increased marginally in October, but have generally flat-lined at around 5.4 mb/d over the last four months. The next major change is expected in February 2023 with Europe's embargo on Russian product imports that we assume will force significant run-cuts. Overall, 2023 refinery intake is forecast to fall by almost 800 kb/d y-o-y on lower product exports and declining domestic demand.

Data for refinery operations and demand for **Brazil** have not been updated since June. The incoming president Lula de Silva had campaigned for reversing Petrobras's refinery sales deals and halting the divestment. **Peru's** national oil company Petroperu, is having a serious liquidity crisis, affecting the company's operations. In December, it is expected to bring the newly-expanded Talara refinery online, but the CEO has tendered his resignation and the government is urgently injecting cash into the company. It is not clear when the refinery will eventually restart. **Guyana** announced a tender to build and operate the first refinery in the country, aiming for a small plant of 30 kb/d capacity. It is currently exporting close to 350 kb/d of crude oil. About 15 kb/d of imported products cover the domestic needs for now.



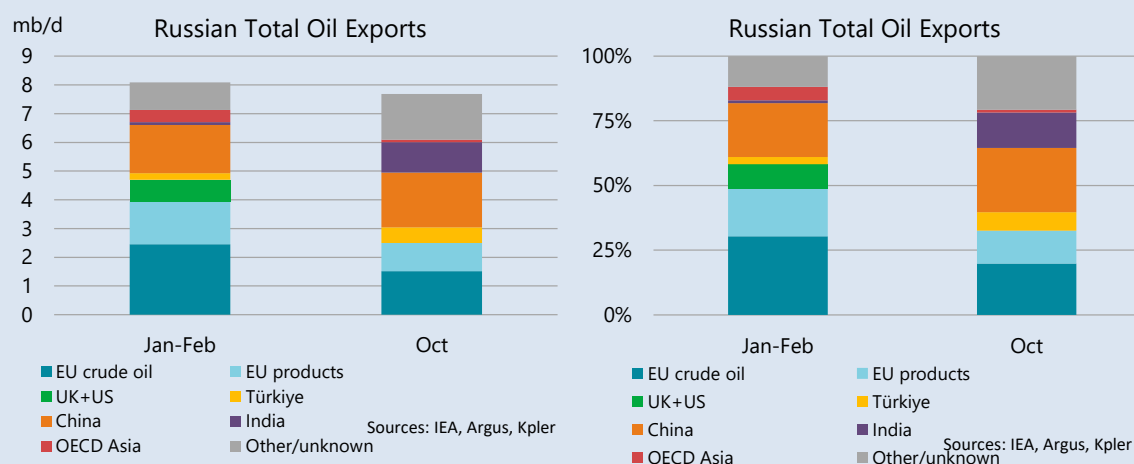
With the 650 kb/d Lekki refinery in **Nigeria** set to start up some time next year, Nigerian National Petroleum Co (NNPC), which owns the three existing refinery sites, announced a deal with the Korean Daewoo group to rehabilitate the 110 kb/d Kaduna refinery. According to NNPC, the 125 kb/d Warri refinery, is set to resume processing in 1Q23. **South Africa** reported refinery throughput data for 2021, with actuals some 60 kb/d higher on average than our estimates. Astron Energy, the operator of the 100 kb/d Cape Town refinery has reconfirmed that the refinery will restart before the end of the year. Cargo tracking data show no crude deliveries so far into the port but the tank farm is estimated to hold about 3.6 mb of crude in storage that could cover several weeks of operation.



Calm before the storm: Russian exports up in October

Russian oil exports rose by 165 kb/d in October to 7.7 mb/d as shipments to the EU, China and India were largely unchanged m-o-m. Lower shipments to Türkiye were more than offset by increased flows to yet to be identified destinations. Export revenues were up by \$1.7 bn to \$17.3 bn on higher volumes and gains in crude oil and product prices.

Both crude oil and product flows increased m-o-m. For the EU, crude oil shipments fell to just 1.5 mb/d as a 140 kb/d decline in Druzhba pipeline flows was partly offset by a small increase in seaborne flows. This brought the cumulative drop in crude oil exports to the EU to 1 mb/d compared to the January-February average. By 5 December, Russia will need to redirect another 1.1 mb/d of crude oil exports elsewhere, as the EU import ban kicks in.



India, China and Türkiye relatively quickly made up for more than the EU foregone volumes, ramping up their crude oil imports from Russia by about 1.2 mb/d by this summer. Their purchases have stabilised somewhat over the last two months. Whether they will receive another boost from December onwards, remains to be seen. The EU import embargo is accompanied by a ban on maritime services

and insurance by EU-domiciled companies, with the UK also having enacted similar legislation. The price cap mechanism provides exemptions to these bans, but Russia has opposed it. If China, India and Türkiye do not increase their imports of Russian oil, the rest of the world (excluding sanctioned destinations) would need to triple their Russian oil imports (from about 1.2 mb/d to 3.3 mb/d) by February 2023. We do not think this is feasible, therefore our crude oil and refinery throughputs forecasts for Russia incorporate sanctions-related losses.

Russian Oil Exports (mb/d)											
	2021 avg	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22
EU crude oil	2.1	2.4	2.5	2.1	2.1	2.2	1.9	1.7	1.9	1.6	1.5
EU products	1.2	1.4	1.6	1.3	1.4	1.3	1.2	1.1	1.0	0.9	1.0
UK+US	0.7	0.6	0.9	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0
Türkiye	0.2	0.2	0.2	0.4	0.4	0.3	0.4	0.4	0.6	0.6	0.5
China	1.6	1.8	1.6	1.8	1.8	2.0	2.2	1.8	2.0	1.9	1.9
India	0.1	0.1	0.1	0.5	1.0	1.0	0.8	1.2	1.0	1.1	1.1
OECD Asia	0.5	0.5	0.4	0.4	0.3	0.1	0.0	0.1	0.1	0.0	0.1
Other/unknown	1.1	1.0	0.9	0.8	1.1	0.9	1.1	1.3	1.2	1.4	1.6
Total exports	7.5	8.0	8.2	7.6	8.2	7.8	7.6	7.4	7.8	7.5	7.7
<i>Memo</i>											
Pipeline to EU	0.7	0.8	0.8	0.8	0.9	0.8	0.8	0.8	0.8	0.8	0.7
Pipeline to China	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
Crude Oil	4.7	5.0	4.9	5.1	5.6	5.4	5.1	4.9	5.1	4.8	4.9
Oil Products	2.6	3.0	3.2	2.5	2.6	2.4	2.5	2.5	2.7	2.7	2.8
Estimated export revenues, \$bn	14.7	20.3	20.5	22.6	19.5	20.9	21.9	19.8	18.8	15.6	17.3

Sources: IEA, Argus, Kpler.

Note: Recent months volumes and revenues are estimates and subject to change.

Products trade in particular is facing uncertainties. On one hand, the dynamics of EU's imports of Russian crude oil and products are quite similar. The EU's share in Russian crude oil exports fell to just 31% in October, from 50% before the war, while the product market share fell to 35% versus 50% pre-war levels. On the other hand, Russia has been able to redirect all of the crude oil volumes, while it has had to cut refined product exports by 400 kb/d since the start of the year.

Crude Imports into EU (mb/d)											
Month	Russia	Saudi Arabia	US	West Africa	Kazakhstan	Iraq	Norway	North Africa	Other America	ROW	Total
Jan-22	2.5	0.4	0.8	0.8	1.1	0.6	0.7	1.0	0.4	1.2	9.4
Feb-22	2.6	0.5	1.1	0.6	1.2	0.7	0.7	1.0	0.4	1.0	9.9
Mar-22	2.1	0.5	0.9	0.9	0.8	0.8	1.0	0.9	0.4	0.9	9.2
Apr-22	2.3	0.5	1.0	1.1	0.6	0.7	1.0	1.0	0.3	1.1	9.7
May-22	2.0	0.6	1.2	1.1	0.9	1.0	1.0	0.9	0.6	1.2	10.4
Jun-22	2.0	0.7	1.2	1.3	0.7	0.8	1.0	0.7	0.6	1.2	10.1
Jul-22	1.8	0.7	1.2	1.1	0.9	0.9	1.0	0.7	0.7	1.3	10.4
Aug-22	1.7	0.7	1.3	0.9	0.7	0.9	1.0	0.8	0.5	1.3	9.8
Sep-22	1.8	0.9	0.9	0.9	0.7	0.8	0.8	1.1	0.5	1.3	9.8
Oct-22	1.4	0.7	1.0	1.0	0.6	1.0	0.9	1.1	0.6	1.4	9.8
Oct vs Jan-Feb	-1.1	0.2	0.0	0.3	-0.5	0.4	0.2	0.1	0.2	0.3	0.1

Sources: IEA, Argus, Kpler.

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

The so-called shadow trade, including high-sea transshipments using "dark" tankers (with unclear ownership and record), is also likely to expand and could obstruct Russian trade analysis. At the time of writing, some 100 kb/d of September loadings and 450 kb/d of October loadings (or about 6%) were missing destination information. It is highly likely that most of these volumes will eventually materialise in flows to Russia's main markets, namely, the EU, China, India and Türkiye. From next month, however, shippers of Russian oil outside the price cap may be incentivised to hide actual destinations.

On the EU import side, losses in Russian crude oil volumes have been offset by increased supplies predominantly from the Middle East, but also Africa, Norway, Brazil and Guyana.

Diesel imports into the EU in October increased by almost 50% compared to pre-war levels due to French refinery strikes and seasonal maintenance. European buyers are also eager to rebuild stocks before the 5 February deadline for Russian product imports. Russian diesel imports into the EU have only marginally fallen from Jan-February averages. But in October, with high inflows from other suppliers, the share of Russian diesel in the EU imports dropped to an unprecedented low level of just 40%, from 60% pre-war levels.

Diesel Imports into EU (mb/d)								
Month	Russia	Saudi Arabia	Türkiye	US	India	Other Asia	ROW	Total
Jan-22	0.5	0.2	0.0	0.0	0.0	0.0	0.2	0.9
Feb-22	0.7	0.1	0.0	0.0	0.0	0.0	0.2	1.1
Mar-22	0.7	0.1	0.0	0.0	0.1	0.0	0.2	1.1
Apr-22	0.6	0.2	0.1	0.1	0.1	0.0	0.3	1.4
May-22	0.6	0.1	0.0	0.0	0.0	0.0	0.2	1.0
Jun-22	0.7	0.1	0.0	0.0	0.0	0.0	0.2	1.1
Jul-22	0.7	0.2	0.0	0.0	0.0	0.0	0.2	1.2
Aug-22	0.6	0.2	0.1	0.0	0.1	0.0	0.2	1.2
Sep-22	0.5	0.3	0.0	0.1	0.1	0.0	0.3	1.3
Oct-22	0.6	0.2	0.0	0.1	0.2	0.1	0.4	1.5
Oct vs Jan-Feb	-0.1	0.1	0.0	0.1	0.2	0.1	0.1	0.5

Sources: IEA, Argus, Kpler.

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

Stocks

Overview

Global observed inventories continue to hover near their lowest levels since at least 2016 (earliest data available) after falling by 14.2 mb in September. OECD and non-OECD on-land stocks plunged by 45.5 mb and 19.3 mb, respectively, but were partially offset by a surge in oil on water of 50.6 mb.

Since the beginning of 2022, global observed stocks fell by a mere 7 mb, compared with a decline of 506 mb over the same period in 2021.

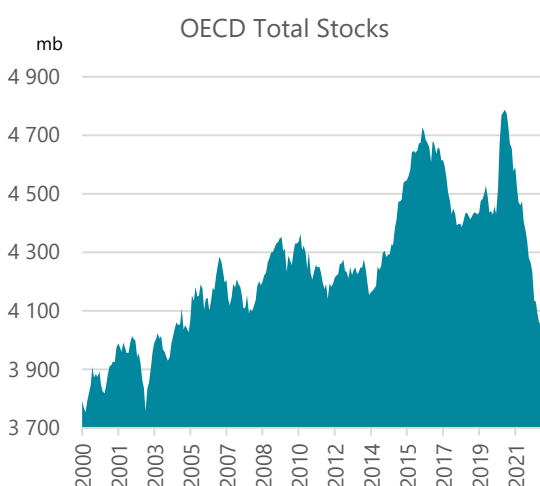
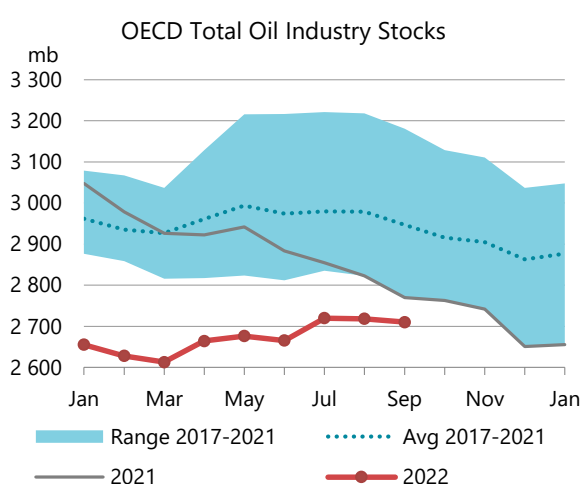
However, maritime trade has been booming, with oil in transit jumping by 105.7 mb, due to sanctions and embargoes on Russia driving a massive rerouting of tankers.

OECD oil stocks (industry plus strategic reserves) have depleted by a steep 176.6 mb between January and September, to below 4 000 mb for the first time since 2004. By contrast, volatile non-OECD inventories (especially crude stocks in China) built by 63.4 mb.



Sources: IEA, Kayrros, Kpler, FEDCom/S&P Global Platts, Enterprise Singapore

Lowering market tensions depends upon correcting the severe on-land oil stock draws of 2021. But the correction has been delayed until completion of the logistics adjustments that are locking-up more barrels due to the embargoes on Russia.



OECD industry oil stocks fell by 8 mb in September, a quarter of the normal seasonal decline. Crude oil, NGL and feedstock inventories rose counter-seasonally by a marginal 0.2 mb. Oil product inventories fell by 8.2 mb, about half of the typical five-year average draw. In terms of forward demand, total OECD industry stocks covered 58 days, down 0.3 days m-o-m. Total OECD stock levels stood at 2 710 mb, a sharp 236.8 mb below the five-year average. Crude oil stocks were 77.6 mb lower than the average in September, compared with a 128.1 mb deficit in September 2021.

Middle distillate stocks stood 103 mb below the five-year average, almost double the deficit of a year ago.

OECD government stocks fell by 37.4 mb in September as a part of IEA collective actions and individual member country releases. The US contributed the largest share, releasing 28.3 mb of crude oil. In Asia, Japan and Korea drew a combined 7.8 mb of crude oil. In addition, 1.2 mb of crude and 0.2 mb of products were supplied from European public stocks. Although the US will continue to make crude from its Strategic Petroleum Reserves (SPR) available to the market until the end of the year, the planned releases under the IEA member country agreement are now completed. At the end of September, OECD government stocks stood at 1 248 mb, a 26-year low.

Preliminary October data for the US, Europe and Japan show 8.1 mb of increase in OECD industry stocks. Crude oil, NGL and feedstock inventories rose by 11.4 mb, led by the US (+11.8 mb). Oil product stocks declined by 3.3 mb, also driven lower by the US (-9 mb). Gasoline stocks and middle distillate stocks decreased by 1.2 mb and 2.2 mb, respectively, with declines in the US and Europe partially offset by increases in Japan. Other product inventories fell by 4.7 mb due to a 5.5 mb decline in the US. By contrast, fuel oil stocks increased across the three regions, by 4.8 mb.

Preliminary OECD Industry Stock Change in September 2022 and Third Quarter 2022												
	September 2022 (preliminary)				Third 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
Crude Oil	4.7	-6.0	3.2	1.9	0.2	-0.2	0.1	0.1	0.0	-0.2	0.3	0.1
Gasoline	-7.0	-2.0	0.6	-8.4	-0.2	-0.1	0.0	-0.3	-0.1	0.0	0.0	-0.1
Middle Distillates	-4.1	-5.3	0.9	-8.4	-0.1	-0.2	0.0	-0.3	0.0	0.0	0.0	0.0
Residual Fuel Oil	1.4	1.2	1.0	3.6	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0
Other Products	8.8	-4.3	0.5	5.0	0.3	-0.1	0.0	0.2	0.5	0.0	0.0	0.5
Total Products	-0.9	-10.3	3.0	-8.2	0.0	-0.3	0.1	-0.3	0.3	0.0	0.0	0.3
Other Oils ¹	-5.1	1.1	2.3	-1.7	-0.2	0.0	0.1	-0.1	-0.1	0.0	0.0	0.0
Total Oil	-1.3	-15.2	8.5	-8.0	0.0	-0.5	0.3	-0.3	0.3	-0.2	0.4	0.5

¹ Other oils includes NGLs, feedstocks and other hydrocarbons.

Following the receipt of more complete data, total OECD stocks for August were revised down by 17.5 mb to 2 718 mb (-1.7 mb m-o-m). The largest downward adjustments came from OECD Europe, at -14.3 mb for crude oil and -4 mb for middle distillates. Stocks in OECD Americas were also reduced by 11.4 mb, with crude oil down 3.1 mb and other products lowered by 7.5 mb. By contrast, crude oil and product inventories in OECD Asia Oceania were revised up by 5.4 mb and 2.4 mb, respectively.

OECD Industry Stock Revisions versus October 2022 Oil Market Report								
	(million barrels)							
	Americas		Europe		Asia Oceania		OECD	
	Jul-22	Aug-22	Jul-22	Aug-22	Jul-22	Aug-22	Jul-22	Aug-22
Crude Oil	2.6	-3.1	-3.1	-14.3	0.0	5.4	-0.5	-12.0
Gasoline	0.0	-1.0	0.2	3.4	0.0	0.0	0.2	2.4
Middle Distillates	0.0	0.2	-0.9	-4.0	0.0	0.2	-0.9	-3.7
Residual Fuel Oil	0.0	1.3	-0.2	-0.5	0.0	0.0	-0.2	0.8
Other Products	0.0	-7.5	0.6	1.7	0.0	2.3	0.6	-3.4
Total Products	0.0	-7.0	-0.3	0.7	0.0	2.4	-0.3	-3.9
Other Oils ¹	0.0	-1.2	0.0	-0.5	0.0	0.1	0.0	-1.6
Total Oil	2.6	-11.4	-3.4	-14.0	0.0	7.9	-0.8	-17.5

¹ Other oils includes NGLs, feedstocks and other hydrocarbons.

Implied balance

The global supply and demand balance in 3Q22 shows a 650 kb/d implied stock build. This was the second quarterly increase in a row after seven quarters of decline. The observed stock build in the quarter was 120 kb/d where a notable build in inventories on water (+1.15 mb/d) partially offset a drop in onshore stocks (-1.02 mb/d), led by OECD government inventories (-1.04 mb/d).

In September, OECD commercial crude oil, NGL and feedstock inventories rose by a mere 10 kb/d while products fell by 270 kb/d. OECD government stocks drew by -1.25 mb/d, near a record high. Non-OECD crude inventories fell by 710 kb/d due to a large decline in China (-1.04 mb/d) based on data from *Kayros*. Combined independent product stocks in Singapore and Fujairah rose for the fifth consecutive month, by 60 kb/d. Crude oil on water, including floating storage, increased by a steep 1.45 mb/d while that for products rose by 240 kb/d, according to data from *Kpler*.

IEA Global oil balance (implied stock change) (mb/d)									
	2020	2021	1Q22	2Q22	Jul-22	Aug-22	Sep-22	3Q22	Oct-22
Global oil balance	2.33	-2.33	-0.70	0.10	0.83	0.28	0.86	0.65	1.59
Observed stock changes									
OECD industry stocks	0.41	-1.06	-0.37	0.58	1.76	-0.05	-0.27	0.49	0.26
OECD government stocks	0.02	-0.16	-0.46	-1.08	-0.89	-0.98	-1.25	-1.04	-0.57
Non-OECD crude stocks*	0.44	-0.48	0.40	0.75	-0.71	-0.38	-0.71	-0.60	-0.23
Selected non-OECD product stocks**	0.12	-0.03	0.12	0.07	0.47	-0.16	0.06	0.13	-0.24
Oil on water	0.02	-0.06	-0.52	0.52	-0.49	2.27	1.69	1.15	
Total observed stock changes	1.00	-1.78	-0.84	0.84	0.14	0.69	-0.47	0.12	
Unaccounted for balance	1.33	-0.55	0.14	-0.74	0.69	-0.41	1.33	0.53	

*Crude stock change data from *Kayros*. 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 August 2022, plus Fujairah and Singapore inventories.

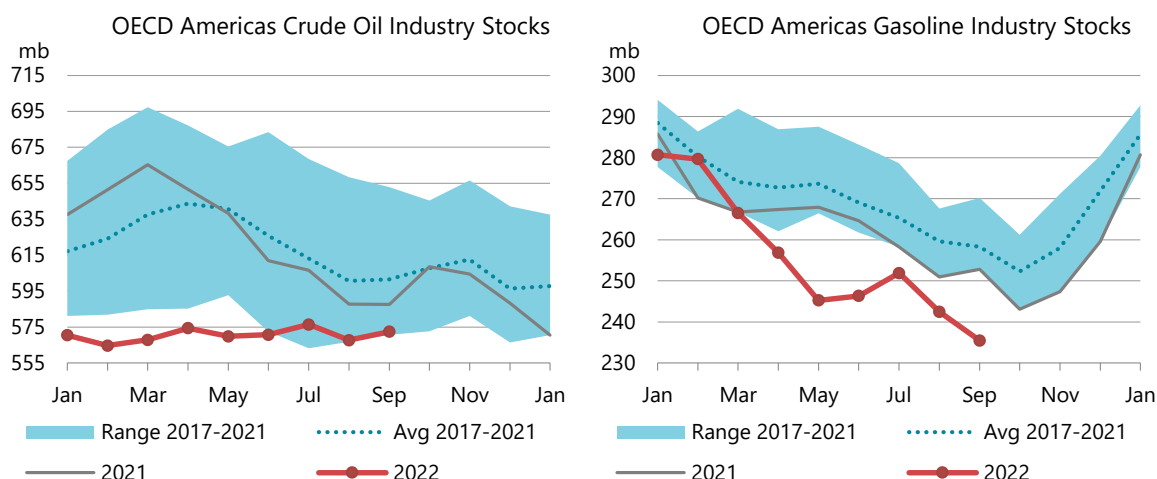
Sources: IEA, EIA, PAJ, Euroilstock, *Kayros*, JODI, *Kpler*, *FEDCom/S&P Global Platts* and *Enterprise Singapore*.

Recent OECD industry stocks changes

OECD Americas

Industry stocks in OECD Americas eased by 1.3 mb in September to 1 464 mb, 112.3 mb below the five-year average. Crude oil stocks increased by 4.7 mb, with a significant 28.3 mb released from the US SPR. NGLs and feedstock inventories declined by 5.1 mb.

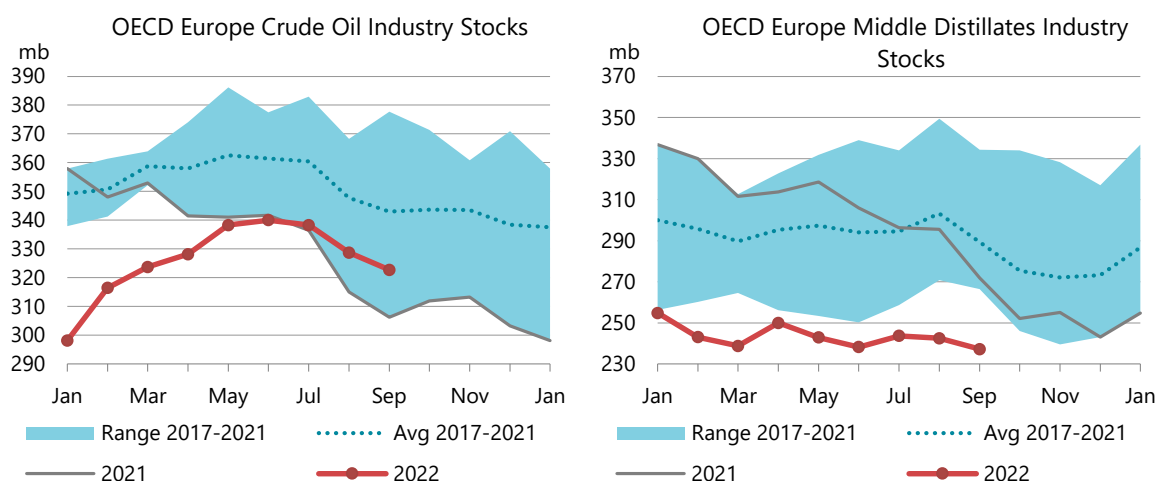
Total product stocks drew by a marginal 0.9 mb. Gasoline inventories led the decline, falling 7 mb, after decreasing by 9.4 mb in the previous month. At 235.5 mb, gasoline stocks hit a 10-year low. Middle distillates fell seasonally, but only by 4.1 mb to 176.2 mb or 39.5 mb less than the five-year average. Fuel oil and other product inventories built by 1.4 mb and 8.8 mb, respectively, both in line with typical levels.



Weekly data from the US Energy Information Administration (EIA) for October show industry crude oil stocks increased by 9.3 mb in line with the seasonal trend. At the same time, 17.8 mb of crude oil was released from the SPR. Other oil inventories also rose, by 2.5 mb. Total product stocks declined by 9 mb compared with a normal seasonal draw of 28.8 mb. Higher-than-normal refinery throughput rates (+470 kb/d m-o-m) eased the drawdown of product inventories. Middle distillates fell by 3.9 mb, when they normally draw by 13.5 mb. Other product stocks declined by 5.5 mb, largely in line with the seasonal trend. The draw in gasoline inventories was limited to 1.2 mb, versus a more normal decline of 7.8 mb, due to weaker demand in October. Fuel oil stocks rose counter-seasonally, up by 1.6 mb.

OECD Europe

Industry stocks in OECD Europe posted the largest decline in September (-15.2 mb) among the three OECD regions. Inventories stood at 894.2 mb, 78.2 mb below their five-year average. Crude oil stocks fell by 6 mb to 322.7 mb, hitting the lowest since February this year. NGL and feedstock stocks rose counter-seasonally, by 1.1 mb.



Total oil product stocks fell by 10.3 mb, less than the seasonal norm of 17.3 mb. Middle distillate inventories drew 5.3 mb compared with the seasonal average decline of 13.8 mb. The UK posted a counter-seasonal build of 0.6 mb while France and Germany both declined by 0.4 mb each. Other product stocks dropped by 4.3 mb compared with a marginal build of 0.1 mb for the five-year

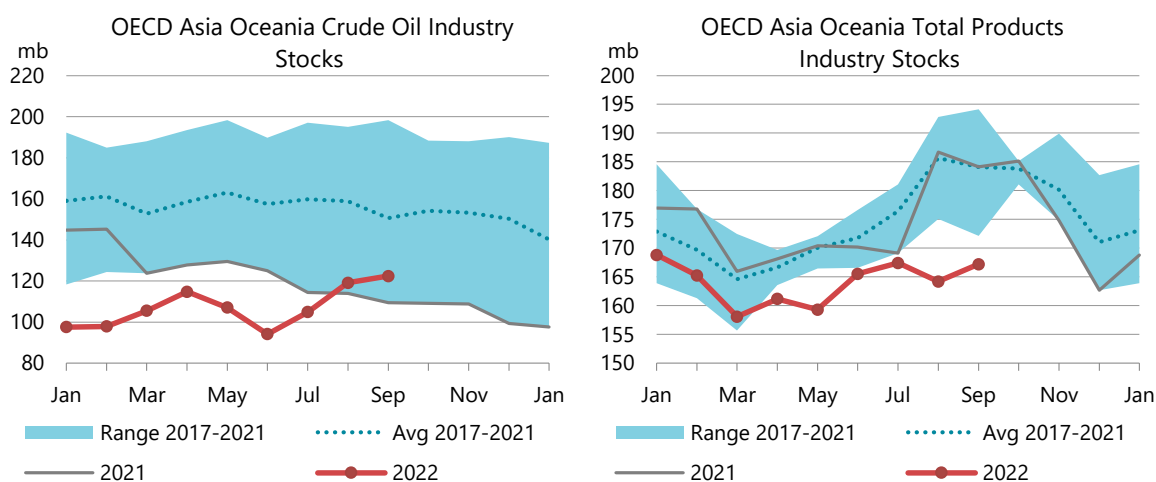
average. Gasoline stocks decreased by 2 mb, in line with the seasonal trend. Fuel oil stocks rose counter-seasonally by 1.2 mb.

Preliminary data from *Euroilstock* show total industry inventories rose by 2.9 mb in October. Crude oil led the increase, up by 0.8 mb. A large decline in the UK (-2.9 mb) partially offset builds in the Netherlands (+1.5 mb), Austria (+1.1 mb), Greece (+0.7 mb) and Spain (+0.7 mb). Total product stocks in the region built by 2.1 mb. The largest increase came from fuel oil inventories (+2.3 mb). Naphtha stocks also rose (+0.9 mb) but middle distillates fell (-0.6 mb). Refinery strikes in France severely affected fuel supply in the country but middle distillate inventories rose by 1.5 mb due to fuel distribution issues and extraordinarily high seaborne imports of 700 kb/d, (+250 kb/d m-o-m) according to *Kpler*. By contrast, they fell by 1.9 mb in Spain. Total European gasoline stocks decreased counter-seasonally by 0.5 mb.

OECD Asia Oceania

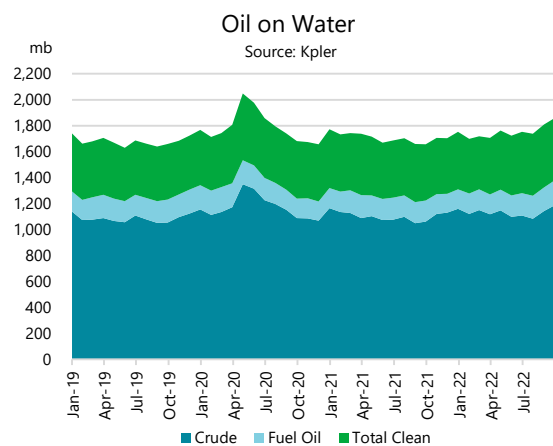
Total industry inventories in OECD Asia Oceania built by 8.5 mb in September, helped by the release of 7.8 mb of government reserves. Commercial stocks were 46.2 mb below the five-year average, at 352.2 mb. Crude oil inventories increased by 3.2 mb (versus a typical 8.2 mb draw) to 122.4 mb, the highest since June 2021. NGLs and feedstock inventories also rose counter-seasonally (+2.3 mb). The build in crude oil, NGLs and feedstocks came largely from Japan (+5.2 mb).

Total product stocks in the region rose by 3 mb. All product categories showed modest builds. Fuel oil posted the largest increase at 1 mb compared to a typical build of 0.4 mb. Gasoline, middle distillates and other product inventories built counter-seasonally by 0.6 mb, 0.9 mb and 0.5 mb, respectively.

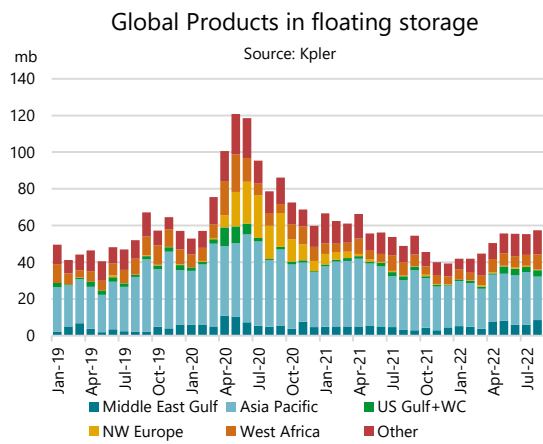


Preliminary data from the Petroleum Association of Japan (PAJ) for October show total industry stocks rose by 2.4 mb, in line with normal builds. Crude oil stocks decreased by a marginal 0.2 mb, after a counter-seasonal increase in the previous month thanks to the release of government stocks. Other oil inventories were down by 1 mb. Total product stocks built by 3.6 mb, led by a 2.3 mb increase in middle distillates. Residual fuel inventories were up by 0.9 mb. Gasoline stocks rose by a modest 0.6 mb despite exports doubling compared with the previous month. Naphtha stocks edged down by 0.1 mb.

Other stock developments

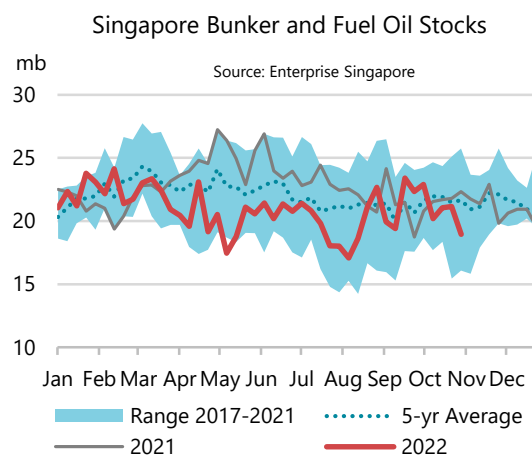
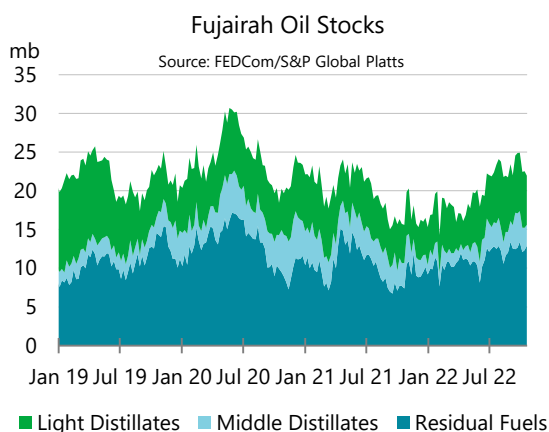


Note: Oil on water includes floating storage



Volume of commodities on tankers that are idled offshore for 12 or more days

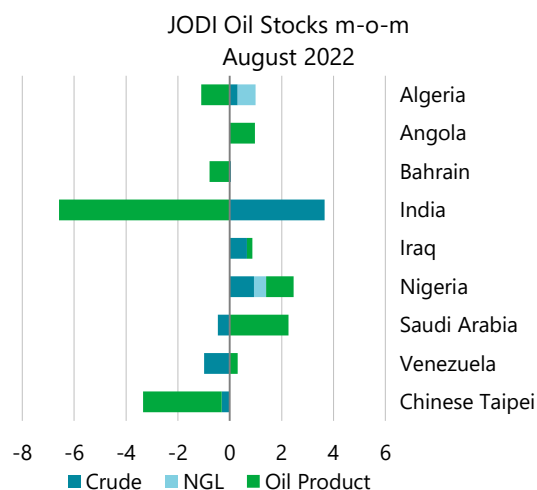
In September, oil on water, including floating storage, rose by a large 50.6 mb, according to *Kpler*. The increase was largely in crude oil (+43.5 mb). Fuel oil was also higher (+11.3 mb) while clean products declined (-4.2 mb). Short-term floating storage of crude oil increased by 11.7 mb, mainly in the Middle East (+6.8 mb) and Asia (+6.1 mb), after decreasing by 20 mb in the previous month. Oil products held in floating storage increased by 8.3 mb to 65.8 mb, its highest since April 2021. Some Russian fuel oils are reportedly being stored offshore Singapore and Malaysia. Those products are shunned by traditional buyers in the US and European countries and are now positioned for Asia markets.



In Fujairah, independent product stocks dropped by 2.8 mb in October to 22 mb, according to *FEDCom and S&P Global Platts*. Middle distillate inventories posted the largest decline, by 1.9 mb to 2.7 mb. Light distillate stocks fell by 1.3 mb to 6.4 mb, led by the highest naphtha exports (160 kb/d) since at least 2017 according to *Kpler*. By contrast, residual fuel stocks edged up by 0.3 mb to 12.9 mb.

Independent product stocks in Singapore tumbled by 4.6 mb in October, the largest decline since April 2018. Residual fuel oil inventories fell by 2.9 mb to 19.6 mb. Middle distillate inventories moved down for a third consecutive month, by 0.6 mb to 6.8 mb, and are 4.8 mb below the five-year average. Light distillate stocks declined by 1 mb to 14.8 mb, but were still 3.1 mb higher than the average.

Total oil stocks in the 12 non-OECD economies reporting to the *JODI-Oil* database for August fell by 1.6 mb m-o-m. Crude oil and NGL stocks rose by 5.1 mb, led by a build of 3.7 mb in India. By contrast, oil product inventories fell by 6.7 mb, with most of the decline in India (-6.6 mb) and Chinese Taipei (-3 mb). Refinery intake in India declined for a third consecutive month in August, by 450 kb/d. With Indian product demand higher than pre-Covid levels through August this year, product supplies have been boosted by seaborne imports, including from Russia.

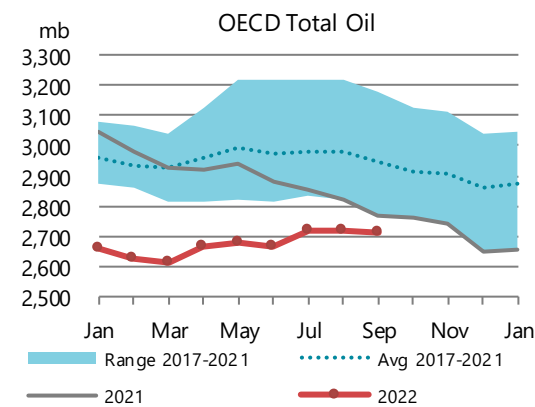
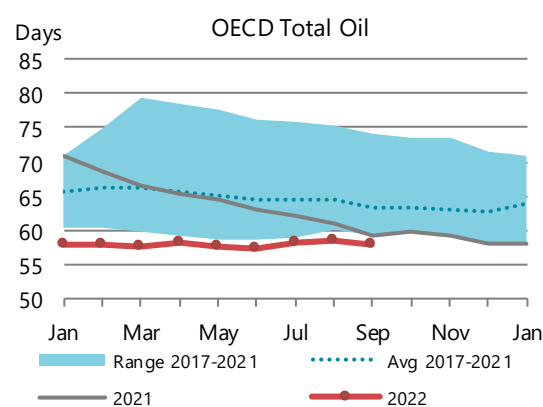
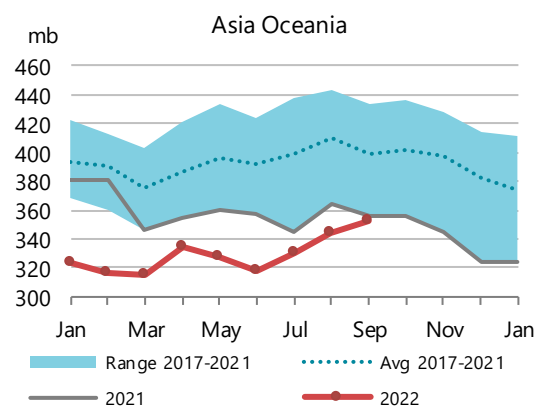
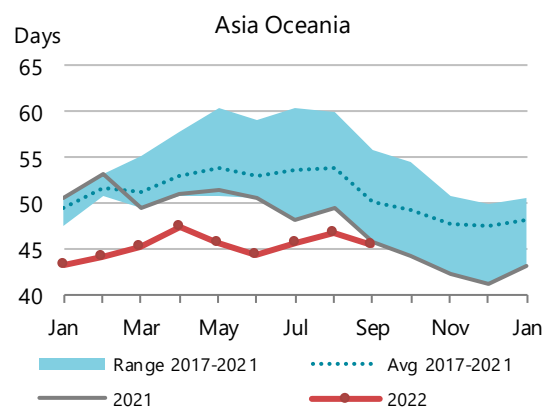
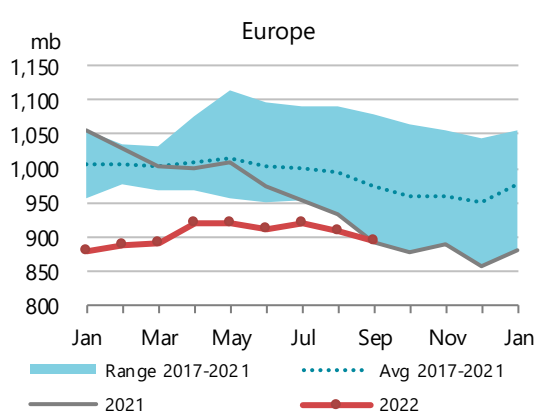
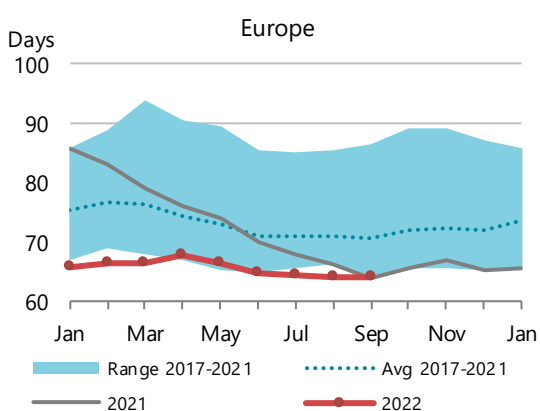
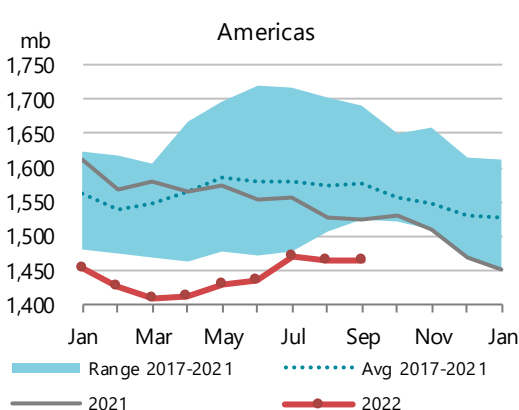
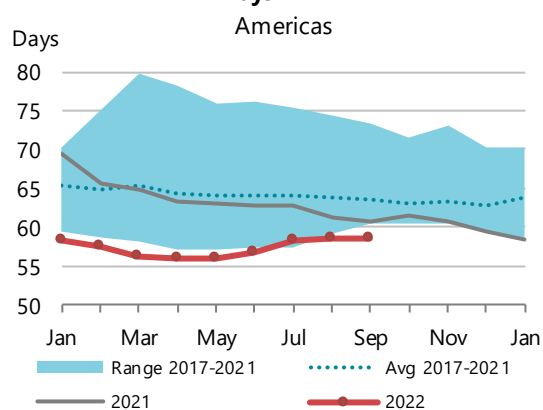


Regional OECD End-of-Month Industry Stocks

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

Days¹

Million Barrels



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

Prices

Overview

Oil prices recovered in October with North Sea Dated rising by \$3.35/bbl m-o-m to \$93.11/bbl, its first increase in four months. Prices ebbed and flowed over the month, peaking above \$100/bbl in early November before easing again to just below \$95/bbl as fresh Covid outbreaks weighed on China's demand prospects. Crude forward curves weakened in tandem with prices, while product cracks benefitted from refinery disruptions with distillate margins surging to record highs. Oil prices remain about 30% below their June peak.



Sources: Argus Media Ltd, ICE, NYMEX (NYMEX WTI = NYMEX Light Sweet Crude)

The global economic outlook remained decidedly weak amid looming recession fears, worsening consumer inflation and soaring interest rates. For now, the US economy has proved relatively immune to the Federal Reserve's hiking cycle, with GDP growth rebounding to 2.6% in 3Q22 after two straight quarters of contraction. As yet, evidence of weaker growth has mainly been limited to the US housing market, where home prices posted their biggest monthly drop since 2011 in August. US resilience contrasts sharply with Europe's rapid slowdown due to the looming energy supply crisis this winter and with an increasingly insular China, whose growth outlook has been crippled by its zero-Covid strategy and a deflating property bubble. The collapse of iron ore, steel and copper prices to multi-year lows in October corroborates the severity of China's slump: prices are down by 20-40% compared to their all-time highs set in March.

Defying the economic gloom, global equity markets rallied in October, as investors focussed on third-quarter earnings results and expectations of a slower pace in central bank rate hikes. However, those hoping for a "Fed pivot" were disappointed when Chairman Powell struck a hawkish tone at the central bank's 2 November meeting, which saw the fourth straight 0.75 percentage point hike.

Crude price forward curves and physical differentials initially firmed on the prospect of OPEC+-driven supply scarcity, but momentum was subsequently counterbalanced by French refinery strikes and regular autumn maintenance. Forward curves were slightly weaker m-o-m, while North Sea Dated strengthened marginally against Brent futures and was unchanged against WTI Cushing. Dated returned to a premium against Dubai crude, which faced increased competition from Russian exports being redirected to Asia.

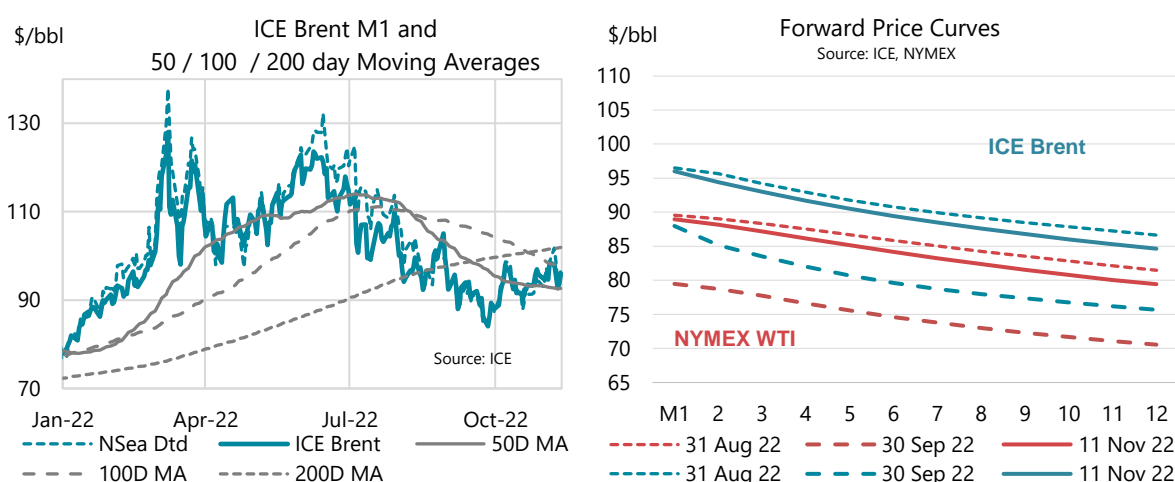
Freight rates continued their ascent during October. As the EU embargo loomed, charterers scrambled to attract vessels for the rerouting of exports both from the Baltic and Black Sea to East

of Suez as well as from the Middle East and United States toward Europe. Long range VLCC fees continued to climb, approaching early 2020 pandemic highs and reflecting the unprecedented strain that global tanker capacity is seeing at present.

Futures markets

Oil prices in October found a measure of support after the relentless sell-off that began in June. Front-month WTI and Brent futures rose by 4% m-o-m to \$87.03/bbl and by 3% m-o-m to \$93.59/bbl, respectively as OPEC+-related bullishness outweighed the gloomy macro-economic climate and lower refinery activity. Technical selling brought some renewed bearishness after the initial rally, as Brent fell below its 50-day moving average in mid-month.

Reflecting a less macro-driven environment, oil's dependency on other financial market drivers decreased during October. Brent's 20-day running correlation with the S&P 500 index and the US Dollar index had stretched to +75% and below -75%, respectively, towards the end of September, but by the end of October these reverted to +20% and -20%.

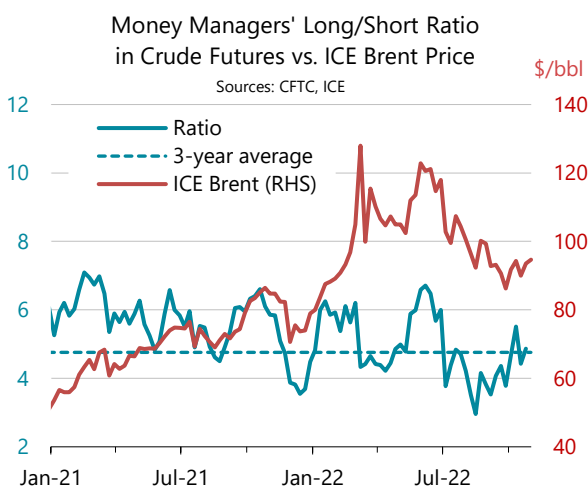
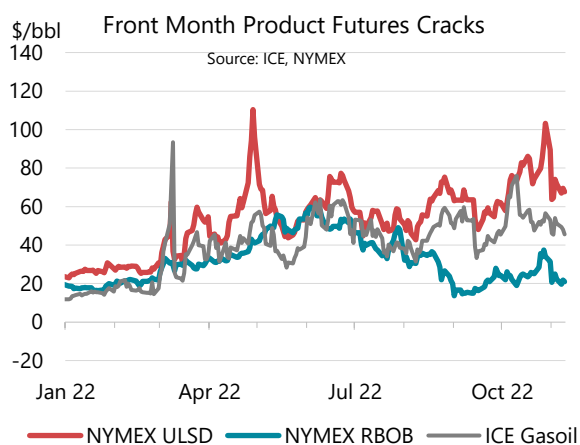


Reflecting a better-supplied Atlantic Basin in late October, Brent's 1-12 forward curve backwardation weakened by about \$2/bbl to \$10/bbl, while North Sea Dated CFDs also came off. Despite this easing, the curve kept pricing a persistently tight physical market ignoring rising odds of a global recession. Robust forward selling (to hedge crude production) which weighed on forward maturities also contributed to the inversion: net producer short positions in Brent climbed to -337 mb, their highest level since March.

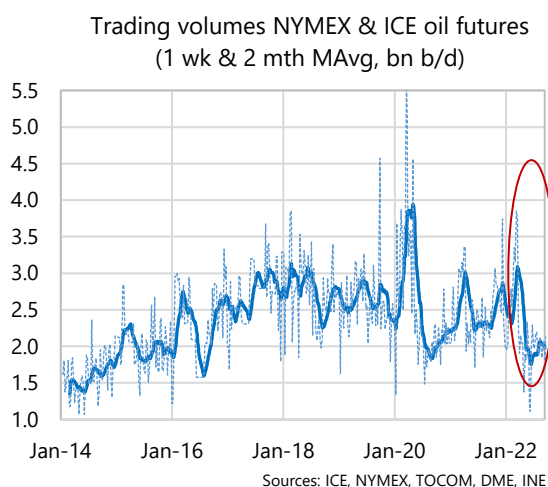
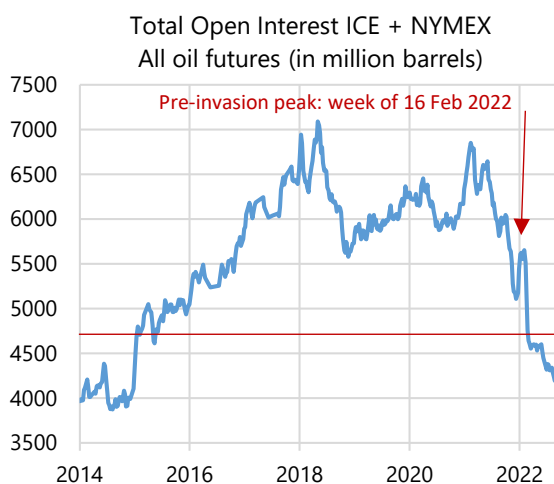
Net managed money positions were mostly stable in WTI, heating oil and RBOB gasoline. The main exception was Brent, where net fund positioning rose by 20 mb to 205 mb, a four-month high. This reflected both short-covering and fresh longs being entered – when rolled, these benefit from the more substantial backwardation in the nearby contracts. The ratio of long to short future holdings by money managers increased marginally to 4.9, in line with its long-term average.

Product prices fared much better than crude as fuel markets tightened with refining disruptions. The heating oil crack spread to WTI soared by \$20/bbl m-o-m to as much as \$89/bbl after France's refinery outages added to growing anxiety about Russian diesel supplies. RBOB gasoline cracks firmed in parallel, rising \$8/bbl m-o-m as refiners maximised diesel yields, while US weekly data suggested that gasoline demand recovered somewhat after a subpar driving season.

Open interest dropped to new seven-year lows in WTI, heating oil and RBOB gasoline contracts. Daily traded volumes were similarly lacklustre. Exchange liquidity continued to languish at multi-year lows, as extreme price volatility and elevated exchange margins kept traders on the side-lines.



Again, the main outlier was ICE Brent, where open interest rose by 9% to 2.03 billion barrels, the largest surplus to NYMEX WTI positions (1.44 billion bb) in more than two years. Global supply tensions have made ICE Brent the venue of choice for producers and investors alike.



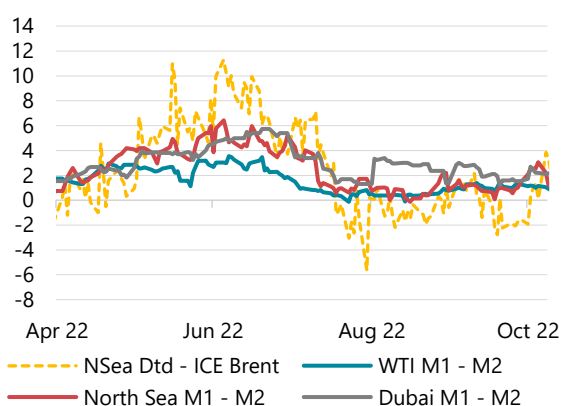
Prompt Month Oil Futures Prices (monthly and weekly averages, \$/bbl)											
	Aug 2022	Sep 2022	Oct 2022	Oct 2022		Week Commencing:					Last
				m-o-m Chg	y-o-y Chg	03 Oct	10 Oct	17 Oct	24 Oct	31 Oct	11 Nov
NYMEX											
Light Sweet Crude Oil (WTI) 1st contract	91.48	83.80	87.03	3.23	5.81	87.80	88.49	84.97	86.96	89.14	88.96
Light Sweet Crude Oil (WTI) 12th contract	83.36	76.01	76.67	0.66	3.93	76.79	77.04	75.66	77.15	78.96	79.42
RBOB	122.25	102.69	113.75	11.07	12.10	111.56	111.00	110.09	121.50	113.66	109.60
ULSD	150.89	142.94	165.97	23.03	60.31	155.19	166.77	164.41	175.49	161.86	149.32
ULSD (\$/mmbtu)	27.18	25.75	29.90	4.15	10.86	27.96	30.04	29.62	31.61	29.16	26.90
NYMEX Natural Gas (\$/mmbtu)	8.78	7.76	6.08	(1.67)	0.51	6.79	6.53	5.50	5.46	6.14	5.88
ICE											
Brent 1st contract	97.74	90.57	93.59	3.02	9.84	93.27	93.83	91.99	95.04	95.78	95.99
Brent 12th; contract	88.39	80.81	81.87	1.06	5.85	81.50	81.87	80.91	83.01	84.36	84.66
Gasoil	142.74	137	151	14.34	54.08	154.64	157.50	145.40	147.75	145.62	132.58
Prompt Month Differentials											
NYMEX WTI - ICE Brent	(6.26)	(6.77)	(6.56)	0.21	(4.03)	(5.47)	(5.34)	(7.02)	(8.08)	(6.64)	(7.03)
NYMEX WTI 1st vs. 12th	8.12	7.79	10.36	2.57	1.88	11.01	11.45	9.31	9.81	10.18	11.33
ICE Brent 1st - 12th	9.35	9.76	11.72	1.96	3.99	11.77	11.96	11.08	12.03	11.42	11.33
NYMEX ULSD - WTI	59.41	59.14	78.94	19.80	54.50	67.39	78.28	79.44	88.53	72.72	60.36
NYMEX RBOB - WTI	30.77	18.89	26.72	7.84	6.29	23.76	22.51	25.12	34.54	24.52	20.64
NYMEX 3-2-1 Crack (RBOB)	40.32	32.30	44.13	11.82	22.36	38.30	41.10	43.22	52.53	40.59	33.88
NYMEX ULSD - Natural Gas (\$/mmbtu)	18.40	17.99	23.81	5.82	10.35	21.17	23.51	24.11	26.16	23.02	21.02
ICE Gasoil - ICE Brent	45.00	46.24	57.56	11.32	44.24	61.37	63.67	53.41	52.71	49.84	36.59

Source: ICE, NYMEX.

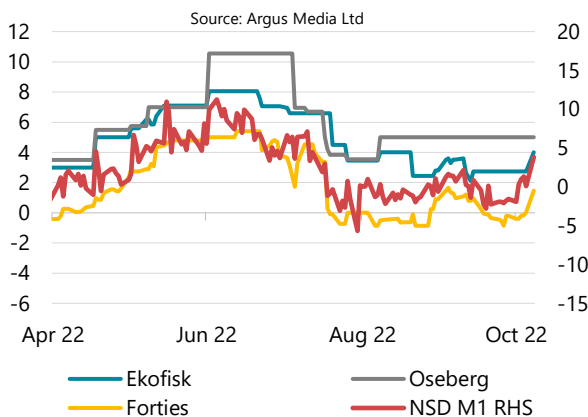
Spot crude oil prices

Physical crude prices firmed in early October after OPEC+ announced output cuts. Prices subsequently eased on the back of growing economic uncertainty and fresh lockdowns in China, but managed to conclude the month on a bullish note, as US inventories fell and the US dollar weakened.

\$/bbl Crude Prices Prompt Month Differentials
Source: Argus Media Ltd



\$/bbl North Sea Differentials to Dated
Source: Argus Media Ltd

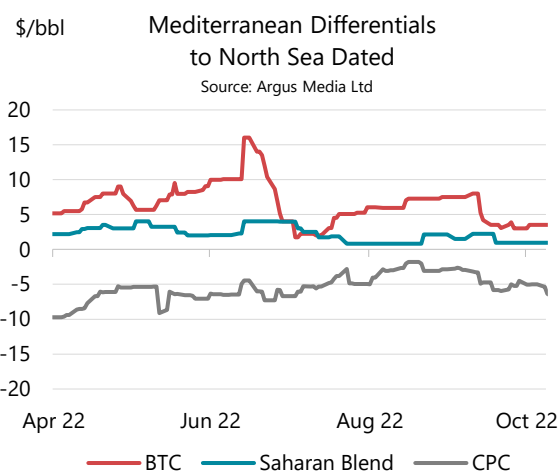
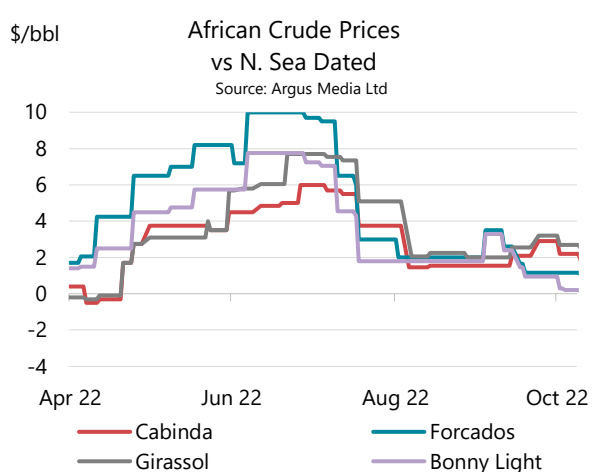


Benchmark prices mostly rose in October, with the exception of front month Dubai, which was virtually unchanged at \$91.08/bbl, after China's Party Congress failed to bring changes to its zero-Covid strategy. Together with lower Middle East Official Selling Prices (OSPs), this pressured Gulf crude values. The North Sea Dated benchmark increased by \$3.35/bbl m-o-m to \$93.11/bbl, while WTI at Cushing followed closely, climbing \$3.30/bbl m-o-m to \$87.26/bbl.

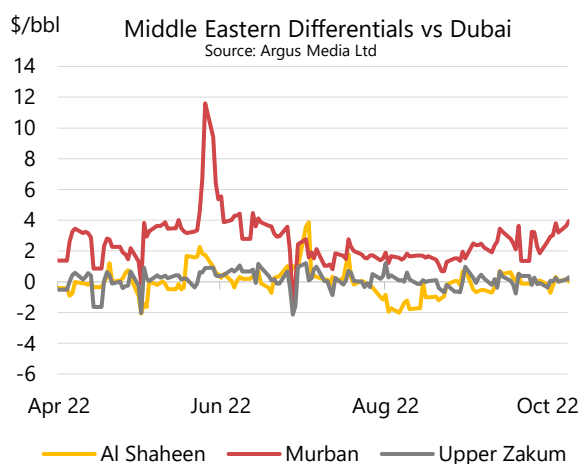
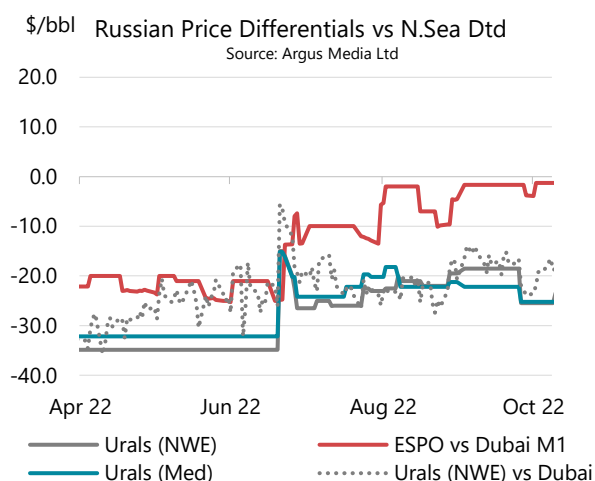
The average monthly Dated discount to ICE Brent narrowed by \$0.33/bbl m-o-m to a -\$0.49/bbl. A volatile market saw the differential drop from a premium to a -\$1.83/bbl discount by mid-month amid a brief supply overhang in the wake of France's refinery strikes. Firm diesel margins in combination with refiners coming back online buoyed the differential back to a \$0.17/bbl premium at month-end before strengthening further in early November, briefly trading above \$2/bbl. WTI Houston's discount

to North Sea Dated M1 narrowed by \$0.42 m-o-m to -\$4.92/bbl, before widening \$2.36 to -\$7.28/bbl in early November as lower transatlantic shipments favoured a stronger arbitrage.

North Sea grade differentials showed little direction. Forties firmed in early October, reaching a \$1.35/bbl premium, but subsequently moved back to a discount, crowded out by abundant crude supplies. The differential for Forties averaged \$0.41/bbl (+\$0.74/bbl m-o-m) and Oseberg at \$5/bbl (+\$0.28/bbl) while the Ekofisk premium fell by \$0.35/bbl to \$2.91/bbl. Lastly, Statfjord grades were unchanged at \$2.15/bbl.



West African light sweet premiums to North Sea Dated were little changed amid stiff competition as transatlantic crude continued to flow eastwards to both Europe and Asia. Forcados, Brass River and Bonny Light all posted \$0.07/bbl gains, closing at \$2.07/bbl, \$2.37/bbl, and \$1.87/bbl, respectively. Demand for distillate-rich Cabinda was robust as independent Chinese refiners focused on Angolan crudes amid surging diesel cracks, driving differentials up by \$0.36/bbl to \$2.09/bbl. Qua Ibo premiums narrowed by \$0.11/bbl to \$2.72/bbl as the grade deteriorated in parallel with lower naphtha cracks and higher freight costs.



Mediterranean grades weakened against North Sea Dated in spite of their reasonable distillate yields. Prices were depressed by the influx of US sweet crudes, with additional pressure coming from the ramp up of the Kashagan field. CPC fell \$1.53/bbl m-o-m to a -\$4.39/bbl discount, while Azeri/BTC dropped \$1.61/bbl to a \$4.91/bbl premium.

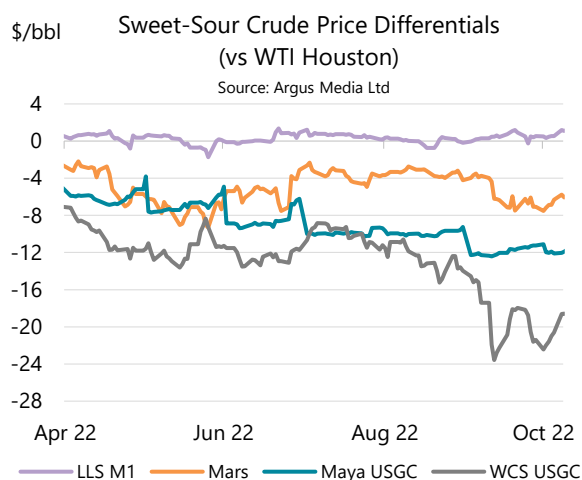
Urals differentials rose for a fourth straight month on stronger demand for cargoes to Asia. The discount to Dated climbed by \$1.33/bbl m-o-m to -\$19.83/bbl. However, the spread fell sharply towards month-end and traded at around -\$25.20/bbl in early November after more details about the G7 oil price cap emerged.

Middle Eastern and Asian crude price differentials to Dubai firmed after OPEC+ output cuts boosted demand for sour crudes. UAE Murban crude climbed \$1.10/bbl to \$2.56/bbl, while Qatar's Al-Shaheen strengthened by \$0.84/bbl to -\$0.09/bbl. Upper Zakum grades were unchanged.

Premiums to Dubai climbed for the very light sweet Malaysian grade Tapis, by \$1.59/bbl to \$13.12/bbl, while the discount for Indonesian Minas narrowed by \$2.11/bbl to parity with Dubai. Their proximity to Asian refiners has increased the competitiveness of these crudes amid sky-high freight rates. ESPO Blend continued to strengthen against Dubai, climbing \$3.53/bbl to -\$4.05/bbl. ESPO's discount to Dubai traded as low as -\$24/bbl in May and has since narrowed by \$20/bbl as Chinese buyers continued to absorb Russian barrels, while higher freight costs also supported prices. ESPO exports to China rose to 820 kb/d in October, their highest on record.

Spot Crude Oil Prices and Differentials (monthly and weekly averages, \$/bbl)											
	Oct 2022					Week Commencing:					Last
	Aug 2022	Sep 2022	Oct 2022	m-o-m Chg	y-o-y Chg	03 Oct	10 Oct	17 Oct	24 Oct	31 Oct	11 Nov
Crudes											
North Sea Dated	99.63	89.76	93.11	3.35	9.57	94.57	94.23	90.47	93.21	95.95	96.74
North Sea Mth 1	99.19	91.49	94.52	3.02	10.09	94.54	95.13	92.35	95.99	97.89	97.68
North Sea Mth 2	97.33	90.70	93.50	2.80	9.71	93.29	94.18	91.66	95.06	95.35	96.17
WTI (Cushing) Mth 1	91.57	83.96	87.26	3.30	5.91	87.80	88.49	85.30	87.60	89.14	88.96
WTI (Cushing) Mth 2	90.88	83.48	86.07	2.59	5.45	86.80	87.29	84.14	86.20	88.02	88.16
WTI (Houston) Mth 1	93.61	86.34	89.60	3.26	7.50	90.32	91.02	87.65	89.59	91.36	90.86
Urals (NWE)	74.63	68.59	73.28	4.68	-8.21	76.07	75.73	71.97	70.51	70.45	72.07
Dubai (1st month)	96.43	91.10	91.08	-0.03	9.62	90.95	93.20	88.97	91.25	91.01	91.35
Differentials to Futures											
North Sea Dated vs. ICE Brent	1.89	-0.81	-0.48	0.33	-0.27	1.30	0.40	-1.52	-1.83	0.17	0.86
WTI (Cushing) Mth1 vs. NYMEX	0.09	0.16	0.23	0.07	0.10	0.00	0.00	0.33	0.64	0.00	0.27
Differentials to Physical Markers											
WTI (Houston) versus North Sea Mth 1	-5.58	-5.15	-4.92	0.24	-2.60	-4.23	-4.11	-4.70	-6.40	-6.54	-6.82
WTI (Houston) versus WTI (Cushing) Mth	2.04	2.37	2.34	-0.04	1.59	2.52	2.53	2.35	1.99	2.22	1.90
Urals (NWE) versus North Sea Dated	-25.00	-21.17	-19.83	1.33	-17.78	-18.50	-18.50	-18.50	-22.70	-25.50	-24.67
Dubai versus North Sea Mth 2	-0.90	0.40	-2.43	-2.83	-0.09	-2.34	-0.98	-2.69	-3.81	-4.34	-4.82
Dubai versus WTI (Cushing) Mth 2	5.55	7.62	5.00	-2.62	4.17	4.15	5.91	4.83	5.04	2.99	3.19
Prompt Month Differentials											
Forward North Sea Mth1-Mth2	1.86	0.79	1.01	0.22	0.39	1.25	0.95	0.70	0.93	2.54	1.51
Forward WTI Cushing Mth1-Mth2	0.69	0.48	1.19	0.71	0.45	1.00	1.20	1.16	1.40	1.12	0.80
Forward Dubai Mth1-Mth2	2.33	2.76	2.15	-0.61	1.06	2.85	2.36	1.79	1.58	2.25	2.10

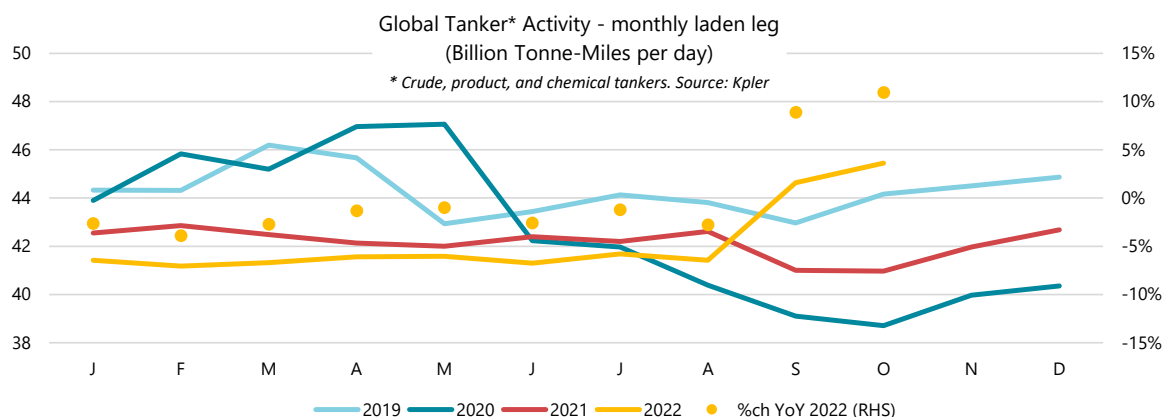
Source: Argus Media Ltd, ICE, NYMEX



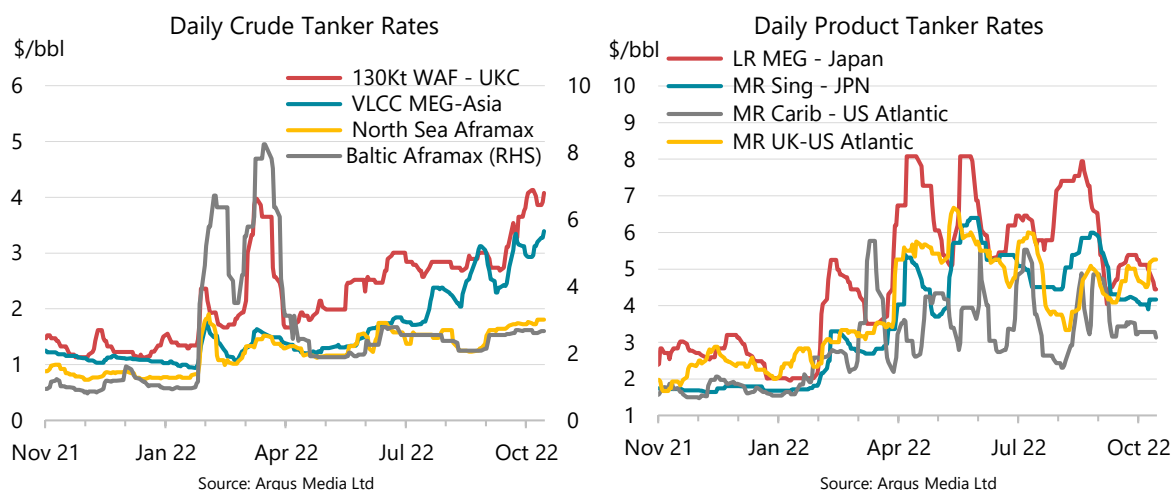
WTI price differentials versus Cushing barely changed in October with the spread to Midland falling by \$0.09/bbl and to Houston by \$0.04/bbl after strength in the first few weeks of October later eased. The Mars discount to WTI Houston widened sharply, by \$2.35/bbl m-o-m to -\$5.79/bbl. Rising arrivals of heavy sour Western Canadian Select (WCS), in combination with ongoing US SPR crude releases and deteriorating fuel cracks, are weighing on sour discounts.

Freight

In October, global tanker activity increased by 10% year-on-year, moving well above 2019 levels and contributing an additional 4 billion tonne-miles per day since August. The rise in exported crude along with the shift away from Russian barrels has increased tension on available fleet capacity. October saw the seasonal winding down of refinery maintenance and record high refinery margins that combined to boost tanker demand and raise dirty freight rates.



Freight rates for VLCCs have climbed steadily since the onset of the invasion, increasing 165% over the past six months. Charters from the Middle East to Asia rose by \$0.21/bbl m-o-m in October to \$2.79/bbl, compared with \$1.05/bbl in February. Eastward charters continued to stretch a VLCC fleet that is already struggling to adapt to new trade flows.



Suezmax charters faced similar challenges that lifted rates more than those for VLCC's. October saw record activity, pushing rates from West Africa to the UK up by \$0.45/bbl m-o-m to \$3.30/bbl. Fees climbed by an additional \$0.83/bbl to \$4.13/bbl in early November. Dirty Aframax rates also firmed, as competition for vessels remained fierce, supported notably by US exports of crude to Europe. The cost of shipments between North Sea ports on Aframax vessels increased by \$0.34/bbl to \$1.69/bbl.

Product tanker rates mostly fell, with the exception of transatlantic shipments, which saw higher rates in October, gaining \$0.26/bbl to average \$4.57/bbl. Strong demand for diesel on the US Atlantic Coast and in Europe (due to refinery strikes) pushed freight rates higher. As refineries came out of

maintenance, rates from the Middle East to Asia fell by \$2.01/bbl to \$4.96/bbl, while short-haul trips within Asia fell by \$1.27/bbl to \$4.30/bbl. Likewise, Caribbean to US shipments pulled back causing rates to fall \$0.45/bbl to \$3.47/bbl.

Freight Costs											
(monthly and weekly averages, \$/bbl)											
	Oct-22					Week Commencing					
	Aug-22	Sep-22	Oct-22	m-o-m chg	y-o-y chg	26-Sep	03-Oct	10-Oct	17-Oct	24-Oct	31-Oct
Crude Tankers											
VLCC MEG-Asia	2.04	2.58	2.79	0.21	1.64	2.81	2.37	2.53	3.20	3.02	2.95
130Kt WAF - UKC	2.78	2.85	3.30	0.45	1.92	2.92	2.73	3.03	3.43	3.85	4.13
Baltic Aframax	2.52	2.19	2.62	0.43	1.76	2.34	2.55	2.57	2.66	2.69	2.65
North Sea Aframax	1.54	1.35	1.69	0.34	0.87	1.54	1.63	1.66	1.73	1.73	1.73
Product Tankers											
LR MEG - Japan	6.27	6.96	4.96	-2.01	2.61	5.70	4.32	4.94	5.33	5.25	5.12
MR Sing - JPN	4.61	5.58	4.30	-1.27	2.58	5.67	4.68	4.23	4.21	4.10	4.04
MR Carib - US Atlantic	3.53	3.92	3.47	-0.45	2.20	4.78	3.72	3.37	3.52	3.30	3.28
MR UK-US Atlantic	4.85	4.31	4.57	0.26	2.87	4.59	4.18	4.35	4.95	4.79	4.55

Source: Argus Media Ltd

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
OECD DEMAND																	
Americas	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-0.1	-	-
Europe	-	-	-	-	-	-	-	-	-	-	-0.1	-	-	-	0.1	-	-
Asia Oceania	-	-	-	-	-	-	-	-	-	-0.1	-	-	-	-	-	-	-
Total OECD	-	-	-	-	-	-	-	-	-	-	-0.1	-	-	-	-	-	-
NON-OECD DEMAND																	
FSU	-	-	-	-	-	-	-	-	-	0.1	0.1	-	0.1	-	0.1	-	-
Europe	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
China	-	-	-	-	-	-	-	-	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Other Asia	-	-	-	-	-	-	-	-	-	-	-0.1	-	-	-	-0.1	-0.1	-0.1
Americas	-	-	-	-	-	-	-	-	-	-	-	-	0.1	-	-	-	-
Middle East	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-0.1	-
Africa	-	-	-	-	-	-	-	-	-	0.1	-	-	-	-	-	-	-
Total Non-OECD	-	-	-	-	-	-	-	-	0.2	0.4	0.2	0.2	0.2	0.1	0.2	0.1	0.1
Total Demand	-	-	-	-	-	-	-	-	0.2	0.4	0.1	0.2	0.1	0.1	0.1	0.1	0.1
OECD SUPPLY																	
Americas	-	-	-	-	-	-	-	-	-	0.1	-	-	-	-0.1	-0.2	-	-0.1
Europe	-	-	-	-	-	-	-	-	-	-	-	-	-	0.1	0.1	-	-
Asia Oceania	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total OECD	-	-	-	-	-	-	-	-	-	0.1	-	-	-	-0.1	-0.1	-	-
NON-OECD SUPPLY																	
FSU	-	-	-	-	-	-	-	-	-	-	0.2	0.1	0.2	-	-	-	-
Europe	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
China	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Asia	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Americas	-	-	-	-	-	-	-	-	-	0.1	-	-	-	0.1	0.1	0.1	0.1
Middle East	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Africa	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Non-OECD	-	-	-	-	-	-	-	-	-	0.1	0.2	0.1	0.3	0.1	-	0.1	0.1
Processing gains	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Global Biofuels	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Non-OPEC Supply	-	-	-	-	-	-	-	-	-	0.1	0.2	0.1	0.3	-	-0.1	0.1	0.1
OPEC																	
Crude	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NGLs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total OPEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Supply	-	-	-	-	-	-	-	-	-	0.1	-	-	-	-	-	-	-
STOCK CHANGES AND MISCELLANEOUS																	
REPORTED OECD																	
Industry	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Government	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Floating storage/Oil in transit	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Miscellaneous to balance	-	-	-	-	-	-	-	-	-0.2	-	-	-	-	-	-	-	-
Total Stock Ch. & Misc	-	-	-	-	-	-	-	-	-0.2	-0.3	-	-	-	-	-	-	-
Memo items:																	
Call on OPEC crude & stock changes	-	-	-	-	-	-	-	-	0.2	0.3	-0.2	0.1	-0.1	0.1	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 agreement¹)
(million barrels per day)

	2019	2020	1Q21	2Q21	3Q21	4Q21	2021	1Q22	2Q22	3Q22	4Q22	2022	1Q23	2Q23	3Q23	4Q23	2023
Total Demand	100.5	91.5	94.5	96.4	98.8	100.9	97.7	99.4	98.7	100.3	100.7	99.8	99.6	100.5	102.3	103.0	101.4
OECD SUPPLY																	
Americas ²	22.8	21.9	21.5	22.4	22.4	23.4	22.4	23.0	23.4	24.1	24.5	23.7	24.4	24.6	25.1	25.4	24.9
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	3.4	3.4	3.3	3.5	3.4
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	0.5	0.5	0.4	0.5
Total OECD (non-OPEC+)	26.7	26.0	25.7	26.0	26.4	27.3	26.3	26.8	26.9	27.6	28.2	27.4	28.2	28.4	28.8	29.3	28.7
NON-OECD SUPPLY																	
FSU ³	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	4.2	4.2	4.1	4.2
Other Asia ⁴	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	1.9	2.0
Latin America	5.3	5.3	5.3	5.3	5.4	5.2	5.3	5.4	5.5	5.7	5.8	5.6	5.9	6.0	6.0	6.1	6.0
Middle East ⁵	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.0	2.0	2.0	2.0
Africa ⁶	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
Total Non-OECD (non-OPEC+)	15.3	15.1	15.1	15.1	15.2	14.8	15.0	15.2	15.2	15.4	15.4	15.3	15.6	15.7	15.7	15.7	15.6
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	2.3	2.4	2.4	2.4
Global Biofuels	2.8	2.6	2.2	2.9	3.2	2.7	2.8	2.4	3.0	3.3	3.0	2.9	2.6	3.1	3.4	3.0	3.0
Total Non-OPEC+	47.2	45.9	45.1	46.3	47.1	47.1	46.4	46.7	47.5	48.6	48.9	47.9	48.7	49.6	50.3	50.4	49.7
OPEC+ CRUDE																	
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	0.6	0.6	0.6	0.5	0.5	0.5	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	2.5	2.5	2.5	2.5	2.5	2.5	2.5
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	4.4	4.4	4.4	4.4
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	1.6	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	2.7	2.7	2.7	2.7
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	1.7	1.6	1.7	1.7	1.7	1.6	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	1.2	1.2	1.2	1.1	1.2
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	9.6	9.7	8.5	8.2	8.1	8.1	8.2
Saudi Arabia	9.9	9.2	8.5	8.6	9.6	9.9	9.2	10.2	10.5	10.9	10.6	10.6	10.5	10.5	10.5	10.5	10.5
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	3.3	3.3	3.2	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	0.8	0.8	0.8	0.8	0.8
OPEC+ Crude	45.9	40.6	40.0	40.5	42.0	43.3	41.5	44.1	43.4	44.6	44.3	44.1	43.2	42.8	42.7	42.7	42.8
OPEC+ NGLs & Condensate	7.4	7.2	7.4	7.4	7.3	7.5	7.4	7.8	7.8	7.7	7.8	7.8	7.9	8.0	8.0	8.0	8.0
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
Total OPEC+	53.4	47.9	47.5	48.0	49.4	51.0	49.0	52.0	51.3	52.4	52.3	52.0	51.2	50.9	50.8	50.8	50.9
Total Supply Oil	100.6	93.8	92.6	94.3	96.4	98.0	95.3	98.7	98.8	101.0	101.2	99.9	100.0	100.5	101.1	101.1	100.7
Memo items:																	
Call on OPEC+ crude & stock changes	45.9	38.2	42.0	42.7	44.3	46.2	43.8	44.8	43.4	43.9	43.8	44.0	42.9	42.9	43.9	44.5	43.6

¹ From Nov 2022, OPEC+ supply reflects latest OPEC+ deal and individual country's sustainable capacity. Libya, Iran, Venezuela held at most recent level through 2023.

² OECD Americas excludes Mexico.

³ FSU excludes Russia, Kazakhstan, Azerbaijan.

⁴ Other Asia excludes Brunei, Malaysia.

⁵ Middle East excludes Oman, Bahrain.

⁶ 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
Demand (mb/d)																
Americas	22.45	22.93	24.39	24.79	25.13	24.32	24.77	24.98	25.30	25.00	25.01	24.73	25.05	25.37	25.17	25.08
Europe	12.41	11.95	12.68	13.89	13.96	13.13	13.15	13.43	14.09	13.95	13.66	13.36	13.51	14.09	13.87	13.71
Asia Oceania	7.17	7.68	7.00	7.07	7.78	7.38	7.85	6.98	7.18	7.77	7.44	7.99	7.14	7.39	7.92	7.61
Total OECD	42.03	42.56	44.07	45.75	46.86	44.83	45.77	45.40	46.57	46.72	46.12	46.07	45.70	46.85	46.96	46.40
Asia	26.92	28.62	28.67	28.34	29.59	28.81	29.52	28.43	28.15	29.23	28.83	29.53	30.03	29.94	31.31	30.21
Middle East	8.07	8.16	8.43	8.90	8.43	8.48	8.53	9.17	9.51	8.74	8.99	8.63	9.23	9.57	8.77	9.05
Americas	5.45	5.74	5.80	6.12	6.09	5.94	5.91	6.07	6.14	6.12	6.06	5.94	6.11	6.19	6.16	6.10
FSU	4.56	4.63	4.74	4.97	5.05	4.85	4.71	4.73	5.10	4.87	4.85	4.60	4.61	4.90	4.82	4.73
Africa	3.77	4.03	3.94	3.90	4.10	3.99	4.20	4.12	4.05	4.18	4.14	4.13	4.10	4.05	4.20	4.12
Europe	0.72	0.76	0.76	0.78	0.79	0.77	0.78	0.77	0.79	0.81	0.79	0.76	0.77	0.79	0.80	0.78
Total Non-OECD	49.49	51.94	52.33	53.01	54.05	52.84	53.65	53.28	53.75	53.95	53.66	53.57	54.84	55.44	56.06	54.99
World	91.52	94.50	96.39	98.76	100.91	97.66	99.42	98.68	100.31	100.67	99.78	99.64	100.54	102.29	103.02	101.39
of which:																
United States ¹	18.19	18.58	20.13	20.30	20.54	19.89	20.22	20.27	20.42	20.36	20.32	20.06	20.29	20.44	20.42	20.30
Europe 5 ²	6.91	6.67	7.06	7.66	7.81	7.31	7.39	7.60	7.86	7.80	7.66	7.49	7.58	7.84	7.76	7.67
China	14.20	14.88	15.59	15.59	15.64	15.43	15.40	14.41	14.79	15.21	14.95	14.98	15.59	15.82	16.52	15.73
Japan	3.36	3.77	3.07	3.17	3.66	3.41	3.70	3.03	3.17	3.63	3.38	3.79	3.07	3.28	3.68	3.45
India	4.58	5.04	4.49	4.52	5.02	4.77	5.25	5.14	4.93	5.28	5.15	5.44	5.31	5.17	5.50	5.35
Russia	3.42	3.50	3.58	3.76	3.76	3.65	3.63	3.61	3.96	3.66	3.71	3.48	3.47	3.73	3.58	3.56
Brazil	2.87	2.91	2.92	3.13	3.06	3.01	2.95	2.99	3.06	3.09	3.02	3.01	3.07	3.12	3.14	3.09
Saudi Arabia	3.45	3.24	3.53	3.76	3.44	3.49	3.34	3.83	3.97	3.59	3.68	3.36	3.85	4.04	3.60	3.71
Canada	2.17	2.22	2.13	2.35	2.34	2.26	2.24	2.21	2.41	2.25	2.27	2.29	2.25	2.45	2.36	2.34
Korea	2.45	2.54	2.49	2.59	2.69	2.58	2.73	2.49	2.54	2.64	2.60	2.76	2.59	2.64	2.73	2.68
Mexico	1.60	1.63	1.66	1.61	1.72	1.65	1.76	1.99	1.96	1.87	1.89	1.83	1.98	1.95	1.86	1.91
Iran	1.76	1.90	1.81	1.81	1.81	1.83	1.91	1.84	1.83	1.82	1.85	1.91	1.86	1.84	1.82	1.86
Total	64.96	66.86	68.45	70.24	71.49	69.27	70.52	69.40	70.90	71.21	70.51	70.42	70.89	72.31	72.98	71.66
% of World	71.0%	70.7%	71.0%	71.1%	70.8%	70.9%	70.9%	70.3%	70.7%	70.7%	70.7%	70.7%	70.5%	70.7%	70.8%	70.7%
Annual Change (% per annum)																
Americas	-11.6	-5.5	22.7	9.7	9.1	8.3	8.0	2.5	2.1	-0.5	2.9	-0.2	0.3	0.3	0.7	0.3
Europe	-13.3	-10.2	15.4	8.1	11.8	5.8	10.0	5.9	1.4	0.0	4.0	1.5	0.6	0.0	-0.6	0.4
Asia Oceania	-9.8	-2.6	5.6	4.4	5.5	3.0	2.3	-0.2	1.4	-0.1	0.8	1.7	2.2	3.0	1.9	2.2
Total OECD	-11.8	-6.4	17.5	8.3	9.2	6.7	7.5	3.0	1.8	-0.3	2.9	0.7	0.7	0.6	0.5	0.6
Asia	-4.3	12.1	9.6	3.8	3.2	7.0	3.2	-0.8	-0.7	-1.2	0.1	0.0	5.6	6.3	7.1	4.8
Middle East	-8.7	-1.8	12.9	5.8	4.1	5.0	4.4	8.8	6.9	3.7	6.0	1.2	0.7	0.6	0.3	0.7
Americas	-13.4	2.7	18.4	10.1	5.9	9.0	3.0	4.7	0.3	0.5	2.1	0.5	0.6	0.9	0.7	0.7
FSU	-3.5	-0.2	14.3	5.1	6.8	6.3	1.8	-0.2	2.7	-3.6	0.1	-2.4	-2.4	-4.0	-1.0	-2.5
Africa	-8.6	-1.3	15.1	5.7	6.1	6.1	4.2	4.6	3.8	2.1	3.7	-1.8	-0.5	0.0	0.3	-0.5
Europe	-7.5	4.1	12.3	5.9	4.5	6.6	2.6	1.8	1.5	2.2	2.0	-2.2	-0.2	-0.5	-0.1	-0.8
Total Non-OECD	-6.4	6.3	11.9	5.1	4.2	6.8	3.3	1.8	1.4	-0.2	1.6	-0.1	2.9	3.1	3.9	2.5
World	-9.0	0.2	14.4	6.6	6.5	6.7	5.2	2.4	1.6	-0.2	2.2	0.2	1.9	2.0	2.3	1.6
Annual Change (mb/d)																
Americas	-2.95	-1.34	4.51	2.18	2.09	1.87	1.83	0.60	0.52	-0.13	0.70	-0.04	0.07	0.07	0.17	0.07
Europe	-1.90	-1.36	1.69	1.04	1.47	0.72	1.20	0.75	0.20	-0.01	0.53	0.20	0.08	0.00	-0.08	0.05
Asia Oceania	-0.78	-0.21	0.37	0.30	0.40	0.22	0.18	-0.01	0.10	-0.01	0.06	0.14	0.15	0.21	0.15	0.16
Total OECD	-5.63	-2.90	6.57	3.52	3.96	2.80	3.21	1.33	0.81	-0.15	1.29	0.30	0.30	0.29	0.24	0.28
Asia	-1.20	3.09	2.52	1.05	0.92	1.89	0.90	-0.24	-0.19	-0.36	0.02	0.00	1.60	1.79	2.08	1.37
Middle East	-0.77	-0.15	0.96	0.49	0.33	0.41	0.36	0.74	0.61	0.31	0.51	0.10	0.06	0.06	0.03	0.06
Americas	-0.84	0.15	0.90	0.56	0.34	0.49	0.17	0.27	0.02	0.03	0.12	0.03	0.04	0.05	0.04	0.04
FSU	-0.16	-0.01	0.59	0.24	0.32	0.29	0.09	-0.01	0.13	-0.18	0.01	-0.11	-0.11	-0.20	-0.05	-0.12
Africa	-0.35	-0.05	0.52	0.21	0.24	0.23	0.17	0.18	0.15	0.08	0.15	-0.08	-0.02	0.00	0.01	-0.02
Europe	-0.06	0.03	0.08	0.04	0.03	0.05	0.02	0.01	0.01	0.02	0.02	-0.02	0.00	0.00	0.00	-0.01
Total Non-OECD	-3.39	3.06	5.57	2.59	2.18	3.35	1.71	0.96	0.74	-0.10	0.82	-0.08	1.56	1.69	2.11	1.33
World	-9.02	0.16	12.14	6.11	6.14	6.15	4.92	2.29	1.55	-0.24	2.11	0.22	1.86	1.98	2.35	1.61
Revisions to Oil Demand from Last Month's Report (mb/d)																
Americas	-0.02	-0.02	-0.02	-0.01	-0.01	-0.02	-0.01	-0.02	0.01	-0.01	-0.01	0.01	-0.03	-0.07	0.02	-0.02
Europe	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.02	-0.06	0.00	-0.01	0.02	0.05	0.03	0.03
Asia Oceania	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.07	-0.02	-0.02	-0.03	-0.01	-0.03	-0.02	-0.02
Total OECD	-0.02	-0.02	-0.02	-0.01	-0.01	-0.02	-0.01	-0.00	-0.04	-0.09	-0.04	-0.03	-0.02	-0.05	0.03	-0.02
Asia	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.21	0.02	0.11	0.05	0.08	0.06	0.01	0.05
Middle East	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	-0.01	0.00	-0.04	-0.05	0.03	-0.06	-0.03
Americas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.04	0.02	0.06	0.05	0.02	0.03	0.04
FSU	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.07	0.04	0.06	0.01	0.05	0.05	0.04
Africa	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.05	0.05	0.03	0.03	0.03	0.03	0.04	0.03
Europe	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.00	-0.01	0.00	0.00
Total Non-OECD	-0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.24	0.40	0.18	0.21	0.17	0.13	0.20	0.07	0.14
World	-0.02	-0.02	-0.01	-0.01	-0.01	-0.01	-0.01	0.23	0.36	0.09	0.17	0.14	0.11	0.15	0.10	0.13
Revisions to Oil Demand Growth from Last Month's Report (mb/d)																
World	0.00	0.00	0.01	0.01	0.02	0.01	0.01	0.24	0.36	0.10	0.18	0.15	-0.12	-0.21	0.01	-0.04

¹ US figures exclude US territories.

² France, Germany, Italy, Spain and UK.

Table 2a
OECD REGIONAL OIL DEMAND¹
(million barrels per day)

	2020	2021	3Q21	4Q21	1Q22	2Q22	Jun 22	Jul 22	Aug 22 ²	Latest month vs.	
										Jul 22	Aug 21
Americas											
LPG and ethane	3.52	3.69	3.53	3.93	4.18	3.62	3.68	4.07	3.60	-0.47	0.09
Naphtha	0.26	0.25	0.26	0.25	0.22	0.21	0.20	0.21	0.20	-0.02	-0.07
Motor gasoline	9.53	10.34	10.72	10.61	10.04	10.70	10.88	10.44	10.81	0.37	0.04
Jet and kerosene	1.25	1.56	1.73	1.74	1.69	1.87	2.00	1.90	1.94	0.05	0.17
Gasoil/diesel oil	4.88	5.06	5.00	5.16	5.33	5.14	5.28	4.96	5.08	0.12	-0.02
Residual fuel oil	0.41	0.55	0.57	0.59	0.59	0.54	0.53	0.58	0.57	-0.01	0.00
Other products	2.61	2.85	2.98	2.84	2.72	2.91	3.11	3.19	3.26	0.07	0.22
Total	22.45	24.31	24.79	25.12	24.77	24.98	25.68	25.35	25.46	0.11	0.43
Europe											
LPG and ethane	1.07	1.10	1.11	1.09	1.11	0.95	1.02	1.11	1.11	0.00	0.01
Naphtha	1.06	1.12	1.09	1.18	1.15	1.01	0.98	0.93	0.88	-0.05	-0.23
Motor gasoline	1.76	1.93	2.19	2.02	1.88	2.08	2.18	2.10	2.24	0.14	0.04
Jet and kerosene	0.74	0.86	1.03	1.07	1.02	1.29	1.38	1.48	1.54	0.06	0.47
Gasoil/diesel oil	5.93	6.26	6.51	6.68	6.14	6.09	6.13	5.98	6.38	0.40	0.09
Residual fuel oil	0.69	0.76	0.78	0.76	0.79	0.84	0.84	0.86	0.85	-0.01	0.08
Other products	1.17	1.10	1.17	1.15	1.07	1.17	1.18	1.17	1.19	0.02	0.07
Total	12.41	13.13	13.89	13.96	13.15	13.43	13.71	13.62	14.18	0.56	0.53
Asia Oceania											
LPG and ethane	0.76	0.77	0.72	0.78	0.94	0.77	0.73	0.73	0.74	0.02	0.07
Naphtha	1.81	1.95	1.98	2.06	1.93	1.78	1.75	1.93	1.99	0.06	0.01
Motor gasoline	1.38	1.35	1.34	1.37	1.28	1.30	1.30	1.42	1.47	0.04	0.13
Jet and kerosene	0.61	0.61	0.42	0.72	0.87	0.51	0.49	0.50	0.54	0.04	0.14
Gasoil/diesel oil	1.83	1.89	1.83	1.98	1.95	1.86	1.87	1.84	1.99	0.14	0.20
Residual fuel oil	0.42	0.45	0.43	0.48	0.52	0.45	0.46	0.46	0.49	0.02	0.05
Other products	0.36	0.36	0.35	0.39	0.36	0.31	0.38	0.23	0.24	0.01	-0.10
Total	7.17	7.38	7.07	7.78	7.85	6.98	6.99	7.11	7.45	0.34	0.50
OECD											
LPG and ethane	5.35	5.56	5.36	5.80	6.23	5.35	5.43	5.90	5.45	-0.45	0.17
Naphtha	3.12	3.33	3.34	3.48	3.30	3.00	2.93	3.07	3.06	0.00	-0.28
Motor gasoline	12.66	13.62	14.25	14.00	13.19	14.08	14.37	13.96	14.51	0.55	0.20
Jet and kerosene	2.60	3.03	3.19	3.54	3.59	3.67	3.87	3.88	4.02	0.14	0.78
Gasoil/diesel oil	12.65	13.21	13.34	13.82	13.41	13.09	13.28	12.79	13.45	0.67	0.26
Residual fuel oil	1.52	1.76	1.78	1.84	1.91	1.82	1.83	1.91	1.90	0.00	0.13
Other products	4.14	4.32	4.50	4.39	4.15	4.39	4.67	4.59	4.69	0.10	0.19
Total	42.03	44.83	45.75	46.86	45.77	45.40	46.38	46.09	47.10	1.00	1.45

¹ 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.

² Latest official OECD submissions (MOS).

Table 2b
OIL DEMAND IN SELECTED OECD COUNTRIES¹
(million barrels per day)

	2020	2021	3Q21	4Q21	1Q22	2Q22	Jun 22	Jul 22	Aug 22 ²	Latest month vs.	
										Jul 22	Aug 21
United States³											
LPG and ethane	2.74	2.88	2.75	3.13	3.37	2.89	2.92	3.15	2.75	-0.40	0.00
Naphtha	0.18	0.19	0.20	0.18	0.15	0.14	0.13	0.14	0.12	-0.02	-0.06
Motor gasoline	8.05	8.82	9.14	8.98	8.47	9.00	9.13	8.75	9.08	0.33	-0.10
Jet and kerosene	1.08	1.38	1.52	1.50	1.46	1.61	1.71	1.60	1.65	0.05	0.09
Gasoil/diesel oil	3.78	3.97	3.90	4.03	4.14	3.89	3.99	3.72	3.87	0.15	-0.11
Residual fuel oil	0.21	0.31	0.35	0.40	0.38	0.31	0.29	0.33	0.37	0.04	0.03
Other products	2.13	2.35	2.45	2.31	2.24	2.43	2.61	2.66	2.76	0.10	0.20
Total	18.19	19.89	20.30	20.54	20.22	20.27	20.77	20.34	20.60	0.26	0.03
Japan											
LPG and ethane	0.39	0.40	0.35	0.41	0.49	0.40	0.38	0.34	0.38	0.04	0.07
Naphtha	0.66	0.70	0.67	0.76	0.63	0.56	0.60	0.62	0.69	0.07	0.03
Motor gasoline	0.79	0.73	0.75	0.73	0.67	0.68	0.69	0.76	0.78	0.02	0.01
Jet and kerosene	0.37	0.37	0.22	0.46	0.58	0.25	0.22	0.22	0.24	0.02	0.02
Diesel	0.41	0.42	0.42	0.44	0.43	0.41	0.43	0.43	0.43	0.01	0.03
Other gasoil	0.31	0.32	0.29	0.35	0.37	0.30	0.30	0.30	0.30	0.00	0.02
Residual fuel oil	0.22	0.25	0.24	0.26	0.29	0.24	0.25	0.24	0.27	0.03	0.04
Other products	0.21	0.22	0.24	0.25	0.23	0.18	0.24	0.19	0.22	0.02	-0.01
Total	3.36	3.41	3.17	3.66	3.70	3.03	3.12	3.10	3.31	0.22	0.22
Germany											
LPG and ethane	0.11	0.12	0.12	0.11	0.11	0.12	0.12	0.11	0.10	-0.01	-0.02
Naphtha	0.28	0.32	0.31	0.34	0.35	0.33	0.30	0.28	0.25	-0.02	-0.04
Motor gasoline	0.46	0.45	0.48	0.46	0.43	0.46	0.51	0.49	0.52	0.03	0.03
Jet and kerosene	0.10	0.13	0.16	0.16	0.15	0.20	0.21	0.22	0.22	0.00	0.06
Diesel	0.71	0.71	0.77	0.75	0.67	0.68	0.72	0.73	0.79	0.06	0.03
Other gasoil	0.36	0.27	0.26	0.36	0.28	0.25	0.23	0.31	0.31	0.00	0.06
Residual fuel oil	0.05	0.05	0.05	0.06	0.06	0.05	0.05	0.06	0.05	-0.01	0.00
Other products	0.08	0.07	0.08	0.08	0.06	0.07	0.04	0.09	0.09	0.00	0.01
Total	2.15	2.13	2.23	2.34	2.11	2.16	2.18	2.29	2.35	0.06	0.14
Italy											
LPG and ethane	0.09	0.11	0.10	0.12	0.13	0.10	0.10	0.08	0.10	0.02	0.01
Naphtha	0.10	0.09	0.08	0.10	0.10	0.07	0.05	0.06	0.06	0.00	-0.03
Motor gasoline	0.14	0.17	0.20	0.18	0.16	0.19	0.19	0.14	0.20	0.06	0.01
Jet and kerosene	0.05	0.06	0.09	0.07	0.07	0.10	0.10	0.11	0.11	0.00	0.01
Diesel	0.39	0.48	0.51	0.51	0.48	0.49	0.51	0.37	0.48	0.11	0.01
Other gasoil	0.07	0.07	0.07	0.07	0.04	0.05	0.06	0.05	0.06	0.01	-0.02
Residual fuel oil	0.06	0.09	0.10	0.09	0.09	0.10	0.11	0.10	0.11	0.00	0.01
Other products	0.14	0.11	0.11	0.12	0.10	0.13	0.15	0.11	0.11	0.00	0.03
Total	1.03	1.18	1.26	1.26	1.17	1.23	1.27	1.01	1.22	0.21	0.02
France											
LPG and ethane	0.11	0.11	0.11	0.10	0.12	0.10	0.10	0.12	0.09	-0.02	-0.02
Naphtha	0.12	0.14	0.13	0.16	0.13	0.09	0.12	0.13	0.09	-0.03	-0.03
Motor gasoline	0.17	0.21	0.24	0.22	0.21	0.24	0.25	0.25	0.26	0.01	0.02
Jet and kerosene	0.09	0.09	0.11	0.11	0.10	0.11	0.12	0.14	0.18	0.04	0.06
Diesel	0.67	0.73	0.77	0.75	0.71	0.75	0.77	0.74	0.68	-0.06	-0.05
Other gasoil	0.14	0.13	0.11	0.16	0.16	0.07	0.06	0.07	0.10	0.03	0.01
Residual fuel oil	0.03	0.03	0.03	0.03	0.03	0.04	0.04	0.04	0.04	0.00	0.01
Other products	0.09	0.10	0.12	0.10	0.08	0.11	0.13	0.13	0.11	-0.01	0.01
Total	1.43	1.55	1.64	1.62	1.54	1.50	1.59	1.61	1.57	-0.04	0.01
United Kingdom											
LPG and ethane	0.12	0.11	0.11	0.11	0.12	0.12	0.13	0.10	0.10	0.00	-0.01
Naphtha	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Motor gasoline	0.22	0.25	0.28	0.28	0.26	0.28	0.29	0.28	0.28	0.00	0.01
Jet and kerosene	0.18	0.18	0.16	0.24	0.24	0.27	0.26	0.28	0.29	0.01	0.14
Diesel	0.43	0.47	0.49	0.49	0.46	0.51	0.51	0.48	0.50	0.02	0.02
Other gasoil	0.11	0.13	0.14	0.12	0.11	0.09	0.08	0.12	0.13	0.01	-0.01
Residual fuel oil	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.03	0.02	-0.01	0.00
Other products	0.10	0.10	0.11	0.10	0.11	0.10	0.10	0.10	0.12	0.02	0.01
Total	1.21	1.26	1.30	1.35	1.31	1.39	1.40	1.39	1.45	0.06	0.15
Canada											
LPG and ethane	0.43	0.45	0.42	0.43	0.43	0.39	0.41	0.55	0.47	-0.08	0.08
Naphtha	0.05	0.04	0.05	0.04	0.05	0.05	0.05	0.05	0.05	0.00	0.00
Motor gasoline	0.73	0.76	0.83	0.80	0.73	0.78	0.83	0.79	0.84	0.05	-0.01
Jet and kerosene	0.08	0.09	0.11	0.12	0.10	0.13	0.16	0.17	0.17	0.00	0.06
Diesel	0.29	0.29	0.33	0.29	0.30	0.25	0.27	0.28	0.27	-0.01	-0.07
Other gasoil	0.28	0.28	0.27	0.28	0.30	0.27	0.27	0.26	0.26	0.00	0.00
Residual fuel oil	0.03	0.03	0.02	0.03	0.04	0.03	0.04	0.03	0.02	-0.01	0.00
Other products	0.28	0.31	0.34	0.35	0.29	0.30	0.33	0.35	0.30	-0.05	0.00
Total	2.17	2.26	2.35	2.34	2.24	2.21	2.36	2.49	2.39	-0.11	0.06

¹ 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.

² Latest official OECD submissions (MOS).

³ US figures exclude US territories.

Table 3
WORLD OIL PRODUCTION
(million barrels per day)

	2021	2022	2023	2Q22	3Q22	4Q22	1Q23	2Q23	Aug 22	Sep 22	Oct 22
OPEC											
Crude Oil											
Saudi Arabia	9.15			10.49	10.93				10.96	11.03	10.90
Iran	2.42			2.47	2.52				2.57	2.49	2.51
Iraq	4.03			4.45	4.54				4.54	4.55	4.60
UAE	2.76			3.29	3.41				3.41	3.48	3.46
Kuwait	2.42			2.67	2.80				2.80	2.82	2.80
Angola	1.12			1.17	1.15				1.17	1.09	1.05
Nigeria	1.31			1.15	1.01				0.98	0.96	1.01
Libya	1.15			0.77	0.96				1.08	1.16	1.18
Algeria	0.91			1.01	1.02				1.02	1.03	1.04
Congo	0.27			0.26	0.26				0.26	0.27	0.25
Gabon	0.18			0.18	0.20				0.21	0.20	0.22
Equatorial Guinea	0.10			0.09	0.09				0.09	0.08	0.07
Venezuela	0.61			0.74	0.66				0.69	0.67	0.71
Total Crude Oil	26.43			28.74	29.54				29.78	29.83	29.80
<i>of which Neutral Zone¹</i>	<i>0.25</i>			<i>0.28</i>	<i>0.31</i>				<i>0.32</i>	<i>0.32</i>	<i>0.32</i>
Total NGLs²	5.12	5.35	5.45	5.35	5.38	5.39	5.43	5.44	5.37	5.38	5.39
Total OPEC³	31.55			34.09	34.92				35.15	35.21	35.19
NON-OPEC⁴											
OECD											
Americas											
United States	16.83	17.96	18.99	17.80	18.22	18.56	18.57	18.89	18.21	18.22	18.46
Mexico	1.95	2.01	2.06	1.99	2.00	2.04	2.07	2.08	2.00	2.00	2.02
Canada	5.59	5.77	5.86	5.58	5.85	5.91	5.81	5.69	5.83	5.89	5.91
Chile	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Europe											
UK	0.89	0.82	0.78	0.86	0.75	0.76	0.80	0.79	0.67	0.67	0.74
Norway	2.04	1.92	2.19	1.74	1.92	2.06	2.15	2.17	2.01	1.89	1.97
Others	0.45	0.42	0.42	0.42	0.42	0.43	0.43	0.42	0.43	0.42	0.43
Asia Oceania											
Australia	0.44	0.41	0.39	0.45	0.36	0.41	0.40	0.38	0.35	0.40	0.39
Others	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
Total OECD	28.28	29.39	30.76	28.91	29.60	30.24	30.30	30.50	29.58	29.57	29.99
NON-OECD											
Former USSR											
Russia	10.87	11.01	9.59	10.70	11.07	10.92	9.85	9.50	10.98	11.10	11.07
Azerbaijan	0.70	0.67	0.67	0.67	0.66	0.67	0.68	0.67	0.64	0.66	0.66
Kazakhstan	1.85	1.81	1.96	1.76	1.63	1.87	1.98	1.97	1.59	1.52	1.67
Others	0.35	0.32	0.31	0.30	0.31	0.31	0.32	0.31	0.31	0.31	0.31
Asia											
China	4.06	4.17	4.20	4.23	4.12	4.10	4.26	4.22	4.08	4.18	4.12
Malaysia	0.57	0.56	0.56	0.56	0.54	0.56	0.56	0.56	0.55	0.56	0.56
India	0.73	0.70	0.69	0.71	0.70	0.69	0.68	0.69	0.67	0.72	0.69
Indonesia	0.68	0.63	0.60	0.63	0.63	0.62	0.61	0.61	0.63	0.63	0.62
Others	0.88	0.81	0.76	0.81	0.79	0.78	0.78	0.77	0.81	0.78	0.77
Europe											
Americas	5.30	5.62	6.01	5.48	5.74	5.82	5.88	5.99	5.75	5.84	5.80
Brazil	3.00	3.11	3.41	3.00	3.16	3.21	3.28	3.39	3.17	3.24	3.20
Argentina	0.64	0.71	0.75	0.70	0.72	0.73	0.74	0.75	0.71	0.72	0.72
Colombia	0.74	0.76	0.75	0.76	0.76	0.77	0.76	0.76	0.76	0.77	0.77
Ecuador	0.48	0.47	0.45	0.45	0.47	0.47	0.46	0.46	0.47	0.47	0.47
Others	0.43	0.57	0.64	0.56	0.64	0.64	0.64	0.64	0.63	0.63	0.63
Middle East											
Oman	0.98	1.07	1.07	1.07	1.10	1.08	1.07	1.07	1.10	1.10	1.11
Qatar	1.82	1.84	1.87	1.85	1.85	1.85	1.87	1.87	1.85	1.85	1.85
Others	0.28	0.30	0.30	0.29	0.31	0.30	0.30	0.30	0.31	0.31	0.31
Africa											
Egypt	0.59	0.60	0.60	0.61	0.60	0.60	0.60	0.60	0.61	0.61	0.60
Others	0.74	0.70	0.67	0.69	0.71	0.70	0.68	0.67	0.73	0.68	0.74
Total Non-OECD	30.51	30.93	29.97	30.48	30.86	30.98	30.23	29.93	30.71	30.93	30.97
Processing gains ⁵	2.25	2.31	2.36	2.29	2.32	2.34	2.32	2.35	2.33	2.32	2.30
Global biofuels	2.75	2.92	3.04	3.01	3.28	2.95	2.55	3.14	3.26	3.22	3.21
TOTAL NON-OPEC	63.79	65.55	66.13	64.69	66.05	66.52	65.39	65.91	65.88	66.04	66.47
TOTAL SUPPLY	95.34			98.78	100.97				101.03	101.25	101.66

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

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

³ OPEC data based on today's membership throughout the time series.

⁴ Comprises crude oil, condensates, NGLs and oil from non-conventional sources.

⁵ Net volumetric gains and losses in refining and marine transportation losses.

Table 3a
OIL SUPPLY IN OECD COUNTRIES¹
(thousand of barrels per day)

	2021	2022	2023	2Q22	3Q22	4Q22	1Q23	2Q23	Aug 22	Sep 22	Oct 22
United States											
Alaska	437	440	432	436	426	450	448	428	413	434	441
California	380	343	329	345	340	337	334	330	341	338	338
Texas	4766	4992	5230	4985	5043	5051	5143	5206	5096	5014	5021
Federal Gulf of Mexico ²	1707	1728	1866	1700	1740	1797	1816	1875	1783	1674	1801
Other US Lower 48	3963	4287	4599	4230	4364	4437	4561	4597	4342	4433	4415
NGLs ³	5425	5979	6297	5915	6111	6268	6052	6220	6031	6160	6246
Other Hydrocarbons	149	192	234	190	190	220	213	230	200	170	200
Total	16827	17961	18986	17802	18216	18560	18567	18887	18206	18224	18461
Canada											
Alberta Light/Medium/Heavy	436	489	504	497	496	494	509	506	501	495	494
Alberta Bitumen	1921	1993	2056	1882	2107	2054	1928	1949	2103	2186	2043
Saskatchewan	444	455	451	458	459	456	457	453	474	455	456
Other Crude	456	436	436	447	435	419	421	453	433	431	430
NGLs	975	1034	1031	1019	1039	1029	1045	1022	1015	1035	1035
Other Upgraders	180	183	185	171	177	196	195	176	176	173	195
Synthetic Crudes	1181	1178	1194	1101	1140	1260	1258	1134	1134	1111	1254
Total	5593	5767	5857	5576	5854	5908	5813	5694	5835	5886	5908
Mexico											
Crude	1780	1849	1918	1834	1848	1887	1920	1937	1846	1848	1871
NGLs	170	152	137	148	147	144	141	138	145	144	145
Total	1954	2006	2061	1987	2000	2036	2066	2081	1997	1996	2021
UK											
Brent Fields	25	22	17	26	15	19	21	20	11	8	13
Forties Fields	211	206	176	209	164	204	200	155	131	162	207
Ninian Fields	24	18	17	18	15	17	18	17	17	15	15
Flotta Fields	50	41	39	40	38	39	39	37	41	33	37
Other Fields	512	468	470	500	453	422	463	498	415	387	405
NGLs	67	65	58	68	61	60	59	59	58	61	60
Total	888	820	777	860	746	761	800	786	672	666	737
Norway⁴											
Ekofisk-Ula Area	141	124	133	84	139	143	141	134	125	147	143
Oseberg-Troll Area	211	209	234	211	198	220	232	234	216	159	202
Statfjord-Gullfaks Area	262	244	226	245	244	239	233	229	251	238	240
Haltenbanken Area	284	270	280	250	276	272	276	278	270	275	272
Sleipner-Frigg Area	816	797	1017	681	799	874	964	985	850	849	851
Other Fields	75	87	115	89	78	118	114	122	102	53	62
NGLs	249	192	182	180	192	192	188	185	198	171	196
Total	2038	1923	2188	1739	1925	2057	2148	2166	2012	1893	1965
Other OECD Europe											
Denmark	66	65	63	66	64	62	60	60	63	63	63
Italy	97	89	94	92	84	95	95	94	79	92	94
Türkiye	66	69	70	68	71	71	71	71	72	70	71
Other	99	81	85	72	80	90	88	86	84	88	90
NGLs	7	6	5	6	6	6	6	6	6	6	6
Non-Conventional Oils	118	114	106	119	117	106	106	106	122	103	106
Total	453	425	424	423	421	430	426	422	426	423	429
Australia											
Gippsland Basin	5	5	4	4	4	4	4	4	4	4	4
Cooper-Eromanga Basin	23	18	17	18	18	17	17	17	18	18	18
Carnarvon Basin	113	112	105	115	113	111	108	106	113	112	111
Other Crude	193	177	162	199	147	186	166	156	141	180	178
NGLs	109	97	101	109	74	97	102	102	77	85	83
Total	444	408	388	445	357	414	397	385	353	400	394
Other OECD Asia Oceania											
New Zealand	18	16	15	15	16	16	16	15	16	16	16
Japan	4	3	3	3	3	3	3	3	3	3	3
NGLs	11	10	9	11	10	9	9	9	10	9	9
Non-Conventional Oils	37	39	39	39	39	39	39	39	39	38	39
Total	71	69	65	69	68	67	66	66	68	67	67
OECD											
Crude Oil	19588	20134	21165	19822	20280	20606	20868	21057	20355	20287	20405
NGLs	7019	7545	7829	7464	7648	7812	7611	7749	7548	7679	7789
Non-Conventional Oils ⁵	1670	1711	1763	1626	1668	1825	1816	1690	1675	1600	1799
Total	28277	29390	30757	28911	29596	30244	30295	30497	29579	29566	29993

¹ Subcategories refer to crude oil only unless otherwise noted.

² Only production from Federal waters is included.

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

⁴ 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.

⁵ Does not include biofuels.

Table 3b
WORLD OIL PRODUCTION (Including OPEC+ based on current agreement¹)
(million barrels per day)

	2021	2022	2023	1Q22	2Q22	3Q22	4Q22	1Q23	Aug 22	Sep 22	Oct 22
OPEC+											
Crude Oil											
Algeria	0.91	1.01	1.00	0.99	1.01	1.02	1.02	1.00	1.02	1.03	1.04
Angola	1.12	1.14	1.10	1.16	1.17	1.15	1.08	1.13	1.17	1.09	1.05
Azerbaijan	0.59	0.56	0.54	0.58	0.56	0.55	0.55	0.55	0.55	0.54	0.55
Bahrain	0.17	0.19	0.19	0.18	0.19	0.20	0.20	0.20	0.20	0.20	0.20
Brunei	0.08	0.07	0.08	0.08	0.07	0.07	0.06	0.08	0.08	0.06	0.05
Congo	0.27	0.26	0.27	0.27	0.26	0.26	0.26	0.27	0.26	0.27	0.25
Equatorial Guinea	0.10	0.09	0.10	0.09	0.09	0.09	0.08	0.10	0.09	0.08	0.07
Gabon	0.18	0.19	0.18	0.19	0.18	0.20	0.19	0.18	0.21	0.20	0.22
Iran	2.42	2.51	2.51	2.55	2.47	2.52	2.51	2.51	2.57	2.49	2.51
Iraq	4.03	4.44	4.43	4.29	4.45	4.54	4.49	4.43	4.54	4.55	4.60
Kazakhstan	1.52	1.49	1.61	1.63	1.43	1.35	1.57	1.63	1.25	1.36	1.46
Kuwait	2.42	2.70	2.68	2.61	2.67	2.80	2.72	2.68	2.80	2.82	2.80
Libya	1.15	1.00	1.18	1.08	0.77	0.96	1.18	1.18	1.08	1.16	1.18
Malaysia	0.42	0.40	0.40	0.41	0.39	0.38	0.40	0.40	0.39	0.40	0.40
Mexico	1.66	1.63	1.67	1.64	1.62	1.62	1.66	1.68	1.63	1.62	1.64
Nigeria	1.31	1.14	1.17	1.30	1.15	1.01	1.08	1.18	0.98	0.96	1.01
Oman	0.75	0.85	0.84	0.82	0.84	0.88	0.85	0.84	0.88	0.88	0.88
Russia	9.62	9.70	8.24	10.04	9.40	9.78	9.57	8.50	9.77	9.74	9.72
Saudi Arabia	9.15	10.56	10.48	10.20	10.49	10.93	10.62	10.48	10.96	11.03	10.90
South Sudan	0.15	0.14	0.12	0.14	0.14	0.15	0.14	0.12	0.15	0.16	0.17
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	3.28	3.24	3.09	3.29	3.41	3.31	3.24	3.41	3.48	3.46
Venezuela	0.61	0.72	0.75	0.72	0.74	0.66	0.74	0.75	0.69	0.67	0.71
Total Crude Oil	41.47	44.12	42.83	44.11	43.45	44.57	44.33	43.19	44.73	44.85	44.92
<i>of which Neutral Zone</i>	<i>0.25</i>			<i>0.27</i>	<i>0.28</i>				<i>0.32</i>	<i>0.32</i>	<i>0.32</i>
Total NGLs	7.50	7.89	8.09	7.87	7.88	7.85	7.96	8.06	7.80	7.80	7.86
TOTAL OPEC+	48.97	52.0	50.9	52.0	51.3	52.4	52.3	51.2	52.5	52.7	52.8
NON-OPEC+											
OECD											
Americas²	22.43	23.74	24.85	22.99	23.39	24.08	24.48	24.39	24.05	24.12	24.38
United States	16.83	17.96	18.99	17.25	17.80	18.22	18.56	18.57	18.21	18.22	18.46
Canada	5.59	5.77	5.86	5.73	5.58	5.85	5.91	5.81	5.83	5.89	5.91
Chile	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Europe	3.38	3.17	3.39	3.31	3.02	3.09	3.25	3.37	3.11	2.98	3.13
UK	0.89	0.82	0.78	0.92	0.86	0.75	0.76	0.80	0.67	0.67	0.74
Norway	2.04	1.92	2.19	1.97	1.74	1.92	2.06	2.15	2.01	1.89	1.97
Others	0.45	0.42	0.42	0.42	0.42	0.42	0.43	0.43	0.43	0.42	0.43
Asia Oceania	0.51	0.48	0.45	0.49	0.51	0.42	0.48	0.46	0.42	0.47	0.46
Australia	0.44	0.41	0.39	0.42	0.45	0.36	0.41	0.40	0.35	0.40	0.39
Others	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
Total OECD (non-OPEC+)	26.32	27.38	28.70	26.79	26.92	27.60	28.21	28.23	27.58	27.57	27.97
Non-OECD											
FSU	0.35	0.32	0.31	0.34	0.30	0.31	0.31	0.32	0.31	0.31	0.31
Asia	6.24	6.22	6.16	6.32	6.30	6.16	6.11	6.24	6.09	6.23	6.14
China	4.06	4.17	4.20	4.23	4.23	4.12	4.10	4.26	4.08	4.18	4.12
India	0.73	0.70	0.69	0.72	0.71	0.70	0.69	0.68	0.67	0.72	0.69
Indonesia	0.68	0.63	0.60	0.65	0.63	0.63	0.62	0.61	0.63	0.63	0.62
Others	0.77	0.71	0.66	0.73	0.72	0.71	0.70	0.68	0.71	0.71	0.70
Europe	0.11	0.11	0.10	0.11	0.11	0.10	0.10	0.10	0.10	0.10	0.10
Americas	5.30	5.62	6.01	5.43	5.48	5.74	5.82	5.88	5.75	5.84	5.80
Brazil	3.00	3.11	3.41	3.09	3.00	3.16	3.21	3.28	3.17	3.24	3.20
Argentina	0.64	0.71	0.75	0.69	0.70	0.72	0.73	0.74	0.71	0.72	0.72
Colombia	0.74	0.76	0.75	0.75	0.76	0.76	0.77	0.76	0.76	0.77	0.77
Ecuador	0.48	0.47	0.45	0.47	0.45	0.47	0.47	0.46	0.47	0.47	0.47
Others	0.43	0.57	0.64	0.43	0.56	0.64	0.64	0.64	0.63	0.63	0.63
Middle East	1.92	1.94	1.96	1.92	1.95	1.94	1.94	1.96	1.94	1.94	1.94
Qatar	1.82	1.84	1.87	1.82	1.85	1.85	1.85	1.87	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	0.10
Africa	1.12	1.11	1.10	1.10	1.11	1.11	1.11	1.10	1.12	1.07	1.11
Egypt	0.59	0.60	0.60	0.59	0.61	0.60	0.60	0.60	0.61	0.61	0.60
Others	0.53	0.50	0.50	0.51	0.50	0.50	0.51	0.50	0.52	0.46	0.51
Total non-OECD (non-OPEC+)	15.04	15.30	15.65	15.23	15.23	15.36	15.40	15.61	15.32	15.49	15.40
Processing gains	2.25	2.31	2.36	2.28	2.29	2.32	2.34	2.32	2.33	2.32	2.30
Global biofuels	2.75	2.92	3.04	2.44	3.01	3.28	2.95	2.55	3.26	3.22	3.21
TOTAL NON-OPEC+	46.37	47.92	49.74	46.74	47.45	48.55	48.90	48.70	48.50	48.60	48.88
TOTAL SUPPLY	95.34	99.93	100.66	98.72	98.78	100.97	101.20	99.95	101.03	101.25	101.66

¹ From Nov 2022, OPEC+ supply reflects latest OPEC+ deal and individual country's sustainable capacity. Libya, Iran, Venezuela held at most recent level through 2023.

² Excludes Mexico.

Table 4
OECD STOCKS AND QUARTERLY STOCK CHANGES

	RECENT MONTHLY STOCKS ² in Million Barrels					PRIOR YEARS' STOCKS ² in Million Barrels			STOCK CHANGES in mb/d			
	May2022	Jun2022	Jul2022	Aug2022	Sep2022 ³	Sep2019	Sep2020	Sep2021	4Q2021	1Q2022	2Q2022	3Q2022
OECD INDUSTRY-CONTROLLED STOCKS¹												
OECD Americas												
Crude	569.9	570.8	576.5	567.8	572.5	570.7	652.9	587.6	0.01	-0.23	0.03	0.02
Motor Gasoline	245.3	246.4	251.9	242.5	235.5	259.0	257.0	252.8	0.07	0.08	-0.22	-0.12
Middle Distillate	177.8	178.7	181.0	180.2	176.2	206.2	241.3	203.9	-0.09	-0.20	0.01	-0.03
Residual Fuel Oil	36.8	35.7	35.0	35.1	36.4	35.9	38.5	34.3	-0.02	0.03	0.01	0.01
Total Products ⁴	695.3	703.1	729.9	735.1	734.2	818.0	862.7	772.8	-0.46	-0.48	0.23	0.34
Total⁵	1428.9	1436.2	1470.2	1465.2	1463.9	1554.8	1690.5	1523.4	-0.58	-0.64	0.32	0.30
OECD Europe												
Crude	338.3	340.0	338.3	328.8	322.7	355.4	377.8	306.2	-0.03	0.23	0.18	-0.19
Motor Gasoline	90.5	86.1	86.7	88.0	86.0	85.9	90.0	80.4	0.06	0.06	-0.06	0.00
Middle Distillate	243.0	238.3	243.7	242.6	237.3	279.7	334.3	271.9	-0.31	-0.05	-0.01	-0.01
Residual Fuel Oil	66.2	64.5	63.6	61.1	62.4	65.6	68.6	63.4	-0.04	0.04	0.02	-0.02
Total Products ⁴	507.1	497.8	504.8	504.0	493.7	548.7	612.5	513.1	-0.31	0.06	0.09	-0.04
Total⁵	920.0	911.5	920.1	909.4	894.2	988.1	1078.8	891.1	-0.37	0.36	0.24	-0.19
OECD Asia Oceania												
Crude	107.1	94.2	104.9	119.2	122.4	142.3	163.3	109.4	-0.11	0.07	-0.12	0.31
Motor Gasoline	25.5	25.7	23.9	23.5	24.0	26.9	26.8	26.7	-0.03	0.02	0.00	-0.02
Middle Distillate	56.3	61.3	63.6	61.3	62.3	79.4	72.0	72.1	-0.09	-0.09	0.06	0.01
Residual Fuel Oil	17.3	16.1	15.7	15.4	16.4	21.0	17.2	18.7	-0.02	-0.02	0.01	0.00
Total Products ⁴	159.3	165.5	167.4	164.2	167.2	194.1	183.4	184.1	-0.23	-0.05	0.08	0.02
Total⁵	327.3	317.9	329.7	343.7	352.2	400.8	411.3	355.2	-0.34	-0.09	0.02	0.37
Total OECD												
Crude	1015.3	1005.0	1019.7	1015.7	1017.6	1068.4	1194.0	1003.3	-0.13	0.07	0.09	0.14
Motor Gasoline	361.3	358.2	362.5	353.9	345.5	371.8	373.7	359.9	0.10	0.16	-0.28	-0.14
Middle Distillate	477.0	478.3	488.3	484.1	475.7	565.4	647.6	547.9	-0.49	-0.33	0.06	-0.03
Residual Fuel Oil	120.3	116.3	114.2	111.6	115.2	122.5	124.3	116.3	-0.08	0.05	0.04	-0.01
Total Products ⁴	1361.8	1366.5	1402.1	1403.2	1395.0	1560.8	1658.6	1470.0	-1.00	-0.47	0.40	0.31
Total⁵	2676.2	2665.6	2720.0	2718.3	2710.3	2943.8	3180.6	2769.8	-1.29	-0.37	0.58	0.49
OECD GOVERNMENT-CONTROLLED STOCKS⁶												
OECD Americas												
Crude	523.1	493.3	468.0	445.1	416.8	644.8	642.2	617.8	-0.26	-0.31	-0.80	-0.83
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
OECD Europe												
Crude	196.0	195.0	194.6	195.1	194.0	206.3	207.4	205.3	-0.05	-0.02	-0.04	-0.01
Products	259.5	255.8	255.4	254.3	254.1	274.3	280.5	277.6	-0.01	-0.09	-0.13	-0.02
OECD Asia Oceania												
Crude	361.0	358.1	357.2	350.1	342.3	377.0	377.6	369.5	0.01	-0.03	-0.11	-0.17
Products	37.9	37.3	37.3	37.3	37.3	38.9	39.4	38.8	0.00	-0.01	-0.01	0.00
Total OECD												
Crude	1080.1	1046.4	1019.7	990.3	953.1	1228.0	1227.1	1192.5	-0.31	-0.35	-0.94	-1.01
Products	299.4	295.1	294.7	293.6	293.4	315.2	321.9	318.5	-0.01	-0.11	-0.14	-0.02
Total⁵	1381.1	1343.1	1315.5	1285.0	1247.6	1544.5	1551.3	1512.7	-0.31	-0.46	-1.08	-1.04

¹ Stocks are primary national territory stocks on land (excluding utility stocks and including pipeline and entrepot 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.

² Closing stock levels.

³ Estimated.

⁴ Total products includes gasoline, middle distillates, fuel oil and other products.

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

⁶ Includes government-owned stocks and stock holding organisation stocks held for emergency purposes.

Table 4a
INDUSTRY STOCKS¹ ON LAND IN SELECTED COUNTRIES

(million barrels)

	April			May			June			July			August		
	2021	2022	%	2021	2022	%	2021	2022	%	2021	2022	%	2021	2022	%
United States²															
Crude	489.2	419.1	-14.3	477.0	414.3	-13.1	448.1	417.5	-6.8	438.7	424.2	-3.3	421.5	419.7	-0.4
Motor Gasoline	238.6	230.1	-3.6	240.2	220.7	-8.1	237.3	221.0	-6.9	230.8	225.6	-2.3	225.6	215.6	-4.4
Middle Distillate	179.3	145.3	-19.0	184.7	152.0	-17.7	186.5	151.6	-18.7	187.7	154.8	-17.5	182.2	152.7	-16.2
Residual Fuel Oil	31.9	29.4	-7.8	32.0	29.2	-8.8	31.5	29.2	-7.3	29.4	29.1	-1.0	29.8	28.6	-4.0
Other Products	218.9	191.5	-12.5	229.7	212.5	-7.5	235.4	219.5	-6.8	248.9	238.6	-4.1	256.5	254.6	-0.7
Total Products	668.7	596.3	-10.8	686.6	614.4	-10.5	690.7	621.3	-10.0	696.8	648.1	-7.0	694.1	651.5	-6.1
Other ³	140.9	138.1	-2.0	140.3	143.8	2.5	142.5	140.9	-1.1	142.6	143.1	0.4	134.6	141.2	4.9
Total	1298.8	1153.5	-11.2	1303.9	1172.5	-10.1	1281.3	1179.7	-7.9	1278.1	1215.4	-4.9	1250.2	1212.4	-3.0
Japan															
Crude	69.8	80.3	15.0	78.4	74.9	-4.5	76.0	67.0	-11.8	70.5	66.7	-5.4	73.9	76.2	3.1
Motor Gasoline	12.9	10.3	-20.2	14.9	10.3	-30.9	14.3	9.9	-30.8	9.9	8.8	-11.1	9.9	9.6	-3.0
Middle Distillate	29.2	24.7	-15.4	32.2	26.6	-17.4	31.5	26.6	-15.6	30.8	28.8	-6.5	34.4	30.9	-10.2
Residual Fuel Oil	7.2	6.2	-13.9	7.6	6.8	-10.5	7.0	6.7	-4.3	7.1	6.2	-12.7	7.3	6.8	-6.8
Other Products	31.9	33.1	3.8	33.1	34.8	5.1	31.9	34.8	9.1	31.7	35.8	12.9	36.3	36.9	1.7
Total Products	81.2	74.3	-8.5	87.8	78.5	-10.6	84.7	78.0	-7.9	79.5	79.6	0.1	87.9	84.2	-4.2
Other ³	49.7	47.3	-4.8	51.0	49.9	-2.2	51.3	47.8	-6.8	51.1	47.1	-7.8	52.9	49.2	-7.0
Total	200.7	201.9	0.6	217.2	203.3	-6.4	212.0	192.8	-9.1	201.1	193.4	-3.8	214.7	209.6	-2.4
Germany															
Crude	49.0	48.9	-0.2	46.7	50.8	8.8	48.7	49.6	1.8	50.6	48.4	-4.3	47.8	48.2	0.8
Motor Gasoline	10.2	11.6	13.7	11.3	11.9	5.3	9.4	10.1	7.4	9.1	10.1	11.0	9.5	9.9	4.2
Middle Distillate	24.1	27.1	12.4	26.7	26.0	-2.6	24.1	25.1	4.1	25.4	22.6	-11.0	25.1	24.5	-2.4
Residual Fuel Oil	7.8	7.8	0.0	7.9	8.0	1.3	7.9	8.5	7.6	7.9	7.8	-1.3	8.1	8.3	2.5
Other Products	10.0	10.6	6.0	10.3	10.0	-2.9	9.9	9.9	0.0	10.1	10.2	1.0	10.5	10.8	2.9
Total Products	52.1	57.1	9.6	56.2	55.9	-0.5	51.3	53.6	4.5	52.5	50.7	-3.4	53.2	53.5	0.6
Other ³	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
Total	101.1	106.0	4.8	102.9	106.7	3.7	100.0	103.2	3.2	103.1	99.1	-3.9	101.0	101.7	0.7
Italy															
Crude	38.6	34.1	-11.7	42.9	36.4	-15.2	42.7	38.2	-10.5	36.0	34.3	-4.7	32.9	36.3	10.3
Motor Gasoline	12.6	10.5	-16.7	12.1	11.6	-4.1	10.4	10.2	-1.9	9.4	10.0	6.4	9.3	10.2	9.7
Middle Distillate	28.8	22.6	-21.5	30.0	22.5	-25.0	29.4	21.2	-27.9	22.6	22.6	0.0	26.6	21.7	-18.4
Residual Fuel Oil	7.4	8.7	17.6	7.3	8.3	13.7	7.5	7.8	4.0	7.0	7.2	2.9	7.5	7.0	-6.7
Other Products	11.1	11.4	2.7	10.9	11.8	8.3	10.8	11.5	6.5	10.8	11.6	7.4	11.5	10.7	-7.0
Total Products	59.9	53.2	-11.2	60.3	54.2	-10.1	58.1	50.7	-12.7	49.8	51.4	3.2	54.9	49.6	-9.7
Other ³	15.3	14.6	-4.6	15.6	13.8	-11.5	15.0	14.9	-0.7	13.9	14.6	5.0	14.3	14.6	2.1
Total	113.8	101.9	-10.5	118.8	104.4	-12.1	115.8	103.8	-10.4	99.7	100.3	0.6	102.1	100.5	-1.6
France															
Crude	12.8	10.2	-20.3	12.4	11.9	-4.0	13.0	13.5	3.8	13.6	12.0	-11.8	13.4	11.5	-14.2
Motor Gasoline	4.8	4.9	2.1	4.9	4.5	-8.2	3.6	4.4	22.2	3.8	5.6	47.4	4.2	5.4	28.6
Middle Distillate	21.9	19.3	-11.9	23.1	19.7	-14.7	22.9	17.2	-24.9	21.6	19.5	-9.7	21.3	21.8	2.3
Residual Fuel Oil	1.8	1.1	-38.9	1.9	1.5	-21.1	1.7	2.1	23.5	2.0	2.6	30.0	1.7	3.0	76.5
Other Products	3.4	3.8	11.8	3.7	3.5	-5.4	3.2	3.6	12.5	3.3	3.7	12.1	3.1	3.7	19.4
Total Products	31.9	29.1	-8.8	33.6	29.2	-13.1	31.4	27.3	-13.1	30.7	31.4	2.3	30.3	33.9	11.9
Other ³	7.9	7.6	-3.8	7.8	8.2	5.1	8.4	7.7	-8.3	7.6	7.0	-7.9	7.0	7.1	1.4
Total	52.6	46.9	-10.8	53.8	49.3	-8.4	52.8	48.5	-8.1	51.9	50.4	-2.9	50.7	52.5	3.6
United Kingdom															
Crude	24.8	26.3	6.0	29.3	23.9	-18.4	26.5	23.6	-10.9	26.8	27.4	2.2	24.0	25.9	7.9
Motor Gasoline	8.9	9.9	11.2	9.6	9.7	1.0	9.0	9.4	4.4	9.4	9.0	-4.3	9.3	9.2	-1.1
Middle Distillate	25.4	19.8	-22.0	25.6	19.3	-24.6	24.2	18.9	-21.9	24.5	20.0	-18.4	23.7	18.6	-21.5
Residual Fuel Oil	1.3	1.7	30.8	1.5	1.7	13.3	1.3	1.3	0.0	1.5	1.2	-20.0	1.2	1.5	25.0
Other Products	6.3	6.8	7.9	6.6	6.8	3.0	6.4	6.8	6.2	6.3	6.9	9.5	6.9	6.7	-2.9
Total Products	41.9	38.2	-8.8	43.3	37.5	-13.4	40.9	36.4	-11.0	41.7	37.1	-11.0	41.1	36.0	-12.4
Other ³	7.9	7.5	-5.1	8.1	6.8	-16.0	8.8	7.2	-18.2	8.8	7.8	-11.4	8.2	7.4	-9.8
Total	74.6	72.0	-3.5	80.7	68.2	-15.5	76.2	67.2	-11.8	77.3	72.3	-6.5	73.3	69.3	-5.5
Canada⁴															
Crude	129.4	122.6	-5.3	128.0	121.3	-5.2	130.5	120.0	-8.0	133.7	118.6	-11.3	132.2	114.4	-13.5
Motor Gasoline	16.7	15.3	-8.4	15.4	13.4	-13.0	14.7	13.7	-6.8	14.8	14.6	-1.4	13.9	14.7	5.8
Middle Distillate	20.1	18.2	-9.5	17.7	17.3	-2.3	18.5	17.1	-7.6	19.8	17.4	-12.1	20.2	17.5	-13.4
Residual Fuel Oil	2.2	1.9	-13.6	3.2	2.7	-15.6	2.5	2.1	-16.0	2.8	1.9	-32.1	2.0	2.3	15.0
Other Products	11.7	13.9	18.8	12.3	13.8	12.2	12.1	13.7	13.2	12.0	13.5	12.5	12.0	13.6	13.3
Total Products	50.7	49.3	-2.8	48.6	47.2	-2.9	47.8	46.6	-2.5	49.4	47.4	-4.0	48.1	48.1	0.0
Other ³	19.0	17.1	-10.0	21.8	19.6	-10.1	23.2	21.2	-8.6	25.7	20.7	-19.5	26.7	21.1	-21.0
Total	199.1	189.0	-5.1	198.4	188.1	-5.2	201.5	187.8	-6.8	208.8	186.7	-10.6	207.0	183.6	-11.3

¹ Stocks are primary national territory stocks on land (excluding utility stocks and including pipeline and entrepot 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.

² US figures exclude US territories.

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

⁴ 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 COUNTRIES¹
 ("millions of barrels" and "days")

	End September 2021		End December 2021		End March 2022		End June 2022		End September 2022 ³	
	Stock Level	Days Fwd ² Demand	Stock Level	Days Fwd Demand	Stock Level	Days Fwd Demand	Stock Level	Days Fwd Demand	Stock Level	Days Fwd Demand
OECD Americas										
Canada	204.1	87	201.7	90	185.7	84	187.9	-	-	-
Chile	10.3	27	10.8	28	10.3	27	9.9	-	-	-
Mexico	36.0	22	36.7	22	35.7	20	36.6	-	-	-
United States ⁴	1870.7	91	1794.3	89	1721.7	85	1675.0	-	-	-
Total⁴	2143.2	86	2065.6	84	1975.5	80	1931.5	76	1882.7	75
OECD Asia Oceania										
Australia	40.9	39	37.6	36	40.0	37	38.3	-	-	-
Israel	-	-	-	-	-	-	-	-	-	-
Japan	525.1	144	519.4	140	500.5	165	502.8	-	-	-
Korea	189.3	70	168.8	62	174.6	70	165.9	-	-	-
New Zealand	8.3	53	6.8	44	6.2	43	6.2	-	-	-
Total	763.5	98	732.6	93	721.4	103	713.3	99	731.9	94
OECD Europe⁵										
Austria	21.1	81	20.9	85	24.1	98	20.0	-	-	-
Belgium	47.1	71	43.3	68	42.9	74	44.8	-	-	-
Czech Republic	21.7	97	22.5	107	22.2	100	22.3	-	-	-
Denmark	24.3	163	22.7	161	20.4	136	21.8	-	-	-
Estonia	2.7	90	2.5	90	2.6	77	2.3	-	-	-
Finland	37.3	192	36.2	189	38.4	209	41.0	-	-	-
France	157.3	97	151.6	98	148.8	99	144.6	-	-	-
Germany	270.1	116	268.9	127	268.9	125	267.8	-	-	-
Greece	26.4	90	29.4	107	29.2	104	29.8	-	-	-
Hungary	25.9	134	27.0	143	28.0	152	29.2	-	-	-
Ireland	10.6	67	10.8	70	10.6	72	10.3	-	-	-
Italy	118.0	94	112.5	96	116.3	94	119.3	-	-	-
Latvia	2.7	75	2.6	76	2.8	79	2.8	-	-	-
Lithuania	9.1	132	8.2	137	9.8	161	8.4	-	-	-
Luxembourg	0.5	9	0.6	11	0.5	11	0.7	-	-	-
Netherlands	125.8	151	109.5	130	123.9	139	127.1	-	-	-
Norway	20.2	85	21.4	112	26.3	171	25.5	-	-	-
Poland	78.1	104	80.6	112	82.8	113	82.4	-	-	-
Portugal	19.0	83	20.9	89	21.3	84	22.5	-	-	-
Slovak Republic	12.2	127	12.2	134	12.8	135	13.2	-	-	-
Slovenia	4.9	99	5.2	108	4.6	86	4.8	-	-	-
Spain	111.6	89	104.9	84	106.6	81	107.9	-	-	-
Sweden	38.3	120	30.1	99	28.2	104	30.2	-	-	-
Switzerland	33.4	156	31.5	168	30.2	173	29.9	-	-	-
Republic of Türkiye	85.6	82	87.4	96	87.6	86	87.8	-	-	-
United Kingdom	71.6	53	72.8	55	68.6	49	67.3	-	-	-
Total	1375.7	99	1336.2	102	1358.3	101	1363.9	97	1343.3	96
Total OECD	4282.4	92	4134.4	91	4055.2	90	4008.7	86	3957.9	85
DAYS OF IEA Net Imports⁶ -		160	-	156	-	156	-	243	-	-

1 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.

2 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.

3 End September 2022 forward demand figures are IEA Secretariat forecasts.

4 US figures exclude US territories. Total includes US territories.

5 Data not available for Iceland.

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

TOTAL OECD STOCKS

CLOSING STOCKS	Total	Government ¹ controlled Millions of Barrels	Industry	Total	Government ¹ controlled Days of Fwd. Demand ²	Industry
3Q2019	4488	1544	2944	94	32	62
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	3036	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	91	32	58
1Q2022	4055	1442	2613	90	32	58
2Q2022	4009	1343	2666	86	29	57
3Q2022	3958	1248	2710	85	27	58

1 Includes government-owned stocks and stock holding organisation stocks held for emergency purposes.

2 Days of forward demand calculated using actual demand except in 3Q2022 (where latest forecasts are used).

Table 6
IEA MEMBER COUNTRY DESTINATIONS OF SELECTED CRUDE STREAMS¹
(million barrels per day)

											Year Earlier	
	2019	2020	2021	3Q21	4Q21	1Q22	2Q22	Jun 22	Jul 22	Aug 22	Aug 21	change
Saudi Light & Extra Light												
Americas	0.20	0.26	0.34	0.45	0.43	0.44	0.46	0.50	0.38	0.68	0.40	0.29
Europe	0.68	0.59	0.48	0.55	0.55	0.53	0.68	0.65	0.57	0.67	0.61	0.07
Asia Oceania	1.42	1.39	1.30	1.18	1.48	1.57	1.36	1.17	1.44	1.74	1.35	0.38
Saudi Medium												
Americas	0.12	0.14	0.01	-	-	-	-	-	-	-	-	-
Europe	0.02	0.02	0.01	0.02	-	0.00	0.04	0.12	0.05	0.02	0.03	-0.01
Asia Oceania	0.23	0.25	0.21	0.19	0.26	0.20	0.26	0.26	0.24	0.33	0.18	0.15
Canada Heavy												
Americas	2.27	2.39	2.59	2.47	2.82	2.69	2.54	2.48	2.66	2.32	2.46	-0.14
Europe	0.04	0.03	0.03	0.04	0.03	0.03	0.09	0.08	0.12	0.03	0.04	-0.01
Asia Oceania	0.00	0.00	0.02	0.01	0.00	0.01	0.01	-	-	-	0.01	-
Iraqi Basrah Light²												
Americas	0.31	0.11	0.08	0.04	0.17	0.16	0.30	0.31	0.27	0.16	-	-
Europe	0.85	0.58	0.62	0.60	0.71	0.61	0.64	0.60	0.84	0.68	0.63	0.05
Asia Oceania	0.37	0.22	0.17	0.16	0.19	0.17	0.20	0.23	0.27	0.22	0.16	0.06
Kuwait Blend												
Americas	-	-	-	-	-	-	-	-	-	-	-	-
Europe	0.11	0.04	-	-	-	-	-	-	-	-	-	-
Asia Oceania	0.61	0.55	0.48	0.47	0.52	0.58	0.42	0.38	0.52	0.50	0.43	0.07
Iranian Light												
Americas	-	-	-	-	-	-	-	-	-	-	-	-
Europe	0.00	-	-	-	-	-	-	-	-	-	-	-
Asia Oceania	0.00	-	-	-	-	-	-	-	-	-	-	-
Iranian Heavy³												
Americas	-	-	-	-	-	-	-	-	-	-	-	-
Europe	0.04	-	-	-	-	-	-	-	-	-	-	-
Asia Oceania	0.14	-	-	-	-	-	-	-	-	-	-	-
BFOE												
Americas	0.00	-	0.00	0.01	-	-	-	-	-	-	-	-
Europe	0.37	0.42	0.36	0.36	0.40	0.38	0.44	0.36	0.60	0.30	0.39	-0.09
Asia Oceania	0.01	0.03	0.05	-	0.05	0.02	0.06	0.04	-	-	-	-
Kazakhstan												
Americas	-	-	0.01	-	-	-	-	-	-	-	-	-
Europe	0.76	0.74	0.69	0.64	0.68	0.86	0.69	0.69	0.76	0.65	0.65	-0.01
Asia Oceania	0.18	0.07	0.09	0.10	0.10	0.14	0.16	0.21	0.10	0.13	0.10	0.03
Venezuelan 22 API and heavier												
Americas	0.05	-	-	-	-	-	-	-	-	-	-	-
Europe	0.09	0.04	-	-	-	-	-	-	0.11	-	-	-
Asia Oceania	-	-	-	-	-	-	-	-	-	-	-	-
Mexican Maya												
Americas	0.51	0.48	0.40	0.45	0.32	0.36	0.47	0.45	0.40	0.39	0.48	-0.09
Europe	0.19	0.16	0.14	0.13	0.12	0.11	0.07	0.07	0.10	0.10	0.13	-0.03
Asia Oceania	0.13	0.12	0.14	0.14	0.13	0.08	0.05	0.07	0.05	0.03	0.13	-0.10
Russian Urals												
Americas	0.01	-	-	-	-	-	-	-	-	-	-	-
Europe	1.37	1.12	1.05	1.08	1.15	1.08	0.79	0.79	0.71	0.65	1.15	-0.50
Asia Oceania	-	-	0.01	0.03	-	-	-	-	-	-	-	-
Cabinda and Other Angola												
North America	0.01	0.01	-	-	-	-	-	-	-	0.01	-	-
Europe	0.15	0.12	0.03	0.03	0.04	0.06	0.26	0.41	0.36	0.28	0.06	0.22
Pacific	0.00	-	-	-	-	-	-	-	-	-	-	-
Nigerian Light⁴												
Americas	0.03	-	0.02	0.03	-	-	-	-	-	0.03	0.03	0.00
Europe	0.51	0.49	0.41	0.40	0.52	0.47	0.43	0.45	0.35	0.24	0.41	-0.17
Asia Oceania	0.02	0.02	0.01	-	0.01	-	-	-	-	0.03	-	-
Libya Light and Medium												
Americas	0.00	-	0.02	0.06	-	-	-	-	-	-	0.09	-
Europe	0.67	0.19	0.80	0.87	0.78	0.66	0.56	0.39	0.25	0.55	0.72	-0.17
Asia Oceania	0.03	0.01	0.02	0.01	0.03	0.02	0.02	-	-	-	0.01	-

¹ 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.

² Iraqi Total minus Kirkuk.

³ Iranian Total minus Iranian Light.

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

Table 7
REGIONAL OECD IMPORTS^{1,2}
(thousand barrels per day)

	2019	2020	2021	3Q21	4Q21	1Q22	2Q22	Jun 22	Jul 22	Aug 22	Year Earlier	
											Aug 21	% change
Crude Oil												
Americas	2722	1896	2077	2368	2128	2096	2075	2205	2338	2134	2307	-7%
Europe	9872	8349	8516	8748	9137	8888	9196	9339	9537	8923	8888	0%
Asia Oceania	6541	5579	5519	5419	5876	6101	5363	4881	6120	6446	5799	11%
Total OECD	19136	15823	16113	16535	17141	17086	16633	16424	17995	17503	16994	3%
LPG												
Americas	26	28	21	22	25	39	21	24	20	26	16	62%
Europe	434	422	404	378	424	470	503	513	530	479	325	47%
Asia Oceania	583	559	563	528	528	681	569	535	509	570	504	13%
Total OECD	1042	1009	988	928	977	1189	1093	1073	1059	1075	844	27%
Naphtha												
Americas	5	7	8	11	8	6	6	6	8	6	6	-5%
Europe	347	409	512	445	563	399	405	232	309	211	395	-47%
Asia Oceania	990	1003	1146	1226	1199	1078	971	1010	1130	1071	1263	-15%
Total OECD	1342	1419	1667	1682	1770	1482	1382	1248	1447	1288	1664	-23%
Gasoline³												
Americas	812	576	805	973	574	485	890	1003	776	749	939	-20%
Europe	112	109	106	75	89	102	125	99	111	111	77	45%
Asia Oceania	110	116	146	125	129	157	175	222	135	167	154	8%
Total OECD	1034	801	1057	1172	793	745	1190	1324	1022	1027	1169	-12%
Jet & Kerosene												
Americas	174	159	165	207	179	120	123	141	161	96	219	-56%
Europe	520	337	334	349	411	306	429	428	529	511	325	57%
Asia Oceania	72	60	71	39	82	71	76	97	69	66	26	158%
Total OECD	766	556	570	596	673	497	629	666	759	673	569	18%
Gasoil/Diesel												
Americas	118	134	197	154	222	158	76	75	49	49	150	-67%
Europe	1300	1192	1192	1173	1262	1093	1145	1099	1048	1170	1201	-3%
Asia Oceania	261	328	352	344	377	299	352	384	294	305	346	-12%
Total OECD	1679	1654	1740	1670	1862	1551	1572	1557	1391	1525	1697	-10%
Heavy Fuel Oil												
Americas	116	143	102	91	104	139	135	165	59	102	120	-15%
Europe	223	295	374	435	375	302	253	230	250	221	405	-45%
Asia Oceania	101	88	119	121	129	117	96	124	48	84	112	-25%
Total OECD	440	526	594	648	607	559	484	519	357	407	637	-36%
Other Products												
Americas	714	591	580	607	509	496	534	479	603	475	632	-25%
Europe	865	574	575	585	689	667	557	514	693	505	611	-17%
Asia Oceania	261	207	233	239	241	221	182	206	179	209	179	16%
Total OECD	1840	1372	1389	1431	1440	1384	1274	1199	1476	1189	1422	-16%
Total Products												
Americas	1965	1639	1878	2064	1621	1443	1786	1891	1676	1503	2081	-28%
Europe	3800	3339	3497	3441	3814	3339	3417	3116	3470	3208	3338	-4%
Asia Oceania	2378	2360	2630	2623	2686	2624	2420	2578	2365	2473	2584	-4%
Total OECD	8144	7338	8005	8127	8121	7407	7623	7585	7511	7184	8003	-10%
Total Oil												
Americas	4688	3534	3955	4432	3749	3540	3861	4096	4015	3636	4388	-17%
Europe	13672	11688	12013	12188	12951	12227	12613	12455	13007	12131	12226	-1%
Asia Oceania	8919	7939	8150	8041	8562	8725	7783	7458	8484	8919	8383	6%
Total OECD	27279	23161	24118	24662	25262	24492	24257	24010	25506	24687	24997	-1%

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#a>.

2 Excludes intra-regional trade.

3 Includes additives.

Table 7a
REGIONAL OECD IMPORTS FROM NON-OECD COUNTRIES^{1,2}
(thousand barrels per day)

	2019	2020	2021	3Q21	4Q21	1Q22	2Q22	Jun 22	Jul 22	Aug 22	Year Earlier	
											Aug 21	% change
Crude Oil												
Americas	2573	1835	1982	2276	2027	2033	2012	2132	2251	2089	2216	-6%
Europe	8913	7115	7264	7455	7832	7551	7681	7884	7887	7099	7609	-7%
Asia Oceania	5914	5051	4910	4772	5312	5480	4849	4347	5570	5878	5098	15%
Total OECD	17399	14002	14156	14504	15171	15063	14542	14363	15707	15066	14923	1%
LPG												
Americas	23	22	20	22	25	37	21	24	20	26	16	62%
Europe	303	252	242	245	251	253	249	231	216	230	263	-13%
Asia Oceania	74	58	47	35	33	90	53	47	42	81	22	262%
Total OECD	400	331	309	303	309	379	323	302	278	337	302	12%
Naphtha												
Americas	2	1	4	5	5	3	2	3	2	4	2	72%
Europe	320	390	425	337	485	338	332	229	308	210	252	-17%
Asia Oceania	895	832	975	1010	1073	942	929	978	1029	955	1106	-14%
Total OECD	1217	1223	1404	1352	1563	1283	1263	1211	1339	1168	1360	-14%
Gasoline³												
Americas	304	195	248	312	176	111	233	257	232	247	349	-29%
Europe	108	104	100	70	80	84	103	83	88	97	75	29%
Asia Oceania	84	98	141	125	129	157	174	222	135	167	154	8%
Total OECD	496	397	489	507	385	352	511	561	454	510	578	-12%
Jet & Kerosene												
Americas	41	55	63	65	93	43	33	37	33	17	75	-77%
Europe	464	297	298	309	362	303	381	347	489	440	282	56%
Asia Oceania	72	60	71	39	82	71	76	97	69	66	26	158%
Total OECD	576	413	433	414	538	416	489	481	592	524	383	37%
Gasoil/Diesel												
Americas	86	103	134	94	146	87	26	36	10	20	105	-81%
Europe	1126	1062	1109	1070	1186	1026	1062	1050	983	1043	1089	-4%
Asia Oceania	260	323	352	343	377	299	352	384	294	305	346	-12%
Total OECD	1472	1488	1595	1507	1709	1412	1439	1470	1288	1368	1540	-11%
Heavy Fuel Oil												
Americas	102	110	86	78	77	109	101	120	51	81	98	-17%
Europe	202	279	347	417	350	282	239	207	221	195	382	-49%
Asia Oceania	100	88	119	121	129	117	96	124	48	84	112	-25%
Total OECD	404	477	552	616	555	508	436	450	320	361	592	-39%
Other Products												
Americas	543	514	530	556	463	455	471	380	466	355	589	-40%
Europe	629	352	398	398	498	481	379	360	530	319	417	-24%
Asia Oceania	177	130	155	151	150	148	114	115	111	134	100	34%
Total OECD	1350	996	1083	1105	1111	1083	964	855	1107	808	1107	-27%
Total Products												
Americas	1102	1000	1085	1131	985	844	887	857	814	751	1234	-39%
Europe	3152	2735	2920	2847	3211	2767	2745	2507	2836	2533	2761	-8%
Asia Oceania	1662	1590	1860	1825	1974	1824	1792	1966	1728	1793	1866	-4%
Total OECD	5915	5325	5864	5803	6169	5434	5424	5330	5378	5076	5862	-13%
Total Oil												
Americas	3675	2835	3067	3407	3012	2876	2900	2989	3064	2840	3451	-18%
Europe	12064	9850	10183	10302	11043	10318	10425	10390	10723	9632	10370	-7%
Asia Oceania	7576	6641	6769	6597	7286	7304	6642	6314	7299	7670	6964	10%
Total OECD	23315	19327	20020	20307	21341	20498	19966	19693	21086	20142	20784	-3%

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#a>.

2 Excludes intra-regional trade.

3 Includes additives.

Table 7b
INTER-REGIONAL OECD TRANSFERS^{1,2}
(thousand barrels per day)

	2019	2020	2021	3Q21	4Q21	1Q22	2Q22	Jun 22	Jul 22	Aug 22	Year Earlier	
											Aug 21	% change
Crude Oil												
Americas	149	60	95	92	101	64	62	73	88	45	90	-50%
Europe	959	1234	1252	1293	1305	1338	1515	1455	1651	1824	1279	43%
Asia Oceania	628	527	610	646	563	621	514	533	549	569	701	-19%
Total OECD	1736	1821	1957	2031	1969	2022	2091	2061	2288	2437	2071	18%
LPG												
Americas	3	6	1	0	0	2	0	0	0	0	0	na
Europe	131	171	162	132	173	217	254	283	314	249	61	306%
Asia Oceania	508	501	516	493	495	591	517	488	467	489	481	2%
Total OECD	642	678	679	625	669	810	771	771	781	738	543	36%
Naphtha												
Americas	3	6	4	6	2	2	4	2	6	2	4	-50%
Europe	27	20	87	108	79	61	73	2	1	1	143	-99%
Asia Oceania	96	170	172	216	126	136	42	32	101	117	157	-26%
Total OECD	125	196	263	330	207	200	119	37	108	120	304	-61%
Gasoline³												
Americas	508	382	557	660	399	375	656	746	545	502	589	-15%
Europe	4	5	6	5	9	18	22	17	24	15	2	683%
Asia Oceania	26	18	5	0	0	0	0	0	0	0	0	-96%
Total OECD	538	404	567	665	408	393	679	763	568	517	591	-13%
Jet & Kerosene												
Americas	133	103	102	142	86	78	90	104	128	79	144	-45%
Europe	56	40	35	40	49	3	48	82	39	71	43	66%
Asia Oceania	0	0	0	0	0	0	1	0	0	0	0	na
Total OECD	190	144	138	182	135	81	139	185	167	150	187	-20%
Gasoil/Diesel												
Americas	31	31	63	60	76	71	50	39	39	29	45	-36%
Europe	174	131	82	103	77	67	83	49	64	128	112	14%
Asia Oceania	1	4	0	0	0	0	0	0	0	0	0	400%
Total OECD	206	166	146	163	153	138	133	88	103	156	157	0%
Heavy Fuel Oil												
Americas	14	33	16	13	27	31	34	45	8	20	22	-7%
Europe	21	16	26	19	25	20	14	24	29	26	22	14%
Asia Oceania	1	0	0	0	0	0	0	0	0	0	0	-100%
Total OECD	36	49	42	32	52	50	48	68	37	46	44	4%
Other Products												
Americas	171	78	50	51	47	41	64	99	137	120	43	177%
Europe	236	222	178	187	191	187	178	154	163	186	193	-4%
Asia Oceania	83	77	78	89	91	73	69	91	68	74	79	-6%
Total OECD	491	377	306	326	329	301	310	344	368	381	316	21%
Total Products												
Americas	864	639	793	933	636	600	899	1034	863	751	847	-11%
Europe	649	604	577	593	603	572	672	610	633	675	577	17%
Asia Oceania	716	770	771	798	713	801	628	612	636	680	718	-5%
Total OECD	2228	2013	2141	2324	1952	1973	2199	2255	2132	2107	2141	-2%
Total Oil												
Americas	1013	699	888	1025	737	663	961	1107	951	797	938	-15%
Europe	1608	1838	1829	1886	1908	1910	2188	2065	2284	2499	1856	35%
Asia Oceania	1343	1297	1381	1444	1276	1422	1141	1145	1186	1249	1419	-12%
Total OECD	3964	3834	4098	4355	3921	3995	4290	4317	4420	4545	4212	8%

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#a>.

2 Excludes intra-regional trade.

3 Includes additives.

Table 8
REGIONAL OECD CRUDE IMPORTS BY SOURCE¹
(thousand barrels per day)

	2019	2020	2021	3Q21	4Q21	1Q22	2Q22	Jun 22	Jul 22	Aug 22	Year Earlier	
											Aug 21	change
OECD Americas												
Venezuela	81	-	-	-	-	-	-	-	-	-	-	-
Other Central & South America	865	745	719	809	731	780	802	804	900	901	808	93
North Sea	148	59	92	92	101	64	62	73	65	45	90	-45
Other OECD Europe	2	1	3	-	-	-	-	-	-	-	-	-
Non-OECD Europe	-	-	-	-	-	-	-	-	-	-	-	-
Former Soviet Union	192	91	229	308	185	103	27	8	49	24	346	-321
Saudi Arabia	621	588	427	484	520	571	569	686	523	476	444	32
Kuwait	45	21	21	36	20	24	25	26	23	20	24	-4
Iran	-	-	3	-	-	6	-	-	-	-	-	-
Iraq	331	177	152	128	192	225	229	236	386	214	131	83
Oman	-	-	-	-	-	-	-	-	-	-	-	-
United Arab Emirates	3	5	17	44	22	10	19	-	32	24	31	-7
Other Middle East	-	-	-	-	-	-	-	-	-	-	-	-
West Africa ²	267	145	228	255	180	171	211	224	170	283	244	39
Other Africa	137	45	161	167	157	144	131	148	168	129	172	-43
Asia	32	17	25	46	22	-	-	-	23	18	16	1
Other	0	3	-	-	-	-	-	-	-	-	-	-
Total	2722	1896	2077	2368	2128	2096	2075	2205	2338	2134	2307	-173
of which Non-OECD	2573	1835	1982	2276	2027	2033	2012	2132	2251	2089	2216	-128
OECD Europe												
Canada	60	95	83	89	55	79	139	162	190	62	95	-33
Mexico + USA	900	1139	1169	1204	1250	1259	1376	1293	1461	1762	1184	578
Venezuela	106	44	-	-	-	-	-	-	103	-	-	-
Other Central & South America	118	208	219	263	194	217	402	710	667	394	358	36
Non-OECD Europe	14	25	23	28	23	20	12	13	5	15	23	-8
Former Soviet Union	4239	3504	3538	3525	3849	4060	3197	2932	3100	2783	3613	-830
Saudi Arabia	792	756	518	587	483	523	779	754	832	754	597	157
Kuwait	97	48	0	0	0	-	-	-	-	-	-	-
Iran	74	6	1	6	-	-	-	-	-	-	17	-
Iraq	1124	814	912	927	1018	881	1013	1127	1217	1038	912	126
Oman	-	-	-	-	-	-	-	-	-	-	-	-
United Arab Emirates	2	-	-	-	-	-	31	93	21	159	-	-
Other Middle East	3	8	9	12	6	-	6	-	31	-	19	-
West Africa ²	1140	1074	822	842	947	807	1169	1311	1116	1092	891	201
Other Africa	1180	596	1197	1228	1282	997	1038	909	763	864	1117	-254
Asia	-	0	0	0	-	5	-	-	-	-	-	-
Other	13	11	1	0	6	3	8	0	-	0	-	-
Total	9863	8329	8493	8712	9113	8851	9170	9304	9507	8923	8826	97
of which Non-OECD	8913	7115	7264	7455	7832	7551	7681	7884	7887	7099	7609	-509
OECD Asia Oceania												
Canada	5	1	16	5	3	9	6	-	-	-	6	-
Mexico + USA	613	477	496	554	463	582	452	498	491	569	593	-24
Venezuela	-	-	-	-	-	-	-	-	-	-	-	-
Other Central & South America	48	91	110	93	97	129	102	111	142	138	76	62
North Sea	10	49	98	87	97	30	56	35	59	-	102	-
Other OECD Europe	-	-	-	-	-	-	-	-	-	-	-	-
Non-OECD Europe	-	-	-	-	-	-	-	-	-	-	-	-
Former Soviet Union	435	300	335	265	376	405	272	236	152	133	321	-188
Saudi Arabia	1878	1867	1766	1601	2020	2029	1862	1652	1860	2371	1766	605
Kuwait	666	584	506	493	563	624	472	441	537	568	437	131
Iran	137	-	-	-	-	-	-	-	-	-	-	-
Iraq	364	224	167	160	192	172	204	231	274	219	161	59
Oman	59	22	32	49	22	28	39	-	113	58	65	-7
United Arab Emirates	1256	1096	1083	1143	1184	1145	1200	1133	1625	1365	1275	90
Other Middle East	449	387	362	371	301	442	326	260	412	455	332	123
West Africa ²	56	65	71	67	79	52	61	29	76	54	76	-22
Other Africa	90	42	56	85	39	42	31	50	20	34	93	-59
Non-OECD Asia	220	161	175	161	153	126	130	87	139	74	185	-111
Other	254	210	241	278	280	277	151	117	220	409	297	112
Total	6541	5577	5515	5411	5869	6093	5363	4881	6120	6446	5783	664
of which Non-OECD	5914	5051	4910	4772	5312	5480	4849	4347	5570	5878	5098	780
Total OECD Trade	19126	15801	16085	16491	17111	17040	16608	16390	17965	17503	16916	587
of which Non-OECD	17399	14002	14156	14504	15171	15063	14542	14363	15707	15066	14923	143

¹ 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.

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

Table 9
REGIONAL OECD GASOLINE IMPORTS BY SOURCE¹
(thousand barrels per day)

	2019	2020	2021	3Q21	4Q21	1Q22	2Q22	Jun 22	Jul 22	Aug 22	Year Earlier	
											Aug 21	change
OECD Americas												
Venezuela	4	-	-	-	-	-	-	-	-	-	-	-
Other Central & South America	83	40	41	37	51	12	44	50	45	78	50	28
ARA (Belgium Germany Netherlands)	188	149	194	240	96	126	255	367	238	175	227	-52
Other Europe	294	213	327	380	273	222	364	372	252	272	328	-56
FSU	79	56	83	92	58	31	3	-	-	-	119	-
Saudi Arabia	7	6	24	41	-	6	62	74	19	16	41	-25
Algeria	-	4	1	-	-	-	-	-	-	1	-	-
Other Middle East & Africa	14	13	13	15	4	8	14	18	27	24	13	10
Singapore	5	1	4	8	3	-	-	-	1	4	9	-5
OECD Asia Oceania	28	21	37	43	30	27	39	12	55	55	44	11
Non-OECD Asia (excl. Singapore)	112	72	81	116	60	53	108	110	141	125	107	17
Other	0	-	0	-	-	-	0	-	-	-	-	-
Total²	812	576	805	973	574	485	890	1003	776	749	939	-190
of which Non-OECD	304	195	248	312	176	111	233	257	232	247	349	-102
OECD Europe												
OECD Americas	3	3	5	3	8	17	21	16	23	15	1	14
Venezuela	0	0	2	5	-	2	2	2	3	3	-	-
Other Central & South America	3	4	7	11	5	14	4	6	8	14	23	-9
Non-OECD Europe	18	16	10	10	6	5	6	15	4	19	10	9
FSU	54	31	8	9	2	7	24	2	2	2	8	-5
Saudi Arabia	0	8	3	13	0	0	1	1	-	5	-	-
Algeria	0	1	-	-	-	-	12	14	11	8	-	-
Other Middle East & Africa	8	3	5	3	2	11	9	11	6	4	4	0
Singapore	3	2	0	0	0	1	2	1	1	1	0	1
OECD Asia Oceania	1	1	1	1	1	1	1	1	1	-	1	-
Non-OECD Asia (excl. Singapore)	0	0	3	2	3	3	2	3	2	5	4	2
Other	21	37	62	15	61	41	41	27	51	35	26	9
Total²	112	107	106	75	89	102	125	99	111	111	77	35
of which Non-OECD	108	104	100	70	80	84	103	83	88	97	75	22
OECD Asia Oceania												
OECD Americas	6	4	1	0	0	0	0	0	-	0	0	0
Venezuela	-	-	-	-	-	-	-	-	-	-	-	-
Other Central & South America	-	-	-	-	-	-	-	-	-	-	-	-
ARA (Belgium Germany Netherlands)	14	4	4	0	0	0	0	0	-	-	0	-
Other Europe	5	10	0	0	0	0	0	0	-	-	0	-
FSU	0	0	-	-	-	-	-	-	-	-	-	-
Saudi Arabia	1	-	-	-	-	-	-	-	-	-	-	-
Algeria	-	-	-	-	-	-	-	-	-	-	-	-
Other Middle East & Africa	-	1	-	-	-	-	-	-	-	-	-	-
Singapore	46	51	100	96	120	135	122	162	118	122	119	3
Non-OECD Asia (excl. Singapore)	21	37	29	19	0	14	44	51	7	36	26	10
Other	17	9	12	9	9	9	9	9	9	9	9	0
Total²	110	116	146	125	129	157	175	222	135	167	154	13
of which Non-OECD	84	98	141	125	129	157	174	222	135	167	154	13
Total OECD Trade²	1034	799	1057	1172	793	745	1190	1324	1022	1027	1169	-142
of which Non-OECD	496	397	489	507	385	352	511	561	454	510	578	-67

¹ Based on Monthly Oil Questionnaire data submitted by OECD countries in tonnes.

² Total figure excludes intra-regional trade.

Table 10
REGIONAL OECD GASOIL/DIESEL IMPORTS BY SOURCE¹
(thousand barrels per day)

	2019	2020	2021	3Q21	4Q21	1Q22	2Q22	Jun 22	Jul 22	Aug 22	Year Earlier	
											Aug 21	change
OECD Americas												
Venezuela	1	-	-	-	-	-	-	-	-	-	-	-
Other Central and South America	38	34	28	24	20	3	6	6	10	20	24	-4
ARA (Belgium Germany Netherlands)	5	11	34	30	22	40	6	7	5	-	9	-
Other Europe	2	4	5	1	10	2	3	0	-	0	-	-
FSU	6	12	25	10	33	25	-	-	-	-	1	-
Saudi Arabia	3	8	15	11	18	18	15	25	-	-	25	-
Algeria	-	-	-	-	-	-	-	-	-	-	-	-
Other Middle East and Africa	2	9	25	18	26	8	-	-	-	-	30	-
Singapore	0	-	2	8	-	2	-	-	-	-	17	-
OECD Asia Oceania	24	16	25	29	44	29	42	32	34	29	36	-7
Non-OECD Asia (excl. Singapore)	30	34	27	12	31	0	2	5	-	-	9	-
Other	7	6	12	11	18	31	3	-	-	-	-	-
Total²	118	134	197	154	222	158	76	75	49	49	150	-101
of which Non-OECD	86	103	134	94	146	87	26	36	10	20	105	-85
OECD Europe												
OECD Americas	138	99	40	55	33	31	61	29	55	119	65	54
Venezuela	-	-	-	-	-	-	-	-	-	-	-	-
Other Central and South America	0	3	1	1	3	1	1	1	-	0	2	-2
Non-OECD Europe	41	30	35	30	32	39	46	60	10	54	25	29
FSU	608	627	611	546	516	595	472	493	567	512	484	28
Saudi Arabia	205	193	140	142	153	98	163	224	148	200	151	50
Algeria	0	2	-	-	-	-	-	-	-	-	-	-
Other Middle East and Africa	83	71	158	198	222	137	160	151	164	143	221	-78
Singapore	27	17	19	24	22	39	50	15	19	16	22	-7
OECD Asia Oceania	36	32	42	48	44	36	22	19	9	9	47	-38
Non-OECD Asia (excl. Singapore)	152	101	126	122	195	88	149	78	65	81	173	-91
Other	10	15	20	6	43	30	20	29	10	36	11	25
Total²	1300	1190	1191	1172	1262	1092	1145	1099	1048	1170	1200	-30
of which Non-OECD	1126	1062	1109	1070	1186	1026	1062	1050	983	1043	1089	-46
OECD Asia Oceania												
OECD Americas	1	4	0	0	-	-	-	-	-	-	0	-
Venezuela	-	-	-	-	-	-	-	-	-	-	-	-
Other Central and South America	-	0	-	-	-	-	-	-	-	-	-	-
ARA (Belgium Germany Netherlands)	-	0	0	0	0	0	0	0	0	0	-	-
Other Europe	-	-	0	-	0	-	-	-	-	-	-	-
FSU	4	2	1	2	1	-	-	-	-	-	4	-
Saudi Arabia	-	-	-	-	-	-	-	-	-	-	-	-
Algeria	-	-	-	-	-	-	-	-	-	-	-	-
Other Middle East and Africa	7	13	4	0	3	-	11	11	41	-	0	-
Singapore	111	91	109	153	110	123	117	126	127	124	179	-55
Non-OECD Asia (excl. Singapore)	133	208	229	181	259	168	217	243	122	177	149	28
Other	5	9	8	8	5	8	7	4	4	4	14	-10
Total²	261	328	352	344	377	299	352	384	294	305	346	-40
of which Non-OECD	260	323	352	343	377	299	352	384	294	305	346	-40
Total OECD Trade²	1679	1652	1740	1670	1861	1550	1572	1557	1391	1525	1696	-172
of which Non-OECD	1472	1488	1595	1507	1709	1412	1439	1470	1288	1368	1540	-172

¹ Based on Monthly Oil Questionnaire data submitted by OECD countries in tonnes.

² Total figure excludes intra-regional trade.

Table 11
REGIONAL OECD JET AND KEROSENE IMPORTS BY SOURCE¹
(thousand barrels per day)

	2019	2020	2021	3Q21	4Q21	1Q22	2Q22	Jun 22	Jul 22	Aug 22	Year Earlier	
											Aug 21	change
OECD Americas												
Venezuela	0	-	-	-	-	-	-	-	-	-	-	-
Other Central and South America	7	5	1	-	-	-	-	-	-	-	-	-
ARA (Belgium Germany Netherlands)	-	-	5	14	-	-	0	-	-	-	19	-
Other Europe	0	4	7	6	10	0	1	0	-	-	2	-
FSU	-	0	4	0	16	3	-	-	-	-	0	-
Saudi Arabia	2	6	6	4	17	5	-	-	-	-	2	-
Algeria	-	1	4	3	5	-	-	-	-	-	7	-
Other Middle East and Africa	10	11	18	14	22	11	10	17	3	9	25	-16
Singapore	3	4	2	5	-	2	2	3	-	-	11	-
OECD Asia Oceania	133	100	91	122	76	78	90	104	128	79	123	-45
Non-OECD Asia (excl. Singapore)	16	23	27	34	33	17	18	18	26	8	20	-12
Other	3	4	1	4	-	5	4	-	4	-	11	-
Total²	174	159	165	207	179	120	123	141	161	96	219	-123
of which Non-OECD	41	55	63	65	93	43	33	37	33	17	75	-57
OECD Europe												
OECD Americas	20	13	3	1	9	1	4	4	4	4	3	1
Venezuela	-	-	-	-	-	-	-	-	-	-	-	-
Other Central and South America	1	0	0	-	1	-	1	-	1	2	-	-
Non-OECD Europe	2	0	0	-	0	-	4	0	4	-	-	-
FSU	41	21	27	30	21	20	12	14	18	16	20	-4
Saudi Arabia	105	40	27	11	21	37	58	64	75	53	-	-
Algeria	11	9	5	6	-	3	8	25	-	16	9	7
Other Middle East and Africa	199	155	155	179	168	154	186	200	232	164	170	-6
Singapore	29	10	11	23	15	6	11	4	-	38	45	-7
OECD Asia Oceania	36	27	32	39	40	2	44	77	35	67	40	27
Non-OECD Asia (excl. Singapore)	73	50	62	59	113	78	95	37	124	148	38	110
Other	2	10	9	1	22	4	2	2	36	3	0	3
Total²	520	336	333	349	411	306	425	428	528	511	325	186
of which Non-OECD	464	297	298	309	362	303	381	347	489	440	282	158
OECD Asia Oceania												
OECD Americas	-	-	0	0	0	0	0	0	-	-	-	-
Venezuela	-	-	-	-	-	-	-	-	-	-	-	-
Other Central and South America	-	-	-	-	-	-	-	-	-	-	-	-
ARA (Belgium Germany Netherlands)	-	-	0	-	-	-	-	-	-	-	-	-
Other Europe	-	-	0	0	-	-	1	-	-	-	-	-
FSU	-	-	-	-	-	-	-	-	-	-	-	-
Saudi Arabia	-	-	-	-	-	-	-	-	-	-	-	-
Algeria	-	-	-	-	-	-	-	-	-	-	-	-
Other Middle East and Africa	-	-	1	-	-	-	0	-	-	-	-	-
Singapore	21	14	16	19	19	26	28	45	47	46	20	26
Non-OECD Asia (excl. Singapore)	29	28	34	15	29	20	38	47	16	15	1	15
Other	22	18	21	5	34	25	9	5	5	5	5	0
Total²	72	60	71	39	82	71	76	97	69	66	26	41
of which Non-OECD	72	60	71	39	82	71	76	97	69	66	26	41
Total OECD Trade²	766	555	570	596	673	497	624	665	758	673	569	104
of which Non-OECD	576	413	433	414	538	416	489	481	592	524	383	141

¹ Based on Monthly Oil Questionnaire data submitted by OECD countries in tonnes.

² Total figure excludes intra-regional trade.

Table 12
REGIONAL OECD RESIDUAL FUEL OIL IMPORTS BY SOURCE¹
(thousand barrels per day)

	2019	2020	2021	3Q21	4Q21	1Q22	2Q22	Jun 22	Jul 22	Aug 22	Year Earlier	
											Aug 21	change
OECD Americas												
Venezuela	7	-	-	-	-	-	-	-	-	-	-	-
Other Central and South America	50	52	34	39	44	55	53	77	43	43	32	11
ARA (Belgium Germany Netherlands)	6	12	6	9	9	6	11	18	3	-	14	-
Other Europe	8	21	10	4	18	25	23	26	5	20	6	15
FSU	29	43	34	19	18	46	24	15	-	13	23	-10
Saudi Arabia	2	2	0	-	2	1	12	20	5	11	-	-
Algeria	8	2	7	3	13	-	10	9	0	11	0	11
Other Middle East and Africa	5	10	8	15	0	6	1	-	2	4	43	-39
Singapore	1	1	0	2	-	-	-	-	-	-	-	-
OECD Asia Oceania	-	-	0	1	-	-	-	-	-	-	2	-
Non-OECD Asia (excl. Singapore)	0	-	2	0	-	-	-	-	-	-	0	-
Other	-	-	-	-	-	-	-	-	-	-	-	-
Total²	116	143	102	91	104	139	135	165	59	102	120	-18
of which Non-OECD	102	110	86	78	77	109	101	120	51	81	98	-16
OECD Europe												
OECD Americas	7	12	24	14	20	13	6	7	16	19	22	-3
Venezuela	-	-	-	-	-	-	-	-	-	-	-	-
Other Central and South America	5	6	4	10	1	1	3	0	13	3	-	-
Non-OECD Europe	21	13	12	12	11	17	35	26	55	28	21	6
FSU	144	141	247	315	279	216	119	103	115	92	259	-168
Saudi Arabia	-	2	-	-	-	-	-	-	-	-	-	-
Algeria	0	2	2	2	3	-	13	-	5	6	6	0
Other Middle East and Africa	19	13	14	18	13	11	34	37	7	15	24	-9
Singapore	1	3	3	2	2	5	0	-	2	-	7	-
OECD Asia Oceania	14	4	3	5	5	7	7	17	13	7	0	7
Non-OECD Asia (excl. Singapore)	3	-	-	-	-	-	-	-	-	2	-	-
Other	8	93	59	55	41	30	33	37	22	44	59	-15
Total²	222	288	368	433	374	300	251	228	248	215	399	-184
of which Non-OECD	202	279	347	417	350	282	239	207	221	195	382	-187
OECD Asia Oceania												
OECD Americas	1	-	-	-	-	-	-	-	-	-	-	-
Venezuela	-	-	-	-	-	-	-	-	-	-	-	-
Other Central and South America	-	0	-	-	-	-	-	-	-	-	-	-
ARA (Belgium Germany Netherlands)	-	-	0	0	-	-	0	0	-	-	0	-
Other Europe	-	-	-	-	-	-	-	-	-	-	-	-
FSU	6	5	0	-	-	-	-	-	-	-	-	-
Saudi Arabia	1	1	13	13	25	12	29	67	26	19	3	16
Algeria	-	-	-	-	-	-	-	-	-	-	-	-
Other Middle East and Africa	27	38	30	31	30	6	6	19	-	-	30	-
Singapore	25	18	29	22	23	34	21	13	8	20	26	-5
Non-OECD Asia (excl. Singapore)	40	26	47	56	51	64	39	24	14	44	53	-9
Other	1	-	-	-	-	-	-	-	-	-	-	-
Total²	101	88	119	121	129	117	96	124	48	84	112	-28
of which Non-OECD	100	88	119	121	129	117	96	124	48	84	112	-28
Total OECD Trade²	439	519	588	645	607	556	482	516	356	401	631	-230
of which Non-OECD	404	477	552	616	555	508	436	450	320	361	592	-231

¹ Based on Monthly Oil Questionnaire data submitted by OECD countries in tonnes.

² Total figure excludes intra-regional trade.

Table 13
AVERAGE IEA CIF CRUDE COST AND SPOT CRUDE AND PRODUCT PRICES
 (\$/bbl)

	2019	2020	2021	4Q21	1Q22	2Q22	3Q22	May 22	Jun 22	Jul 22	Aug 22	Sep 22	Oct 22
CRUDE PRICES													
IEA CIF Average Import¹													
IEA Europe	64.25	42.91	70.67	73.11	79.39	97.95	111.08	109.57	118.56	112.22	101.73		
IEA Americas	56.93	37.31	64.78	67.32	73.13	86.94	106.20	105.59	111.31	101.21	91.71		
IEA Asia Oceania	66.38	46.28	70.41	74.07	80.92	89.86	113.01	110.95	117.54	116.34	110.99		
IEA Total	62.75	42.19	68.87	71.64	77.98	92.72	110.17	108.76	116.27	110.13	101.51		
SPOT PRICES²													
North Sea Dated	64.12	41.76	70.82	79.67	102.12	113.90	100.66	113.38	123.62	112.63	99.63	89.76	93.11
North Sea Dated M1	64.74	42.90	71.51	80.45	101.45	114.15	100.16	114.71	121.74	109.85	99.19	91.49	94.52
WTI (Cushing) M1	57.03	39.25	68.10	77.33	95.18	108.77	91.91	109.61	114.59	99.84	91.57	83.96	87.26
WTI (Houston) M1	61.87	40.71	69.01	78.27	96.77	109.96	94.04	110.80	115.83	101.85	93.61	86.34	89.60
Urals	63.31	41.21	69.00	78.05	89.49	79.11	75.41	78.53	88.77	83.05	74.63	68.59	73.28
Dubai M1	63.49	42.36	69.35	78.23	96.06	108.12	96.79	108.08	112.89	102.86	96.43	91.10	91.08
PRODUCT PRICES²													
Northwest Europe													
Gasoline	71.15	44.64	80.07	90.50	110.20	146.06	114.30	149.17	162.42	131.84	111.23	98.47	110.80
Diesel	79.28	49.34	78.41	91.93	124.88	160.84	145.21	152.16	179.05	153.09	142.81	139.29	162.68
Jet/Kero	80.15	45.80	77.31	91.14	122.94	165.15	142.09	162.13	178.37	147.78	142.85	134.91	138.99
Naphtha	56.62	40.18	71.58	82.44	99.99	97.26	77.03	99.79	90.20	86.05	74.18	70.37	75.54
HSFO	49.85	33.99	61.18	67.69	84.19	92.98	70.72	96.91	91.10	71.89	76.18	63.12	60.23
0.5% Fuel Oil	80.17	48.50	76.78	85.25	109.62	126.09	106.56	121.76	135.66	116.36	106.23	96.12	94.38
Mediterranean Europe													
Gasoline	71.09	45.57	80.50	90.87	111.66	147.99	117.35	148.43	168.80	139.15	112.32	99.07	108.74
Diesel	78.94	48.82	77.93	91.08	122.53	156.54	136.06	148.63	173.09	142.46	133.39	132.06	148.51
Jet/Kero	79.96	45.57	77.19	91.11	123.04	164.87	142.30	162.00	178.33	147.90	143.11	135.16	139.44
Naphtha	55.51	39.04	70.65	81.33	98.64	94.95	75.37	97.59	87.32	84.29	72.44	68.91	73.52
HSFO	52.01	34.17	60.05	66.73	82.75	89.63	65.84	93.44	86.65	71.69	72.15	52.07	57.51
US Gulf Coast													
Gasoline	71.11	47.30	86.49	95.15	116.70	153.69	119.07	157.34	169.71	134.83	115.54	106.77	116.16
Diesel	79.12	50.26	84.73	97.55	126.70	167.83	146.96	163.46	179.48	151.92	148.23	140.22	159.40
Jet/Kero	78.84	46.30	77.95	92.12	121.54	163.46	140.49	161.46	171.69	145.44	139.74	136.19	148.53
Naphtha	59.04	40.12	72.24	82.52	99.45	105.15	84.63	101.48	111.82	90.34	87.05	75.70	81.05
HSFO	52.53	34.71	59.90	67.41	83.38	93.04	76.51	94.62	94.92	84.50	81.74	61.76	52.59
0.5% Fuel Oil	74.08	49.88	79.69	89.03	114.08	133.17	112.20	131.87	140.31	125.31	111.24	99.54	100.80
Singapore													
Gasoline	70.10	45.28	78.49	91.16	111.63	137.95	106.08	140.99	149.10	116.35	107.19	94.03	91.16
Diesel	78.47	49.60	77.80	90.88	119.08	159.99	138.17	153.41	177.35	145.27	139.12	129.66	137.25
Jet/Kero	77.55	45.06	75.29	88.49	113.53	147.63	129.57	142.90	165.10	134.90	131.73	121.58	123.40
Naphtha	57.41	40.94	71.02	82.10	98.04	92.73	74.63	95.76	85.42	82.70	72.73	68.22	71.86
HSFO	57.46	38.33	63.20	70.13	85.69	98.18	69.96	98.44	92.45	73.83	74.95	60.36	57.46
0.5% Fuel Oil	75.66	52.85	80.81	91.25	115.97	139.05	116.26	136.42	155.05	135.90	110.92	101.48	105.77

¹ IEA CIF Average Import price for Aug 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.

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Table 14
MONTHLY AVERAGE END-USER PRICES FOR PETROLEUM PRODUCTS

October 2022

	NATIONAL CURRENCY ¹						US DOLLARS					
	Total		% change from		Ex-Tax		Total		% change from		Ex-Tax	
	Price		Sep-22	Oct-21	Price		Price		Sep-22	Oct-21	Price	
GASOLINE ² (per litre)												
France	1.664	5.9	1.7		0.946	8.9	1.637	5.2	-13.7		0.931	8.2
Germany	1.974	-1.5	15.5		1.004	-19.8	1.942	-2.1	-2.0		0.988	-20.3
Italy	1.671	-1.9	-2.8		0.892	-2.8	1.644	-2.4	-17.5		0.878	-3.4
Spain	1.734	0.2	17.6		1.084	0.3	1.706	-0.3	-0.2		1.067	-0.3
United Kingdom	1.637	-1.7	18.0		0.834	-2.8	1.851	-1.9	-2.6		0.943	-2.9
Japan	169.0	-0.4	3.4		97.0	-0.7	1.149	-3.0	-20.5		0.660	-3.3
Canada	1.741	9.5	17.9		1.253	11.8	1.271	6.5	7.0		0.915	8.7
United States	1.008	3.1	15.9		0.876	3.5	1.008	3.1	15.9		0.876	3.5
AUTOMOTIVE DIESEL FOR NON COMMERCIAL USE (per litre)												
France	1.838	6.7	19.7		1.173	9.0	1.809	6.1	1.5		1.154	8.4
Germany	2.116	1.5	38.3		1.308	-5.7	2.082	0.9	17.3		1.287	-6.2
Italy	1.831	1.3	16.2		1.134	1.8	1.802	0.7	-1.5		1.116	1.2
Spain	1.912	1.8	42.3		1.325	2.1	1.881	1.2	20.7		1.304	1.5
United Kingdom	1.840	1.3	29.3		1.003	1.9	2.081	1.1	6.8		1.134	1.8
Japan	149.0	-0.5	4.0		103.5	-0.6	1.013	-3.0	-20.0		0.704	-3.2
Canada	2.177	14.7	50.2		1.688	16.9	1.589	11.6	36.4		1.232	13.7
United States	1.377	4.4	44.3		1.224	5.0	1.377	4.4	44.3		1.224	5.0
DOMESTIC HEATING OIL (per litre)												
France	1.641	7.6	60.2		1.212	8.7	1.615	7.0	35.9		1.192	8.1
Germany	1.551	0.8	75.0		1.242	0.9	1.527	0.3	48.5		1.222	0.3
Italy	1.869	3.2	34.9		1.129	4.3	1.840	2.6	14.4		1.111	3.7
Spain	1.408	4.2	69.9		1.067	4.6	1.385	3.6	44.1		1.050	4.0
United Kingdom	1.144	10.4	58.4		0.988	11.6	1.294	10.2	30.8		1.117	11.4
Japan ³	112.2	-0.3	12.9		99.2	-0.3	0.763	-2.9	-13.2		0.674	-2.9
Canada	2.099	16.4	58.1		1.873	16.6	1.532	13.3	43.5		1.367	13.5
United States	-	-	-		-	-	-	-	-		-	-
LOW SULPHUR FUEL OIL FOR INDUSTRY ⁴ (per kg)												
France	0.789	-1.0	17.3		0.650	-1.3	0.776	-1.6	-0.5		0.639	-1.8
Germany	-	-	-		-	-	-	-	-		-	-
Italy	0.746	0.4	23.0		0.715	0.4	0.734	-0.2	4.3		0.704	-0.2
Spain	0.692	2.8	39.5		0.675	2.9	0.681	2.2	18.4		0.664	2.3
United Kingdom	-	-	-		-	-	-	-	-		-	-
Japan	-	-	-		-	-	-	-	-		-	-
Canada	-	-	-		-	-	-	-	-		-	-
United States	-	-	-		-	-	-	-	-		-	-

¹ Prices for France, Germany, Italy and Spain are in Euros; UK in British Pounds, Japan in Yen, Canada in Canadian Dollars² Unleaded premium (95 RON) for France, Germany, Italy, Spain, UK; regular unleaded for Canada, Japan and the United States.³ Kerosene for Japan.⁴ VAT excluded from prices for low sulphur fuel oil when refunded to industry.

Table 15
IEA Global Indicator Refining Margins

\$/bbl	2019	2020	2021	4Q21	1Q22	2Q22	3Q22	May 22	Jun 22	Jul 22	Aug 22	Sep 22	Oct 22
NW Europe													
Light sweet hydroskimming	3.03	1.11	2.54	4.72	5.27	15.30	8.94	14.64	14.28	4.95	9.59	12.60	18.20
Light sweet cracking	5.40	2.07	3.51	6.56	8.85	22.18	15.19	20.28	23.01	12.43	14.76	18.74	28.10
Light sweet cracking + Petchem	6.90	3.23	6.55	9.19	10.99	26.45	16.98	23.72	27.78	15.19	16.73	19.25	27.95
Medium sour cracking	8.64	4.30	6.11	7.26	21.56	59.44	37.60	57.85	60.49	40.44	35.47	36.92	51.37
Mediumsour cracking + Petchem	10.09	5.44	9.07	9.81	23.64	63.59	39.34	61.19	65.11	43.13	37.38	37.42	51.23
Mediterranean													
Light sweet hydroskimming	4.13	2.36	2.90	4.38	4.14	13.88	7.56	12.22	12.96	1.68	8.32	13.17	16.58
Light sweet cracking	7.15	3.34	4.97	7.27	8.77	23.72	15.85	20.99	25.99	12.37	15.54	20.08	25.52
Medium sour cracking	10.61	5.70	5.68	7.80	11.85	30.25	20.50	29.79	33.30	18.30	20.66	22.75	30.73
US Gulf Coast													
Light sweet cracking	7.51	4.28	11.04	11.96	16.54	38.22	26.72	37.83	45.12	29.39	25.62	25.24	33.60
Medium sour cracking	11.95	6.61	15.79	18.71	25.08	47.39	35.32	45.88	56.49	38.88	34.26	32.85	43.51
Heavy sour coking	17.42	9.73	19.98	23.97	32.06	55.43	46.40	54.86	64.39	49.64	43.63	46.34	62.38
US Midwest													
Light sweet cracking	10.76	3.74	12.33	11.14	13.95	40.42	34.23	38.14	52.10	33.64	33.17	36.13	44.90
Heavy sour coking	23.67	13.26	26.02	27.74	32.07	60.64	53.96	59.13	73.93	55.07	50.68	56.76	71.61
Singapore													
Light sweet cracking	-1.24	0.20	3.10	5.56	7.94	18.69	10.93	15.50	24.03	12.04	11.75	8.85	9.10
Light sweet cracking + Petchem	0.32	2.03	4.82	7.03	8.63	20.69	12.83	17.00	26.32	13.24	13.84	11.28	10.28
Medium sour cracking	5.16	1.80	3.92	5.27	9.85	23.35	7.91	22.26	27.10	9.91	8.98	4.63	9.01
Medium sour cracking + Petchem	6.70	3.61	5.61	6.72	10.53	25.33	9.79	23.74	29.37	11.09	11.04	7.02	10.17

Source: IEA, Argus Media Ltd prices.

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

Table 16
REFINED PRODUCT YIELDS BASED ON TOTAL INPUT (% VOLUME)¹

	Jun-22	Jul-22	Aug-22	Aug-21	Aug 22 vs Previous Month	Aug 22 vs Previous Year	Aug 22 vs 5 Year Average	5 Year Average
OECD Americas								
Naphtha	0.9	1.1	0.9	1.2	-0.1	-0.3	-0.5	1.4
Motor gasoline	44.2	43.6	43.6	45.4	0.1	-1.8	-1.2	44.8
Jet/kerosene	9.0	9.2	9.0	7.9	-0.1	1.1	0.6	8.5
Gasoil/diesel oil	28.7	28.4	28.5	27.3	0.1	1.2	0.3	28.2
Residual fuel oil	2.5	2.6	3.1	2.7	0.5	0.4	0.0	3.1
Petroleum coke	4.4	4.2	4.2	4.3	0.0	-0.1	-0.2	4.4
Other products	13.9	14.3	13.6	14.4	-0.7	-0.8	0.2	13.4
OECD Europe								
Naphtha	7.7	8.2	8.3	8.4	0.1	-0.1	0.1	8.2
Motor gasoline	20.6	20.6	21.2	21.2	0.6	0.0	0.5	20.7
Jet/kerosene	9.0	8.5	8.6	6.6	0.2	2.1	0.7	7.9
Gasoil/diesel oil	38.7	39.7	39.6	40.4	-0.1	-0.8	-0.7	40.3
Residual fuel oil	8.5	8.1	7.8	7.7	-0.2	0.2	-0.5	8.3
Petroleum coke	1.5	1.5	1.6	1.6	0.0	-0.1	0.1	1.4
Other products	15.6	16.1	15.8	16.6	-0.3	-0.8	0.1	15.7
OECD Asia Oceania								
Naphtha	16.9	16.3	16.4	15.8	0.1	0.6	0.5	15.9
Motor gasoline	21.6	21.3	21.1	22.0	-0.3	-0.9	-1.1	22.1
Jet/kerosene	11.5	13.0	13.5	12.0	0.5	1.5	-0.5	14.0
Gasoil/diesel oil	31.3	30.9	30.5	30.7	-0.4	-0.2	0.5	29.9
Residual fuel oil	7.8	8.7	8.5	7.8	-0.2	0.7	1.8	6.6
Petroleum coke	0.5	0.5	0.5	0.5	0.0	0.0	0.0	0.4
Other products	12.5	11.5	11.7	13.0	0.2	-1.3	-1.1	12.8
OECD Total								
Naphtha	5.7	5.9	6.0	6.0	0.1	-0.1	-0.2	6.1
Motor gasoline	32.9	32.4	32.6	33.6	0.1	-1.1	-0.4	33.0
Jet/kerosene	9.4	9.6	9.7	8.2	0.1	1.5	0.4	9.3
Gasoil/diesel oil	32.4	32.5	32.4	32.1	-0.1	0.3	0.0	32.4
Residual fuel oil	5.3	5.4	5.5	5.2	0.1	0.3	0.1	5.4
Petroleum coke	2.8	2.7	2.7	2.8	0.0	-0.1	-0.1	2.8
Other products	14.2	14.4	14.0	14.9	-0.4	-0.9	-0.1	14.1

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

Table 17
WORLD BIOFUELS PRODUCTION
(thousand barrels per day)

	2019	2020	2021	1Q22	2Q22	3Q22	Aug 22	Sep 22	Oct 22
ETHANOL									
OECD Americas	1063	934	1010	1058	1041	1028	1018	1016	1016
United States	1029	906	979	1023	1006	993	983	980	980
Other ¹	34	28	30	35	35	35			
OECD Europe	97	93	103	100	110	111	115	105	105
France	21	17	18	21	25	23	29	11	11
Germany	12	11	12	17	19	15	20	5	5
Spain	9	8	10	8	8	10	8	14	14
United Kingdom	5	4	9	6	6	9	6	15	15
Other ¹	50	52	54	49	52	55			
OECD Asia Oceania	4	4	4	4	4	4	4	5	5
Australia	4	4	4	4	4	4	4	4	4
Other ¹	0	0	0	0	0	0			
Total OECD Ethanol	1165	1031	1116	1162	1156	1143	1137	1125	1125
Total Non-OECD Ethanol	809	735	703	312	849	1105	1109	1020	1008
Brazil	621	560	515	100	637	893	897	808	796
China ¹	67	69	76	79	79	79			
Argentina ¹	19	15	18	21	21	21			
Other	102	91	94	112	112	112	212	212	212
TOTAL ETHANOL	1974	1766	1819	1475	2005	2248	2246	2145	2133
BIODIESEL									
OECD Americas	151	159	168	186	207	232	235	243	243
United States	145	153	160	181	201	223	229	229	229
Other ¹	7	6	7	6	6	9			
OECD Europe	295	281	313	307	318	321	303	358	358
France	43	41	43	48	56	43	42	41	41
Germany	69	61	66	62	62	64	61	75	75
Italy ¹	18	28	30	23	33	34			
Spain	42	30	39	36	34	40	36	50	50
Other	123	121	136	139	134	138	132	153	153
OECD Asia Oceania	15	12	12	10	14	13	15	11	11
Australia	0	0	0	0	0	0	0	0	0
Other ¹	15	12	12	10	14	13			
Total OECD Biodiesel	461	452	493	503	538	566	552	611	611
Total Non-OECD Biodiesel	405	411	439	464	464	464	464	464	464
Brazil	102	111	116	101	105	105	105	105	105
Argentina ¹	42	27	36	42	42	42			
Other ¹	261	274	287	321	317	318			
TOTAL BIODIESEL	866	863	932	967	1002	1029	1016	1075	1075
GLOBAL BIOFUELS	2839	2629	2752	2441	3007	3277	3262	3220	3208

¹ monthly data not available.

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