

Oil Market Report

13 October 2022

- The relentless deterioration of the economy and higher prices sparked by an OPEC+ plan to cut supply are slowing world oil demand, which is now expected to contract by 340 kb/d y-o-y in 4Q22. Demand growth has been reduced to 1.9 mb/d in 2022 and to 1.7 mb/d next year, down by 60 kb/d and 470 kb/d, respectively, from last month's *Report*. World oil demand is now forecast to average 101.3 mb/d in 2023.
- World oil supply rose by 300 kb/d in September to 101.2 mb/d, with OPEC+ providing over 85% of the gains. After a massive 2.1 mb/d boost from 2Q22 to 3Q22, growth is forecast to decelerate markedly, to 170 kb/d from 3Q22 to 4Q22, following the OPEC+ decision to cut official production targets by 2 mb/d from November – a 1 mb/d cut to actual output given the bloc's underperformance vis-à-vis quotas.
- Global refining activity is responding to the slowdown in demand and lower refinery margins, with 3Q22 runs coming in lower than expected. Our forecasts for 4Q22 and 2023 have been revised down by 340 kb/d and 720 kb/d, respectively, following demand downgrades and OPEC+ production cuts. Runs are now expected to increase by 2.2 mb/d in 2022 and 1.2 mb/d next year.
- Russian oil exports fell by 230 kb/d to 7.5 mb/d in September, down 560 kb/d from pre-war levels. Shipments to the EU dropped by 390 kb/d m-o-m. With less than two months to go before a ban on Russian crude oil imports comes into effect, EU countries have yet to diversify more than half of their pre-war import levels away from Russia. The country's export revenues were down \$3.2 bn to \$15.3 bn.
- Global observed inventories rebounded by 36.5 mb in August, as lower onshore inventories (-27.8 mb) were offset by a surge in oil on water (+64.3 mb). OECD commercial oil inventories built for a second consecutive month, by 15 mb in August, but remained a steep 243 mb below the five-year average despite the release of 32.8 mb of government stocks.
- Brent futures fell by 7% m-o-m in September and touched their lowest level since the start of the year, at \$84/bbl on 26 September. The decision by OPEC+ in early October to curtail supply pushed Brent up by around \$14/bbl, to \$97.92/bbl, before easing somewhat. Brent backwardation steepened for the first time in four months in September while open interest fell to seven-year lows.



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Compounding risks

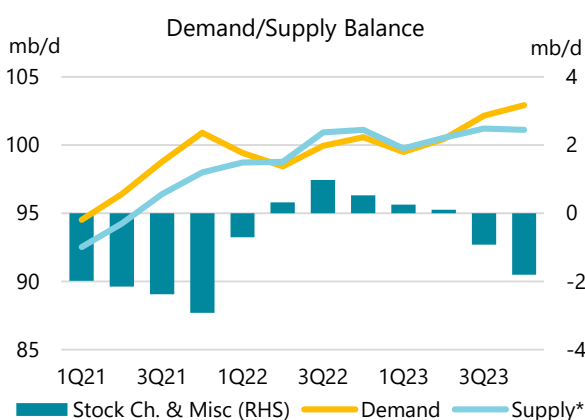
Disruptive market forces are multiplying as the world struggles to navigate the worst global energy crisis in history. The OPEC+ bloc's plan to sharply curtail oil supplies to the market has derailed the growth trajectory of oil supply through the remainder of this year and next, with the resulting higher price levels exacerbating market volatility and heightening energy security concerns. Benchmark crude oil prices spiked by around \$14/bbl from a September low and Brent once again flirted with triple digits. With unrelenting inflationary pressures and interest rate hikes taking their toll, higher oil prices may prove the tipping point for a global economy already on the brink of recession.

The stronger economic headwinds have led us to lower our forecast for world oil demand growth for 2023 by 470 kb/d from last month's *Report*, to 1.7 mb/d. Our revisions are underpinned by further downgrades to global GDP growth expectations from major institutions, with recession now expected in several European countries and risks increasing for emerging and developing economies. For this year, world oil demand growth has been further reduced, to 1.9 mb/d from 3.2 mb/d expected before Russia's invasion of Ukraine. The still relatively robust headline figure masks a sharp slowdown underway, with demand now forecast to contract by 340 kb/d y-o-y in 4Q22, despite increased gas-to-oil switching in power generation and industry.

The decline in OPEC+ supply will be smaller than the announced 2 mb/d reduction in production targets, with the majority of the alliance's members already producing well below their ceilings due to capacity constraints. Our current estimate is for a decrease of around 1 mb/d in OPEC+ crude oil output from November, with the bulk of the cuts delivered by Saudi Arabia and the UAE. Further production losses could come from Russia in December, when an EU embargo on crude oil imports and a ban on maritime services go into full effect. Russian officials have threatened to cut oil production in order to offset the negative impact of proposed price caps.

While previous large spikes in oil prices have spurred a strong investment response leading to greater supply from non-OPEC producers, this time may be different. US shale producers, traditionally the most responsive to changing market conditions, are struggling with supply chain constraints and cost inflation – and, so far, they are maintaining capital discipline. This casts doubt on suggestions that higher prices will necessarily balance the market through additional supply.

The massive cut in OPEC+ oil supply increases energy security risks worldwide. Even taking into account lower demand expectations, it will sharply reduce a much needed build in oil stocks through the rest of this year and into the first half of 2023. At end-August, OECD industry inventories remained a steep 243 mb below the five-year average, at 2 736 mb. They would have been significantly lower had it not been for the release of 185 mb of IEA member country government stocks from March through August. The recent wave of market disruptors underscores that energy security is as important today as it was 48 years ago when the IEA was founded. Now, as then, commercial and residential consumers are taking measures to reduce their energy bills and those effort could well have a lasting impact on oil markets.



* Assumes Iran remains under sanctions.

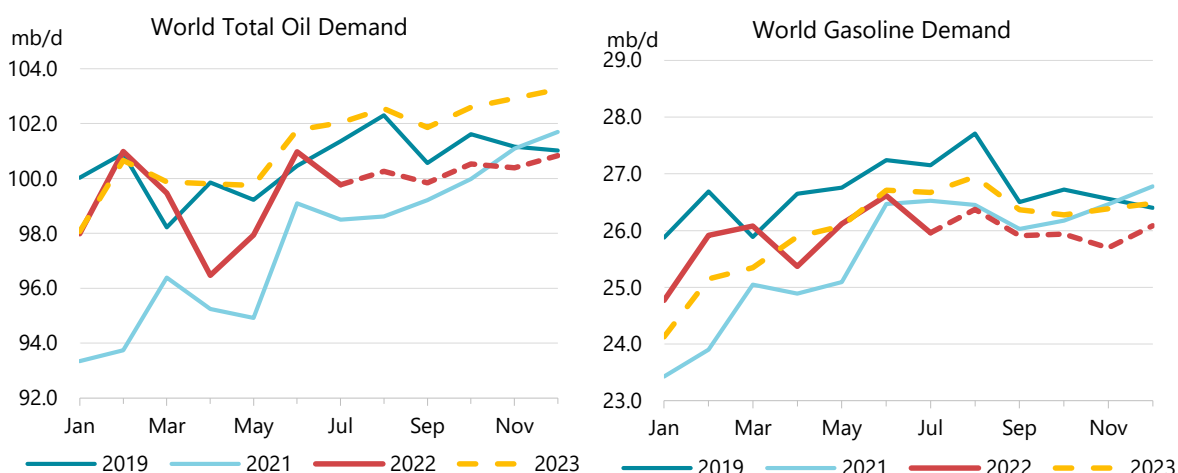
Demand

Overview

After a strong start to the year, global oil demand growth has been steadily decelerating and is forecast to tip into negative territory for the fourth quarter. This comes amid a deteriorating outlook for the Chinese economy, compounded by the impact of higher prices following the early October decision by OPEC+ to constrain supplies. Demand in 4Q22 is now set to decline by 340 kb/d year-on-year (y-o-y), compared to our earlier expectation of little or no change for the quarter.

In addition to the prolonged economic malaise in China and oil prices closing in on \$100/bbl, a combination of inflationary pressures, a relentless rise in interest rates and a strong US dollar are slowing a recovery in the rest of the world. This has led us to reduce our forecast for world oil demand growth for this year and next.

Global oil demand growth has been revised lower by 60 kb/d for 2022 and a sharper 470 kb/d next year compared with last month's *Report*. Demand is now expected to increase by 1.9 mb/d in 2022 and by 1.7 mb/d in 2023, to 99.6 mb/d and 101.3 mb/d, respectively. The global 2023 GDP growth assumptions used as inputs in these forecasts have been downgraded by 0.5% to 2% over the past month. This accounts for about half of the declines in forecasted demand growth.



The impact of higher prices will be most apparent in major OECD countries. Here, demand is typically more price-elastic than in large non-OECD peers, where some governments are more active in controlling retail prices. There will also be potentially severe impacts in smaller non-OECD nations, where the ability to cushion the blow of higher fuel costs is far more limited.

The biggest downgrade nevertheless comes from China where ongoing government restrictions to stem the spread of the coronavirus pandemic are impacting mobility and economic activity. Demand has been revised lower for 2H22 and 1H23 by an average of 460 kb/d, on expectations that these severe policies will be more protracted than projected in last month's *Report*. The GDP growth assumptions for our 2023 China balances have been trimmed on average by 0.2% to 4.9%, with a substantial impact on 1Q23 oil demand.

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	13 839	14 416	14 669	577	253	4.2	1.8
Naphtha	6 434	6 982	6 875	7 097	- 107	222	-1.5	3.2
Motor Gasoline	23 645	25 615	25 903	26 040	288	137	1.1	0.5
Jet Fuel & Kerosene	4 708	5 191	6 118	6 885	927	767	17.9	12.5
Gas/Diesel Oil	26 119	27 658	27 975	27 983	317	9	1.1	0.0
Residual Fuel Oil	5 624	6 159	6 420	6 656	261	236	4.2	3.7
Other Products	11 878	12 229	11 901	11 930	- 328	28	-2.7	0.2
Total Products	91 537	97 673	99 607	101 260	1 934	1 653	2.0	1.7

Underscoring the weaker growth trend, gains in global 3Q22 deliveries, of +1.2 mb/d, were only about one-third the level of 1H22. Stronger growth in the Americas, other Asia and smaller increases elsewhere more than offset a steep decline in Chinese demand of 1 mb/d y-o-y in 3Q22.

OECD 3Q22 demand rose by 840 kb/d y-o-y, led higher by the Americas at 500 kb/d. In Europe, demand posted a smaller rise of just 170 kb/d, including increased gas-to-oil switching. OECD regions have been the main engines of demand growth in 2022, up 1.3 mb/d, as many countries opened up relatively quickly from Covid shutdowns. However, growth will slow dramatically, to just 260 kb/d, on a weaker economic outlook and the new higher baseline from its one-off Covid recovery.

Non-OECD deliveries in 3Q22 posted a y-o-y increase of 350 kb/d despite the sharp fall in China. India (+400 kb/d) and the Middle East (+600 kb/d) both grew substantially y-o-y during 3Q22, representing significant bright spots for demand. These economies have been relatively insulated from climbing global prices. So far, India's economy has been largely impervious to global economic headwinds, while the Middle East has also benefitted from increased prices for energy exports. Alongside these high-growth countries, jet fuel has been a mainstay of rising demand this year (+930 kb/d), steadily gaining ground on pre-pandemic levels and likely to underpin growth throughout 2023 (see *Demand growth slowdown offset by 2023 China rebound and jet fuel gains*).

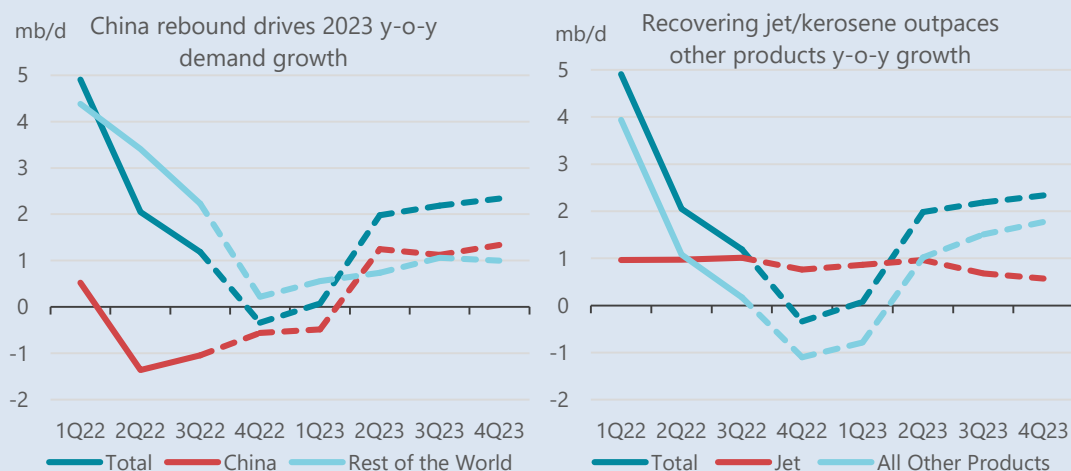
Global Demand by Region								
(thousand barrels per day)								
	Demand				Annual Chg (kb/d)		Annual Chg (%)	
	2020	2021	2022	2023	2022	2023	2022	2023
Africa	3 766	3 991	4 108	4 085	117	- 24	2.9	-0.6
Americas	27 916	30 268	31 062	31 159	794	97	2.6	0.3
Asia/Pacific	34 085	36 187	36 195	37 784	8	1 590	0.0	4.4
Europe	13 136	13 899	14 445	14 464	546	19	3.9	0.1
FSU	4 559	4 848	4 812	4 691	- 36	- 121	-0.7	-2.5
Middle East	8 075	8 480	8 986	9 077	506	91	6.0	1.0
World	91 537	97 673	99 607	101 260	1 934	1 653	2.0	1.7
OECD	42 049	44 843	46 154	46 414	1 311	261	2.9	0.6
Non-OECD	49 488	52 830	53 454	54 846	623	1 392	1.2	2.6

Demand growth slowdown offset by 2023 China rebound and jet fuel gains

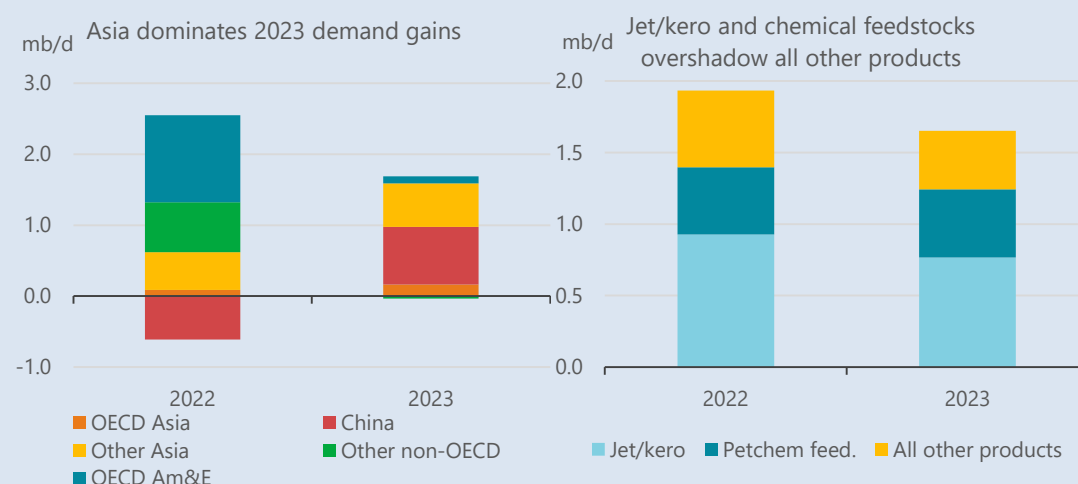
World oil demand growth has gradually eroded over the year, easing from +4.9 mb/d in 1Q22 to 2 mb/d in 2Q22 and 1.2 mb/d in 3Q22. By 4Q22 this will have turned into a 340 kb/d contraction, reflecting steadily worsening macroeconomic fundamentals and a rising baseline as the rebound from pandemic lockdowns wanes. The impact of this baseline effect is considerable – in 1Q21, demand was 5.2 mb/d

below 1Q19, but by 4Q21 the gap with 4Q19 was reduced to 340 kb/d as the world started opening up from Covid pandemic shutdowns.

China, the area of the world most affected by public health restrictions in 2022, saw comparatively limited constraints in 2021. The impact of these restrictions has been a major driver of the global demand slowdown. Indeed, for the world excluding China, this deceleration has been much less abrupt and becomes most apparent in 4Q22. An anticipated gradual rebound in Chinese activity is also the largest single element in 2023 oil use gains, contributing 810 kb/d of the 1.7 mb/d total. The result of these China disruptions is to exaggerate the speed of the slide in underlying demand growth in 2022 and overemphasise the scale of growth next year.



Jet fuel demand was severely impacted by the pandemic and has taken longer to rebound than any other products. However, during 2022 jet fuel has been relatively immune to the worsening macroeconomic environment with its recovery gathering pace, growing at an average of 930 kb/d. Per *Radarbox*, commercial flights briefly surpassed 100,000 per day in early August, 87% of the equivalent 2019 level and 27% higher y-o-y. As with China, this disguises some of the weakness in underlying oil demand. Excluding jet/kerosene, oil demand is set to contract by 1.1 mb/d in 4Q22 and by 790 kb/d in 1Q23.



The vast majority of overall oil demand gains in 2023 will be concentrated in Asia, which will account for 96% of the global total. Apart from China, neighbouring East-Asian economies will benefit from its recovery (including: Hong Kong +80 kb/d, Singapore +90 kb/d, Japan +70 kb/d and Korea +80 kb/d). India, where the economy has continued to perform strongly is likely to see sustained growth next year,

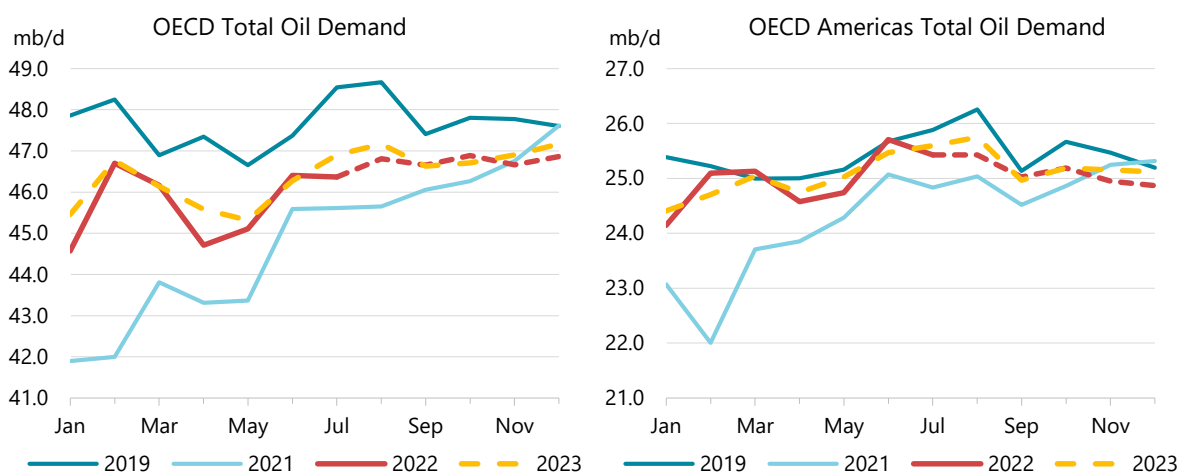
with GDP expected to expand by 4.3%. Based on this, Indian oil use will increase by 180 kb/d in 2023, second only to China.

In contrast, combined oil demand growth in Europe and North America is forecast to slump to a marginal 120 kb/d next year. Increased air traffic and petrochemical feedstock consumption will only narrowly outweigh the downwards pressure from greater vehicle fleet efficiency and rising electric vehicle numbers.

OECD

In 3Q22, OECD deliveries increased by 840 kb/d y-o-y, compared with 2.3 mb/d during 1H22. We expect that demand will contract by 70 kb/d in 4Q22 as weaker GDP growth undermines fuel use. Overall demand for 2022 and 2023 will be 46.2 mb/d (+1.3 mb/d) and 46.4 mb/d (+260 kb/d), respectively. We have reduced our demand forecast for 2023 by 160 kb/d on lower economic growth expectations and higher fuel prices.

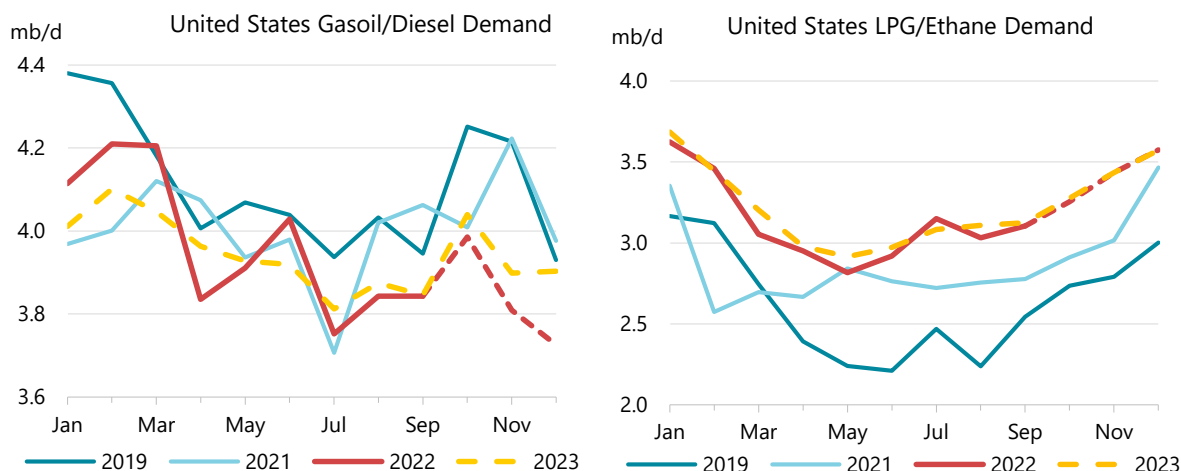
OECD oil demand expanded by 760 kb/d y-o-y in July, with growth dominated by the ongoing rebound in jet/kerosene demand (+780 kb/d) and structural gains in LPG/ethane (+450 kb/d). Flight counts peaked in July, with intra-European flights rising approximately 25% y-o-y. US chemical operations benefitted from the ramp-up of new capacities (up by an average of 7% this year) pushing domestic ethane consumption 390 kb/d higher y-o-y. In contrast, road fuel deliveries remained extremely subdued, with combined gasoline and diesel demand 730 kb/d lower y-o-y, and the traditional summer driving season virtually non-existent. Naphtha cracker operators continued to struggle, particularly in Europe, and OECD naphtha demand fell by 140 kb/d y-o-y.



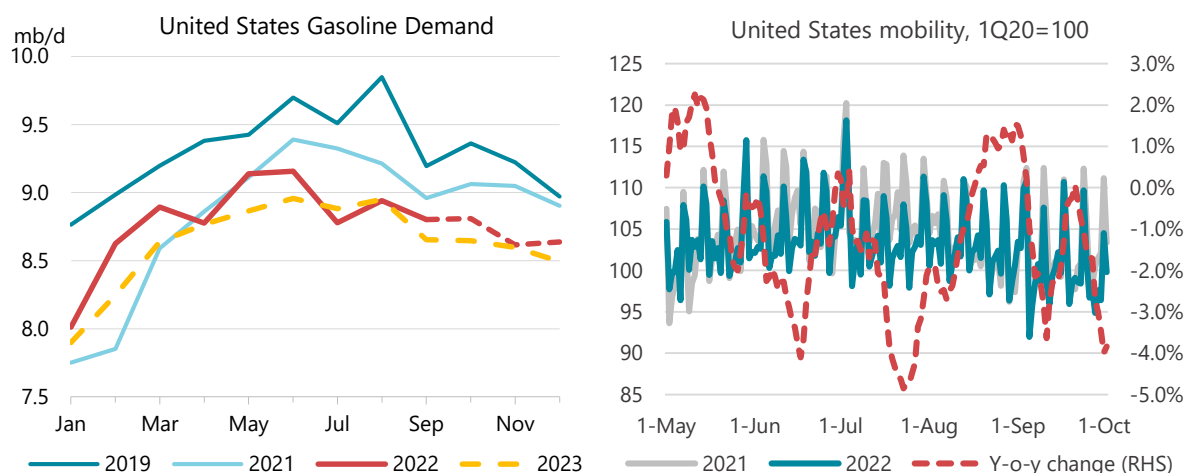
Oil demand in **OECD America** fell by 280 kb/d month-on-month (m-o-m) in July (590 kb/d y-o-y), displaying significant variation between the major products, as tepid gasoil and gasoline consumption in North America was largely offset by firm petrochemical feedstock use. LPG/ethane gains helped propel Canadian demand past 2019 levels for the first time, by 30 kb/d in July. Mexican demand was virtually unchanged m-o-m.

Gasoline demand for the **United States** was 550 kb/d, or 6%, lower y-o-y in July, in line with our forecast and confirming a lacklustre seasonal driving peak. However, subsequent lower pump prices supported a fledgling demand recovery, apparent in preliminary indications for August and September. US gasoline retail prices in September were 22% below their June high, according to

data from *GlobalPetrolPrices.com* (GPP). Google mobility indicators show a partial rebound during August before weakening again in September.



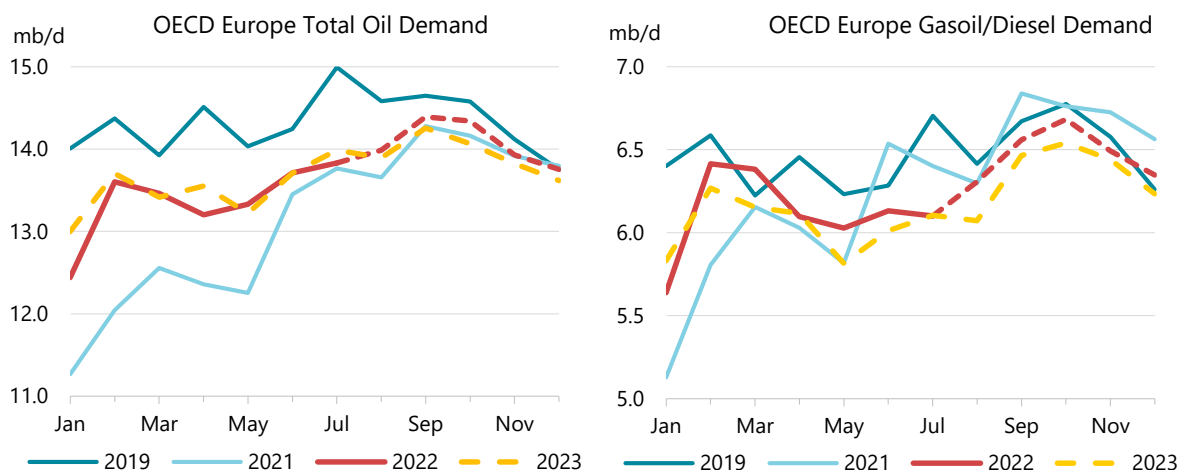
Reflecting the weaker economic environment, US gasoil demand slumped by 280 kb/d m-o-m in July, with y-o-y growth barely positive at 1.2%. Preliminary data for August and September indicate a further deterioration. This is supported by *DAT Freight & Analytics*, which reported a 9.1% m-o-m decline in spot truck cargoes in September. We have reduced our 2H22 demand estimate for gasoil by 70 kb/d; our overall demand outlook for the US as a whole is lower for both 2022 (-10 kb/d to 400 kb/d y-o-y) and 2023 (-100 kb/d to flat y-o-y growth).



Deliveries in **OECD Europe** rose by 120 kb/d in July, about half their normal seasonal increase (July is when European usage tends to reach its summer peak). Year-on-year growth slowed to 70 kb/d, or 0.5%, as strong jet/kerosene (+520 kb/d y-o-y) was weighed down by naphtha (-140 kb/d y-o-y) and diesel (-380 kb/d y-o-y). Naphtha deliveries remained subdued, as European steam cracker margins stayed near record lows, while diesel usage suffered from lower industrial activity. We have maintained our gas-to-oil switching scenario of 400-500 kb/d in total substitution demand in Europe during 4Q22 and 1Q23 (+300 kb/d y-o-y). We expect total oil demand growth of 530 kb/d in 2022, followed by almost non-existent growth 20 kb/d y-o-y growth in 2023, lower by 110 kb/d compared to last month's *Report* due to Europe's rapidly deteriorating economic outlook.

Indeed, extremely high gas prices and gloomy sentiment have pushed the eurozone's economy to the brink of contraction and the bloc is set to slip into recession by early next year. The consensus GDP growth forecast for 2023 has fallen by more than two points since Russia's invasion of Ukraine,

to an anaemic 0.3%. Consequently, manufacturing output is floundering, as energy-intensive sectors have been forced to cut production. A September survey by the German chemical industry association (VCI) found that 34% of operators have cut production, a five-fold increase since June, while 14% have moved production abroad. Germany's Ifo business climate index dropped for the fourth consecutive month in September, from 88.5 to 84.3, to the lowest since May 2020.



Demand in **OECD Asia Oceania** rose 130 kb/d m-o-m in July (100 kb/d y-o-y), in line with its historical seasonal pattern. The biggest contribution came from Korean naphtha demand (+160 kb/d m-o-m, +30 kb/d y-o-y), supported by relatively resilient cracker margins. Japanese consumption growth was slightly negative, both on a monthly (-20 kb/d m-o-m) and yearly (-10 kb/d y-o-y) basis.

August data for Korea were softer. Gasoline demand growth stalled, as the country saw the heaviest rainfall in eight decades. Traffic flows were disrupted as reflected in a steep drop in *Google's* mobility indicator for the country.

The region's economic conditions continue to deteriorate, due both to its exposure to China's slowdown and to dollar-related economic stress. Asia's economies are finding themselves in speculators' crosshairs, as the Federal Reserve's aggressive tightening contrasts with Asia's generally more accommodative monetary policies. Japan is now the only country in the world that still has negative interest rates, while elevated domestic debt levels prevent Korea from raising rates aggressively. This monetary dovishness sent the yen and won to multi-decade lows again in September, prompting central bank intervention to shore up national currencies. As both countries are reliant on oil imports, the present extreme currency weakness dents their purchasing power.

This adverse price effect and the waning economic outlook are largely counterbalanced by supportive developments in individual oil products. Japan's Meteorological Agency forecasts a colder-than-normal winter, which is likely to increase use of kerosene and LPG, as well as boosting oil-fired power generation given the price advantage to gas. Jet/kerosene's outlook will also improve after Japan confirmed the end of Covid-19 related border restrictions in October (at present, international flight traffic is still at less than half of pre-pandemic levels). We see jet/kerosene demand recovering steadily, attaining the highest growth rate among the major products in 2023 at 15% y-o-y. All in all, our forecasts for OECD Asia Oceanian oil demand for 2022 and 2023 are little changed, at 7.5 mb/d and 7.6 mb/d, respectively.

OECD Demand based on Adjusted Preliminary Submissions - August 2022

(million barrels per day)

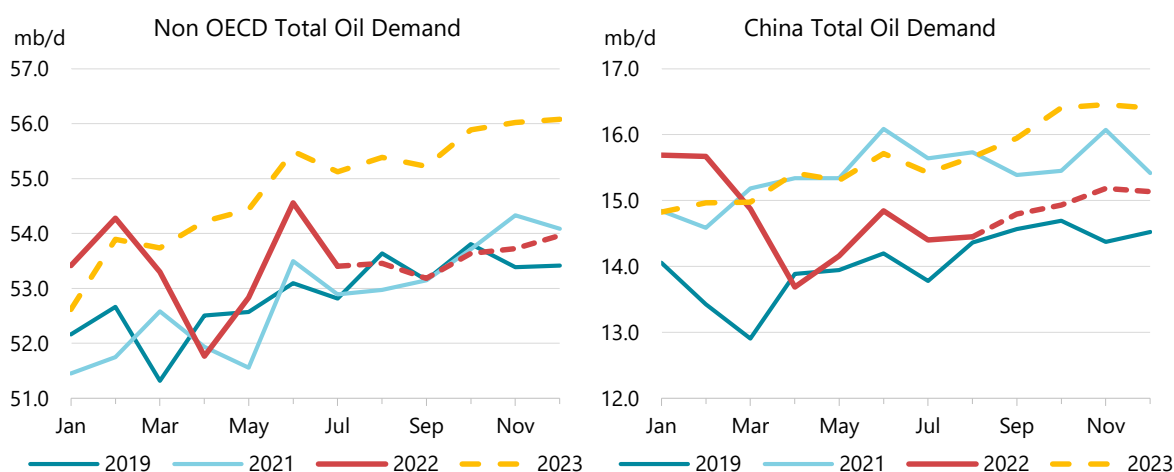
	Gasoline		Jet/Kerosene		Diesel		LPG/Ethane		RFO		Other		Total Products	
	mb/d	% pa	mb/d	% pa	mb/d	% pa	mb/d	% pa	mb/d	% pa	mb/d	% pa	mb/d	% pa
OECD Americas	10.59	-1.7	2.02	13.7	3.36	1.6	3.84	9.5	0.53	-7.0	5.08	-0.3	25.43	1.6
US*	8.94	-3.0	1.73	8.9	2.44	-3.8	3.03	10.0	0.37	-5.2	4.11	-3.3	20.61	-0.5
Canada	0.80	-5.8	0.17	56.9	0.33	-1.0	0.43	10.6	0.03	28.7	0.72	17.3	2.49	7.1
Mexico	0.76	23.9	0.09	31.9	0.40	71.4	0.32	4.9	0.13	-19.8	0.23	8.7	1.94	21.4
OECD Europe	2.18	-0.9	1.44	35.4	5.04	-1.6	1.08	-1.8	0.89	16.6	3.35	-1.5	13.99	2.4
Germany	0.53	6.6	0.21	36.3	0.79	3.3	0.10	-18.0	0.05	5.0	0.60	-3.4	2.28	3.4
United Kingdom	0.26	-4.4	0.29	86.9	0.47	-1.9	0.11	-0.7	0.02	17.9	0.27	7.1	1.44	10.5
France	0.26	4.7	0.17	38.4	0.68	-6.8	0.11	-9.8	0.04	31.3	0.33	1.6	1.57	0.7
Italy	0.18	-6.0	0.11	13.3	0.42	-11.2	0.09	-0.7	0.10	4.9	0.26	5.8	1.17	-2.8
Spain	0.13	-8.8	0.15	41.8	0.43	-4.5	0.06	39.5	0.14	18.6	0.32	-7.4	1.24	2.1
OECD Asia & Oceania	1.45	8.2	0.51	26.2	1.47	8.0	0.69	1.3	0.50	14.6	2.77	1.4	7.39	6.3
Japan	0.78	1.4	0.22	0.6	0.43	7.7	0.32	2.0	0.28	18.0	1.28	10.3	3.31	6.8
Korea	0.28	14.6	0.15	38.8	0.46	17.4	0.29	-1.0	0.19	6.0	1.26	-6.1	2.63	2.8
Australia	0.27	29.7	0.12	122.4	0.52	-0.1	0.05	3.9	0.01	69.2	0.10	11.7	1.08	15.5
OECD Total	14.22	-0.6	3.97	22.4	9.88	0.8	5.61	6.1	1.92	8.5	11.21	-0.3	46.81	2.5

* Including US territories

Non-OECD

Total non-OECD oil demand is set to average 53.5 mb/d in 2022, up by 620 kb/d y-o-y. This growth will quicken to 1.4 mb/d in 2023 as Chinese demand recovers. Excluding China (where usage will shrink by 610 kb/d), growth will register 1.3 mb/d for 2022 before slowing to 580 kb/d next year. Strong performances in India (+400 kb/d) and the Middle East (+510 kb/d), have unspinned 2022 gains.

Following a sharp drop of 1.2 mb/d m-o-m in July, non-OECD demand held steady in August, reflecting the impact of China's ongoing economic malaise. As this continues, we expect non-OECD oil use to remain close to 2021 levels through 2H22.



Based on national statistics for August, we estimate that **Chinese** demand remained subdued, only 50 kb/d above July and 1.3 mb/d behind August 2021. Among major products, gasoil (-530 kb/d y-o-y, -14.8%) and gasoline (-310 kb/d, -8.4%) demand contracted most abruptly on an annual basis. While *Oxford University* estimates of lockdown levels remained high in August and September, *Baidu* indicators of congestion in the country's largest cities show that drivers have mostly returned to the road at peak times. Meanwhile, *Radarbox* flight numbers declined sharply from late-August onwards, before staging a partial recovery in late September.

China: Demand by Product								
(thousand barrels per day)								
	Demand				Annual Chg (kb/d)		Annual Chg (%)	
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Naphtha	1 479	1 679	1 767	1 879	87	112	5.2	6.3
Motor Gasoline	3 156	3 502	3 421	3 517	- 81	96	-2.3	2.8
Jet Fuel & Kerosene	755	733	564	740	- 169	176	-23.1	31.3
Gas/Diesel Oil	3 022	3 399	3 297	3 488	- 102	191	-3.0	5.8
Residual Fuel Oil	490	527	539	577	13	37	2.5	6.9
Other Products	3 466	3 434	2 913	2 983	- 521	71	-15.2	2.4
Total Products	14 204	15 427	14 814	15 627	- 613	813	-4.0	5.5

There has been a host of negative headlines relating to China's economic outlook in recent months, especially for the real estate and construction sectors. Along with public-health measures, these woes are weighing on sentiment, with the *Caixin China Manufacturing PMI* showing a deepening slowdown in September (falling to 48.1, from the already contractionary 49.5 in August). The 2023 *Oxford Economics* GDP growth estimate used in our modelling has been revised down to 4.9%. The estimates of economists surveyed by *Bloomberg* range from around 2% to close to 7%, highlighting the degree of uncertainty inherent in the 2023 outlook.

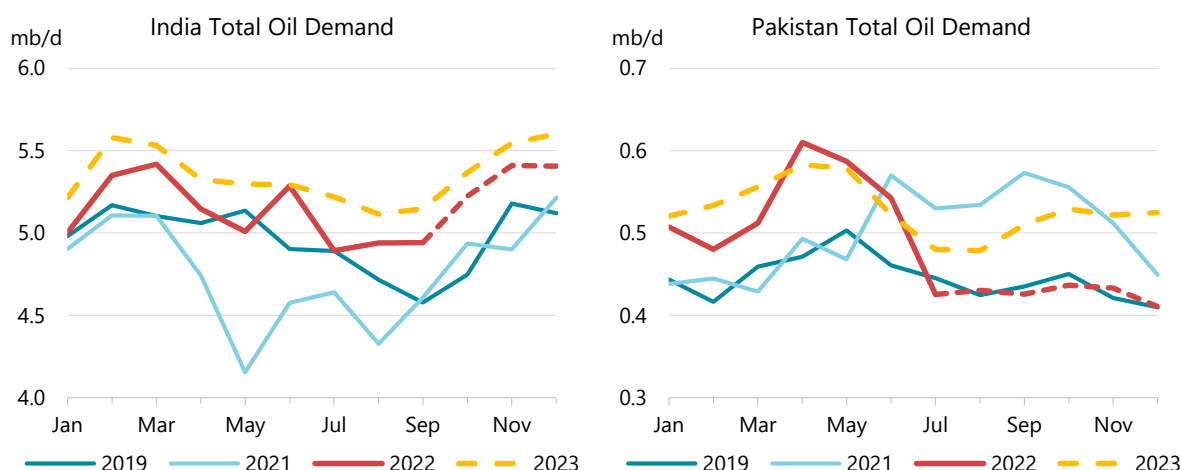
Furthermore, recent experience suggests that once eased, restrictions can quickly be re-imposed and that the pace of relaxation will be geographically uneven. Therefore, we now assume these disruptions will play a greater role in dampening oil demand into 1Q23 and beyond. While y-o-y growth will return by April, demand will not significantly exceed 2021 levels until September 2023. This is despite large-scale structural growth in petrochemical feedstock demand. For 2023 we estimate that total naphtha and LPG demand will be 490 kb/d higher than in 2021.



India currently leads the world in demand growth, posting an impressive y-o-y rise of 610 kb/d in August and 330 kb/d in September according to official data. All major products except LPG registered annual increases of at least 10% in August. Gasoil (+180 kb/d y-o-y) and gasoline (+90 kb/d) remained the principal engines of growth as business activity and personal mobility go from strength to strength. This year's monsoon season, typically coinciding with much lower demand, appears to have had a more limited impact than usual. The *S&P Global India Manufacturing PMI* shows the sector in rude health, despite slipping from 56.2 in August to 55.1 in September. The rate of production, hiring and expansion by businesses remained close to historical highs with inflationary cost pressures easing slightly. Pump prices, kept in check by government price controls, held relatively stable over the past year, according to GPP statistics. Diesel prices were flat y-o-y in August and gasoline prices were about 1% higher. In comparison, the equivalent US prices rose by 50% and 20%, respectively, over the same period.

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	922	934	30	12	3.4	1.3
Naphtha	313	313	294	299	- 18	5	-5.9	1.6
Motor Gasoline	698	781	865	901	84	36	10.7	4.1
Jet Fuel & Kerosene	118	127	152	204	25	52	20.1	34.3
Gas/Diesel Oil	1 448	1 551	1 705	1 789	154	84	9.9	4.9
Residual Fuel Oil	146	152	160	159	8	- 1	5.2	-0.6
Other Products	984	950	1 068	1 065	118	- 3	12.4	-0.3
Total Products	4 582	4 765	5 166	5 351	401	185	8.4	3.6

Overall, Indian demand increased by 400 kb/d y-o-y in 3Q22, and was 190 kb/d higher than in 3Q19. We expect gains of 330 kb/d in 4Q22 (100 kb/d higher than 4Q19), losing some momentum due to the slowing macro climate. However, the strong state of the Indian economy and insulation from higher prices should be sufficient to propel India to further gains against 2019 levels and maintain the country's place at the top of growth charts.



Forming a sharp contrast with its larger neighbour, **Pakistani** oil demand dramatically declined in July and August. Deliveries collapsed between June and July, dropping by 120 kb/d (22%) and stayed close to this level in August. Local diesel and gasoline prices jumped by 60% and 50% respectively from May to July, following the government's agreement of a bailout deal with the IMF. Additionally, the country suffered an exceptionally severe monsoon season with devastating flooding across large swathes of the country.

Middle Eastern oil demand declined by 80 kb/d from June. This was primarily due to a large reduction in **Saudi Arabian** fuel oil use (-140 kb/d m-o-m), although demand for oil products used in **Iraqi** power generation was slightly higher (+30 kb/d). Higher fuel oil and direct crude use, along with rebounding air traffic and marine bunkering demand, are behind an overall increase in Middle East demand of 600 kb/d y o y in 3Q22 and 510 kb/d, to 9 mb/d, for 2022.

We have increased our expectations for 2022 oil use in **Russia** by 60 kb/d compared with last month's *Report*. This reflects an upward revision to the GDP expectations used in our projections. Additionally, the military contribution to gasoil (+110 kb/d y-o-y) demand has become increasingly apparent. Total demand is set to edge up by 30 kb/d this year.

Argentinian demand declined in August, by 30 kb/d m-o-m (slightly more than the normal seasonal fall). However, deliveries remained surprisingly resilient in the face of a sharp rise in local prices

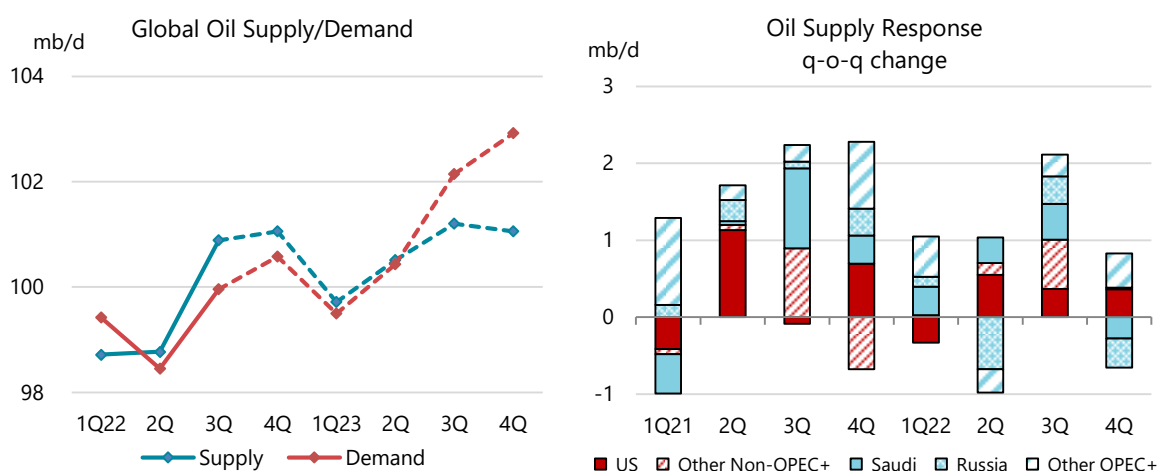
(diesel +25% m-o-m) and grew by 50 kb/d y-o-y. Official **Brazilian** data for July and August remain unavailable at the time of writing.

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	3 991	4 108	4 085	117	- 24	2.9	-0.6
Asia	26 918	28 805	28 726	30 153	- 79	1 427	-0.3	5.0
FSU	4 559	4 848	4 812	4 691	- 36	- 121	-0.7	-2.5
Latin America	5 447	5 936	6 040	6 060	104	20	1.8	0.3
Middle East	8 075	8 480	8 986	9 077	506	91	6.0	1.0
Non-OECD Europe	723	770	782	781	12	- 1	1.6	-0.1
Total Products	49 488	52 830	53 454	54 846	623	1 392	1.2	2.6

Supply

Overview

The OPEC+ alliance has disrupted global oil supply growth through next year with its early October decision to cut official production targets by 2 mb/d – an ostensible “pre-emptive” bid to support oil markets pressured by a faltering economy and weakening demand. The actual reduction, shouldered by Saudi Arabia and the UAE, is likely to be half that amount as most of the bloc – from Russia to Nigeria – is already pumping far below quotas (see *OPEC+ stymies stockbuild with biggest cut since Covid*). Our current estimate is for a decrease of around 1 mb/d from November which will sharply reduce a previously expected build in critically low oil inventories.



After a massive 2.1 mb/d boost from the second to third quarter, global oil supply growth is now forecast to decelerate to just 170 kb/d from the third to fourth quarter. It was the world's top three producers – Saudi Arabia (unwinding OPEC+ cuts), the US (chugging ahead) and Russia (showing resilience despite sanctions) – that propelled supply above demand in the third quarter. Stock building is now expected to slow considerably in the last three months of this year – despite our downgrade to demand growth – as Saudi output is constrained by new lower quotas and Russian production drops due to the EU embargo on its crude oil. But any price support from the OPEC+ decision is unlikely to spur further immediate upside from those producers outside the alliance (non-OPEC+). Non-OPEC+ is on course to provide an additional 290 kb/d of supply by the end of 2022.

In the wake of the OPEC+ decision to slash output, our forecast for annual supply growth has been lowered by an average 220 kb/d this year and 1.2 mb/d in 2023. Global production is now forecast to rise by 4.6 mb/d to 99.9 mb/d in 2022. OPEC+ is projected to contribute 3 mb/d, with Saudi Arabia set to post the largest year-on-year (y-o-y) increase. Non-OPEC+ supplies are expected to rise by 1.5 mb/d in 2022, with the US providing 70% of the increase at 1.1 mb/d. Canada, China and Guyana also deliver solid gains, albeit these volumes are much more modest.

Growth in 2023 is set to slow markedly, to just 760 kb/d, yet it will still reach a record 100.6 mb/d, led by non-OPEC+ supply (+1.8 mb/d). The US is forecast to reach an all-time high and again

contribute the largest share of non-OPEC+ growth at 60%. Output from OPEC+ is expected to contract by more than 1 mb/d, due to a combination of the recent cut in targets and a plunge in Russia's annual production as the EU embargo comes into full effect next February.

As for September, OPEC+ accounted for more than 85% of the 300 kb/d increase that lifted world oil supply to 101.2 mb/d. Russia led the rise in total oil (thanks to a recovery in condensate output), Libyan output continued to recover following months of unrest while Saudi Arabia and the UAE delivered largely in line with an OPEC+ quota increase. Production from non-OPEC+ rose by a modest 40 kb/d month-on-month (m-o-m) as gains in the UK and China were partially offset by seasonal declines in biofuels and maintenance in Norway.

Oil Supply by Select Producers

(million barrels per day)

	2021	Δ	2022	Δ	2023
Non-OPEC+	46.3	1.5	47.9	1.8	49.7
US	16.8	1.1	17.9	1.2	19.1
Canada	5.6	0.2	5.7	0.1	5.8
China	4.1	0.1	4.2	0.0	4.2
Brazil	3.0	0.1	3.1	0.3	3.4
Norway	2.0	-0.1	1.9	0.2	2.1
Guyana	0.1	0.2	0.3	0.1	0.3
Non-OPEC+ Other	14.7	0.0	14.7	0.0	14.7
OPEC+	49.0	3.0	52.0	-1.1	50.9
Saudi Arabia	11.0	1.6	12.6	-0.1	12.5
Russia	10.9	0.1	10.9	-1.4	9.5
Iraq	4.1	0.4	4.5	0.0	4.6
UAE	3.6	0.5	4.1	0.0	4.1
Iran	3.4	0.1	3.5	0.0	3.6
Kazakhstan	1.8	0.0	1.8	0.1	2.0
Nigeria	1.7	-0.2	1.5	0.0	1.5
OPEC+ Other	12.5	0.5	13.0	0.2	13.1
Total Supply	95.3	4.6	99.9	0.8	100.6

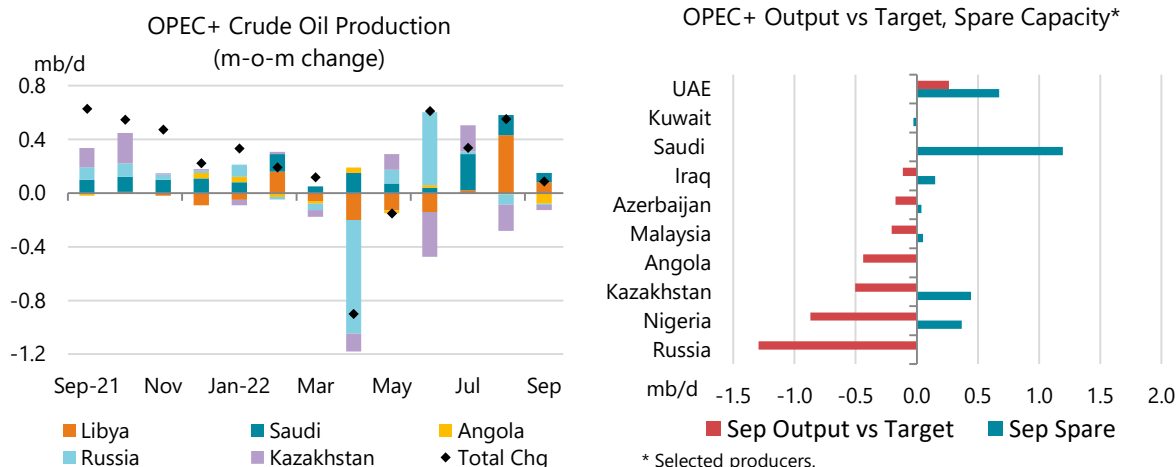
World Oil Production by Region (OPEC+ based on current agreement)

(million barrels per day)

	2021	1Q22	2Q22	3Q22	4Q22	2022	1Q23	2Q23	3Q23	4Q23	2023
Africa	7.4	7.4	7.0	7.0	7.3	7.2	7.4	7.3	7.3	7.3	7.3
Latin America	5.9	6.2	6.2	6.4	6.6	6.3	6.7	6.7	6.8	6.9	6.8
North America	24.4	25.0	25.4	26.0	26.5	25.7	26.5	26.8	27.3	27.4	27.0
China	4.1	4.2	4.2	4.1	4.1	4.2	4.2	4.2	4.2	4.1	4.2
Other Asia	3.4	3.3	3.2	3.1	3.2	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	3.4	3.4	3.4	3.6	3.4
FSU	13.8	14.4	13.4	13.7	13.6	13.8	12.6	12.5	12.4	12.5	12.5
Middle East	27.9	30.1	30.9	31.8	31.2	31.0	31.0	31.0	31.0	31.0	31.0
Total Oil Production	90.3	94.0	93.5	95.2	95.8	94.6	94.8	95.0	95.4	95.7	95.2
Processing Gains	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.4	2.4	2.4	2.4
Global Biofuels	2.8	2.4	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	100.9	101.1	99.9	99.7	100.5	101.2	101.1	100.6
<i>OPEC Crude</i>	31.5	33.8	34.1	34.9	34.8	34.4	34.6	34.6	34.6	34.6	34.6
<i>OPEC NGLs</i>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<i>Non-OPEC OPEC+</i>	17.4	18.2	17.2	17.5	17.4	17.6	16.5	16.3	16.2	16.3	16.3
Total OPEC+	49.0	52.0	51.3	52.4	52.2	52.0	51.1	50.9	50.8	50.8	50.9

OPEC+ crude oil supply

In September, OPEC+ crude oil supply rose by 90 kb/d to 44.78 mb/d – led by Libya, Saudi Arabia and the UAE. Maintenance and operational issues pushed down output in Angola, Nigeria and Kazakhstan. Volumes from OPEC countries increased by 120 kb/d to 29.89 mb/d while output from non-OPEC partners eased 30 kb/d to 14.89 mb/d. Production from the 19 members bound by the bloc's supply deal edged up by 40 kb/d compared to a planned increase of 100 kb/d for September.



Despite the group's overall higher output, sanctions on Russia, operational issues and capacity constraints combined to leave supply 3.4 mb/d short of its official target. Russia (1.3 mb/d below its quota), Nigeria (undershooting by 870 kb/d) and Kazakhstan (500 kb/d below) posted the largest deficits. However, the yawning gap between actual output and quotas could shrink to roughly 2 mb/d once the bloc implements new curbs in November (see *OPEC+ stymies stockbuild with biggest cut since Covid*).

OPEC+ Crude Oil Production ¹						
(million barrels per day)						
	Aug 2022 Supply	Sep 2022 Supply	Sep Prod vs Target	Sep 2022 Target	Sustainable Capacity ²	Eff Spare Cap vs Sep ³
Algeria	1.02	1.02	-0.04	1.06	1.0	0.0
Angola	1.17	1.09	-0.44	1.53	1.2	0.0
Congo	0.26	0.28	-0.05	0.33	0.3	0.0
Equatorial Guinea	0.08	0.09	-0.04	0.13	0.1	0.0
Gabon	0.21	0.22	0.03	0.19	0.2	0.0
Iraq	4.54	4.55	-0.11	4.66	4.7	0.1
Kuwait	2.80	2.82	0.00	2.82	2.8	0.0
Nigeria	0.98	0.96	-0.87	1.83	1.3	0.4
Saudi Arabia	10.96	11.03	0.00	11.03	12.2	1.2
UAE	3.41	3.45	0.26	3.19	4.1	0.7
Total OPEC-10	25.43	25.51	-1.24	26.75	27.9	2.4
Iran ⁴	2.57	2.54			3.8	
Libya ⁴	1.08	1.16			1.2	0.0
Venezuela ⁴	0.69	0.68			0.8	0.1
Total OPEC	29.77	29.89			33.7	2.5
Azerbaijan	0.55	0.54	-0.17	0.72	0.6	0.0
Kazakhstan	1.25	1.21	-0.50	1.71	1.7	0.4
Mexico ⁵	1.63	1.64		1.75	1.7	0.0
Oman	0.88	0.88	0.00	0.88	0.9	0.0
Russia	9.74	9.74	-1.29	11.03	10.2	
Others ⁶	0.87	0.89	-0.22	1.11	0.9	0.1
Total Non-OPEC	14.92	14.89	-2.19	17.20	15.9	0.6
OPEC+¹⁹ in cut deal[*]	38.73	38.76	-3.44	42.20	42.1	2.9
Total OPEC+	44.69	44.78			49.6	3.1

1 Excludes condensates.

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

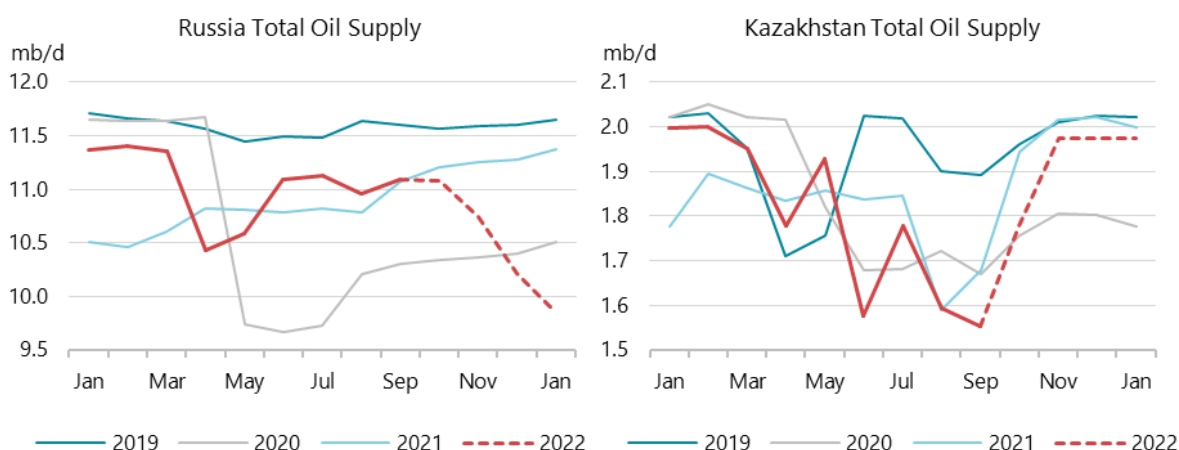
3 Excludes shut in Iranian, Russian crude.

4 Iran, Libya, Venezuela exempt from cuts.

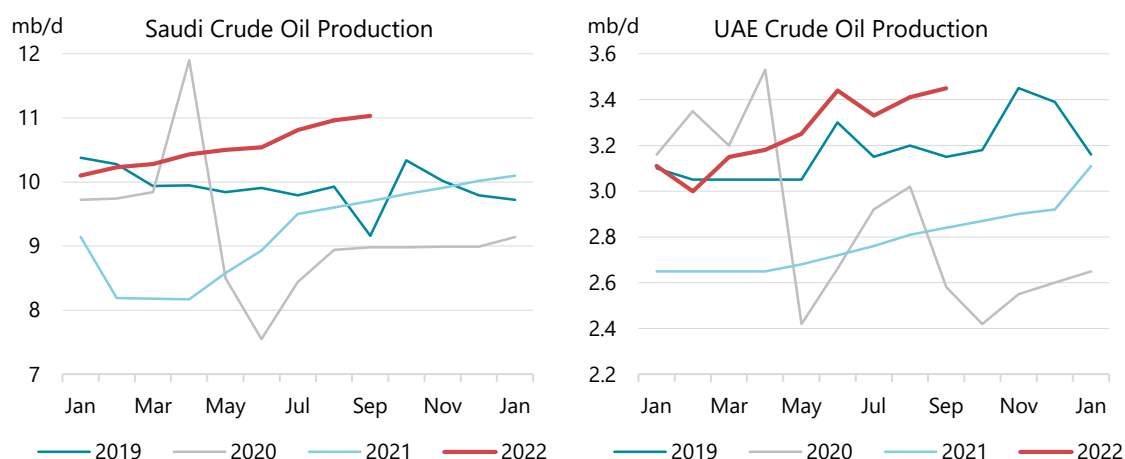
5 Mexico excluded from OPEC+ compliance.

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

In September, **Russia's** crude oil supply held broadly steady at 9.74 mb/d. But a recovery in condensates pushed total production of crude oil, condensates and NGLs to 11.1 mb/d, up 130 kb/d m-o-m but still 310 kb/d below pre-invasion levels. We expect Russian oil output to ease gradually from next month and assume the decrease will deepen in December when the EU embargo on Russian crude oil takes effect. The implementation of the embargo at end-year will hold annual average oil output in 2022 at 10.9 mb/d, steady versus 2021. By the start of next year, we forecast that close to 2 mb/d will be shut in, which would reduce total oil volumes to 9.5 mb/d on average in 2023.



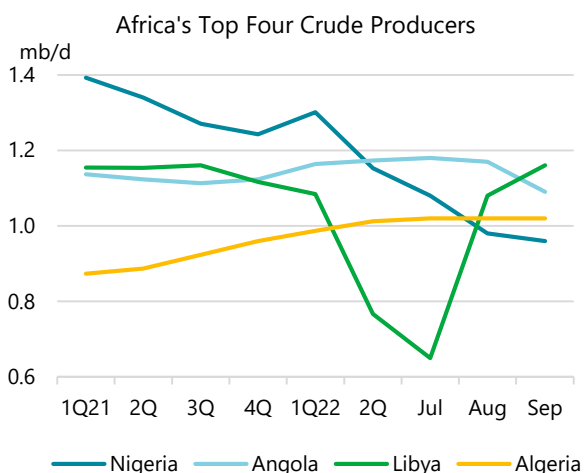
Kazakh supply declined for the second month running due to ongoing operational issues and maintenance. With crude oil production easing 40 kb/d to 1.21 mb/d, total crude/condensate output stood at 1.55 mb/d. The offshore Kashagan field, hit by a gas leak in August, continued to pump at around a quarter of its 400 kb/d capacity. At the same time, the 270 kb/d Karachaganak field was in a scheduled overhaul that was due to run from 12 September through 6 October. The country's energy minister was reported as saying he expects Kashagan to return to full capacity by the end of October.



Saudi Arabia led Middle East production higher, with output topping 11 mb/d, a monthly level scaled only three times previously and broadly in line with a previously pledged OPEC+ increase. Crude oil supply from the Kingdom rose 70 kb/d as exports to world markets edged up. Next month, however, Saudi crude supply is poised to fall roughly 550 kb/d to 10.48 mb/d - in line with its lower OPEC+ target.

The **UAE**, producing significantly above its OPEC+ target since the start of 2022, raised crude oil supply to 3.45 mb/d (+40 kb/d). Our production assessment is based on net exports (using tanker tracking) of roughly 2.9 mb/d, a reported crude stock build of 20 kb/d, our estimate for crude throughput in domestic refineries of 750 kb/d and an assumed 220 kb/d of condensates that are spiked into crude oil streams. Production is, however, expected to fall by around 160 kb/d from next month – in line with new OPEC+ cuts. In **Iraq**, volumes crept up to 4.55 mb/d, 110 kb/d below its OPEC+ target. Crude oil production in **Iran**, exempt from the OPEC+ supply pact, eased 30 kb/d to 2.54 mb/d in September on slower exports to China, its primary buyer. 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 gradually restored in about six to eight months.

Combined crude oil output from African members of OPEC+ inched up 30 kb/d after a further rebound in Libya offset a steep decline in Angola and a further dip in Nigeria. **Libyan** crude oil increased by 80 kb/d to an average 1.16 mb/d. The North African producer has seen a steady recovery in production after a deal was reached in July with protesters and tribal leaders to restart ports and oil fields that had been shut for months. **Angola** posted the single largest loss within OPEC+ with output falling 80 kb/d to 1.09 mb/d due to maintenance and operational issues. Crude oil supply in **Nigeria** eased 20 kb/d to 960 kb/d. Chronic underinvestment, sabotage and oil theft have pushed output to the lowest ever monthly level in our data going back nearly 40 years with the core export streams of Forcados, Bonny Light and Brass River running at a trickle. Shipments of Forcados have been halted since mid-July but are reportedly expected to restart in the second half of October.



OPEC+ stymies stockbuild with biggest cut since Covid

OPEC+ is gearing up for its largest supply cut since the start of the Covid pandemic, hindering a much-needed stockbuild when world oil inventories are still well below the five-year industry average, a benchmark the group has typically used to assess the market outlook. The bloc's supply target, agreed on 5 October at its first in-person meeting in Vienna since early 2020, will be decreased – on paper – by 2 mb/d from November through the end of next year. But with much of the group pumping far below official production targets, the actual volume removed from the market is likely to be closer to 1 mb/d, with the lion's share shouldered by Saudi Arabia and the UAE.

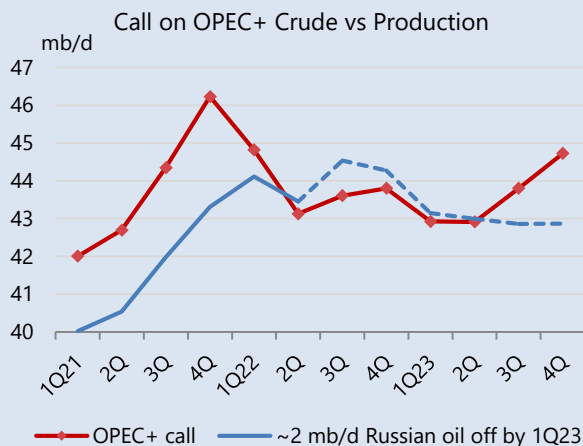
The reduction from November follows a token 100 kb/d cut in October that was widely regarded as a signal of further defensive action. A communique released after the OPEC+ meeting cited an uncertain outlook for the global economy and the oil market and described the group's decision as "proactive". Washington swiftly called the group's policy "short-sighted" as oil prices spiked on the news.

Although the decision for the so-called voluntary adjustments was unanimously endorsed, it will have little to no impact on most of the 19 members in the supply pact, including Russia. Underinvestment, operational issues and sanctions are preventing most from producing at or near pre-existing or new targets. As of September, OPEC+ crude oil output was 3.4 mb/d below its target. That is why the volume

loss will be less than the headline figure suggests. Saudi Arabia and the UAE will provide 526 kb/d and 160 kb/d, respectively, or around 70% of the expected actual 1 mb/d reduction.

The impending OPEC+ curbs will also slow the much-needed replenishment of global inventories for the rest of this year and into 2023. In the third quarter, the bloc's production exceeded the requirement for its crude by 930 kb/d, creating an implied surplus. However, in the fourth quarter we expect OPEC+ supply will run at 480 kb/d above the 43.8 mb/d call on its crude. And next year the implied OPEC+ call falls to 42.9 mb/d in the first half of the year versus similar average output.

The 23-member producer group also extended the declaration of cooperation, the foundation of the OPEC+ alliance, through the end of 2023 and agreed to meet less often. Ministerial meetings will take place every six months, with the next scheduled for 4 December.



New OPEC+ Supply Targets and Production Estimates

(million barrels per day)

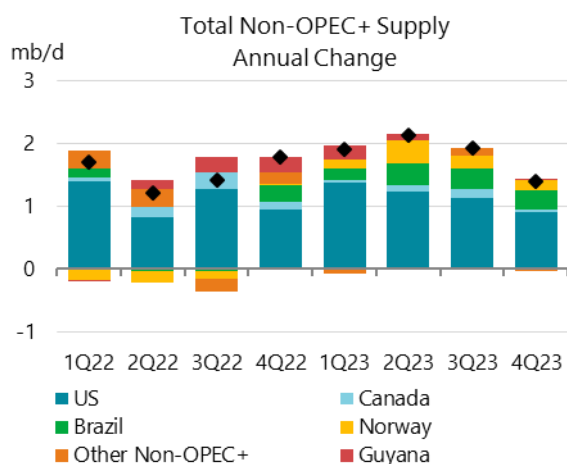
	Oct	Nov 22-Dec 23	Voluntary	Nov Est	Oct-Nov	Nov vs
	Target	Target	Cut	Production	Change	Target
Algeria	1.055	1.007	0.048	1.007	-0.013	0
Angola	1.525	1.455	0.070	1.101	0	-0.354
Congo	0.325	0.310	0.015	0.280	0	-0.030
Eq. Guinea	0.127	0.121	0.006	0.095	0	-0.026
Gabon	0.186	0.177	0.009	0.177	-0.009	0
Iraq	4.651	4.431	0.220	4.431	-0.129	0
Kuwait	2.811	2.676	0.135	2.676	-0.124	0
Nigeria	1.826	1.742	0.084	1.100	0.070	-0.642
Saudi Arabia	11.004	10.478	0.526	10.478	-0.526	0
UAE	3.179	3.019	0.160	3.240	-0.160	0.221
Total OPEC 10	26.689	25.416	1.273	24.585	-0.870	-0.831
Azerbaijan	0.717	0.684	0.033	0.559	-0.004	-0.125
Kazakhstan	1.706	1.628	0.078	1.628	0.196	0.000
Oman	0.881	0.841	0.040	0.841	-0.039	0
Russia	11.004	10.478	0.526	9.440	-0.314	-1.038
Others*	1.106	1.056	0.050	0.854	-0.012	0.012
Total Non-OPEC	15.414	14.687	0.727	13.322	-0.174	-1.151
Total OPEC+	42.103	40.103	2.000	37.907	-1.044	-1.982

*Bahrain, Brunei, Malaysia, Sudan, South Sudan

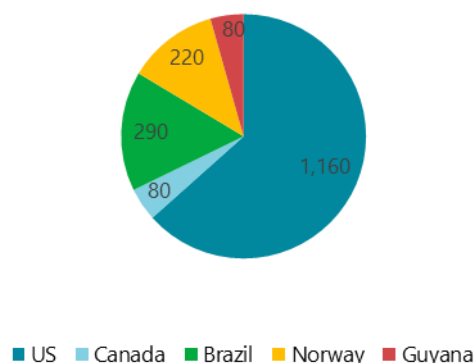
Non-OPEC+

While OPEC+ inked a deal to reduce output through the remainder of this year and 2023, non-OPEC+ countries will continue to expand production as previously assumed, with no short term impact on volumes. On top of the 2.2 mb/d increase seen from January through September, non-OPEC+ producers will add a further 290 kb/d of supply by the end of 2022, for an average annual gain of 1.5 mb/d. Next year sees growth accelerate to 1.8 mb/d, bringing total production to

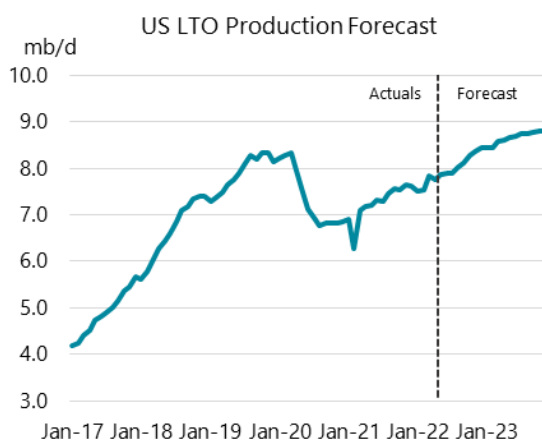
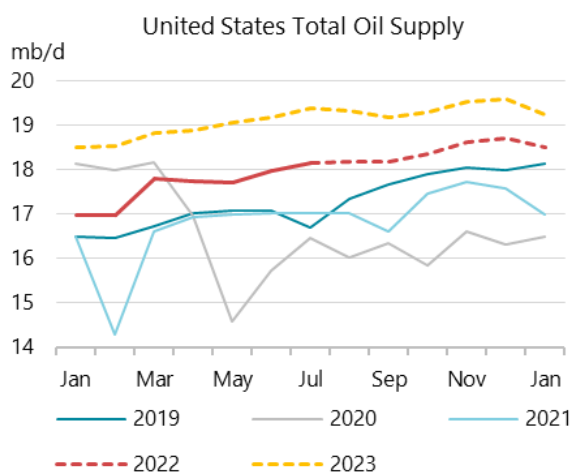
49.7 mb/d, with the US, Norway and Guyana providing over 90% of the gains. In September, non-OPEC+ volumes grew by 40 kb/d m-o-m, to 48.5 mb/d as increases in the UK and China were partially offset by seasonal declines in biofuels and maintenance in Norway.



2023 Non-OPEC+ Supply Annual Change (kb/d)



Total oil supply in the **United States** is forecast to increase by 1.1 mb/d this year and 1.2 mb/d in 2023, to average 17.9 mb/d and 19.1 mb/d, respectively. In September, US output was relatively flat as lower Gulf of Mexico (GoM) supply offset gains in light tight oil (LTO) and Alaska. The Gulf of Mexico declined by 100 kb/d as Shell closed two crude pipelines in the first half of the month for maintenance and producers in the eastern GoM shuttered operations pre-emptively as Hurricane Ian was forecast to impact platforms. The hurricane did not damage any oil installations in the region and all facilities have been ramping back to normal operations.



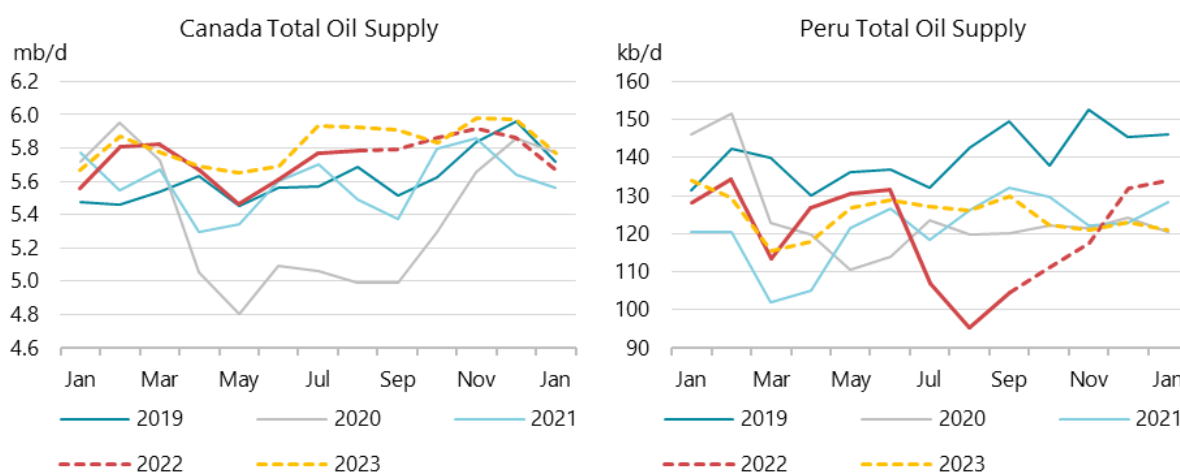
In July, the latest month for which official data from the US Energy Information Administration (EIA) are available, total oil supply rose by 160 kb/d as NGLs, and in particular ethane, continued its upward trajectory. Lower 48 production was flat as gains in Texas and New Mexico (the Permian basin) were offset by losses in North Dakota and Oklahoma, where completions lagged in the previous month.

Activity has returned in North Dakota and remains close to capacity in most other LTO basins. Frackers continue to face a tough path forward as labour and equipment constraints hold back supply and other challenging market conditions – such as price volatility, cost escalation and investor pressures – limit demand for their services by operators.

Additionally, the recent Dallas Fed Energy Survey of over 150 oil and gas companies highlighted constraints facing the industry as its mood darkened for a second straight quarter – including the perception that the government still isn't being supportive enough. According to survey participants, cost inflation and policy pressures/uncertainty weigh heavily on their decision making, as do concerns about the broader economy and a “significant tightening of the oil market” due to underinvestment and the energy transition.

Continued capacity bottlenecks, high cost escalation and negative sentiment in the shale patch have all contributed to lower the LTO forecast in this month's *Report* by 90 kb/d in 2022 and 60 kb/d in 2023. US LTO production is now expected to increase by 690 kb/d on average this year and 720 kb/d in 2023.

According to data from the Alberta Energy Regulator (AER), **Canadian** supply rose by 20 kb/d in August to 5.8 mb/d with higher crude production offsetting lower upgrader output. September supply increased by a further 10 kb/d. For the remainder of the year, volumes are forecast to rise by 70 kb/d to reach 5.9 mb/d by December. Next year, production is expected to average 5.8 mb/d, a gain of 80 kb/d over 2022.

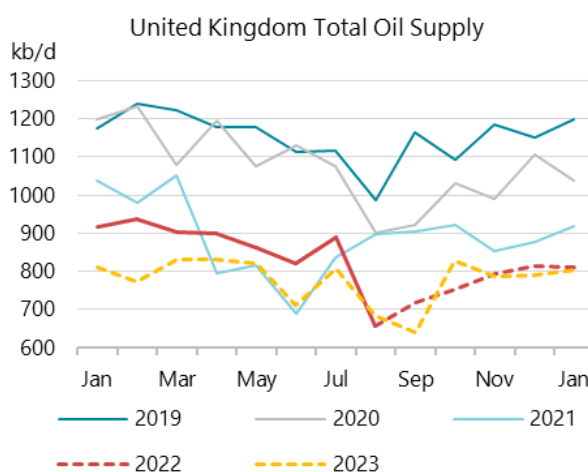
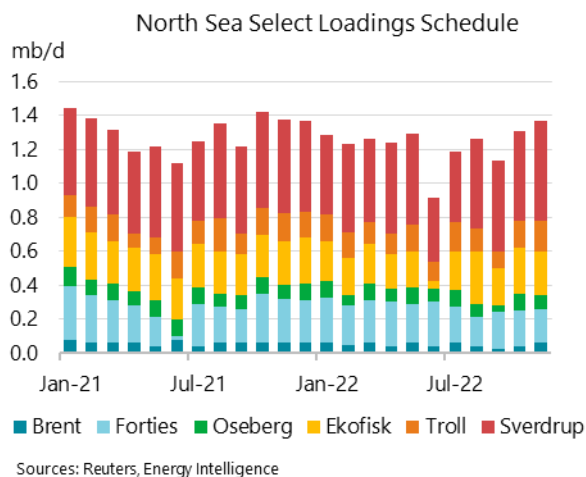


In Brazil, a cyberattack on the Agencia Nacional do Petroleo (ANP) has resulted in a halt of oil statistics, with the latest monthly data available for June and preliminary daily data available through July. Elsewhere in Latin America, Peruvian output fell by 10 kb/d in August to 95 kb/d m-o-m as gains in crude were offset by lower NGLs due to maintenance at the Camisea gas field. September saw volumes recovering by 10 kb/d to 105 kb/d. Through the end of the year, supply continues to increase as the Camisea field comes back and PetroTal's drilling campaign in Block 95 of the Marañon Basin boosts production. Peru exits the year at 135 kb/d and is forecast to produce 130 kb/d in 2023.

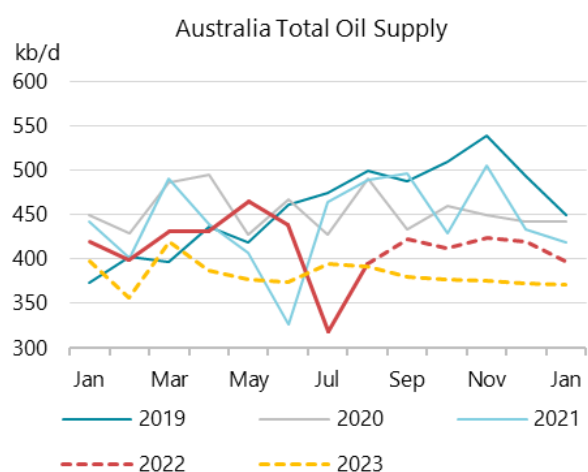
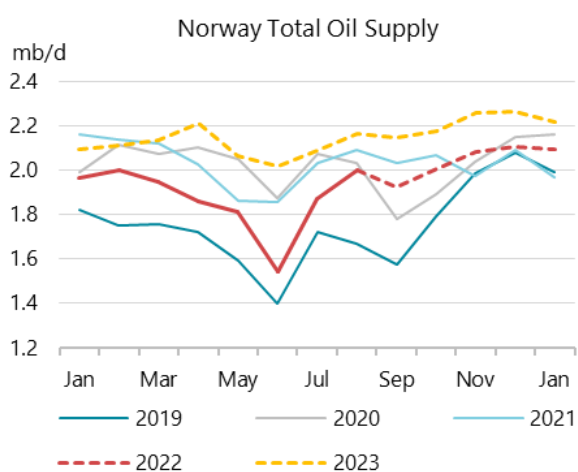
Tensions in the North Sea are quite elevated given sightings of unauthorised and “unusual” drone activity around multiple platforms in the wake of potential sabotage of the Nord Stream gas pipelines. Norway has deployed police and military to patrol and provide security around its platforms, while the UK's Ministry of Defence and Centre for the Protection of National Infrastructure have stepped up their cooperation with operators. No security incidents have yet materialised. Infrastructure security is a given in this *Report's* forecast but presents a potential downside risk.

North Sea loadings (as measured by BFOE plus Troll and Johan Sverdrup) are scheduled to rise by 60 kb/d to 1.4 mb/d in November, as all streams return to pre-maintenance levels and Johan Sverdrup loadings increase to record highs as Phase 2 of the large project begins to ramp up. **UK** supply plunged by 230 kb/d m-o-m in August to 660 kb/d, primarily due to maintenance work,

according to provisional data from the Department of Business, Energy and Industrial Strategy (BEIS). Production is expected to recover into November as seen in loading schedules, with September up 60 kb/d m-o-m to 720 kb/d. UK supply is forecast to average 830 kb/d this year and 780 kb/d in 2023.



Data from the **Norwegian** Petroleum Directorate show August volumes were up 130 kb/d to 2 mb/d as Johan Sverdrup and fields in the Greater Ekofisk area ramped up after summer maintenance. September output fell by 80 kb/d as Equinor performed maintenance on the Oseberg-Troll system. Norway's output is expected to average 1.9 mb/d for the year, down 110 kb/d from 2021. Next year, production is forecast to grow by 220 kb/d to an average 2.1 mb/d.



The latest monthly data from July show **Australian** production cratered by 120 kb/d, in part due to labour issues at Prelude FLNG that were reported to have lasted for 76 days until 23 August. For September, output was estimated at 420 kb/d, in line with the annual average and where it is expected to end the year. Supply continues declining in 2023, to 380 kb/d, down 30 kb/d y-o-y.

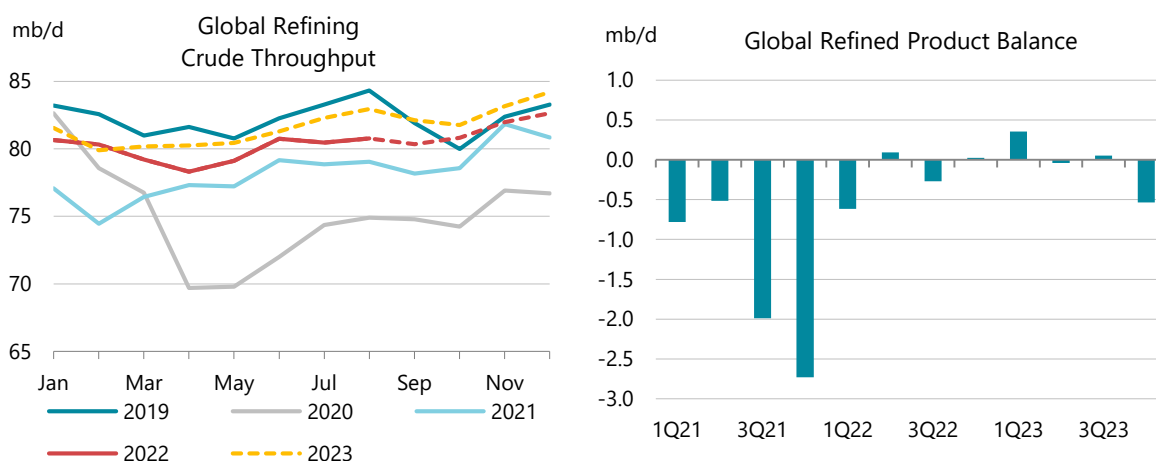
Elsewhere in Asia, **Chinese** output declined for the second straight month in August, by 40 kb/d to 4.1 mb/d. Supply recovered by 80 kb/d in September and is expected to hold relatively steady through the end of the year. For the year as a whole, Chinese oil supply is set to increase by 110 kb/d, to average 4.2 mb/d. Next year sees growth slow to 30 kb/d, maintaining output at 4.2 mb/d. **Indian** volumes fell by 40 kb/d in August to 670 kb/d, according to the latest data available from the Ministry of Petroleum and Natural Gas. Supply is forecast at 700 kb/d in 2022 and 680 kb/d in 2023.

Refining

Overview

Spared from hurricane outages in the US Gulf Coast, refined product markets are now facing a new set of challenges. The latest updates to 3Q22 data continue to disappoint, with lower than expected activity levels in Asia and the Middle East. Meanwhile, refinery profitability in 3Q22 retreated from the record levels of 2Q22. French trade union strikes that started at the end of September have already tightened product supplies in the country and may spill over into the rest of the region.

With the fragile global economic situation, our demand forecast has been revised down by almost 350 kb/d for 4Q22 and 500 kb/d for 2023. On the other hand, the OPEC+ decision in early October is set to curtail crude oil supply by around 1 mb/d compared with earlier expectations, resulting in upward pressure on refinery feedstock costs. These two factors have led to significant downward revisions to our refinery activity forecast.



Global Refinery Crude Throughput ¹														
	2019	2020	2021	1Q22	2Q22	Aug-22	Sep-22	3Q22	Oct-22	4Q22	2022	1Q23	2Q23	2023
Americas	19.1	16.6	17.8	18.4	18.7	19.1	18.8	19.0	18.5	18.7	18.7	18.4	19.1	18.9
Europe	12.2	10.7	11.0	11.0	11.6	11.8	11.3	11.7	11.5	11.9	11.6	11.2	11.4	11.5
Asia Oceania	6.8	5.9	5.8	6.2	5.8	6.4	6.0	6.1	5.8	6.1	6.1	6.1	5.6	5.9
Total OECD	38.1	33.2	34.5	35.6	36.1	37.3	36.0	36.8	35.8	36.7	36.3	35.8	36.2	36.3
FSU	6.8	6.4	6.7	6.5	5.9	6.5	6.4	6.4	6.3	6.3	6.3	5.8	5.0	5.3
Non-OECD Europe	0.5	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
China	13.4	13.7	14.4	14.2	12.9	12.9	13.7	13.1	14.0	14.0	13.5	14.1	14.2	14.3
Other Asia	10.3	9.3	9.5	10.3	10.6	9.9	10.1	10.1	10.4	10.3	10.3	10.5	10.4	10.6
Latin America	3.2	3.0	3.2	3.3	3.4	3.4	3.4	3.4	3.3	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	8.3	8.4	8.5	8.2	8.5	8.9	9.0
Africa	2.0	1.9	1.8	1.9	1.8	1.8	1.8	1.8	1.9	1.9	1.8	1.9	2.0	2.2
Total Non-OECD	44.0	41.9	43.7	44.3	43.2	43.3	44.2	43.6	44.9	45.0	44.0	44.7	44.4	45.2
Total	82.1	75.0	78.2	80.0	79.3	80.7	80.2	80.4	80.7	81.7	80.4	80.5	80.6	81.6
Year-on-year change	-0.2	-7.1	3.2	4.0	1.5	1.7	2.2	1.8	2.2	1.4	2.2	0.5	1.3	1.2

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

In this *Report*, our 4Q22 refinery throughput forecast is revised 340 kb/d lower, primarily in Europe and Asia, where refinery strikes and higher maintenance outages also played a role. With this, the annual growth that averaged 2.4 mb/d over the first three quarters of the year nearly halves to just 1.4 mb/d in 4Q22. Our forecast for 2023 global refinery throughput is revised down by 720 kb/d.

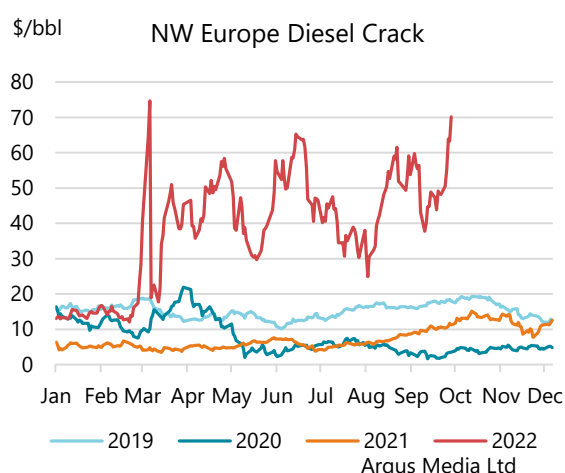
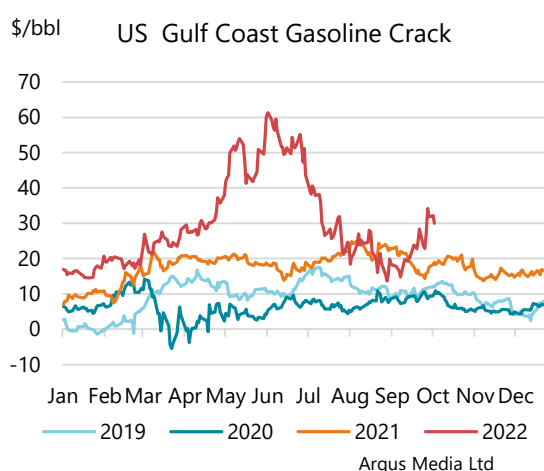
Runs are now expected to increase by 1.2 mb/d next year, with product balances showing a net draw. The recovery to pre-Covid levels is thus not achieved, and 2023 runs remain 530 kb/d below 2019.

Product cracks and refinery margins

In September, crude prices extended their fall. Benchmark regional grades declined by \$5-10/bbl m-o-m. Product cracks, however, mostly continued their downward trend, with the exception of Europe, where middle distillates were supported by refinery strikes and maintenance. Despite lower cracks, wholesale transport fuel prices remained near record levels, resulting in demand destruction.

Product Prices and Differentials (\$/bbl)												
	Prices			Differentials				Week Starting				
	Jul	Aug	Sep	Jul	Aug	Sep	Aug-Sep chg	05-Sep	12-Sep	19-Sep	26-Sep	03-Oct
Northwest Europe												
				to North Sea Dated								
Gasoline	131.84	111.23	98.47	19.22	11.60	8.62	-2.98	7.53	8.55	11.40	10.05	15.64
Diesel	153.09	142.81	139.29	40.46	43.18	49.44	6.26	56.95	44.37	46.38	47.40	60.65
Jet/Kero	147.78	142.85	134.91	35.16	43.22	45.06	1.84	54.31	40.47	41.58	38.97	44.45
Naphtha	86.05	74.25	70.37	-26.58	-25.38	-19.48	5.90	-20.49	-20.32	-18.18	-17.42	-17.50
HSFO	71.89	76.18	63.12	-40.74	-23.45	-26.73	-3.28	-27.75	-27.76	-24.88	-24.79	-29.85
0.5% Fuel Oil	116.36	106.23	96.12	3.73	6.60	6.28	-0.32	7.86	7.78	5.07	3.94	-0.02
US Gulf Coast												
				to WTI Houston								
Gasoline	134.83	115.54	106.77	32.98	21.93	20.43	-1.50	17.42	18.32	22.03	24.90	30.96
Diesel	151.92	148.23	140.22	50.07	54.62	53.88	-0.74	60.85	48.40	51.02	53.17	66.74
Jet/Kero	145.44	139.74	136.19	43.59	46.13	49.85	3.72	53.09	41.20	47.86	57.78	61.00
Naphtha	90.34	87.05	75.70	-11.51	-6.56	-10.64	-4.08	-14.25	-13.00	-8.82	-5.04	-6.40
HSFO	84.50	81.74	61.76	-17.35	-11.86	-24.58	-12.72	-21.69	-25.25	-27.01	-27.78	-34.96
0.5% Fuel Oil	125.31	111.24	99.54	23.46	17.64	13.21	-4.43	14.36	13.43	12.55	11.73	10.98
Singapore												
				to Dubai								
Gasoline	116.35	107.19	94.03	12.32	9.57	1.18	-8.39	4.83	1.98	-2.11	-0.48	-1.88
Diesel	145.27	139.12	129.66	41.24	41.50	36.80	-4.70	46.16	32.02	31.65	31.88	41.94
Jet/Kero	134.90	131.73	121.58	30.87	34.12	28.72	-5.39	38.26	23.93	23.33	23.24	27.28
Naphtha	82.70	72.73	68.22	-21.32	-24.89	-24.64	0.25	-26.01	-25.67	-24.01	-21.26	-20.14
HSFO	73.83	74.95	60.36	-30.19	-22.67	-32.49	-9.82	-31.36	-33.58	-34.33	-32.29	-33.57
0.5% Fuel Oil	135.90	110.92	101.48	31.88	13.30	8.62	-4.68	7.76	7.76	9.19	10.98	13.61

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Gasoline cracks were down in Europe and the US on seasonally lower demand, and back within the range seen last winter. In the US, a major refinery accident in the Midcontinent contributed to a late-month spike. In Europe, which is a net gasoline exporter, the impact of the French strikes has yet to impact cracks. In Singapore, gasoline cracks again breached into negative territory in late-September, on the back of regional refinery restarts, from maintenance and long-term outages,

and expectations of higher Chinese exports. Naphtha cracks in Europe reacted positively to the fall in crude prices, strengthening by \$6/bbl in September, but were largely flat m-o-m in Singapore.

In Europe, diesel cracks surged again to nearly \$50/bbl on a monthly average basis, driving kerosene cracks higher and highlighting the continued tightness in middle distillates markets. In the US Gulf Coast, diesel cracks inched down, while kerosene increased m-o-m. US Gulf Coast prices for diesel and kerosene remained above Northwest European levels, complicating potential arbitrage opportunities. With Europe set to ban Russian product imports from February 2023, the US Gulf Coast is considered to be one of the key alternative sources of diesel supply for the continent.

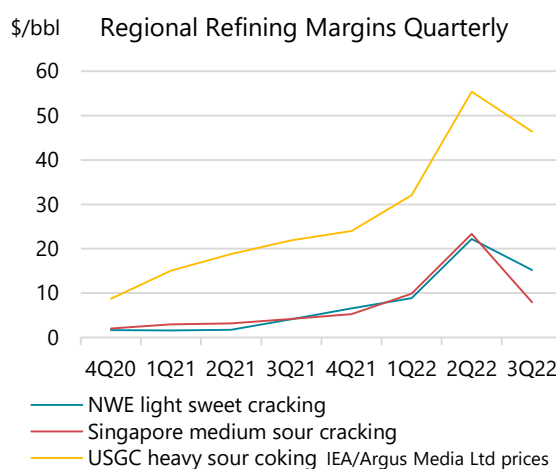
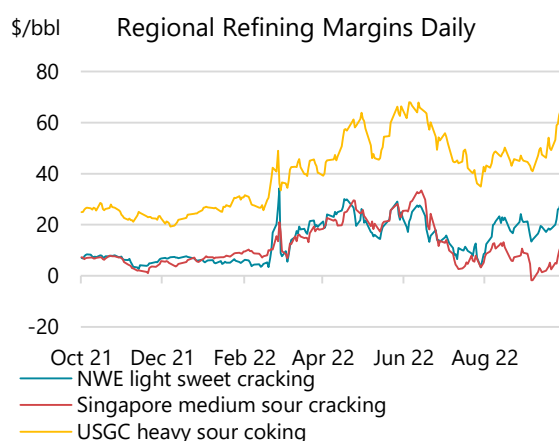
Fuel oil cracks were down in all regions, despite declining crude prices. High sulphur fuel oil cracks in Singapore fell to their lowest ever monthly average, at -\$32.50/bbl. The 0.5% sulphur fuel oil differentials also decreased m-o-m.

IEA Global Indicator Refining Margins										
\$/bbl	Monthly Average				Change	Average for week starting:				
	Jun 22	Jul 22	Aug 22	Sep 22	Aug - Sep	05 Sep	12 Sep	19 Sep	26 Sep	03 Oct
NW Europe										
Light sweet hydroskimming	14.28	4.95	9.60	12.60	3.00	15.08	10.68	12.56	12.08	16.09
Light sweet cracking	23.01	12.43	14.77	18.74	3.97	22.13	16.20	18.26	18.04	24.57
Light sweet cracking + Petchem	27.78	15.19	16.73	19.25	2.52	22.81	16.62	18.64	18.56	24.03
Medium sour cracking	60.49	40.44	35.48	36.92	1.44	39.49	33.75	37.83	36.04	44.64
US Gulf Coast										
Light sweet cracking	45.12	29.39	25.62	25.24	-0.38	25.96	21.69	25.11	28.10	35.12
Medium sour cracking	56.49	38.88	34.26	32.85	-1.41	33.91	28.60	32.78	35.72	42.77
Heavy sour coking	64.39	49.64	43.63	46.34	2.70	45.76	42.51	47.54	49.88	59.81
Singapore										
Light sweet cracking	24.03	12.04	11.75	8.85	-2.90	13.30	6.08	6.30	8.00	9.35
Light sweet cracking + Petchem	26.32	13.24	13.84	11.28	-2.56	16.23	8.65	8.32	10.01	10.61
Medium sour cracking	27.10	9.91	8.98	4.63	-4.35	8.63	2.49	2.13	3.35	7.68
Medium sour cracking + Petchem	29.37	11.09	11.04	7.02	-4.02	11.52	5.03	4.12	5.34	8.93

Note: Mediterranean and US Midcontinent margins are available in Table 5 of this Report.

Source: IEA/Argus Media Ltd prices.

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

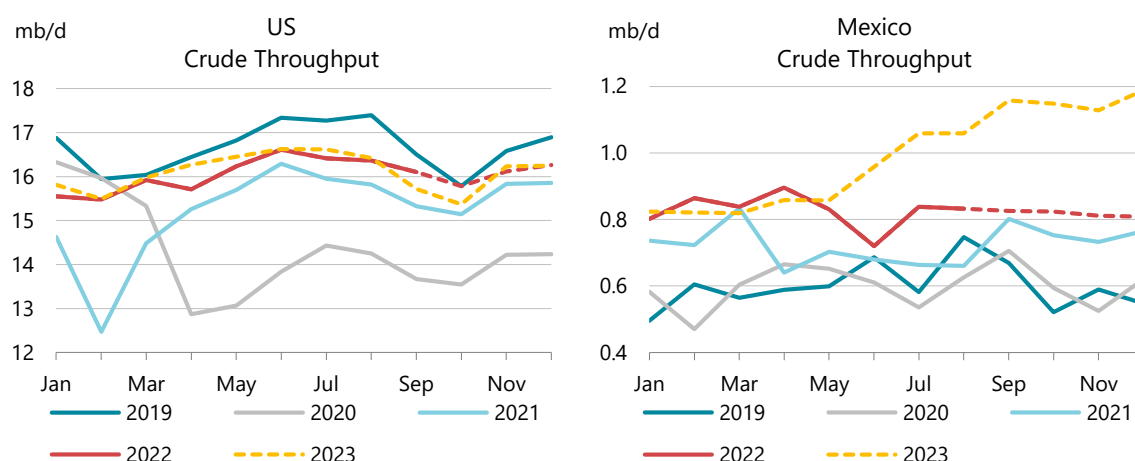


Stronger middle distillate cracks led European benchmark light sweet cracking margins up by \$3/bbl in September. In the US Gulf Coast, with lower gasoline and essentially flat diesel cracks, light and medium crude margins fell m-o-m, but benchmark heavy sour margins were higher on wider

differentials for the underlying Canadian grades. In Singapore, benchmark medium sour complex margins nearly halved in September as all product cracks fell. Overall, in 3Q22 margins came off their 2Q22 record levels in all regions, down between \$10-15/bbl q-o-q. Singapore refining margins saw all gains wiped out from 2Q22 and fell below 1Q22 levels.

Regional refining developments

US refinery intake in September declined seasonally from August, falling by 270 kb/d to 16 mb/d. August throughput was adjusted 120 kb/d lower in the monthly estimates compared to weekly data. Despite falling gasoline cracks, benchmark heavy crude margins in the US Gulf Coast were stronger m-o-m thanks to weaker differentials of the underlying Canadian grades. Peak maintenance is expected in October, with runs forecast to fall by another 320 kb/d m-o-m, before rising again in November and December. US refined product demand is set to decline by 1.3 mb/d between August and January, but the US refining system is a net product exporter and activity levels do not closely track demand seasonality.



Throughputs in **Mexico** were unusually stable m-o-m in August at around 825 kb/d. The start-up of the 340 kb/d Olmeca refinery is expected next year. It will help reduce, but not eliminate, Mexican product imports. Mexico is currently importing almost 900 kb/d of refined products, and exporting just over 1 mb/d of crude oil.

In Europe, refinery intake in August fell 100 kb/d m-o-m and bigger declines are estimated for September due to seasonal maintenance and **French** strikes. Refinery throughputs in France crossed the 1 mb/d mark in August for the first time in three years, but are estimated to have fallen below 700 kb/d in September. At the time of writing, 70% France's refining capacity, comprising of two ExxonMobil and two TotalEnergies refineries, were on strike that started at the end of September.

In Central Europe, a tight product supply situation could start to ease as **Hungary's** Danube refinery completed the first round of maintenance in September and most units are back online. OMV's Schwechat refinery in **Austria** came back to full operations in the first week of October. The plant ran at just 20% of its capacity from May through September, due to an accident during a maintenance shutdown. Meanwhile, the operator of **Slovakia's** sole refinery, Slovnaft, said it is working on reducing Russian crude intake in order to maintain oil product exports. Slovakia is allowed to continue Russian crude oil imports via the Druzhba pipeline. However, it will not be able to export oil

products if Russian oil constitutes the majority of its intake beyond December 2023, when the temporary exemption regarding export rules is set to expire.

In September, the **German** government effectively took control of Rosneft's ownership in several assets in the country, including a 54% share in the 220 kb/d Schwedt refinery, a key supplier of oil products to the capital and the east of the country. The fate of Lukoil's 320 kb/d ISAB refinery in **Italy** remains uncertain with no official announcements made by the Italian government as of yet.

Refinery Crude Throughput and Utilisation in OECD Countries

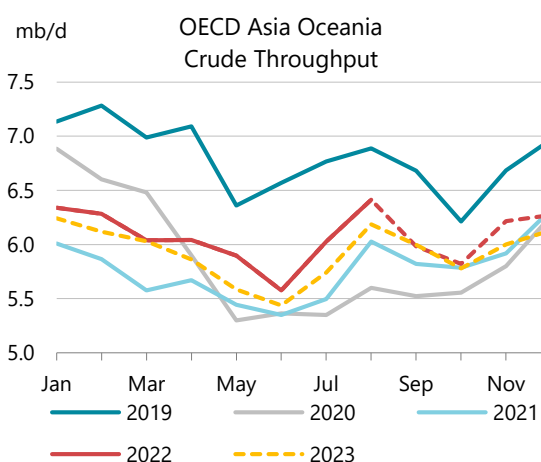
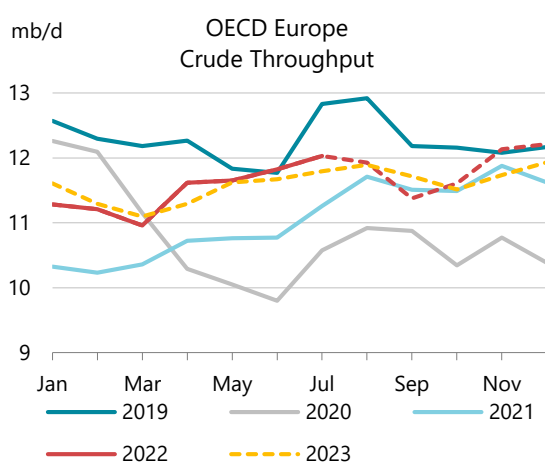
(million barrels per day)

	Mar 22	Apr 22	May 22	Jun 22	Jul 22	Aug 22	Change from		Utilisation rate	
							Jul 22	Aug 21	Aug 22	Aug 21
US ¹	15.82	15.61	16.13	16.51	16.32	16.27	-0.05	0.55	93%	88%
Canada	1.74	1.57	1.65	1.72	1.85	1.85	0.00	0.03	98%	91%
Chile	0.21	0.19	0.13	0.10	0.11	0.15	0.04	-0.06	67%	91%
Mexico	0.83	0.89	0.82	0.71	0.83	0.82	-0.01	0.17	50%	92%
OECD Americas¹	18.60	18.25	18.74	19.05	19.11	19.09	-0.02	0.69	89%	84%
France	0.80	0.83	0.85	0.85	0.98	1.03	0.06	0.21	91%	72%
Germany	1.72	1.90	1.80	1.91	1.86	1.76	-0.10	-0.05	87%	90%
Italy	1.23	1.33	1.46	1.46	1.44	1.34	-0.10	0.08	77%	73%
Netherlands	0.88	1.02	1.06	1.11	1.02	1.04	0.03	0.03	86%	84%
Spain	1.17	1.33	1.37	1.35	1.34	1.30	-0.04	0.06	92%	88%
United Kingdom	1.05	1.10	1.08	0.99	0.96	1.05	0.08	0.02	87%	86%
Other OECD Europe ²	4.01	4.01	3.93	4.06	4.34	4.30	-0.03	-0.13	85%	92%
OECD Europe	10.86	11.52	11.55	11.72	11.93	11.83	-0.10	0.22	86%	84%
Japan	2.72	2.72	2.65	2.42	2.57	2.91	0.35	0.25	85%	77%
Korea	2.78	2.80	2.76	2.65	2.98	3.04	0.06	0.29	86%	78%
Other Asia Oceania ³	0.53	0.51	0.48	0.49	0.47	0.45	-0.02	-0.14	86%	82%
OECD Asia Oceania	6.03	6.03	5.89	5.57	6.02	6.40	0.39	0.39	85%	78%
OECD Total	35.49	35.80	36.18	36.33	37.06	37.33	0.27	1.29	88%	83%

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

² Includes Lithuania

³ Includes Israel

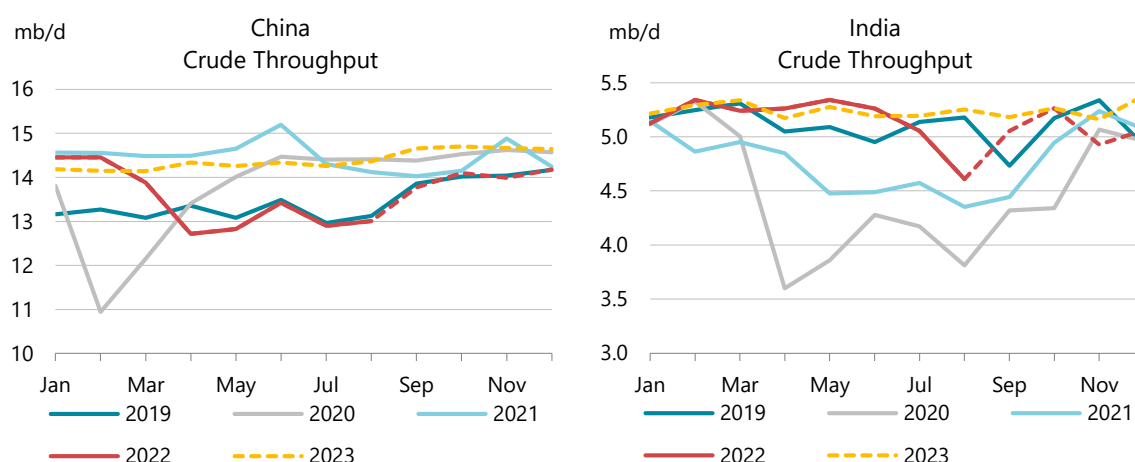


In OECD Asia, throughput rose by 390 kb/d in August, to a new post-pandemic high, as **Korean** runs exceeded 3 mb/d for the first time since April 2019. **Japanese** refiner Eneos announced it permanently closed the 120 kb/d Negishi refinery this month. In October 2023, the company also plans to shut the 122 kb/d Wakayama refinery. The Ministry of Trade and Industry of Japan announced that it will prolong the subsidy scheme for domestic supplies of oil products. The programme has been in effect since January this year, initially as a response to higher international oil product prices. More recently, while oil prices moved lower from their peak in June, the scheme

has been maintained to stave off the impact from the deteriorating exchange rate of the Japanese yen versus the US dollar. In the latest EU sanction package against Russia oil produced at the Sakhalin 2 project was exempt from the services and insurance ban for shipments to Japan until June 2023.

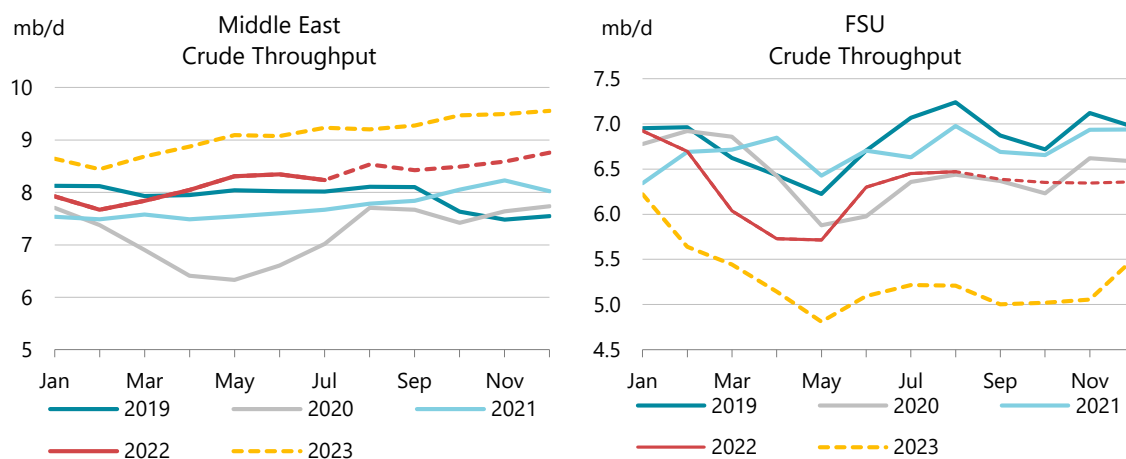
In August, **Chinese** refinery throughputs increased by just 110 kb/d to 12.9 mb/d, down 1.1 mb/d year-on-year (y-o-y). In tandem with sharply lower domestic demand amid Covid-related restrictions, refinery runs are now forecast to decline by a sharp 830 kb/d in 2022. Exports of diesel, gasoline and kerosene in August were up by 260 kb/d m-o-m to 710 kb/d, the highest level since July 2021. In early October, the government issued the third batch of crude oil import quotas for independent refiners, with allocations for a total of 21 mb. With this, the 2022 quota is now slightly up y-o-y to 3.3 mb/d. Meanwhile, from January to August total crude oil imports were down by an average 500 kb/d, to 9.9 mb/d, while throughputs fell 1.1 mb/d. Product export quotas were also topped up by about 110 mb to equalise with the 2021 level. In order to fully utilise these allocations, refiners would need to ramp up product exports to 1.1 mb/d for the remainder of the year, double the January-August average. Reportedly, unlike in previous years, unused product export quotas may be allowed to be transferred to next year.

With rebounding demand for more product exports, refining activity is expected to pick up pace. In September, runs were estimated 765 kb/d higher m-o-m at 13.7 mb/d, with 4Q22 now forecast to rise by 870 kb/d q-o-q to 14 mb/d. In 2023, runs recover to 2019 levels. Two new major projects, Petrochina's 400 kb/d Jieyang and the 320 kb/d Shenghong refinery, which were originally scheduled for start-up in 1H22 and late 2021, respectively, are now expected to come online by the end of this year.



Indian refinery throughputs plunged 445 kb/d m-o-m to just 4.6 mb/d in August on large-scale maintenance at the 300 kb/d Paradeep refinery and an outage at Reliance's Jamnagar complex. The monsoon season also slowed processing rates at several other plants. August runs were the lowest since September 2021. **Indonesia** reported unusually low runs in July, following accidents and refinery outages. Refinery intake was down by a third to just 675 mb/d, the lowest since 2011. Commodity trader Vitol said its 32 kb/d refinery in the port of Tanjung Bin in **Malaysia** has come online. **Sri Lanka** briefly resorted to importing Russian crude oil this summer to restart the country's sole 50 kb/d refinery that had stopped due to lack of feedstock. After just two months of operations, however, the refinery was forced to shut again in early October due to a shortage of foreign exchange to pay for crude.

Refinery intake in the Middle East declined by 110 kb/d in July on lower throughputs in **Saudi Arabia** and **Iraq**. Iraq's oil ministry announced that the first phase of the 140 kb/d Karbala greenfield refinery will be commissioned in November. Two more projects in the region are slated to come online in the near term. The first phase of the 615 kb/d Al-Zour refinery in **Kuwait** is expected to ramp up by the end of the year, adding 200 kb/d of processing capacity, while **Oman's** 230 kb/d Duqm greenfield project is set to start next year.



Russian refinery intake in September fell just 70 kb/d m-o-m to 5.45 mb/d. Crude oil exports were estimated 260 kb/d lower m-o-m but seaborne product exports were up by 30 kb/d (See *Russian oil exports fall as trade flow reallocation slows*). The 120 kb/d Pavlodar refinery in **Kazakhstan** restarted after maintenance, with the country's total intake up 70 kb/d m-o-m in August.

Brazil data have not been updated since June. In **Argentina**, August refinery throughput was up 15 kb/d m-o-m to 500 kb/d. The 170 kb/d Cartagena refinery in **Colombia** completed a 50 kb/d expansion and is set to increase processing rates. **Ecuador's** national oil company Petroecuador is offering private investors to take over operatorship and commit to a 200 kb/d expansion project of its 110 kb/d Esmeraldas refinery. Ecuador has two smaller refineries with 66 kb/d combined capacity.

Russian oil exports fall as trade flow reallocation slows

Russian oil exports fell 230 kb/d in September, to 7.5 mb/d, with crude down 260 kb/d and products up by 30 kb/d. Revenues were down \$3.2 bn to \$15.3 bn on both lower volumes and prices, but were still higher than the average monthly revenue in 2021.

Shipments to EU countries fell by 390 kb/d m-o-m to 2.6 mb/d, with its share down to just 35% in Russia's total oil exports, compared to 50% at the start of the year.

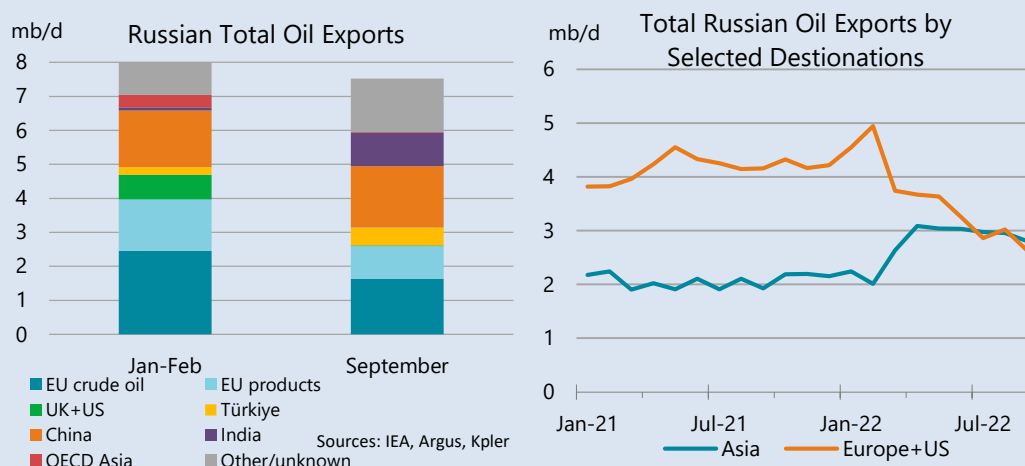
Exports to India were stable m-o-m at just under 1 mb/d, while loadings to China and Türkiye were down by 115 kb/d and 50 kb/d, respectively. However, with close to 500 kb/d of oil going to as yet unidentified destinations, final numbers for each importing region may result in significant revisions to these preliminary figures.

Nevertheless, the share of Russian oil exports to western markets fell, while Asian buyers gained in importance. In September, the declared shipments to China and India combined were 160 kb/d higher than those to Europe, including EU and non-EU countries. The United States stopped importing Russian oil in April.

Since June, China has been the largest importer of Russian crude oil, ahead of the EU countries combined. EU crude oil imports from Russia fell to just 1.6 mb/d in September. While it has taken seven

months for them to replace 800 kb/d of Russian crude oil imports, they will need to switch an additional 1.3 mb/d of seaborne and pipeline volumes in the two months remaining until the EU ban on kicks in.

Oil product loadings to EU countries fell 130 kb/d m-o-m to 965 kb/d, bringing the cumulative post-invasion loss to 550 kb/d. Diesel shipments were down by 70 kb/d m-o-m to just 510 kb/d.



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
EU crude oil	2.1	2.4	2.5	2.1	2.1	2.2	1.9	1.7	1.9	1.6
EU products	1.3	1.5	1.6	1.3	1.4	1.4	1.4	1.2	1.1	1.0
UK+US	0.7	0.6	0.9	0.2	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	0.5
China	1.6	1.7	1.6	1.8	1.8	2.0	2.2	1.8	1.9	1.8
India	0.1	0.1	0.1	0.5	1.0	1.0	0.8	1.2	1.0	1.0
OECD Asia	0.4	0.4	0.3	0.3	0.3	0.0	0.1	0.1	0.1	0.0
Other/unknown	1.2	1.1	1.0	1.0	1.0	0.9	1.1	1.2	1.2	1.6
Total exports	7.6	8.1	8.1	7.7	8.1	7.9	7.7	7.4	7.8	7.5
<i>Memo</i>										
Pipeline to EU	0.72	0.76	0.84	0.82	0.86	0.82	0.76	0.83	0.76	0.83
Pipeline to China	0.73	0.83	0.78	0.76	0.82	0.78	0.81	0.83	0.79	0.76
Crude Oil	4.7	5.0	4.9	5.1	5.5	5.4	5.1	4.9	5.1	4.8
Oil Products	2.9	3.1	3.2	2.6	2.6	2.5	2.6	2.6	2.7	2.7
Estimated export revenues, \$bn	14.9	20.6	20.3	22.8	19.0	20.9	22.0	19.5	18.5	15.3

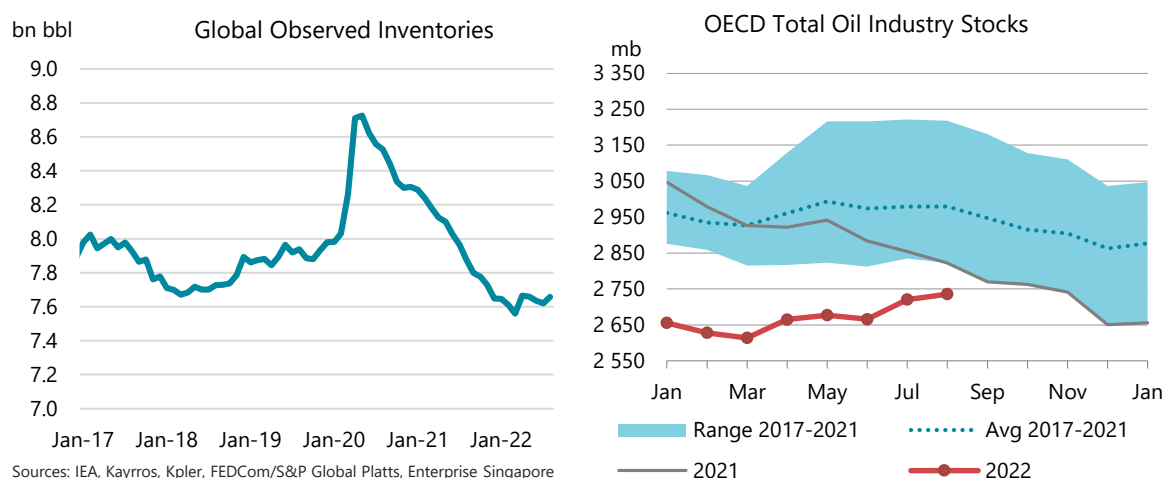
Sources: IEA, Argus, Kpler.

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

Stocks

Overview

Global observed inventories rebounded by 36.5 mb in August, but remained well below historical levels. The increase came exclusively from oil on water (+64.3 mb) while onshore inventories fell in both OECD (-17.8 mb) and non-OECD (-10 mb) countries. Seaborne trade, which was curtailed during the Covid pandemic and by OPEC+ supply cuts, is gradually picking up due to increased oil production in the United States and the Middle East, and the reallocation of Russian trade flows. At the same time, floating storage continues to decline due to higher tanker demand and freight costs.



OECD commercial oil inventories built for a second consecutive month, by 15 mb in August. At 2 736 mb, they nevertheless remained 243.3 mb below the five-year average. Crude oil, NGL and feedstock inventories rose counter-seasonally, by 10.3 mb. Refined oil product stocks increased by 4.7 mb, far short of the normal seasonal build of 26.3 mb. In terms of forward demand, total OECD industry stocks covered 58.5 days, up 0.4 days m-o-m, but still 2.3 days below a year ago.

OECD countries released a further 32.8 mb of emergency reserves in August as a part of the IEA collective actions and individual member country contributions. The release included 31 mb of crude oil stocks in the US and Asia, and 1.8 mb of European oil products (1.6 mb of middle distillates and 0.2 mb of gasoline). Another 38 mb of government stocks were estimated to have been released in September. Since March, 223 mb of OECD government stocks have been taken up by the market.

Preliminary data for the US, Europe and Japan show a further 3.8 mb build in OECD industry stocks in September. Crude oil, NGL and feedstock inventories rose by 2.4 mb as a 9.7 mb increase in Japan was partially offset by drawdowns in the US (-1.2 mb) and Europe (-6.1 mb). Oil product stocks built by 3.8 mb across the regions. Other products stocks rose by 11 mb, led by the US (+9.5 mb), while gasoline and middle distillates fell by 8.6 mb and 3.4 mb, respectively. Fuel oil stocks built in all regions, by 2.5 mb in total.

Preliminary OECD Industry Stock Change in August 2022 and Second Quarter 2022												
August 2022 (preliminary)					Second 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	-3.0	1.6	8.9	7.5	-0.1	0.1	0.3	0.2	0.0	0.2	-0.1	0.1
Gasoline	-8.4	-1.9	-0.5	-10.8	-0.3	-0.1	0.0	-0.3	-0.2	-0.1	0.0	-0.3
Middle Distillates	-1.0	1.9	-2.5	-1.5	0.0	0.1	-0.1	0.0	0.0	0.0	0.1	0.1
Residual Fuel Oil	-1.2	-2.1	-0.2	-3.6	0.0	-0.1	0.0	-0.1	0.0	0.0	0.0	0.0
Other Products	22.8	0.3	-2.5	20.6	0.7	0.0	-0.1	0.7	0.4	0.1	0.0	0.6
Total Products	12.3	-1.9	-5.6	4.7	0.4	-0.1	-0.2	0.2	0.2	0.1	0.1	0.4
Other Oils ¹	-0.3	0.2	2.9	2.8	0.0	0.0	0.1	0.1	0.1	0.0	0.1	0.1
Total Oil	9.0	-0.1	6.1	15.0	0.3	0.0	0.2	0.5	0.3	0.2	0.0	0.6

¹ Other oils includes NGLs, feedstocks and other hydrocarbons.

OECD stock data for July were revised up by 16.3 mb, to 2 721 mb, following the submission of more complete data. The largest adjustment came in crude oil, NGL and feedstock inventories (+10.5 mb), of which 3.5 mb was in crude oil and 7 mb in other oils. Product stocks were up by 5.7 mb, mainly in other products in Europe (+5.2 mb). The upward revision led to a total 54.4 mb build in industry stocks, the largest monthly increase since May 2020. June figures were also adjusted higher, by 5 mb.

OECD Industry Stock Revisions versus September 2022 Oil Market Report								
(million barrels)								
	Americas		Europe		Asia Oceania		OECD	
	Jun-22	Jul-22	Jun-22	Jul-22	Jun-22	Jul-22	Jun-22	Jul-22
Crude Oil	2.8	0.8	0.0	1.8	0.0	0.9	2.8	3.5
Gasoline	-0.1	1.3	-0.4	1.3	0.2	0.6	-0.3	3.2
Middle Distillates	-1.2	0.7	0.0	0.1	0.1	-1.9	-1.2	-1.1
Residual Fuel Oil	0.0	-0.9	-0.7	-0.4	0.0	0.1	-0.7	-1.3
Other Products	0.3	-1.4	2.1	5.2	0.0	1.1	2.4	4.9
Total Products	-1.1	-0.3	0.9	6.1	0.3	-0.2	0.1	5.7
Other Oils ¹	1.9	5.6	0.2	1.7	0.0	-0.3	2.1	7.0
Total Oil	3.6	6.1	1.2	9.7	0.3	0.5	5.0	16.3

¹ Other oils includes NGLs, feedstocks and other hydrocarbons.

Implied balance

The global supply and demand balance in August showed a 660 kb/d implied stock build compared with an increase of 1.18 mb/d in reported and observed inventories. OECD industry crude oil, NGL and feedstock inventories rose by 330 kb/d while oil product stocks built 150 kb/d. OECD government stocks declined by 1.06 mb/d, mainly in crude oil. Non-OECD crude oil inventories drew by 380 kb/d, with Chinese crude stocks plunging by 640 kb/d, according to satellite data from *Kayrros*. Product stocks in Singapore and Fujairah rose marginally, by a combined 60 kb/d. Crude oil on water, including floating storage, surged by 1.78 mb/d while products increased by 300 kb/d, based on shipping data from *Kpler*.

Global Oil Balance and Observed Stock Changes (mb/d)							
	2020	2021	1Q22	2Q22	Jul-22	Aug-22	Sep-22
Global oil balance	2.28	-2.36	-0.71	0.32	0.74	0.66	1.39
Observed stock changes							
OECD industry stocks	0.41	-1.06	-0.35	0.57	1.75	0.49	0.13
OECD government stocks	0.02	-0.16	-0.46	-1.08	-0.89	-1.06	-1.27
Non-OECD crude stocks*	0.44	-0.48	0.40	0.75	-0.71	-0.38	-0.84
Selected non-OECD product stocks**	0.12	-0.03	0.10	0.07	0.36	0.06	0.06
Oil on water	0.01	-0.05	-0.53	0.51	-0.69	2.07	
Total observed stock changes	0.99	-1.78	-0.84	0.83	-0.18	1.18	
Unaccounted for balance	1.29	-0.58	0.14	-0.51	0.92	-0.51	

*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 July 2022, plus Fujairah and Singapore inventories.

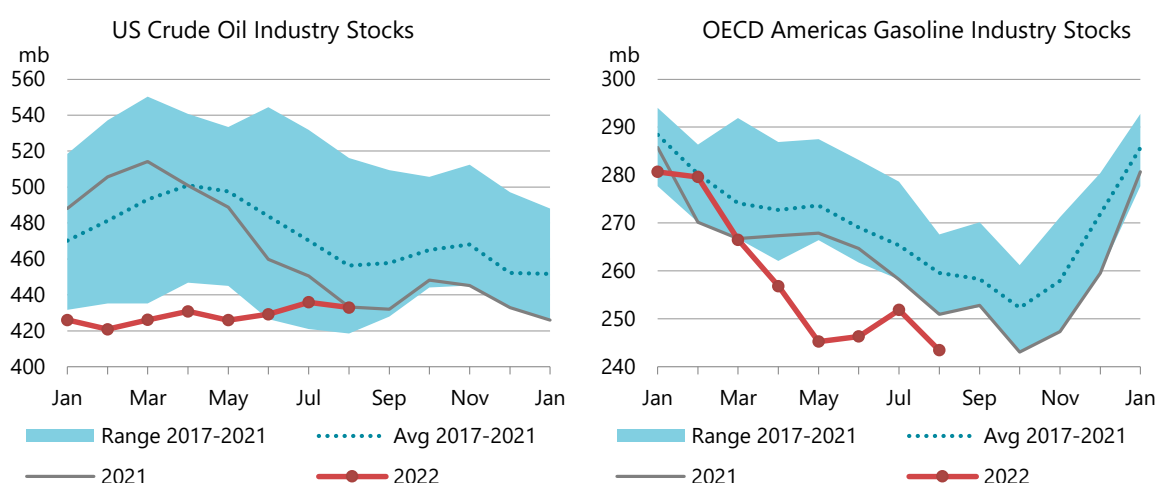
Sources: IEA, EIA, PAJ, Euroilstock, Kayros, JODI, Kpler, FEDCom/S&P Global Platts and Enterprise Singapore.

Recent OECD industry stocks changes

OECD Americas

Industry stocks in the OECD Americas rose counter-seasonally by 9 mb in August. At 1 477 mb, inventories remained 97.5 mb below the five-year average. Crude oil stocks fell by 3 mb, much less than the seasonal trend (-12.4 mb), largely due to the release of 24.1 mb from the US Strategic Petroleum Reserves (SPR). Although crude inventories in the US are still fluctuating, the commercial stock level recovered to year-ago levels. NGL and feedstock inventories edged down by 0.3 mb.

Total product stocks in the region rose by 12.3 mb, led by an increase in other product inventories (+22.8 mb). The build was larger than the five-year average (+14.3 mb) due to higher US propane and propylene supply. Gasoline stocks fell by a hefty 8.4 mb following a counter-seasonal increase in the previous month. US gasoline stocks plummeted to 219.8 mb, its lowest level since October 2021. Middle distillate and fuel oil inventories declined by 1 mb and 1.2 mb, respectively, in line with the seasonal norms.



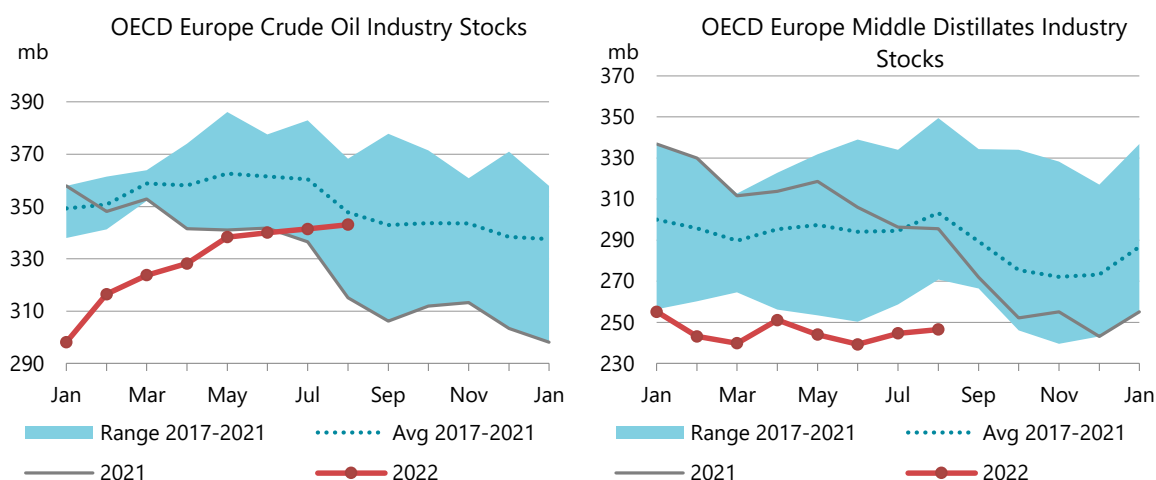
Weekly data from the US Energy Information Administration (EIA) for September show commercial crude oil stocks increased by 4.5 mb or 150 kb/d, supported by 940 kb/d from the SPR release, which was the largest volume after the 990 kb/d reported in June. By contrast, other oil stocks, mainly unfinished products, fell by 5.7 mb. Oil product inventories built by a marginal 0.2 mb when they

usually draw by 1.2 mb. Other product stocks rose by 9.5 mb, twice the five-year average. By contrast, motor gasoline inventories tumbled by 7.3 mb, three times the normal decline. While gasoline demand was weaker, higher-than-normal exports led the steep stock drawdown. Middle distillates fell by 3.3 mb, in line with the seasonal trend, while residual fuel inventories built counter-seasonally, by 1.3 mb.

OECD Europe

Total industry stocks in OECD Europe fell marginally in August, by 0.1 mb to 923.4 mb. Stocks were 71.9 mb below the five-year average. Crude oil stocks rose for the seventh consecutive month, by 1.6 mb compared with a normal decrease of 12.6 mb. By contrast, high refinery intake led French crude inventories down by 3.1 mb to 8.8 mb, the second lowest level on record dating back to 1984. NGL and feedstock rose by a mere 0.2 mb.

Product inventories fell by 1.9 mb versus a typical build of 10.4 mb in August. Amid the tight market, middle distillate stocks were up by only 1.9 mb, compared with a normal seasonal build of 8.7 mb, despite a 1.6 mb government stock release. In France, inventories rose by 3.3 mb whereas in Germany they declined by 2 mb. Gasoline stocks fell by 1.9 mb, led by a draw in Germany (-1.6 mb), where deliveries were disrupted due to low water levels on the Rhine. Italian gasoline inventories fell to 8.2 mb, their lowest level on record (starting from 1984). Fuel oil stocks were down by 2.1 mb while other product inventories increased by a marginal 0.3 mb. The Netherlands was the main driver of the stock changes, with fuel oil declining by 1.8 mb and other products rising by 1.4 mb.

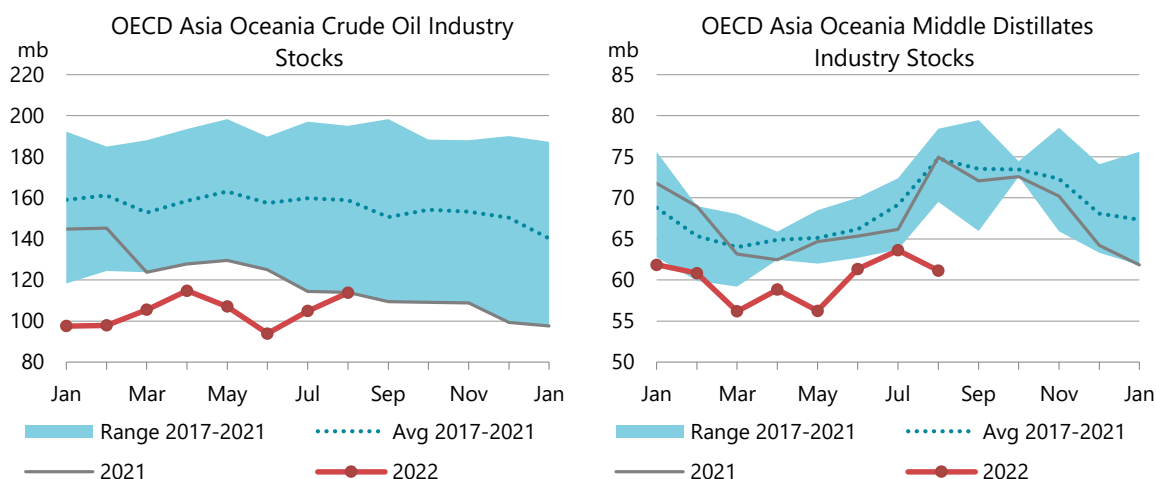


Preliminary September data from Euroilstock show total industry inventories fell by 8.2 mb. The largest draw came from crude oil stocks (-6.1 mb), mainly in Scandinavian countries (-2.3 mb), Italy (-2.2 mb) and Spain (-1.5 mb). Oil product inventories were down by 2 mb. Gasoline stocks decreased by 1.4 mb, led by Germany (-0.9 mb). Middle distillates and naphtha declined marginally, by 0.8 mb and 0.6 mb, respectively, while fuel oil stocks increased by 0.8 mb.

OECD Asia Oceania

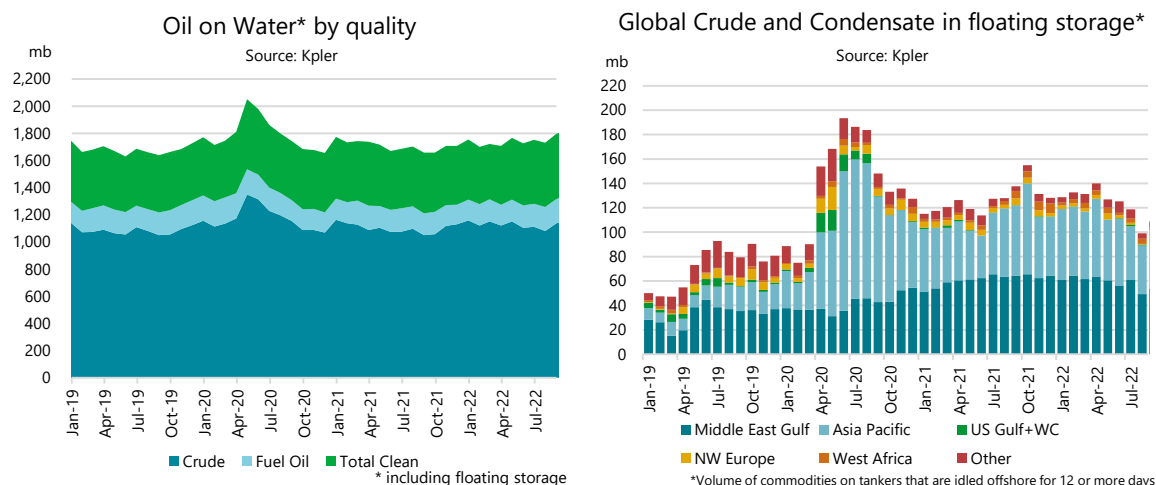
Total industry stocks in OECD Asia Oceania increased by 6.1 mb in August. This was smaller than the historical pattern (+10.4 mb) in the restocking season. At end-August, oil stocks stood at 335.8 mb, 73.8 mb lower than the five-year average. Crude oil inventories increased by 8.9 mb when they usually fall by 1 mb. A total of 7 mb of government crude oil stocks were released from Japan and Korea. NGL and feedstock inventories increased by 2.9 mb, consistent with the seasonal trend.

Oil product inventories declined counter-seasonally by 5.6 mb in August, compared with an average build of 9.2 mb. Product stocks fell by 8 mb in Korea, led by middle distillates (-5.2 mb). By contrast, increased refinery runs in Japan (+350 kb/d m-o-m) lifted all product stocks higher except other products (-1.2 mb), by a combined 2.2 mb. The regional drop was led by middle distillates (-2.5 mb) and other products (-2.5 mb). Gasoline and fuel oil edged down by 0.5 mb and 0.2 mb, respectively.



Preliminary data from the Petroleum Association of Japan show a counter-seasonal build in crude oil, NGL and feedstock inventories of 9.7 mb in September. Product stocks rose by 3.3 mb, led by naphtha (+2.1 mb), middle distillates (+0.7 mb) and residual fuel oil (+0.4 mb). Gasoline inventories were largely unchanged in the month. Refinery runs declined by 190 kb/d m-o-m to 2.7 mb/d but were still 160 kb/d higher y-o-y.

Other stock developments

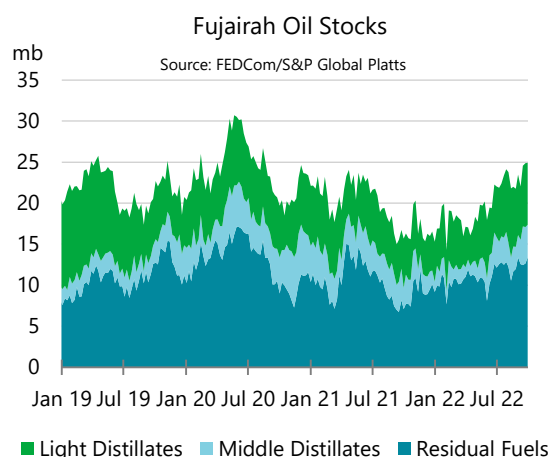
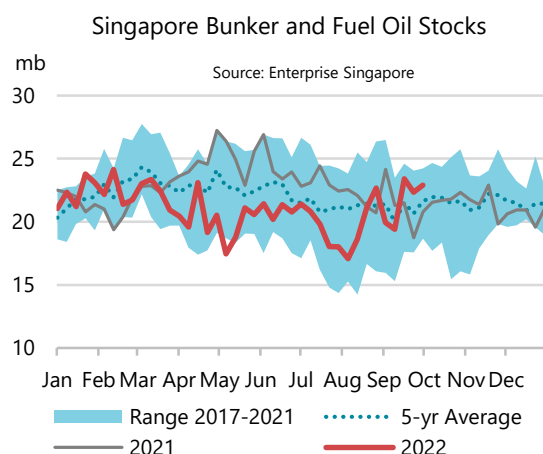


In August, volumes of oil on water, including floating storage, climbed by a sharp 64.3 mb, to its highest level since July 2020, according to *Kpler*. Crude oil increased by a large 55 mb as global seaborne exports rose by 1.3 mb/d m-o-m, its highest level since April 2020. Clean product and fuel oil volumes also increased, by 5.7 mb and 3.5 mb, respectively. Crude oil and condensates held in tankers that idled offshore for more than 12 days fell by 19.8 mb. The largest decline at 11.6 mb was in the Middle East, mostly in Iranian oil, followed by -4.1 mb in the Asia Pacific. Oil products in floating storage rose by 3.7 mb, as a combined 5.7 mb increase in the Middle East and West Africa was

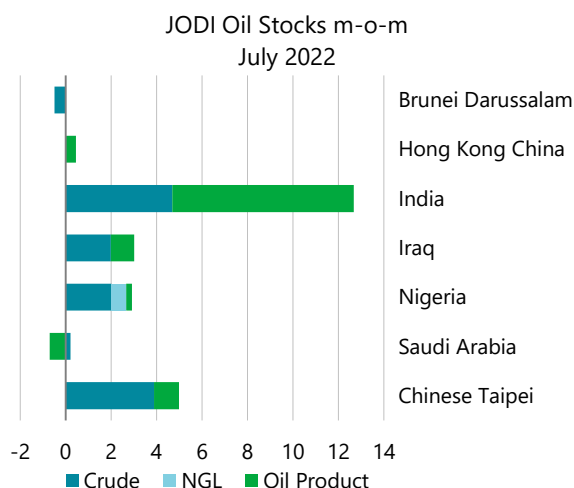
partially offset by a 4.6 mb decline in the Asia Pacific. Floating storage levels have been reduced by half from the 300 mb peak reached in June 2020.

In Fujairah, independent product stocks rose by 2.8 mb to 24.7 mb in September, the highest level since August 2020, according to data from *FEDCom* and *S&P Global Platts*. In the wake of the crisis in Ukraine and ensuing international sanctions, *Kpler* data show that product imports between May and September averaged 770 kb/d compared to 620 kb/d in the same period a year ago, as imports from Russia increased from 30 kb/d to 160 kb/d on average. Previously, most imports into Fujairah were fuel oils, but now middle and light distillates are coming in from Russia. Inventories of heavy, middle and light distillates posted strong increases in September, up by 0.8 mb, 1.6 mb and 0.4 mb, respectively.

Independent product stocks in Singapore, the world's largest bunkering hub, were down by 1 mb in September, according to data from *Enterprise Singapore*. Light distillate inventories declined for the second consecutive month from the record high in July, by a modest 0.5 mb. Stocks of middle distillates fell by 0.3 mb and residual fuel oil were down by 0.2 mb.



Total oil stocks in 10 non-OECD economies reported a large 23 mb m-o-m increase in July, according to the *JODI-Oil* database. Crude inventories increased by 12.3 mb, mainly in India (+4.7 mb) and Chinese Taipei (+3.9 mb). Oil products rose by 10.1 mb, led by India (+8 mb). India's crude stocks rose due to a decline in refinery crude intake of 110 kb/d and higher crude imports of 120 kb/d m-o-m. The lower refinery output was cancelled out by reduced net product exports (-210 kb/d) and weaker consumption (-400 kb/d) m-o-m.

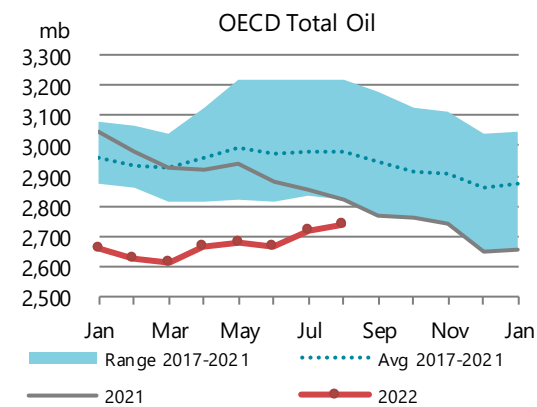
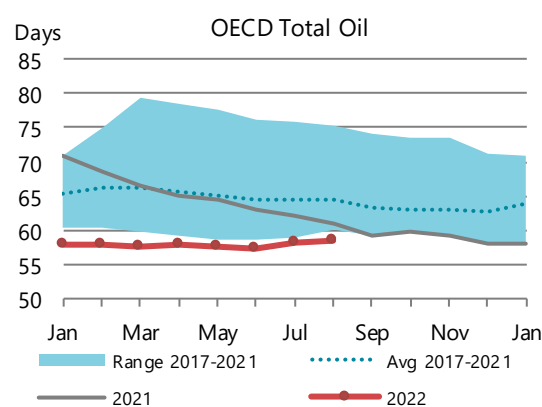
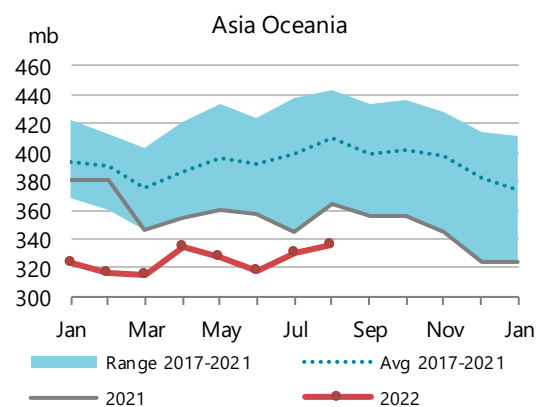
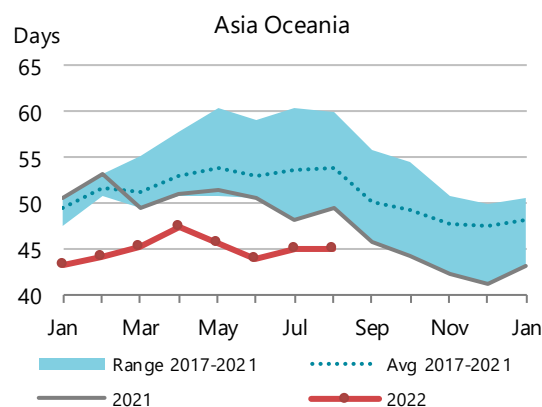
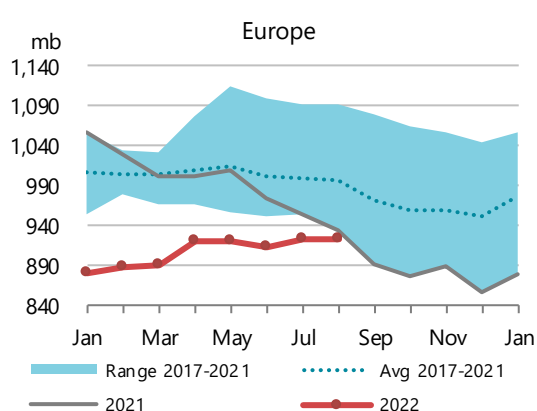
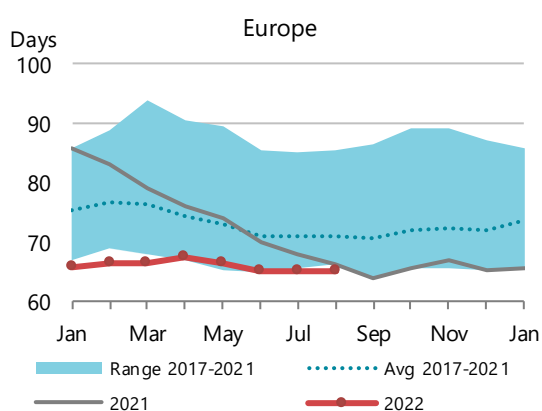
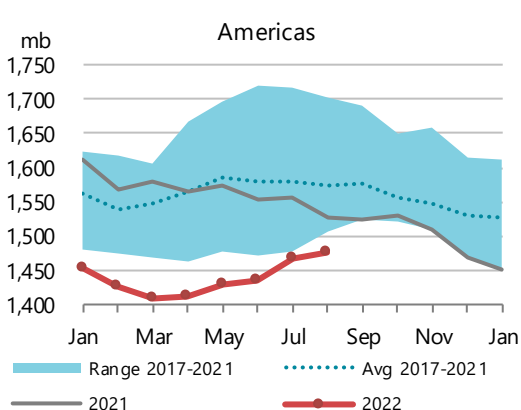
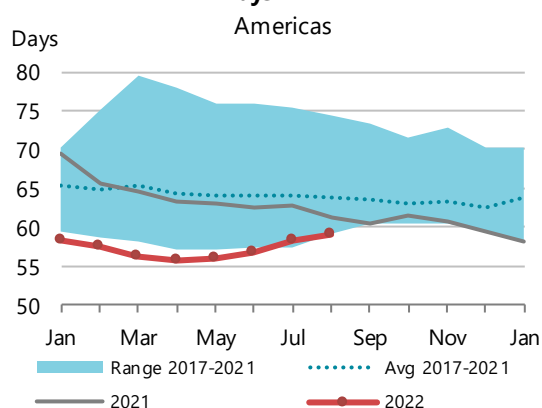


Regional OECD End-of-Month Industry Stocks

(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

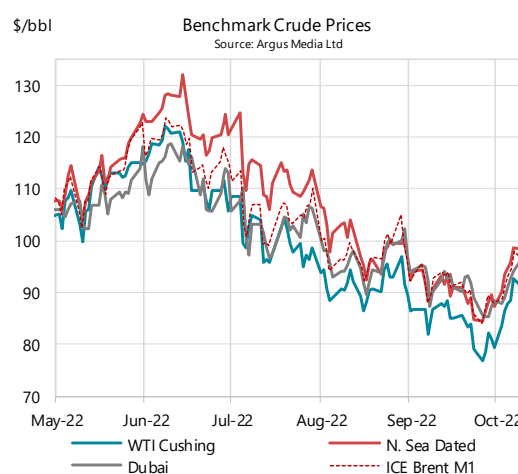
Overview

The oil market rout carried on at full force during September as anxiety over the state of the global economy continued to build, weighing heavily on prices and the outlook for oil demand. The downward price trajectory reversed course in early October as rumblings of a potential steep cut in OPEC+ production targets ahead of the group's meeting swept through the market. In the event, the decision to slash targets by 2 mb/d on 5 October triggered a surge in oil futures to five-week highs, erasing last month's declines. Post-meeting the rally faded, however, as omnipresent macro-economic concerns once again added downward pressure on prices, eclipsing supply concerns for now.

The unrelenting deterioration in economic data reflects the worsening impact of inflation, rising interest rates, a strong US dollar, high energy costs and continued weakness in China. North Sea Dated crude fell \$10/bbl m-o-m to \$90/bbl, after which the build-up of bullish sentiment around the OPEC+ decision prompted a recovery to \$94.57/bbl in the first week of October. Prices have lost around 25% from their June peaks, capping the largest quarterly decline since the 1Q20 pandemic sell-off. Unlike in recent months, September's price drop was accompanied by resilience in forward curves and physical differentials, pointing to fundamental tightness in the face of macro-economic headwinds.

Crude Prices and Differentials (\$/bbl)							
	Month		Week of		Last	Chng Sep-22	
	Sep-21	Aug-22	Sep-22	03 Oct	11 Oct	m-o-m	y-o-y
Crude Futures (M1)							
NYMEX WTI	71.54	91.48	83.80	87.80	89.35	-7.68	12.26
ICE Brent	74.88	97.74	90.57	93.27	94.29	-7.17	15.69
Crude Marker Grades							
North Sea Dated	74.40	99.63	89.76	94.57	94.56	-9.87	15.36
WTI (Cushing)	71.56	91.57	83.86	87.80	89.35	-7.71	12.30
Dubai	72.57	96.43	90.98	90.95	93.63	-5.45	18.42
Differential to North Sea Dated							
WTI (Cushing)	-2.83	-8.06	-5.90	-6.77	-5.21	2.16	-3.06
Dubai	-1.83	-3.20	1.22	-3.62	-0.93	4.42	3.05
Differential to ICE Brent							
North Sea Dated	-0.48	1.89	-0.81	1.30	0.27	-2.70	-0.33
NYMEX WTI	-3.34	-6.26	-6.77	-5.47	-4.94	-0.51	-3.43

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



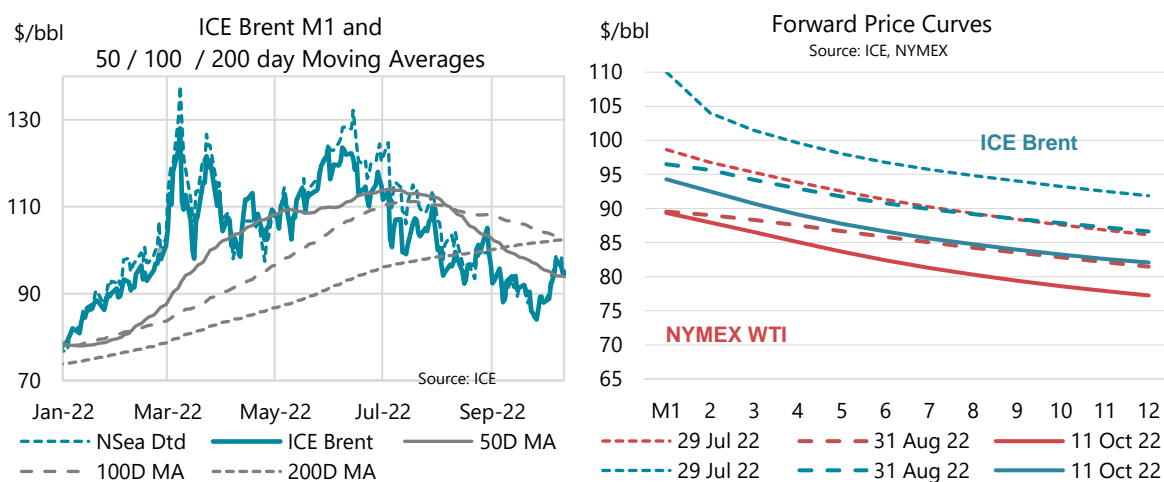
Economic prospects deteriorated and recession fears rose as soaring retail food and energy prices as well as borrowing costs strained household budgets. Central banks worldwide renewed vows to battle runaway consumer inflation. The Federal Reserve approved a third-straight 0.75 percentage points rise in its benchmark interest rate, sending the US dollar to 20-year highs while 10-year US Treasury yields topped 4% for the first time since 2008. In a testament to unprecedented market conditions, massive interest rate hikes and currency market interventions have become the order of the day. Inflationary stress is most acute in Europe, where energy-intensive manufacturers are cutting factory activity, while most EU governments are introducing emergency measures to cushion the impact of punitive power and gas prices. The ensuing sharp deterioration in countries' fiscal balances is increasingly a cause for worry among investors, as is China's weak growth due to its lingering property crisis, persistent lockdowns and waning export activity.

In defiance of this bearish macro environment, physical spreads and differentials actually signalled a tightening supply market, heightened by the prospect of scarcity moving into focus as the October OPEC+ meeting and December EU sanctions on Russian crude imports approached. Brent backwardation steepened for the first time in four months, contrasting with September's price drop as crude stocks stagnated or drew over the month. North Sea Dated spreads showed little direction for most of September, with Dated mostly trading at a discount to ICE futures and Dubai, before moving to a premium to both these benchmarks in the beginning of October. The dismal overall macro sentiment affecting all risk assets has aggravated volatility and price discovery, driving away hedgers and liquidity providers alike, as evidenced by open interest falling to seven-year lows.

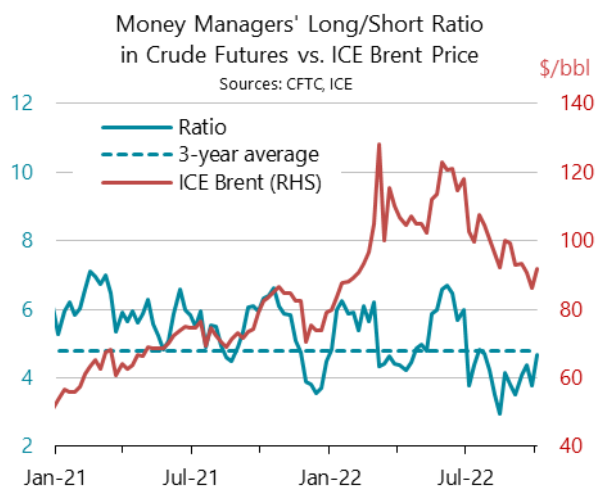
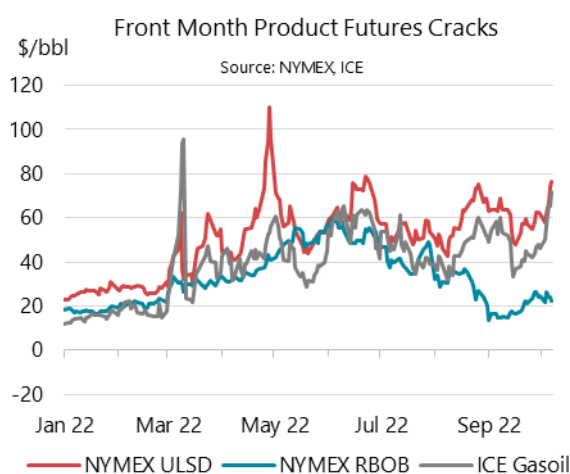
Freight rates remained near last month's highs, as the shake-up of trade flows in the wake of the Ukraine invasion magnified logistical challenges. The re-direction of more Russian barrels from Europe to Asian ports after EU sanctions come into effect on 5 December is bound to further boost tonne-miles and strain the capacity of the global tanker fleet.

Futures markets

Oil's prices continued their downward spiral in September from peak June levels, as macro concerns remained at the fore. Front-month WTI and Brent futures fell by 8% and 7% m-o-m, respectively, before staging an OPEC+ driven recovery in early October, to \$89.35/bbl and \$94.29/bbl, back above their 50-day moving averages. September's all-encompassing risk-averse sentiment also sharply raised correlations with other commodities such as grains and base metals, as well as with other asset classes. Brent's 10-day running correlation with the S&P 500 index exceeded 90% towards the end of September when the sell-off reached its low point.

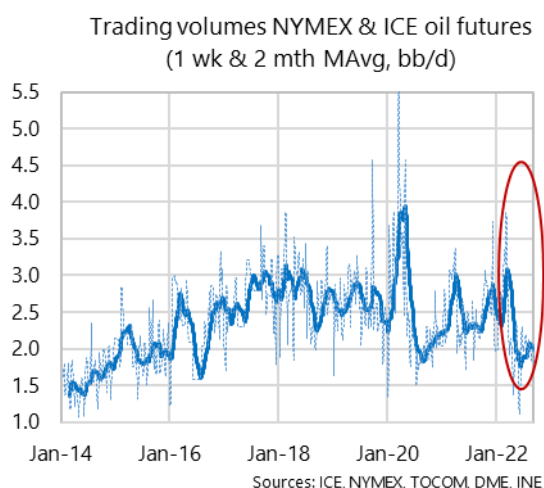
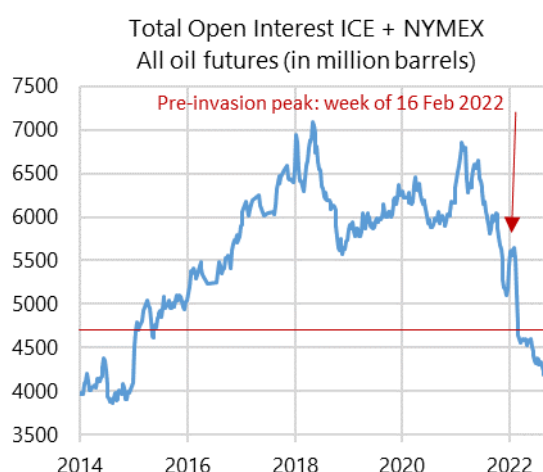


The 12-month backwardation in Brent crude futures strengthened by \$2.39/bbl to \$12.23/bbl from 31 August to 11 October, after three consecutive softer months. This compares with around \$20/bbl in early June, and with about \$15/bbl pre-invasion. Net producer short positioning was -291,000 contracts at the end of September, compared to -209,000 in mid-August, pointing to resilient hedge selling pressure weighing on the back-end of the curve.



The RBOB gasoline to WTI front month crack recovered strongly from its August lows, more than doubling to \$21/bbl – back above its pre-invasion level. Sentiment towards gasoline improved after weekly EIA reports showed counter-seasonal stock draws. In the week ending 30 September gasoline stocks fell to 210 mb, a seven-year seasonal low. Lower pump prices incentivised driving, prompting a nascent demand recovery that tightened the Atlantic Basin market. The heating oil to WTI crack rose by \$8/bbl to \$76/bbl, in line with August's high.

Net managed money positions were somewhat higher in WTI and Brent and marginally lower in RBOB gasoline. Heating oil saw the biggest decrease in relative terms, dropping by about 13 000 to 18 000 contracts. The ratio of long to short crude holdings by money managers rose by one point to 4.7, more or less its long-term average. Speculative positioning is typically strongly correlated with price momentum, but this dependency broke down in September as the price collapse did not coincide with shorter fund positions. Attractive roll gains at the front-end of the curve incentivising long holdings may partly explain this divergence, as may investors' reluctance to add new shorts in a market that is technically heavily oversold and facing OPEC+ supply tensions.



Extreme price volatility further decimated paper liquidity in September, as the surge in exchange margins compelled traders to reduce risk. Total open interest on the ICE and NYMEX exchanges fell to their lowest in seven years, about 70-75% of pre-invasion levels for WTI, Brent and heating oil, with trading volumes showing a similar decline. RBOB gasoline futures saw the biggest drop in liquidity, to around 60% of pre-invasion open interest.

Prompt Month Oil Futures Prices (monthly and weekly averages, \$/bbl)											
	Jul-22	Aug-22	Sep-22	Sep-22		Week Commencing:					Last
				m-o-m Chg	y-o-y Chg	05 Sep	12 Sep	19 Sep	26 Sep	03 Oct	11 Oct
US Market											
Light Sweet Crude Oil (WTI) 1st contract	99.38	91.48	83.80	-7.68	12.26	84.79	86.76	83.07	79.62	87.80	89.35
Light Sweet Crude Oil (WTI) 12th contract	83.00	83.36	76.01	-7.35	9.62	78.03	79.03	74.91	71.13	76.79	77.25
RBOB	140.32	122.25	102.76	-19.49	11.86	99.78	103.27	103.30	104.46	111.56	110.35
ULSD	152.89	150.89	143.21	-7.68	50.79	149.93	141.97	139.99	139.62	155.19	165.09
ULSD (\$/mmbtu)	27.00	26.87	25.25	-1.62	8.62	26.50	25.25	24.67	24.31	26.71	27.41
Henry Hub Natural Gas (\$/mmbtu)	7.19	8.78	7.76	-1.02	2.64	7.97	8.35	7.43	6.81	6.79	6.60
European Market											
Brent 1st contract	105.12	97.74	90.57	-7.17	15.69	91.71	92.69	89.81	87.22	93.27	94.29
Brent 12th contract	88.25	88.39	80.81	-7.58	11.58	82.76	83.14	79.75	76.38	81.50	82.06
Gasoil	149.64	142.74	136.81	-5.93	52.39	147.13	134.50	130.89	131.95	154.64	160.65
Prompt Month Differentials											
WTI M1 - Brent M1	-5.74	-6.26	-6.77	-0.51	-3.43	-6.92	-5.93	-6.74	-7.60	-5.47	-4.94
WTI M1 vs. M12	16.38	8.12	7.79	-0.33	2.64	6.76	7.73	8.16	8.49	11.01	12.10
Brent M1 vs. M12	16.87	9.35	9.76	0.41	4.11	8.95	9.55	10.06	10.84	11.77	12.23
ULSD - WTI	53.51	59.41	59.41	0.00	38.53	65.14	55.21	56.92	60.00	67.39	75.74
RBOB - WTI	40.94	30.77	18.96	-11.81	-0.40	14.99	16.51	20.23	24.84	23.76	21.00
3-2-1 Crack (WTI, RBOB, ULSD)	45.13	40.32	32.44	-7.88	12.58	31.70	29.41	32.46	36.56	38.30	39.25
ULSD - Natural Gas (\$/mmbtu)	19.81	18.09	17.49	-0.60	5.98	18.53	16.90	17.24	17.50	19.92	20.82
Gasoil - Brent	44.52	45.00	46.24	1.24	36.70	55.42	41.81	41.08	44.73	61.37	66.36

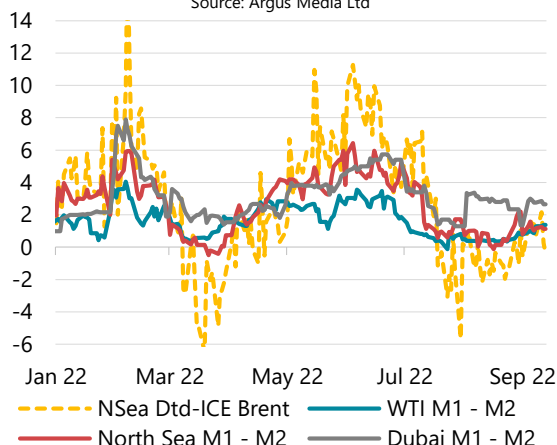
Source: ICE, NYMEX.

Spot crude oil prices

The decline in the North Sea Dated physical crude complex exceeded that for Brent futures in September amid refinery maintenance, a recovery in North Sea output and ongoing SPR releases. The Atlantic basin benchmark North Sea Dated lost \$9.87/bbl m-o-m to average \$89.76/bbl in September, while WTI at Cushing fell \$7.71/bbl to \$83.86/bbl. The Dated differential to ICE Brent futures weakened as cargoes were slow to clear, trading at a discount for most of the month. The spread found renewed support towards the end of September, when (ultimately well-founded) reports of significant OPEC+ output cuts began to circulate, and reverted to a premium of \$1.30/bbl in the first week of October.

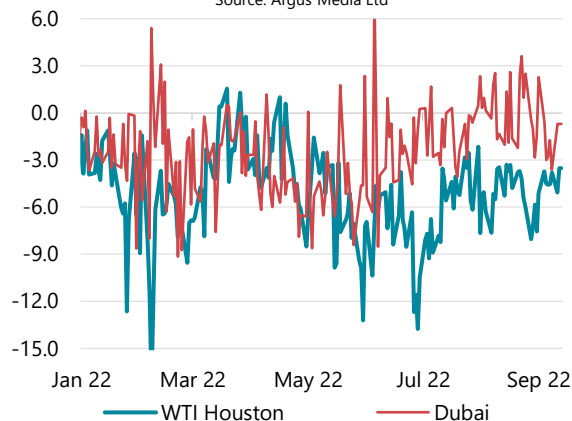
\$/bbl Crude Prices Prompt Month Differentials

Source: Argus Media Ltd



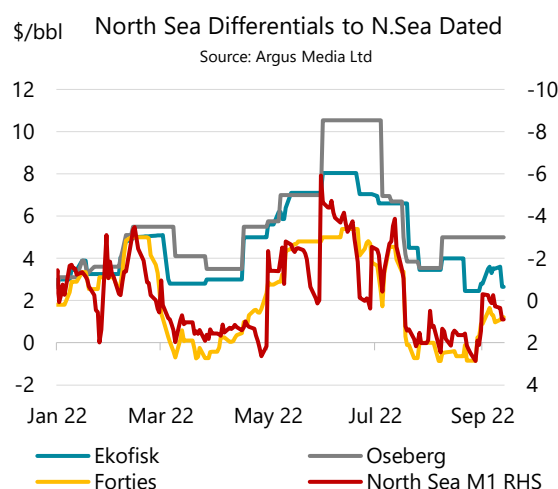
\$/bbl WTI Houston and Dubai vs. North Sea M2

Source: Argus Media Ltd



The Dated price spread to Dubai displayed a similar dynamic. Dubai traded at a premium to North Sea well into September, as the Middle Eastern benchmark was supported by firm Asian demand. This was reflected in a shift among Chinese refiners towards spot buying ahead of an anticipated 4Q22 hike in product export quotas and as Covid uncertainties continued to weigh on the outlook for

domestic demand. However, growing anxiety about the approaching EU embargo and rumoured OPEC+ cuts subsequently propelled North Sea Dated prices back to a \$0.93/bbl premium versus Dubai in early October. In further evidence of a tightening physical market, Brent CFDs in the forward market moved sharply into backwardation at the end of September.

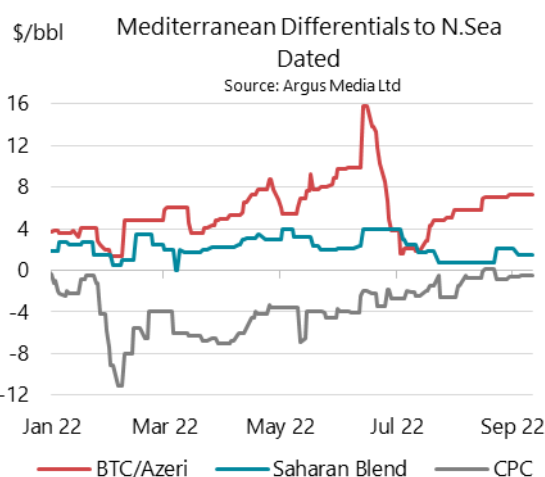
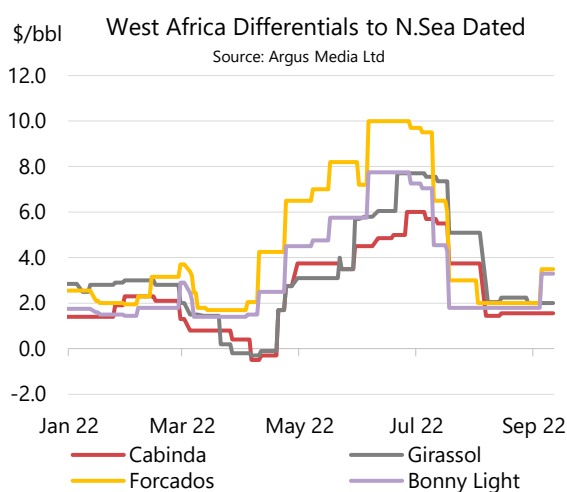


North Sea grade differentials, already significantly lower in August, weakened further over the course of September. In addition to refinery turnarounds and the post-maintenance rise in North Sea crude output, a barrage of light sweet US cargoes pressured the market. Total crude arrivals in Northwest Europe rose 400 kb/d m-o-m, to over 5.9 mb/d, their highest level since mid-2019. Forties, the principal price-setting grade, fell by \$2.19/bbl in September, shifting to a -\$0.33 discount to North Sea Dated as cargoes remained unsold. The heavy discount ultimately rekindled buyers' interest,

resulting in a handful of long-haul charters of Forties sailing to China, helping the differential recover to \$1.35/bbl in the first week of October. Other grades also softened: Ekofisk was down by \$2.40/bbl to \$3.26/bbl, Oseberg by \$1.12/bbl to \$4.72/bbl while Statfjord fell \$4.44/bbl to \$2.15/bbl.

Ongoing SPR releases combined with lacklustre gasoline refining margins continued to support transatlantic exports of US light sweet crude, sending weekly US crude oil exports above 4 mb/d in September, according to data from the *EIA*. The WTI Cushing – Dated Brent spread stood at -\$5.21/bbl in early October.

West African premiums to North Sea Dated continued to contract in September, as elevated exports from Libya and the US put pressure on sweet grades. Premiums were impacted by a halt in Nigerian Forcados loadings since mid-July and the more recent shut-in of a key pipeline for Bonny Light. Angolan differentials fell with Girassol down by \$3.97/bbl to \$2.45/bbl and Cabinda by \$3.10/bbl to \$1.73/bbl on average in September.

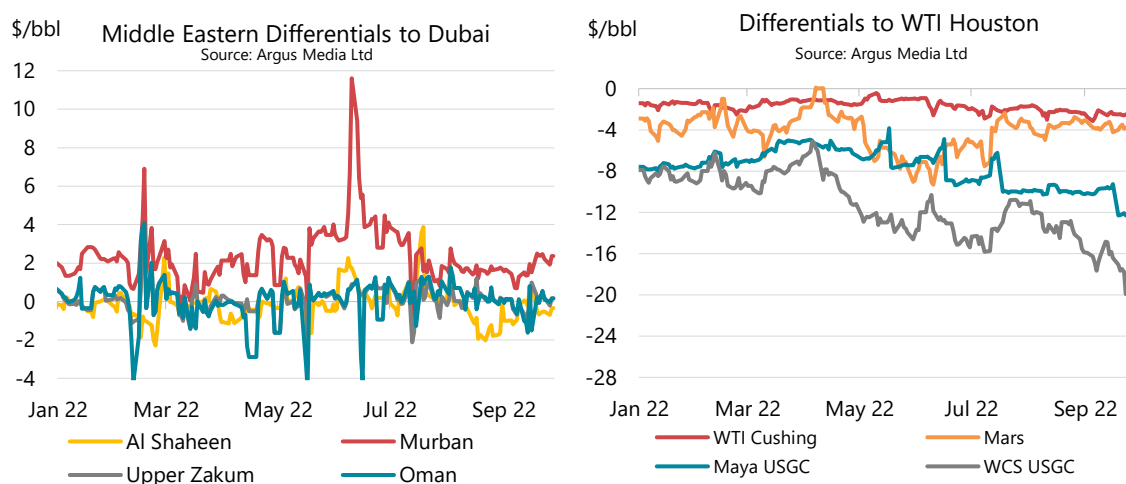


Mediterranean differentials mostly strengthened against North Sea Dated. Light sour CPC Blend's discount narrowed by \$1.55/bbl m-o-m in September, as output was plagued by ongoing problems at its Black Sea terminal. Demand for Azeri/BTC grades climbed, gaining popularity as an alternative

to CPC volumes. The Azeri Light differential rose \$3.08/bbl m-o-m to \$6.53/bbl, peaking around \$7.20/bbl in the last week of September.

Urals' discount to North Sea climbed \$3.84/bbl to -\$21.17/bbl, before strengthening further to -\$18/bbl in early October, as European buyers front-load purchases before the start of the EU embargo. Estimated pricing on Ural shipments has averaged a -\$25/bbl discount since the start of the invasion.

Gulf crude differentials to Dubai shrank, as competition from American and West African barrels weighed on prices despite robust Chinese demand. Light Murban premiums to Dubai's front month contracted by \$0.27/bbl m-o-m to \$1.47/bbl in September, only to rebound in the first week of October to \$2.39/bbl. Weak heavy fuel oil cracks undermined demand for sour grades and pressured their differentials. Oman fell by \$0.84/bbl on average and flipped to a -\$0.19/bbl discount to Dubai while Al Shaheen plunged by \$1.29/bbl to -\$0.92/bbl below the Dubai marker.



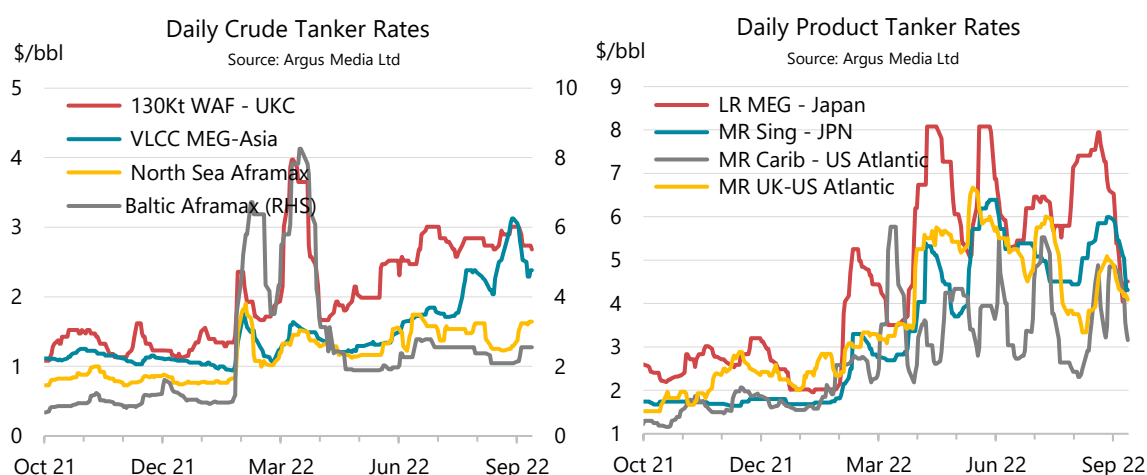
Domestic US benchmarks were mostly range-bound. Premiums for WTI Midland and WTI Houston to Cushing climbed, as exports soared while refinery outages in Ohio pressured Cushing. Midland premiums rose by \$0.26/bbl to \$1.97/bbl and Houston by \$0.35/bbl to \$2.37/bbl. Mars' discount to WTI at Houston narrowed slightly in September, by \$0.22/bbl to -\$3.43/bbl, as sour SPR releases dwindled. Western Canadian Select's (WCS) discount to WTI Houston widened by \$3.12/bbl to -\$15.28/bbl as high sulphur fuel oil discounts increased and gasoline cracks rose, before collapsing towards -\$25/bbl in early October.

Spot Crude Oil Prices and Differentials											
(monthly and weekly averages, \$/bbl)											
	Jul-22	Aug-22	Sep-22	Sep-22 m-o-m	Sep-22 y-o-y	Week Commencing:					
				Chg	Chg	05 Sep	12 Sep	19 Sep	26 Sep	03 Oct	11 Oct
Crudes											
North Sea Dated	112.63	99.63	89.76	-9.87	15.36	90.64	91.64	87.80	87.18	94.57	94.56
North Sea M1	109.85	99.19	91.49	-7.70	15.73	92.47	93.29	89.93	88.78	94.54	95.45
North Sea M2	105.11	97.33	90.70	-6.62	15.72	91.84	93.08	89.43	87.09	93.29	94.33
WTI (Cushing) M1	99.84	91.57	83.86	-7.71	12.30	84.79	86.76	83.33	79.62	87.80	89.35
WTI (Cushing) M2	97.04	90.88	83.37	-7.51	12.04	84.39	86.35	82.89	78.87	86.80	87.97
WTI (Houston) M1	101.85	93.61	86.25	-7.36	13.66	87.03	89.22	85.86	82.04	90.32	91.93
Urals (NWE)	83.05	74.63	68.59	-6.03	-3.76	69.54	70.44	65.80	67.18	76.07	76.06
Dubai (1st mon)	102.86	96.43	90.98	-5.45	18.42	92.03	92.77	91.50	86.40	90.95	93.63
Differentials to Futures											
North Sea Dated vs. ICE Brent	7.51	1.89	-0.81	-2.70	-0.33	-1.07	-1.05	-2.01	-0.04	1.30	0.27
WTI (Cushing) M1 vs. Futures	0.46	0.09	0.06	-0.03	0.04	0.00	0.00	0.26	0.00	0.00	0.00
Differentials to Physical Markers											
WTI (Houston) versus North Sea M2	-3.26	-3.72	-4.45	-0.73	-2.06	-4.81	-3.87	-3.57	-5.06	-2.98	-2.41
WTI (Houston) versus WTI (Cushing) M1	2.01	2.04	2.39	0.35	1.36	2.24	2.46	2.53	2.42	2.52	2.58
Urals (NWE) versus North Sea Dated	-29.57	-25.00	-21.17	3.84	-19.12	-21.10	-21.20	-22.00	-20.00	-18.50	-18.50
Dubai versus North Sea M2	-2.26	-0.90	0.28	1.18	2.70	0.19	-0.32	2.07	-0.69	-2.34	-0.70
Dubai versus WTI (Cushing) M2	5.82	5.55	7.61	2.06	6.37	7.64	6.42	8.61	7.52	4.15	5.66
Prompt Month Differentials											
Forward North Sea M1-M2	4.74	1.86	0.79	-1.07	0.01	0.64	0.21	0.50	1.69	1.25	1.12
Forward WTI Cushing M1-M2	2.80	0.69	0.49	-0.20	0.26	0.39	0.40	0.44	0.74	1.00	1.38
Forward Dubai M1-M2	5.27	2.33	2.74	0.41	2.23	3.12	2.90	2.77	1.95	2.85	2.65

Source: Argus Media Ltd, ICE, NYMEX

Freight

European refiners continued their shift away from Russian crude, adding longer routes and more tonne-miles to the freight market. The onset of the refinery maintenance season will support product trade flows (given low stock levels in consuming regions) backing clean tanker rates. Planned increases to Chinese refinery throughput as a result of newly issued quotas are expected to boost freight rates for shipping both crude and products.



Dirty tanker rates in September were mixed. Prices for long range VLCC charters continued to firm, reaching highs not seen since 2020. Fees escalated due to a lack of available vessels, amid strong demand for charters out of the Middle East to Asia. Additionally, Brazil had two VLCC cargoes fixed for China, while the US moved a handful of cargoes to Asia. Long-haul VLCC charters from the Middle East to Asia rose to a high of \$3.06/bbl in the week of 19 September, before easing during the first week of October to \$2.37/bbl. Suezmax rates, while still at two-year highs, were flat in September as West African crude production struggled with operational difficulties. European

Aframax rates eased in September amid thin demand for vessels, as Europe utilised more long-range tankers. Aframax charters out of the Baltic region were down \$0.33/bbl to \$2.19/bbl, while Black Sea rates fell \$0.18/bbl to \$1.35/bbl.

Product freight rates mostly increased in September, with the exception of transatlantic routes on medium range (MR) tankers. Vessels out of Northwest Europe fell for a second month, down \$0.54/bbl to \$4.31/bbl. Rates for shorter inter-regional Asian voyages increased by \$0.97/bbl with Northeast Asian refiners moving into maintenance and the seasonal pick-up in kerosene demand to build stocks ahead of winter. In response to Hurricane Ian, more shipments moved from the Caribbean to the US Gulf Coast, adding \$0.39/bbl to inter-Atlantic rates.

Freight Costs											
(monthly and weekly averages, \$/bbl)											
	Sep-22					Week Commencing					
	Jul-22	Aug-22	Sep-22	m-o-m chg	y-o-y chg	29-Aug	05-Sep	12-Sep	19-Sep	26-Sep	03-Oct
Crude Tankers											
VLCC MEG-Asia	1.74	2.04	2.58	0.54	1.60	2.25	2.11	2.58	3.06	2.81	2.37
130Kt WAF - UKC	2.77	2.78	2.85	0.07	1.81	2.79	2.71	2.87	2.98	2.92	2.73
Baltic Aframax	2.57	2.52	2.19	-0.33	1.55	2.37	2.13	2.08	2.08	2.34	2.55
North Sea Aframax	1.55	1.54	1.35	-0.18	0.65	1.56	1.27	1.24	1.27	1.54	1.63
Product Tankers											
LR MEG - Japan	5.83	6.27	6.96	0.70	4.26	7.38	7.43	7.78	6.93	5.70	4.32
MR Sing - JPN	5.33	4.61	5.58	0.97	3.65	4.65	5.25	5.75	5.94	5.67	4.68
MR Carib - US Atlantic	3.46	3.53	3.92	0.39	2.81	2.38	3.16	4.42	3.86	4.78	3.72
MR UK-US Atlantic	5.15	4.85	4.31	-0.54	2.76	3.57	3.69	4.47	5.03	4.59	4.18

Source: Argus Media Ltd

Tables

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

	2019	2020	1Q21	2Q21	3Q21	4Q21	2021	1Q22	2Q22	3Q22	4Q22	2022	1Q23	2Q23	3Q23	4Q23	2023
OECD DEMAND																	
Americas	25.4	22.5	23.0	24.4	24.8	25.1	24.3	24.8	25.0	25.3	25.0	25.0	24.7	25.1	25.4	25.2	25.1
Europe	14.3	12.4	12.0	12.7	13.9	14.0	13.1	13.2	13.4	14.1	14.0	13.7	13.4	13.5	14.0	13.8	13.7
Asia Oceania	7.9	7.2	7.7	7.0	7.1	7.8	7.4	7.9	7.0	7.2	7.8	7.5	8.0	7.2	7.4	7.9	7.6
Total OECD	47.7	42.0	42.6	44.1	45.8	46.9	44.8	45.8	45.4	46.6	46.8	46.2	46.1	45.7	46.9	46.9	46.4
NON-OECD DEMAND																	
FSU	4.7	4.6	4.6	4.7	5.0	5.1	4.8	4.7	4.7	5.0	4.8	4.8	4.5	4.6	4.8	4.8	4.7
Europe	0.8	0.7	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
China	14.1	14.2	14.9	15.6	15.6	15.6	15.4	15.4	14.2	14.5	15.1	14.8	14.9	15.5	15.7	16.4	15.6
Other Asia	14.1	12.7	13.7	13.1	12.8	13.9	13.4	14.1	14.0	13.4	14.1	13.9	14.6	14.5	14.2	14.9	14.5
Americas	6.3	5.4	5.7	5.8	6.1	6.1	5.9	5.9	6.1	6.1	6.1	6.0	5.9	6.1	6.2	6.1	6.1
Middle East	8.8	8.1	8.2	8.4	8.9	8.4	8.5	8.5	9.2	9.5	8.7	9.0	8.7	9.3	9.5	8.8	9.1
Africa	4.1	3.8	4.0	3.9	3.9	4.1	4.0	4.2	4.1	4.0	4.1	4.1	4.1	4.1	4.0	4.2	4.1
Total Non-OECD	52.9	49.5	51.9	52.3	53.0	54.0	52.8	53.6	53.0	53.3	53.8	53.5	53.4	54.7	55.2	56.0	54.8
Total Demand¹	100.6	91.5	94.5	96.4	98.8	100.9	97.7	99.4	98.5	100.0	100.6	99.6	99.5	100.4	102.1	102.9	101.3
OECD SUPPLY																	
Americas	24.8	23.9	23.5	24.4	24.4	25.3	24.4	25.0	25.4	26.0	26.5	25.7	26.5	26.8	27.3	27.4	27.0
Europe	3.4	3.6	3.6	3.1	3.4	3.4	3.4	3.3	3.0	3.1	3.3	3.2	3.3	3.3	3.3	3.5	3.3
Asia Oceania	0.5	0.5	0.5	0.5	0.6	0.5	0.5	0.5	0.5	0.4	0.5	0.5	0.5	0.4	0.5	0.4	0.5
Total OECD²	28.6	28.0	27.6	27.9	28.3	29.2	28.3	28.8	28.9	29.5	30.2	29.4	30.3	30.6	31.0	31.3	30.8
NON-OECD SUPPLY																	
FSU	14.6	13.5	13.4	13.7	13.7	14.3	13.8	14.4	13.4	13.7	13.6	13.8	12.6	12.5	12.4	12.5	12.5
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	4.2	4.2	4.2	4.1	4.2
Other Asia	3.3	3.0	3.0	2.9	2.8	2.8	2.9	2.8	2.7	2.7	2.7	2.7	2.6	2.6	2.6	2.6	2.6
Americas	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	5.9	6.0	6.1	6.0
Middle East	3.0	3.0	3.1	3.1	3.1	3.1	3.1	3.2	3.2	3.3	3.2	3.2	3.2	3.2	3.2	3.2	3.2
Africa	1.5	1.4	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
Total Non-OECD²	31.8	30.3	30.2	30.5	30.5	30.8	30.5	31.4	30.5	30.8	30.8	30.8	30.0	29.9	29.8	29.8	29.9
Processing gains ³	2.4	2.1	2.1	2.2	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.4	2.4	2.4	2.4
Global Biofuels	2.8	2.6	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 Supply	65.6	63.0	62.1	63.6	64.3	65.0	63.8	64.9	64.7	65.9	66.3	65.5	65.1	65.9	66.6	66.5	66.0
OPEC⁴																	
Crude	29.6	25.7	25.4	25.6	27.0	27.8	26.4	28.5	28.7	29.6							
NGLs	5.3	5.1	5.1	5.1	5.1	5.2	5.1	5.3	5.4	5.4	5.4	5.3	5.4	5.4	5.5	5.5	5.4
Total OPEC	35.0	30.8	30.4	30.7	32.1	33.0	31.5	33.8	34.1	34.9							
Total Supply	100.6	93.8	92.5	94.2	96.4	98.0	95.3	98.7	98.8	100.9							
STOCK CHANGES AND MISCELLANEOUS																	
Reported OECD																	
Industry	0.1	0.4	-1.2	-0.5	-1.2	-1.3	-1.1	-0.4	0.6								
Government	0.0	0.0	0.1	-0.2	-0.1	-0.3	-0.2	-0.5	-1.1								
Total	0.0	0.4	-1.2	-0.7	-1.4	-1.6	-1.2	-0.8	-0.5								
Floating storage/Oil in transit	0.1	0.0	-0.4	-0.6	-0.3	1.0	-0.1	-0.5	0.5								
Miscellaneous to balance ⁵	-0.1	1.8	-0.4	-0.9	-0.7	-2.4	-1.1	0.6	0.3								
Total Stock Ch. & Misc	0.0	2.3	-2.0	-2.2	-2.4	-2.9	-2.4	-0.7	0.3	0.9							
Memo items:																	
Call on OPEC crude & stock changes ⁶	29.6	23.4	27.4	27.7	29.3	30.7	28.8	29.2	28.4	28.6	28.9	28.8	29.0	29.1	30.1	30.9	29.8

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

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

³ Net volumetric gains and losses in the refining process and marine transportation losses.

⁴ OPEC include current members throughout the time series.

⁵ Includes changes in non-reported stocks in OECD and non-OECD.

⁶ Total demand minus total non-OPEC supply minus OPEC NGLs.

For the purpose of this and the following tables :

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

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

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

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

	2019	2020	1Q21	2Q21	3Q21	4Q21	2021	1Q22	2Q22	3Q22	4Q22	2022	1Q23	2Q23	3Q23	4Q23	2023
OECD DEMAND																	
Americas	-	-	0.1	-	-0.1	-	-	-	-	0.2	-0.1	-	-0.1	-0.1	-	-0.1	-0.1
Europe	-	-	-	-	-	-	-	-	-	0.1	0.1	0.1	-0.1	-0.1	-	-	-0.1
Asia Oceania	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total OECD	-	-	-	-	-0.1	-	-	-	-	0.3	-	0.1	-0.2	-0.2	-	-0.2	-0.2
NON-OECD DEMAND																	
FSU	-	-	-	-	-	-	-	-	-	0.1	0.1	0.1	0.1	0.1	0.1	-	-
Europe	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
China	-	-	-	-	-	-	-	-	-	-0.4	-0.4	-0.2	-0.5	-0.4	-0.4	-0.1	-0.4
Other Asia	-	-	-	-	-	-	-	-	-	-	0.1	-	0.1	-	-	-	-
Americas	-	-	-	-	-	-	-	-	-	-	-	-	-0.1	-0.1	-0.1	-0.1	-0.1
Middle East	-	-	-	-	-	-	-	-	-	-0.1	-	-	-	-	-	-	-
Africa	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Non-OECD	-	-	-	-	-	-	-	-	-	-0.3	-0.3	-0.2	-0.5	-0.4	-0.5	-0.2	-0.4
Total Demand	-	-	-	-	-0.1	-	-	-	-	-	-0.3	-0.1	-0.7	-0.6	-0.5	-0.4	-0.5
OECD SUPPLY																	
Americas	-	-	-	-	-	-	-	-	-	-	-0.1	-	-0.1	-0.1	0.1	-	-
Europe	-	-	-	-	-	-	-	-	-	-	-0.1	-	-	-	-	-	-
Asia Oceania	-	-	-	-	-	-	-	-	-	-0.1	-	-	-	-	-	-	-
Total OECD	-	-	-	-	-	-	-	-	-	-0.1	-0.2	-0.1	-0.1	-0.1	0.1	-	-
NON-OECD SUPPLY																	
FSU	-	-	-	-	-	-	-	-	-	0.1	0.2	0.1	-0.1	-	-	-	-
Europe	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
China	-	-	-	-	-	-	-	-	-	-0.1	-0.1	-	-0.1	-0.1	-0.1	-0.1	-0.1
Other Asia	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Americas	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Middle East	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Africa	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Non-OECD	-	-	-	-	-	-	-	-	-	-	0.1	-	-0.2	-0.1	-0.1	-0.1	-0.1
Processing gains	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Global Biofuels	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Non-OPEC Supply	-	-	-	-	-	-	-	-	-	-0.1	-0.1	-	-0.3	-0.2	-0.1	-0.2	-0.2
OPEC																	
Crude	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NGLs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total OPEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Supply	-	-	-	-	-	-	-	-	0.1	-	-	-	-	-	-	-	-
STOCK CHANGES AND MISCELLANEOUS																	
REPORTED OECD																	
Industry	-	-	-	-	0.1	-0.1	-	-	0.1	-	-	-	-	-	-	-	-
Government	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	-	-	-	-	0.1	-0.1	-	-	0.1	-	-	-	-	-	-	-	-
Floating storage/Oil in transit	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Miscellaneous to balance	-	-	-	-	-	0.1	-	0.1	-	-	-	-	-	-	-	-	-
Total Stock Ch. & Misc	-	-	-	-	0.1	-	-	0.1	-	-	-	-	-	-	-	-	-
Memo items:																	
Call on OPEC crude & stock changes	-	-	-	-	-0.1	-	-	-0.1	-	0.1	-0.3	-	-0.4	-0.4	-0.4	-0.2	-0.4

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	100.6	91.5	94.5	96.4	98.8	100.9	97.7	99.4	98.5	100.0	100.6	99.6	99.5	100.4	102.1	102.9	101.3
OECD SUPPLY																	
Americas ²	22.8	21.9	21.5	22.4	22.4	23.4	22.4	23.0	23.4	24.0	24.4	23.7	24.4	24.7	25.2	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	3.3	3.2	3.3	3.3	3.3	3.5	3.3
Asia Oceania	0.5	0.5	0.5	0.5	0.6	0.5	0.5	0.5	0.5	0.4	0.5	0.5	0.5	0.4	0.5	0.4	0.5
Total OECD (non-OPEC+)	26.7	26.0	25.7	26.0	26.4	27.3	26.3	26.8	26.9	27.5	28.2	27.4	28.2	28.5	29.0	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	4.2	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	1.9	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	5.9	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	15.1	14.8	15.0	15.2	15.2	15.3	15.4	15.3	15.6	15.6	15.6	15.6	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	2.4	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	45.0	46.2	47.0	47.1	46.3	46.7	47.4	48.4	48.8	47.9	48.6	49.6	50.4	50.2	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	2.6	2.5	2.6	2.6	2.6	2.6	2.6
Iraq	4.7	4.0	3.9	3.9	4.1	4.2	4.0	4.3	4.4	4.5	4.5	4.4	4.4	4.4	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	1.3	1.6	1.5	1.6	1.6	1.6	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	9.4	9.6	8.4	8.3	8.3	8.3	8.3
Saudi Arabia	9.9	9.2	8.5	8.6	9.6	9.9	9.2	10.2	10.5	10.9	10.7	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	44.5	44.3	44.1	43.1	43.0	42.9	42.9	43.0
OPEC+ NGLs & Condensate	7.4	7.2	7.4	7.4	7.3	7.5	7.4	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.9	7.9	7.8
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	52.2	52.0	51.1	50.9	50.8	50.8	50.9
Total Supply Oil	100.6	93.8	92.5	94.2	96.4	98.0	95.3	98.7	98.8	100.9	101.1	99.9	99.7	100.5	101.2	101.1	100.6
Memo items:																	
Call on OPEC+ crude & stock changes	45.9	38.3	42.0	42.7	44.3	46.2	43.8	44.8	43.1	43.6	43.8	43.8	42.9	42.9	43.8	44.7	43.6

¹ From Oct 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	22.47	22.96	24.40	24.80	25.14	24.33	24.78	25.01	25.29	25.00	25.02	24.72	25.08	25.44	25.15	25.10
Europe	12.41	11.95	12.68	13.89	13.96	13.13	13.15	13.41	14.07	14.01	13.66	13.36	13.49	14.04	13.83	13.68
Asia Oceania	7.17	7.68	7.00	7.07	7.78	7.38	7.85	6.98	7.25	7.79	7.47	8.02	7.15	7.42	7.94	7.63
Total OECD	42.05	42.59	44.08	45.77	46.88	44.84	45.78	45.40	46.61	46.81	46.15	46.10	45.72	46.90	46.92	46.41
Asia	26.92	28.62	28.67	28.34	29.59	28.81	29.53	28.23	27.94	29.22	28.73	29.47	29.94	29.88	31.30	30.15
Middle East	8.07	8.16	8.43	8.89	8.43	8.48	8.52	9.17	9.50	8.75	8.99	8.66	9.28	9.54	8.82	9.08
Americas	5.45	5.74	5.80	6.12	6.09	5.94	5.91	6.07	6.11	6.08	6.04	5.88	6.06	6.17	6.13	6.06
FSU	4.56	4.63	4.74	4.97	5.05	4.85	4.71	4.72	5.02	4.80	4.81	4.53	4.60	4.85	4.77	4.69
Africa	3.77	4.03	3.94	3.90	4.10	3.99	4.21	4.10	4.00	4.14	4.11	4.09	4.07	4.02	4.16	4.08
Europe	0.72	0.76	0.75	0.78	0.79	0.77	0.77	0.76	0.79	0.80	0.78	0.76	0.77	0.79	0.80	0.78
Total Non-OECD	49.49	51.93	52.32	53.00	54.04	52.83	53.64	53.05	53.35	53.77	53.45	53.40	54.71	55.24	55.99	54.85
World	91.54	94.52	96.40	98.77	100.92	97.67	99.43	98.45	99.96	100.58	99.61	99.50	100.43	102.15	102.92	101.26
of which:																
United States ¹	18.19	18.58	20.13	20.30	20.54	19.89	20.22	20.27	20.36	20.31	20.29	20.06	20.29	20.44	20.39	20.30
Europe ²	6.91	6.67	7.06	7.66	7.81	7.31	7.39	7.59	7.84	7.87	7.67	7.49	7.56	7.79	7.74	7.65
China	14.20	14.88	15.59	15.59	15.64	15.43	15.40	14.23	14.55	15.08	14.81	14.92	15.48	15.67	16.42	15.63
Japan	3.36	3.77	3.07	3.17	3.66	3.41	3.70	3.03	3.21	3.62	3.39	3.80	3.07	3.29	3.68	3.46
India	4.58	5.04	4.49	4.52	5.02	4.77	5.25	5.14	4.92	5.35	5.17	5.44	5.30	5.16	5.50	5.35
Russia	3.42	3.50	3.58	3.76	3.76	3.65	3.63	3.61	3.87	3.59	3.67	3.42	3.46	3.68	3.54	3.52
Brazil	2.87	2.91	2.92	3.13	3.06	3.01	2.95	2.99	3.05	3.06	3.01	2.96	3.02	3.10	3.11	3.05
Saudi Arabia	3.45	3.24	3.53	3.76	3.44	3.49	3.34	3.83	3.98	3.59	3.69	3.38	3.87	4.04	3.62	3.73
Canada	2.19	2.24	2.14	2.36	2.36	2.28	2.25	2.23	2.49	2.34	2.33	2.31	2.28	2.54	2.41	2.38
Korea	2.45	2.54	2.49	2.59	2.69	2.58	2.73	2.49	2.59	2.68	2.62	2.77	2.60	2.67	2.76	2.70
Mexico	1.60	1.63	1.66	1.61	1.72	1.65	1.76	1.99	1.93	1.83	1.88	1.82	1.98	1.94	1.82	1.89
Iran	1.76	1.90	1.81	1.81	1.81	1.83	1.91	1.84	1.83	1.81	1.85	1.91	1.85	1.84	1.82	1.86
Total	64.98	66.88	68.47	70.25	71.50	69.29	70.53	69.23	70.62	71.14	70.38	70.27	70.76	72.16	72.82	71.51
% of World	71.0%	70.8%	71.0%	71.1%	70.9%	70.9%	70.9%	70.3%	70.7%	70.7%	70.7%	70.6%	70.5%	70.6%	70.8%	70.6%
Annual Change (% per annum)																
Americas	-11.6	-5.5	22.7	9.6	9.0	8.3	7.9	2.5	2.0	-0.5	2.8	-0.2	0.3	0.6	0.6	0.3
Europe	-13.3	-10.2	15.4	8.1	11.8	5.8	10.0	5.8	1.2	0.4	4.1	1.6	0.6	-0.2	-1.2	0.1
Asia Oceania	-9.8	-2.6	5.6	4.4	5.5	3.0	2.3	-0.2	2.5	0.2	1.2	2.1	2.4	2.4	1.9	2.2
Total OECD	-11.8	-6.4	17.5	8.3	9.2	6.6	7.5	3.0	1.8	-0.2	2.9	0.7	0.7	0.6	0.3	0.6
Asia	-4.3	12.1	9.6	3.8	3.2	7.0	3.2	-1.5	-1.4	-1.3	-0.3	-0.2	6.1	6.9	7.1	5.0
Middle East	-8.7	-1.8	12.9	5.7	4.0	5.0	4.4	8.8	6.8	3.8	6.0	1.7	1.2	0.4	0.9	1.0
Americas	-13.4	2.7	18.4	10.1	5.9	9.0	3.0	4.7	-0.2	-0.2	1.8	-0.5	-0.1	1.0	0.9	0.3
FSU	-3.5	-0.2	14.3	5.1	6.8	6.3	1.8	-0.3	0.9	-5.1	-0.7	-3.7	-2.6	-3.3	-0.5	-2.5
Africa	-8.6	-1.3	15.1	5.7	6.0	6.0	4.3	4.0	2.5	1.0	2.9	-2.6	-0.7	0.6	0.5	-0.6
Europe	-7.5	4.1	12.3	5.9	4.4	6.5	2.2	1.0	1.4	1.6	1.5	-1.9	0.4	0.4	0.5	-0.1
Total Non-OECD	-6.4	6.2	11.9	5.1	4.2	6.8	3.3	1.4	0.7	-0.5	1.2	-0.5	3.1	3.6	4.1	2.6
World	-9.0	0.2	14.4	6.6	6.5	6.7	5.2	2.1	1.2	-0.3	2.0	0.1	2.0	2.2	2.3	1.7
Annual Change (mb/d)																
Americas	-2.95	-1.33	4.51	2.18	2.07	1.86	1.82	0.60	0.50	-0.14	0.69	-0.06	0.07	0.15	0.15	0.08
Europe	-1.90	-1.36	1.69	1.04	1.47	0.72	1.20	0.73	0.17	0.05	0.53	0.21	0.08	-0.02	-0.17	0.02
Asia Oceania	-0.78	-0.21	0.37	0.30	0.40	0.22	0.18	-0.01	0.17	0.01	0.09	0.17	0.17	0.17	0.14	0.16
Total OECD	-5.63	-2.90	6.57	3.51	3.95	2.79	3.19	1.32	0.84	-0.07	1.31	0.32	0.32	0.29	0.12	0.26
Asia	-1.20	3.09	2.51	1.04	0.92	1.89	0.91	-0.43	-0.40	-0.37	-0.08	-0.05	1.71	1.94	2.09	1.43
Middle East	-0.77	-0.15	0.96	0.48	0.33	0.41	0.36	0.74	0.60	0.32	0.51	0.14	0.11	0.04	0.08	0.09
Americas	-0.84	0.15	0.90	0.56	0.34	0.49	0.17	0.27	-0.01	-0.01	0.10	-0.03	-0.01	0.06	0.06	0.02
FSU	-0.16	-0.01	0.59	0.24	0.32	0.29	0.08	-0.01	0.05	-0.26	-0.04	-0.17	-0.12	-0.17	-0.02	-0.12
Africa	-0.35	-0.05	0.52	0.21	0.23	0.23	0.17	0.16	0.10	0.04	0.12	-0.11	-0.03	0.02	0.02	-0.02
Europe	-0.06	0.03	0.08	0.04	0.03	0.05	0.02	0.01	0.01	0.01	0.01	-0.01	0.00	0.00	0.00	0.00
Total Non-OECD	-3.39	3.05	5.57	2.59	2.17	3.34	1.71	0.73	0.35	-0.27	0.62	-0.24	1.66	1.89	2.22	1.39
World	-9.02	0.16	12.13	6.10	6.12	6.14	4.91	2.05	1.19	-0.34	1.93	0.07	1.98	2.19	2.34	1.65
Revisions to Oil Demand from Last Month's Report (mb/d)																
Americas	0.00	0.06	-0.02	-0.06	0.03	0.00	-0.01	0.02	0.19	-0.12	0.02	-0.14	-0.10	0.00	-0.13	-0.09
Europe	0.00	-0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.10	0.05	-0.08	-0.09	-0.02	-0.04	-0.06
Asia Oceania	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.03	0.01	-0.01	-0.02	-0.01	0.01	-0.01
Total OECD	-	0.05	-0.03	-0.07	0.03	-0.00	-0.00	0.02	0.32	0.01	0.09	-0.23	-0.21	-0.03	-0.17	-0.16
Asia	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	-0.39	-0.35	-0.18	-0.46	-0.40	-0.44	-0.12	-0.36
Middle East	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.01	-0.06	-0.01	-0.02	-0.01	0.00	-0.01	-0.01	-0.01
Americas	0.00	-0.01	-0.01	-0.03	-0.03	-0.02	-0.03	-0.03	-0.02	-0.04	-0.03	-0.06	-0.06	-0.06	-0.07	-0.06
FSU	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.15	0.09	0.06	0.06	0.07	0.06	-0.03	0.04
Africa	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.02	-0.01	0.01	0.00	0.01	0.00	-0.01	0.00
Europe	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Non-OECD	-0.00	-0.01	-0.01	-0.03	-0.03	-0.02	-0.03	-0.00	-0.31	-0.32	-0.17	-0.47	-0.39	-0.46	-0.24	-0.39
World	-0.00	0.04	-0.04	-0.10	0.00	-0.02	-0.04	0.01	0.01	-0.31	-0.08	-0.70	-0.60	-0.48	-0.41	-0.55
Revisions to Oil Demand Growth from Last Month's Report (mb/d)																
World	0.00	0.09	-0.05	-0.10	-0.02	-0.02	-0.08	0.05	0.11	-0.31	-0.06	-0.66	-0.62	-0.49	-0.10	-0.47

¹ US figures exclude US territories.

² France, Germany, Italy, Spain and UK.

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

										Latest month vs.	
	2020	2021	3Q21	4Q21	1Q22	2Q22	May 22	Jun 22	Jul 22 ²	Jun 22	Jul 21
Americas											
LPG and ethane	3.52	3.69	3.53	3.93	4.18	3.63	3.53	3.68	4.12	0.44	0.55
Naphtha	0.26	0.25	0.26	0.25	0.22	0.21	0.21	0.20	0.21	0.02	-0.05
Motor gasoline	9.53	10.34	10.72	10.61	10.04	10.70	10.79	10.88	10.44	-0.45	-0.48
Jet and kerosene	1.25	1.56	1.73	1.74	1.69	1.87	1.82	2.00	1.90	-0.10	0.18
Gasoil/diesel oil	4.88	5.06	5.00	5.16	5.33	5.14	5.10	5.28	4.96	-0.31	0.22
Residual fuel oil	0.41	0.55	0.57	0.59	0.59	0.54	0.56	0.53	0.58	0.05	-0.01
Other products	2.63	2.87	2.99	2.86	2.73	2.93	2.73	3.14	3.21	0.07	0.19
Total	22.47	24.33	24.80	25.14	24.78	25.01	24.74	25.71	25.43	-0.28	0.59
Europe											
LPG and ethane	1.07	1.10	1.11	1.09	1.11	0.95	0.89	1.02	1.14	0.12	-0.08
Naphtha	1.06	1.12	1.09	1.18	1.15	1.01	1.04	0.98	0.88	-0.10	-0.14
Motor gasoline	1.76	1.93	2.19	2.02	1.88	2.08	2.04	2.18	2.12	-0.06	-0.10
Jet and kerosene	0.74	0.86	1.03	1.07	1.02	1.29	1.27	1.38	1.47	0.10	0.52
Gasoil/diesel oil	5.93	6.26	6.51	6.68	6.14	6.08	6.03	6.13	6.10	-0.03	-0.30
Residual fuel oil	0.69	0.76	0.78	0.76	0.79	0.84	0.88	0.84	0.88	0.04	0.10
Other products	1.17	1.10	1.17	1.15	1.07	1.16	1.19	1.18	1.24	0.05	0.08
Total	12.41	13.13	13.89	13.96	13.15	13.41	13.33	13.71	13.83	0.12	0.07
Asia Oceania											
LPG and ethane	0.76	0.77	0.72	0.78	0.94	0.77	0.79	0.73	0.73	-0.01	-0.02
Naphtha	1.81	1.95	1.98	2.06	1.93	1.78	1.73	1.75	1.93	0.17	0.05
Motor gasoline	1.38	1.35	1.34	1.37	1.28	1.30	1.36	1.30	1.42	0.12	0.07
Jet and kerosene	0.61	0.61	0.42	0.72	0.87	0.51	0.51	0.49	0.50	0.01	0.09
Gasoil/diesel oil	1.83	1.89	1.83	1.98	1.95	1.86	1.90	1.87	1.84	-0.03	0.02
Residual fuel oil	0.42	0.45	0.43	0.48	0.52	0.45	0.42	0.46	0.46	0.01	0.03
Other products	0.36	0.36	0.35	0.39	0.36	0.31	0.32	0.38	0.23	-0.14	-0.13
Total	7.17	7.38	7.07	7.78	7.85	6.98	7.03	6.99	7.11	0.13	0.10
OECD											
LPG and ethane	5.35	5.56	5.36	5.80	6.23	5.35	5.21	5.43	5.98	0.55	0.45
Naphtha	3.12	3.33	3.34	3.48	3.30	3.00	2.98	2.93	3.02	0.09	-0.14
Motor gasoline	12.66	13.62	14.25	14.00	13.19	14.08	14.19	14.36	13.98	-0.38	-0.52
Jet and kerosene	2.60	3.03	3.19	3.54	3.59	3.67	3.60	3.87	3.87	0.00	0.78
Gasoil/diesel oil	12.65	13.21	13.34	13.82	13.41	13.08	13.03	13.28	12.90	-0.38	-0.06
Residual fuel oil	1.52	1.76	1.78	1.84	1.91	1.82	1.85	1.83	1.92	0.09	0.11
Other products	4.16	4.33	4.51	4.40	4.16	4.40	4.24	4.70	4.68	-0.02	0.14
Total	42.05	44.84	45.77	46.88	45.78	45.40	45.11	46.40	46.37	-0.04	0.76

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	May 22	Jun 22	Jul 22 ²	Latest month vs.	
										Jun 22	Jul 21
United States³											
LPG and ethane	2.74	2.88	2.75	3.13	3.37	2.89	2.81	2.92	3.15	0.23	0.43
Naphtha	0.18	0.19	0.20	0.18	0.15	0.14	0.14	0.13	0.14	0.01	-0.07
Motor gasoline	8.05	8.82	9.14	8.98	8.47	9.00	9.11	9.13	8.75	-0.38	-0.55
Jet and kerosene	1.08	1.38	1.52	1.50	1.46	1.61	1.58	1.71	1.60	-0.11	0.10
Gasoil/diesel oil	3.78	3.97	3.90	4.03	4.14	3.89	3.87	3.99	3.72	-0.28	0.04
Residual fuel oil	0.21	0.31	0.35	0.40	0.38	0.31	0.34	0.29	0.33	0.04	-0.02
Other products	2.13	2.35	2.45	2.31	2.24	2.43	2.22	2.61	2.66	0.05	0.24
Total	18.19	19.89	20.30	20.54	20.22	20.27	20.08	20.77	20.34	-0.43	0.17
Japan											
LPG and ethane	0.39	0.40	0.35	0.41	0.49	0.40	0.41	0.38	0.34	-0.04	-0.02
Naphtha	0.66	0.70	0.67	0.76	0.63	0.56	0.55	0.60	0.62	0.01	0.01
Motor gasoline	0.79	0.73	0.75	0.73	0.67	0.68	0.67	0.69	0.76	0.06	0.01
Jet and kerosene	0.37	0.37	0.22	0.46	0.58	0.25	0.24	0.22	0.22	0.01	0.01
Diesel	0.41	0.42	0.42	0.44	0.43	0.41	0.39	0.43	0.43	0.00	0.01
Other gasoil	0.31	0.32	0.29	0.35	0.37	0.30	0.29	0.30	0.30	0.00	0.02
Residual fuel oil	0.22	0.25	0.24	0.26	0.29	0.24	0.22	0.25	0.24	-0.01	-0.01
Other products	0.21	0.22	0.24	0.25	0.23	0.18	0.19	0.24	0.19	-0.05	-0.05
Total	3.36	3.41	3.17	3.66	3.70	3.03	2.95	3.12	3.10	-0.02	-0.01
Germany											
LPG and ethane	0.11	0.12	0.12	0.11	0.11	0.12	0.11	0.12	0.10	-0.01	-0.01
Naphtha	0.28	0.32	0.31	0.34	0.35	0.33	0.34	0.30	0.24	-0.07	-0.05
Motor gasoline	0.46	0.45	0.48	0.46	0.43	0.45	0.41	0.51	0.47	-0.04	0.00
Jet and kerosene	0.10	0.13	0.16	0.16	0.15	0.20	0.19	0.21	0.22	0.01	0.07
Diesel	0.71	0.71	0.77	0.75	0.67	0.67	0.62	0.72	0.70	-0.03	-0.08
Other gasoil	0.36	0.27	0.26	0.36	0.27	0.24	0.27	0.23	0.29	0.06	0.08
Residual fuel oil	0.05	0.05	0.05	0.06	0.06	0.05	0.06	0.05	0.05	0.00	0.00
Other products	0.08	0.07	0.08	0.08	0.06	0.07	0.09	0.04	0.09	0.04	0.02
Total	2.15	2.13	2.23	2.34	2.11	2.14	2.09	2.18	2.15	-0.03	0.02
Italy											
LPG and ethane	0.09	0.11	0.10	0.12	0.13	0.10	0.09	0.10	0.12	0.02	0.02
Naphtha	0.10	0.09	0.08	0.10	0.10	0.07	0.08	0.05	0.05	0.00	-0.02
Motor gasoline	0.14	0.17	0.20	0.18	0.16	0.19	0.18	0.19	0.18	-0.01	-0.03
Jet and kerosene	0.05	0.06	0.09	0.07	0.07	0.10	0.09	0.10	0.10	0.00	0.02
Diesel	0.39	0.48	0.51	0.51	0.48	0.49	0.49	0.51	0.52	0.01	-0.01
Other gasoil	0.07	0.07	0.07	0.07	0.04	0.05	0.05	0.06	0.07	0.01	0.00
Residual fuel oil	0.06	0.09	0.10	0.09	0.09	0.10	0.10	0.11	0.13	0.03	0.03
Other products	0.14	0.11	0.11	0.12	0.10	0.13	0.14	0.15	0.19	0.04	0.07
Total	1.03	1.18	1.26	1.26	1.17	1.23	1.22	1.27	1.37	0.10	0.07
France											
LPG and ethane	0.11	0.11	0.11	0.10	0.12	0.10	0.09	0.10	0.12	0.02	-0.01
Naphtha	0.12	0.14	0.13	0.16	0.13	0.09	0.08	0.12	0.13	0.01	0.00
Motor gasoline	0.17	0.21	0.24	0.22	0.21	0.24	0.24	0.25	0.25	0.00	0.00
Jet and kerosene	0.09	0.09	0.11	0.11	0.10	0.11	0.12	0.12	0.14	0.02	0.03
Diesel	0.67	0.73	0.77	0.75	0.71	0.75	0.74	0.77	0.74	-0.03	-0.05
Other gasoil	0.14	0.13	0.11	0.16	0.16	0.07	0.06	0.06	0.07	0.01	-0.01
Residual fuel oil	0.03	0.03	0.03	0.03	0.03	0.04	0.03	0.04	0.04	-0.01	0.00
Other products	0.09	0.10	0.12	0.10	0.08	0.11	0.10	0.13	0.13	-0.01	0.00
Total	1.43	1.55	1.64	1.62	1.54	1.50	1.47	1.59	1.61	0.02	-0.03
United Kingdom											
LPG and ethane	0.12	0.11	0.11	0.11	0.12	0.12	0.10	0.13	0.10	-0.03	-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	0.28	0.29	0.28	-0.02	0.01
Jet and kerosene	0.18	0.18	0.16	0.24	0.24	0.27	0.27	0.26	0.28	0.02	0.16
Diesel	0.43	0.47	0.49	0.49	0.46	0.51	0.49	0.51	0.48	-0.02	0.02
Other gasoil	0.11	0.13	0.14	0.12	0.11	0.09	0.09	0.08	0.12	0.04	-0.01
Residual fuel oil	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.03	0.01	0.01
Other products	0.10	0.10	0.11	0.10	0.11	0.10	0.11	0.10	0.10	0.00	-0.01
Total	1.21	1.26	1.30	1.35	1.31	1.39	1.37	1.40	1.39	-0.00	0.17
Canada											
LPG and ethane	0.43	0.45	0.42	0.43	0.43	0.39	0.37	0.41	0.60	0.19	0.11
Naphtha	0.05	0.04	0.05	0.04	0.05	0.05	0.04	0.05	0.05	0.00	0.02
Motor gasoline	0.73	0.76	0.83	0.80	0.73	0.78	0.76	0.83	0.79	-0.03	-0.07
Jet and kerosene	0.08	0.09	0.11	0.12	0.10	0.13	0.11	0.16	0.17	0.01	0.07
Diesel	0.29	0.29	0.33	0.29	0.30	0.25	0.23	0.27	0.28	0.01	-0.02
Other gasoil	0.28	0.28	0.27	0.28	0.30	0.27	0.27	0.27	0.26	-0.01	0.00
Residual fuel oil	0.03	0.03	0.02	0.03	0.04	0.03	0.03	0.04	0.03	-0.01	0.01
Other products	0.30	0.33	0.35	0.36	0.30	0.32	0.32	0.36	0.37	0.01	-0.03
Total	2.19	2.28	2.36	2.36	2.25	2.23	2.14	2.39	2.57	0.18	0.10

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	Jul 22	Aug 22	Sep 22
OPEC											
Crude Oil											
Saudi Arabia	9.15			10.49	10.93				10.81	10.96	11.03
Iran	2.42			2.47	2.53				2.49	2.57	2.54
Iraq	4.03			4.45	4.54				4.53	4.54	4.55
UAE	2.76			3.29	3.40				3.33	3.41	3.45
Kuwait	2.42			2.67	2.80				2.77	2.80	2.82
Angola	1.12			1.17	1.15				1.18	1.17	1.09
Nigeria	1.31			1.15	1.01				1.08	0.98	0.96
Libya	1.15			0.77	0.96				0.65	1.08	1.16
Algeria	0.91			1.01	1.02				1.02	1.02	1.02
Congo	0.27			0.26	0.26				0.25	0.26	0.28
Gabon	0.18			0.18	0.21				0.19	0.21	0.22
Equatorial Guinea	0.10			0.09	0.09				0.10	0.08	0.09
Venezuela	0.61			0.74	0.67				0.63	0.69	0.68
Total Crude Oil	26.43			28.74	29.56				29.03	29.77	29.89
of which Neutral Zone ¹	0.25			0.28	0.31				0.28	0.32	0.32
Total NGLs²	5.12	5.35	5.45	5.35	5.38	5.39	5.43	5.44	5.38	5.37	5.38
Total OPEC³	31.55			34.10	34.94				34.41	35.14	35.27
NON-OPEC⁴											
OECD											
Americas	24.38	25.71	26.99	25.38	25.96	26.48	26.47	26.80	25.92	25.97	26.00
United States	16.83	17.94	19.10	17.80	18.17	18.53	18.63	19.04	18.13	18.18	18.18
Mexico	1.95	2.01	2.06	1.99	2.00	2.06	2.07	2.07	2.00	1.99	2.01
Canada	5.59	5.74	5.83	5.58	5.78	5.88	5.77	5.68	5.77	5.79	5.79
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	3.18	3.34	3.03	3.12	3.28	3.34	3.31	3.19	3.09	3.08
UK	0.89	0.83	0.78	0.86	0.75	0.79	0.81	0.79	0.89	0.66	0.72
Norway	2.04	1.93	2.15	1.74	1.93	2.07	2.11	2.10	1.87	2.00	1.92
Others	0.45	0.43	0.42	0.43	0.43	0.43	0.42	0.42	0.43	0.43	0.43
Asia Oceania	0.51	0.48	0.45	0.51	0.45	0.49	0.46	0.45	0.39	0.46	0.49
Australia	0.44	0.41	0.38	0.45	0.38	0.42	0.39	0.38	0.32	0.40	0.42
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	29.38	30.79	28.92	29.53	30.25	30.28	30.55	29.49	29.52	29.56
NON-OECD											
Former USSR	13.77	13.76	12.48	13.43	13.65	13.57	12.60	12.47	13.88	13.49	13.59
Russia	10.87	10.95	9.54	10.70	11.05	10.67	9.63	9.51	11.12	10.95	11.08
Azerbaijan	0.70	0.67	0.67	0.67	0.65	0.67	0.68	0.67	0.67	0.64	0.64
Kazakhstan	1.85	1.82	1.96	1.76	1.64	1.91	1.98	1.97	1.78	1.59	1.55
Others	0.35	0.32	0.31	0.30	0.31	0.31	0.32	0.31	0.30	0.31	0.31
Asia	6.91	6.88	6.82	6.97	6.79	6.77	6.86	6.85	6.77	6.75	6.84
China	4.06	4.17	4.20	4.23	4.12	4.10	4.23	4.22	4.12	4.08	4.15
Malaysia	0.57	0.56	0.56	0.56	0.54	0.56	0.56	0.56	0.51	0.55	0.56
India	0.73	0.70	0.68	0.71	0.69	0.68	0.67	0.68	0.72	0.67	0.68
Indonesia	0.68	0.65	0.62	0.65	0.64	0.63	0.63	0.62	0.64	0.64	0.64
Others	0.88	0.81	0.76	0.81	0.80	0.80	0.77	0.77	0.79	0.81	0.80
Europe	0.11	0.11	0.10	0.11	0.10	0.10	0.10	0.10	0.11	0.10	0.10
Americas	5.30	5.59	5.96	5.47	5.66	5.79	5.87	5.94	5.60	5.68	5.71
Brazil	3.00	3.09	3.39	3.00	3.08	3.20	3.27	3.36	3.02	3.10	3.13
Argentina	0.64	0.71	0.73	0.70	0.71	0.72	0.73	0.73	0.71	0.71	0.71
Colombia	0.74	0.76	0.75	0.76	0.76	0.77	0.76	0.76	0.76	0.76	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	0.65	0.63	0.63
Middle East	3.08	3.21	3.24	3.21	3.26	3.23	3.24	3.24	3.25	3.26	3.27
Oman	0.98	1.07	1.07	1.07	1.10	1.08	1.07	1.07	1.09	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	1.31	1.29	1.27	1.28	1.32	1.30	1.28	1.27	1.30	1.32	1.33
Egypt	0.57	0.58	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.60	0.59
Others	0.74	0.71	0.69	0.69	0.73	0.71	0.69	0.69	0.72	0.72	0.74
Total Non-OECD	30.49	30.85	29.86	30.47	30.78	30.77	29.95	29.88	30.90	30.60	30.84
Processing gains ⁵	2.25	2.31	2.36	2.29	2.33	2.32	2.33	2.35	2.35	2.36	2.29
Global biofuels	2.75	2.93	3.04	3.00	3.31	2.95	2.55	3.14	3.36	3.31	3.27
TOTAL NON-OPEC	63.77	65.46	66.04	64.68	65.95	66.28	65.11	65.92	66.10	65.79	65.96
TOTAL SUPPLY	95.31			98.77	100.88				100.51	100.93	101.23

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	Jul 22	Aug 22	Sep 22
United States											
Alaska	437	438	429	436	425	444	446	427	432	409	433
California	380	344	330	348	341	338	335	332	341	342	341
Texas	4766	4993	5285	4981	5003	5101	5181	5263	5005	5005	4998
Federal Gulf of Mexico ²	1707	1700	1839	1701	1750	1675	1817	1896	1762	1790	1695
Other US Lower 48	3963	4284	4637	4229	4311	4481	4583	4642	4260	4288	4388
NGLs ³	5425	5990	6356	5915	6153	6268	6052	6254	6144	6156	6160
Other Hydrocarbons	149	190	225	190	183	220	210	223	190	190	170
Total	16827	17939	19100	17799	18166	18527	18625	19036	18134	18181	18185
Canada											
Alberta Light/Medium/Heavy	436	489	503	497	496	493	508	505	493	501	493
Alberta Bitumen	1921	1991	2074	1883	2098	2054	1976	1983	2036	2103	2156
Saskatchewan	443	455	449	462	458	454	455	451	459	459	457
Other Crude	456	431	450	450	411	420	433	474	415	406	413
NGLs	975	1021	991	1017	1011	1006	1000	994	1013	1009	1013
Other Upgraders	180	183	183	171	176	196	188	171	182	176	169
Synthetic Crudes	1181	1176	1176	1101	1134	1260	1210	1101	1174	1134	1092
Total	5592	5745	5825	5580	5784	5882	5769	5678	5772	5788	5793
Mexico											
Crude	1780	1856	1916	1834	1853	1913	1925	1932	1850	1846	1862
NGLs	170	151	135	148	144	141	138	136	146	144	141
Total	1954	2012	2055	1987	2001	2058	2068	2073	2002	1995	2008
UK											
Brent Fields	25	23	18	26	17	19	21	21	27	11	13
Forties Fields	211	210	181	209	171	211	206	161	200	131	184
Ninian Fields	24	17	13	18	15	15	14	14	14	17	15
Flotta Fields	50	42	36	40	40	39	38	34	39	41	40
Other Fields	512	473	469	501	451	442	466	500	547	398	405
NGLs	67	65	58	68	61	60	59	59	63	58	61
Total	888	830	776	861	755	786	806	789	889	656	718
Norway⁴											
Ekofisk-Ula Area	141	121	126	84	134	136	134	127	144	122	136
Oseberg-Troll Area	212	212	230	211	201	225	227	230	216	222	162
Statfjord-Gullfaks Area	262	241	219	245	237	231	226	222	242	236	234
Haltenbanken Area	284	274	288	250	283	280	284	285	284	283	283
Sleipner-Frigg Area	816	798	986	681	801	877	937	931	699	856	851
Other Fields	74	83	103	89	70	114	106	108	79	74	58
NGLs	249	197	192	180	203	202	199	195	206	205	199
Total	2038	1927	2145	1739	1930	2066	2113	2097	1870	1999	1923
Other OECD Europe											
Denmark	66	65	63	66	64	63	61	60	65	64	64
Italy	97	93	96	92	98	98	97	97	98	98	99
Türkiye	66	67	67	68	68	68	67	67	68	68	68
Other	99	81	83	70	84	88	86	84	74	90	89
NGLs	7	6	6	6	6	6	6	6	6	6	6
Non-Conventional Oils	118	116	108	129	111	107	108	108	117	107	110
Total	453	428	423	431	432	429	425	421	428	433	435
Australia											
Gippsland Basin	5	5	5	6	5	5	5	5	5	5	5
Cooper-Eromanga Basin	23	19	17	19	18	18	18	17	19	18	18
Carnarvon Basin	114	105	96	106	104	102	99	97	105	104	103
Other Crude	193	185	165	206	165	192	169	160	129	174	193
NGLs	109	101	100	109	85	101	101	100	61	93	102
Total	444	415	384	445	378	418	392	380	319	395	422
Other OECD Asia Oceania											
New Zealand	18	16	15	15	16	16	16	15	15	17	16
Japan	4	3	3	3	3	3	3	3	3	3	3
NGLs	11	10	9	11	9	9	9	9	10	9	9
Non-Conventional Oils	37	40	40	39	40	40	40	40	39	39	41
Total	71	70	67	69	68	68	68	67	68	68	69
OECD											
Crude Oil	19588	20115	21196	19826	20194	20617	20944	21143	20125	20184	20276
NGLs	7019	7551	7855	7461	7682	7801	7573	7761	7658	7688	7699
Non-Conventional Oils ⁵	1669	1710	1736	1636	1649	1828	1760	1648	1708	1651	1587
Total	28276	29375	30787	28923	29525	30246	30276	30552	29491	29524	29562

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	Jul 22	Aug 22	Sep 22
OPEC+											
Crude Oil											
Algeria	0.91	1.01	1.00	0.99	1.01	1.02	1.01	1.00	1.02	1.02	1.02
Angola	1.12	1.14	1.10	1.16	1.17	1.15	1.09	1.13	1.18	1.17	1.09
Azerbaijan	0.59	0.56	0.54	0.58	0.56	0.55	0.56	0.55	0.56	0.55	0.54
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	0.08	0.07	0.08	0.07	0.07	0.07	0.07	0.07	0.08	0.08
Congo	0.27	0.27	0.27	0.27	0.26	0.26	0.28	0.27	0.25	0.26	0.28
Equatorial Guinea	0.10	0.09	0.10	0.09	0.09	0.09	0.10	0.10	0.10	0.08	0.09
Gabon	0.18	0.19	0.18	0.19	0.18	0.21	0.18	0.18	0.19	0.21	0.22
Iran	2.42	2.53	2.55	2.55	2.47	2.53	2.55	2.55	2.49	2.57	2.54
Iraq	4.03	4.44	4.43	4.29	4.45	4.54	4.47	4.43	4.53	4.54	4.55
Kazakhstan	1.52	1.48	1.61	1.63	1.43	1.30	1.56	1.63	1.44	1.25	1.21
Kuwait	2.42	2.70	2.68	2.61	2.67	2.80	2.72	2.68	2.77	2.80	2.82
Libya	1.15	1.00	1.18	1.08	0.77	0.96	1.18	1.18	0.65	1.08	1.16
Malaysia	0.42	0.40	0.40	0.41	0.39	0.38	0.40	0.40	0.35	0.39	0.39
Mexico	1.66	1.64	1.67	1.64	1.62	1.63	1.68	1.69	1.62	1.63	1.64
Nigeria	1.31	1.14	1.17	1.30	1.15	1.01	1.10	1.18	1.08	0.98	0.96
Oman	0.75	0.85	0.84	0.82	0.84	0.88	0.85	0.84	0.87	0.88	0.88
Russia	9.62	9.65	8.32	10.04	9.40	9.77	9.38	8.41	9.82	9.74	9.74
Saudi Arabia	9.15	10.57	10.48	10.20	10.49	10.93	10.66	10.48	10.81	10.96	11.03
South Sudan	0.15	0.14	0.12	0.14	0.14	0.14	0.13	0.12	0.13	0.14	0.16
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	3.27	3.24	3.09	3.29	3.40	3.29	3.24	3.33	3.41	3.45
Venezuela	0.61	0.72	0.76	0.72	0.74	0.67	0.75	0.76	0.63	0.69	0.68
Total Crude Oil	41.47	44.09	42.96	44.11	43.45	44.54	44.28	43.14	44.14	44.69	44.78
of which Neutral Zone	0.25			0.27	0.28				0.28	0.32	0.32
Total NGLs	7.50	7.90	7.95	7.87	7.88	7.90	7.95	7.93	7.93	7.80	7.97
TOTAL OPEC+	48.97	52.0	50.9	52.0	51.3	52.4	52.2	51.1	52.1	52.5	52.8
NON-OPEC+											
OECD											
Americas²	22.43	23.69	24.94	22.99	23.39	23.96	24.42	24.41	23.92	23.98	23.99
United States	16.83	17.94	19.10	17.25	17.80	18.17	18.53	18.63	18.13	18.18	18.18
Canada	5.59	5.74	5.83	5.73	5.58	5.78	5.88	5.77	5.77	5.79	5.79
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	3.18	3.34	3.31	3.03	3.12	3.28	3.34	3.19	3.09	3.08
UK	0.89	0.83	0.78	0.92	0.86	0.75	0.79	0.81	0.89	0.66	0.72
Norway	2.04	1.93	2.15	1.97	1.74	1.93	2.07	2.11	1.87	2.00	1.92
Others	0.45	0.43	0.42	0.42	0.43	0.43	0.43	0.42	0.43	0.43	0.43
Asia Oceania	0.51	0.48	0.45	0.49	0.51	0.45	0.49	0.46	0.39	0.46	0.49
Australia	0.44	0.41	0.38	0.42	0.45	0.38	0.42	0.39	0.32	0.40	0.42
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	27.36	28.73	26.79	26.94	27.52	28.19	28.21	27.49	27.53	27.55
Non-OECD											
FSU	0.35	0.32	0.31	0.34	0.30	0.31	0.31	0.32	0.30	0.31	0.31
Asia	6.24	6.23	6.16	6.34	6.31	6.15	6.11	6.20	6.17	6.10	6.18
China	4.06	4.17	4.20	4.23	4.23	4.12	4.10	4.23	4.12	4.08	4.15
India	0.73	0.70	0.68	0.72	0.71	0.69	0.68	0.67	0.72	0.67	0.68
Indonesia	0.68	0.65	0.62	0.67	0.65	0.64	0.63	0.63	0.64	0.64	0.64
Others	0.77	0.71	0.66	0.73	0.72	0.71	0.70	0.68	0.70	0.71	0.71
Europe	0.11	0.11	0.10	0.11	0.11	0.10	0.10	0.10	0.11	0.10	0.10
Americas	5.30	5.59	5.96	5.43	5.47	5.66	5.79	5.87	5.60	5.68	5.71
Brazil	3.00	3.09	3.39	3.09	3.00	3.08	3.20	3.27	3.02	3.10	3.13
Argentina	0.64	0.71	0.73	0.69	0.70	0.71	0.72	0.73	0.71	0.71	0.71
Colombia	0.74	0.76	0.75	0.75	0.76	0.76	0.77	0.76	0.76	0.76	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	0.65	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	1.10	1.10	1.10	1.08	1.08	1.11	1.11	1.10	1.12	1.11	1.11
Egypt	0.57	0.58	0.59	0.57	0.59	0.59	0.59	0.59	0.59	0.60	0.59
Others	0.53	0.51	0.51	0.51	0.50	0.52	0.52	0.51	0.53	0.52	0.52
Total non-OECD (non-OPEC+)	15.02	15.28	15.59	15.23	15.22	15.28	15.37	15.55	15.24	15.24	15.36
Processing gains	2.25	2.31	2.36	2.29	2.29	2.33	2.32	2.33	2.35	2.36	2.29
Global biofuels	2.75	2.93	3.04	2.44	3.00	3.31	2.95	2.55	3.36	3.31	3.27
TOTAL NON-OPEC+	46.34	47.87	49.71	46.74	47.44	48.45	48.83	48.64	48.44	48.44	48.47
TOTAL SUPPLY	95.31	99.87	100.63	98.72	98.77	100.88	101.06	99.72	100.51	100.93	101.23

¹ From Oct 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			
	Apr2022	May2022	Jun2022	Jul2022	Aug2022 ³	Aug2019	Aug2020	Aug2021	3Q2021	4Q2021	1Q2022	2Q2022
OECD INDUSTRY-CONTROLLED STOCKS¹												
OECD Americas												
Crude	574.4	569.9	570.8	573.9	570.9	573.1	658.3	587.7	-0.26	0.01	-0.23	0.03
Motor Gasoline	256.8	245.3	246.4	251.9	243.5	259.7	265.2	250.9	-0.13	0.07	0.08	-0.22
Middle Distillate	172.6	177.8	178.7	181.0	180.1	211.9	249.2	211.8	-0.12	-0.09	-0.20	0.01
Residual Fuel Oil	36.4	36.8	35.7	35.0	33.8	34.4	41.0	36.4	-0.05	-0.02	0.03	0.01
Total Products ⁴	681.1	695.3	703.1	729.8	742.1	819.5	866.5	776.6	-0.03	-0.46	-0.48	0.23
Total⁵	1410.8	1428.9	1436.2	1467.6	1476.6	1561.4	1703.4	1525.7	-0.32	-0.58	-0.64	0.32
OECD Europe												
Crude	328.2	338.3	340.0	341.4	343.0	360.1	368.2	315.1	-0.39	-0.03	0.23	0.18
Motor Gasoline	94.2	90.5	86.1	86.5	84.5	87.4	94.9	83.1	-0.07	0.06	0.06	-0.06
Middle Distillate	251.1	244.1	239.3	244.6	246.6	288.5	349.5	295.5	-0.37	-0.31	-0.04	-0.01
Residual Fuel Oil	65.7	66.2	64.5	63.7	61.6	64.3	71.6	64.3	-0.01	-0.04	0.04	0.02
Total Products ⁴	516.4	508.2	498.9	505.1	503.2	554.2	636.9	543.8	-0.45	-0.31	0.07	0.09
Total⁵	919.9	921.1	912.5	923.5	923.4	1000.5	1092.0	933.0	-0.89	-0.37	0.38	0.24
OECD Asia Oceania												
Crude	114.8	107.1	93.9	104.9	113.8	159.9	166.8	114.0	-0.17	-0.11	0.07	-0.13
Motor Gasoline	25.7	25.5	25.7	23.9	23.5	25.7	26.2	28.3	-0.03	-0.03	0.02	0.00
Middle Distillate	58.8	56.3	61.3	63.6	61.2	77.8	78.4	75.0	0.07	-0.09	-0.09	0.06
Residual Fuel Oil	16.9	17.3	16.1	15.7	15.4	19.8	16.5	18.2	0.02	-0.02	-0.02	0.01
Total Products ⁴	161.2	159.3	165.5	167.4	161.8	192.8	190.6	186.7	0.15	-0.23	-0.05	0.08
Total⁵	334.4	327.3	317.6	329.7	335.8	419.0	422.9	363.8	-0.02	-0.34	-0.09	0.02
Total OECD												
Crude	1017.5	1015.3	1004.7	1020.2	1027.8	1093.1	1193.4	1016.8	-0.82	-0.13	0.07	0.08
Motor Gasoline	376.7	361.3	358.2	362.3	351.5	372.9	386.3	362.3	-0.22	0.10	0.16	-0.28
Middle Distillate	482.5	478.1	479.3	489.3	487.8	578.2	677.1	582.3	-0.42	-0.49	-0.32	0.06
Residual Fuel Oil	119.0	120.3	116.3	114.4	110.8	118.4	129.1	118.9	-0.04	-0.08	0.05	0.04
Total Products ⁴	1358.7	1362.9	1367.5	1402.4	1407.1	1566.5	1694.0	1507.1	-0.32	-1.00	-0.46	0.40
Total⁵	2665.2	2677.3	2666.4	2720.8	2735.8	2980.9	3218.2	2822.5	-1.24	-1.29	-0.35	0.57
OECD GOVERNMENT-CONTROLLED STOCKS⁶												
OECD Americas												
Crude	547.9	523.1	493.3	468.0	444.0	644.8	647.5	621.3	-0.04	-0.26	-0.31	-0.80
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	195.6	196.0	195.0	194.6	194.6	205.8	208.0	204.0	0.00	-0.05	-0.02	-0.04
Products	262.0	259.5	255.8	255.4	253.5	275.3	281.4	278.0	-0.01	-0.01	-0.09	-0.13
OECD Asia Oceania												
Crude	364.5	361.0	358.1	357.2	350.1	378.6	377.5	371.3	-0.05	0.01	-0.03	-0.11
Products	37.9	37.9	37.3	37.3	37.3	38.9	39.4	38.8	0.00	0.00	-0.01	-0.01
Total OECD												
Crude	1107.9	1080.1	1046.4	1019.7	988.7	1229.2	1233.0	1196.5	-0.10	-0.31	-0.35	-0.94
Products	301.9	299.4	295.1	294.7	292.8	316.2	322.8	318.8	-0.01	-0.01	-0.11	-0.14
Total⁵	1411.5	1381.1	1343.1	1315.5	1282.7	1547.7	1557.8	1517.0	-0.12	-0.31	-0.46	-1.08

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)

	March			April			May			June			July		
	2021	2022	%	2021	2022	%	2021	2022	%	2021	2022	%	2021	2022	%
United States²															
Crude	502.5	414.4	-17.5	489.2	419.1	-14.3	477.0	414.3	-13.1	448.1	417.5	-6.8	438.7	424.2	-3.3
Motor Gasoline	237.8	238.5	0.3	238.6	230.1	-3.6	240.2	220.7	-8.1	237.3	221.0	-6.9	230.8	225.6	-2.3
Middle Distillate	187.2	151.5	-19.1	179.3	145.3	-19.0	184.7	152.0	-17.7	186.5	151.6	-18.7	187.7	154.8	-17.5
Residual Fuel Oil	30.9	27.9	-9.7	31.9	29.4	-7.8	32.0	29.2	-8.8	31.5	29.2	-7.3	29.4	29.1	-1.0
Other Products	207.7	179.8	-13.4	218.9	191.5	-12.5	229.7	212.5	-7.5	235.4	219.5	-6.8	248.9	238.6	-4.1
Total Products	663.6	597.7	-9.9	668.7	596.3	-10.8	686.6	614.4	-10.5	690.7	621.3	-10.0	696.8	648.1	-7.0
Other ³	144.8	141.5	-2.3	140.9	138.1	-2.0	140.3	143.8	2.5	142.5	140.9	-1.1	142.6	143.1	0.4
Total	1310.9	1153.6	-12.0	1298.8	1153.5	-11.2	1303.9	1172.5	-10.1	1281.3	1179.7	-7.9	1278.1	1215.4	-4.9
Japan															
Crude	64.5	76.0	17.8	69.8	80.3	15.0	78.4	74.9	-4.5	76.0	67.0	-11.8	70.5	66.7	-5.4
Motor Gasoline	12.4	9.8	-21.0	12.9	10.3	-20.2	14.9	10.3	-30.9	14.3	9.9	-30.8	9.9	8.8	-11.1
Middle Distillate	27.4	23.3	-15.0	29.2	24.7	-15.4	32.2	26.6	-17.4	31.5	26.6	-15.6	30.8	28.8	-6.5
Residual Fuel Oil	6.5	5.7	-12.3	7.2	6.2	-13.9	7.6	6.8	-10.5	7.0	6.7	-4.3	7.1	6.2	-12.7
Other Products	31.6	32.0	1.3	31.9	33.1	3.8	33.1	34.8	5.1	31.9	34.8	9.1	31.7	35.8	12.9
Total Products	77.9	70.8	-9.1	81.2	74.3	-8.5	87.8	78.5	-10.6	84.7	78.0	-7.9	79.5	79.6	0.1
Other ³	47.3	42.0	-11.2	49.7	47.3	-4.8	51.0	49.9	-2.2	51.3	47.8	-6.8	51.1	47.1	-7.8
Total	189.7	188.8	-0.5	200.7	201.9	0.6	217.2	203.3	-6.4	212.0	192.8	-9.1	201.1	193.4	-3.8
Germany															
Crude	52.7	48.2	-8.5	49.0	48.9	-0.2	46.7	50.8	8.8	48.7	49.6	1.8	50.6	48.4	-4.3
Motor Gasoline	8.9	10.7	20.2	10.2	11.6	13.7	11.3	11.9	5.3	9.4	10.1	7.4	9.1	11.4	25.3
Middle Distillate	22.7	24.1	6.2	24.1	27.1	12.4	26.7	26.0	-2.6	24.1	25.1	4.1	25.4	25.9	2.0
Residual Fuel Oil	7.5	7.9	5.3	7.8	7.8	0.0	7.9	8.0	1.3	7.9	8.5	7.6	7.9	8.1	2.5
Other Products	9.5	9.9	4.2	10.0	10.6	6.0	10.3	10.0	-2.9	9.9	9.9	0.0	10.1	10.8	6.9
Total Products	48.6	52.6	8.2	52.1	57.1	9.6	56.2	55.9	-0.5	51.3	53.6	4.5	52.5	56.2	7.0
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	101.3	100.8	-0.5	101.1	106.0	4.8	102.9	106.7	3.7	100.0	103.2	3.2	103.1	104.6	1.5
Italy															
Crude	39.9	32.7	-18.0	38.6	34.1	-11.7	42.9	36.4	-15.2	42.7	38.2	-10.5	36.0	37.4	3.9
Motor Gasoline	9.8	11.3	15.3	12.6	10.5	-16.7	12.1	11.6	-4.1	10.4	10.2	-1.9	9.4	8.6	-8.5
Middle Distillate	28.6	23.1	-19.2	28.8	22.6	-21.5	30.0	22.5	-25.0	29.4	21.2	-27.9	22.6	19.4	-14.2
Residual Fuel Oil	8.1	7.9	-2.5	7.4	8.7	17.6	7.3	8.3	13.7	7.5	7.8	4.0	7.0	7.2	2.9
Other Products	12.3	11.0	-10.6	11.1	11.4	2.7	10.9	11.8	8.3	10.8	11.5	6.5	10.8	10.3	-4.6
Total Products	58.8	53.3	-9.4	59.9	53.2	-11.2	60.3	54.2	-10.1	58.1	50.7	-12.7	49.8	45.5	-8.6
Other ³	15.1	14.7	-2.6	15.3	14.6	-4.6	15.6	13.8	-11.5	15.0	14.9	-0.7	13.9	14.5	4.3
Total	113.8	100.7	-11.5	113.8	101.9	-10.5	118.8	104.4	-12.1	115.8	103.8	-10.4	99.7	97.4	-2.3
France															
Crude	12.8	12.1	-5.5	12.8	10.2	-20.3	12.4	11.9	-4.0	13.0	13.5	3.8	13.6	12.0	-11.8
Motor Gasoline	3.9	4.2	7.7	4.8	4.9	2.1	4.9	4.5	-8.2	3.6	4.4	22.2	3.8	5.6	47.4
Middle Distillate	22.3	18.6	-16.6	21.9	19.3	-11.9	23.1	19.7	-14.7	22.9	17.2	-24.9	21.6	19.5	-9.7
Residual Fuel Oil	2.0	0.7	-65.0	1.8	1.1	-38.9	1.9	1.5	-21.1	1.7	2.1	23.5	2.0	2.6	30.0
Other Products	3.5	3.6	2.9	3.4	3.8	11.8	3.7	3.5	-5.4	3.2	3.6	12.5	3.3	3.7	12.1
Total Products	31.7	27.1	-14.5	31.9	29.1	-8.8	33.6	29.2	-13.1	31.4	27.3	-13.1	30.7	31.4	2.3
Other ³	7.9	7.1	-10.1	7.9	7.6	-3.8	7.8	8.2	5.1	8.4	7.7	-8.3	7.6	7.0	-7.9
Total	52.4	46.3	-11.6	52.6	46.9	-10.8	53.8	49.3	-8.4	52.8	48.5	-8.1	51.9	50.4	-2.9
United Kingdom															
Crude	26.5	26.3	-0.8	24.8	26.3	6.0	29.3	23.9	-18.4	26.5	23.6	-10.9	26.8	27.4	2.2
Motor Gasoline	9.3	9.2	-1.1	8.9	9.9	11.2	9.6	9.7	1.0	9.0	9.4	4.4	9.4	9.0	-4.3
Middle Distillate	26.0	18.2	-30.0	25.4	19.8	-22.0	25.6	19.3	-24.6	24.2	18.9	-21.9	24.5	20.0	-18.4
Residual Fuel Oil	1.4	1.4	0.0	1.3	1.7	30.8	1.5	1.7	13.3	1.3	1.3	0.0	1.5	1.2	-20.0
Other Products	5.9	5.8	-1.7	6.3	6.8	7.9	6.6	6.8	3.0	6.4	6.8	6.2	6.3	6.9	9.5
Total Products	42.6	34.6	-18.8	41.9	38.2	-8.8	43.3	37.5	-13.4	40.9	36.4	-11.0	41.7	37.1	-11.0
Other ³	7.8	7.7	-1.3	7.9	7.5	-5.1	8.1	6.8	-16.0	8.8	7.2	-18.2	8.8	7.8	-11.4
Total	76.9	68.6	-10.8	74.6	72.0	-3.5	80.7	68.2	-15.5	76.2	67.2	-11.8	77.3	72.3	-6.5
Canada⁴															
Crude	129.0	119.4	-7.4	129.4	122.6	-5.3	128.0	121.3	-5.2	130.5	120.0	-8.0	133.7	116.0	-13.2
Motor Gasoline	16.1	16.6	3.1	16.7	15.3	-8.4	15.4	13.4	-13.0	14.7	13.7	-6.8	14.8	14.5	-2.0
Middle Distillate	19.8	17.9	-9.6	20.1	18.2	-9.5	17.7	17.3	-2.3	18.5	17.1	-7.6	19.8	17.4	-12.1
Residual Fuel Oil	2.8	2.3	-17.9	2.2	1.9	-13.6	3.2	2.7	-15.6	2.5	2.1	-16.0	2.8	2.0	-28.6
Other Products	12.2	13.6	11.5	11.7	13.9	18.8	12.3	13.8	12.2	12.1	13.7	13.2	12.0	13.5	12.5
Total Products	50.9	50.4	-1.0	50.7	49.3	-2.8	48.6	47.2	-2.9	47.8	46.6	-2.5	49.4	47.4	-4.0
Other ³	17.9	15.9	-11.2	19.0	17.1	-10.0	21.8	19.6	-10.1	23.2	21.2	-8.6	25.7	20.7	-19.5
Total	197.8	185.7	-6.1	199.1	189.0	-5.1	198.4	188.1	-5.2	201.5	187.8	-6.8	208.8	184.1	-11.8

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

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 barrels¹ and 'days')

	End June 2021		End September 2021		End December 2021		End March 2022		End June 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	201.4	85	204.1	87	201.7	90	185.7	83	187.9	-
Chile	11.7	30	10.3	27	10.8	28	10.3	27	9.9	-
Mexico	36.4	24	36.0	22	36.7	22	35.7	20	36.6	-
United States ⁴	1904.7	94	1870.7	91	1794.3	89	1721.7	85	1675.0	-
Total⁴	2176.4	88	2143.2	86	2065.6	84	1975.5	80	1931.5	76
OECD Asia Oceania										
Australia	39.6	41	40.9	39	37.6	36	40.0	37	38.1	-
Israel	-	-	-	-	-	-	-	-	-	-
Japan	528.6	167	525.1	144	519.4	140	500.5	165	502.8	-
Korea	194.9	75	189.3	70	168.8	62	174.6	70	165.9	-
New Zealand	7.6	56	8.3	53	6.8	44	6.2	43	6.2	-
Total	770.7	109	763.5	98	732.6	93	721.4	103	713.1	98
OECD Europe⁵										
Austria	23.0	82	21.1	81	20.9	85	24.1	98	20.0	-
Belgium	51.0	83	47.1	71	43.3	68	42.9	74	44.8	-
Czech Republic	21.8	93	21.7	97	22.5	107	22.2	100	22.3	-
Denmark	27.2	182	24.3	163	22.7	160	21.4	142	22.9	-
Estonia	2.9	88	2.7	90	2.5	90	2.6	77	2.3	-
Finland	39.5	210	37.3	192	36.2	189	38.4	209	41.0	-
France	163.0	100	157.3	97	151.6	98	148.8	99	144.6	-
Germany	275.7	124	270.1	116	268.9	127	268.9	126	267.8	-
Greece	30.5	100	26.4	90	29.4	107	29.2	104	29.8	-
Hungary	25.6	131	25.9	134	27.0	143	28.0	152	29.2	-
Ireland	12.0	84	10.6	67	10.8	70	10.6	72	10.3	-
Italy	128.9	102	118.0	94	112.5	96	116.3	94	119.3	-
Latvia	3.0	70	2.7	75	2.6	76	2.8	79	2.8	-
Lithuania	8.5	113	9.1	132	8.2	137	9.8	161	8.4	-
Luxembourg	0.8	13	0.5	9	0.6	11	0.5	11	0.7	-
Netherlands	147.2	171	125.8	151	109.5	130	123.9	139	127.1	-
Norway	23.6	104	20.2	85	21.4	112	26.3	171	25.5	-
Poland	80.0	103	78.1	104	80.6	112	82.8	113	82.4	-
Portugal	19.9	91	19.0	83	20.9	89	21.3	84	22.5	-
Slovak Republic	12.3	125	12.2	127	12.2	134	12.8	135	13.2	-
Slovenia	5.3	104	4.9	99	5.2	108	4.6	86	4.8	-
Spain	118.8	96	111.6	89	104.9	84	106.6	81	107.9	-
Sweden	45.2	141	38.3	120	30.1	99	28.2	104	30.2	-
Switzerland	32.9	177	33.4	156	31.5	168	30.2	173	29.9	-
Republic of Türkiye	85.1	74	85.6	82	87.4	96	87.6	86	87.8	-
United Kingdom	76.2	59	71.6	53	72.8	55	68.6	49	67.3	-
Total	1460.1	105	1375.7	99	1336.2	102	1359.4	101	1364.9	97
Total OECD	4407.2	97	4282.4	92	4134.4	91	4056.3	90	4009.5	86
DAYS OF IEA Net Imports⁶ -	167	-	160	-	156	-	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 June 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	Industry	Total	Government ¹	Industry
		controlled Millions of Barrels			controlled Days of Fwd. Demand ²	
2Q2019	4483	1549	2934	93	32	61
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	71
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	4056	1442	2614	90	32	58
2Q2022	4010	1343	2666	86	29	57

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 2Q2022 (where latest forecasts are used).

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

	2019	2020	2021	3Q21	4Q21	1Q22	2Q22	May 22	Jun 22	Jul 22	Year Earlier	
											Jul 21	change
Saudi Light & Extra Light												
Americas	0.20	0.26	0.34	0.45	0.43	0.44	0.46	0.47	0.50	0.38	0.42	-0.04
Europe	0.68	0.59	0.48	0.55	0.55	0.53	0.67	0.57	0.65	0.48	0.55	-0.07
Asia Oceania	1.42	1.39	1.30	1.18	1.48	1.57	1.36	1.33	1.17	1.44	0.95	0.49
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	0.01	0.05
Asia Oceania	0.23	0.25	0.21	0.19	0.26	0.20	0.26	0.22	0.26	0.24	0.20	0.04
Canada Heavy												
Americas	2.27	2.39	2.59	2.47	2.82	2.69	2.54	2.54	2.48	2.57	2.42	0.16
Europe	0.04	0.03	0.03	0.04	0.03	0.03	0.09	0.12	0.08	0.12	0.05	0.07
Asia Oceania	0.00	0.00	0.02	0.01	0.00	0.01	0.01	-	-	-	-	-
Iraqi Basrah Light ²												
Americas	0.31	0.11	0.08	0.04	0.17	0.16	0.30	0.29	0.31	0.27	0.12	0.15
Europe	0.85	0.58	0.62	0.60	0.71	0.61	0.58	0.59	0.60	0.56	0.58	-0.01
Asia Oceania	0.37	0.22	0.17	0.16	0.19	0.17	0.20	0.19	0.23	0.27	0.19	0.09
Kuwait Blend												
Americas	-	-	-	-	-	-	-	-	-	-	-	-
Europe	0.11	0.04	-	-	-	-	-	-	-	-	-	-
Asia Oceania	0.61	0.55	0.48	0.47	0.52	0.58	0.42	0.35	0.38	0.52	0.51	0.01
Iranian Light												
Americas	-	-	-	-	-	-	-	-	-	-	-	-
Europe	0.00	-	-	-	-	-	-	-	-	-	-	-
Asia Oceania	0.00	-	-	-	-	-	-	-	-	-	-	-
Iranian Heavy ³												
Americas	-	-	-	-	-	-	-	-	-	-	-	-
Europe	0.04	-	-	-	-	-	-	-	-	-	-	-
Asia Oceania	0.14	-	-	-	-	-	-	-	-	-	-	-
BFOE												
Americas	0.00	-	0.00	0.01	-	-	-	-	-	-	0.02	-
Europe	0.37	0.42	0.36	0.36	0.40	0.38	0.44	0.55	0.36	0.57	0.43	0.14
Asia Oceania	0.01	0.03	0.05	-	0.05	0.02	0.06	0.06	0.04	-	-	-
Kazakhstan												
Americas	-	-	0.01	-	-	-	-	-	-	-	-	-
Europe	0.76	0.74	0.69	0.64	0.68	0.86	0.65	0.57	0.69	0.54	0.79	-0.25
Asia Oceania	0.18	0.07	0.09	0.10	0.10	0.14	0.16	0.10	0.21	0.10	0.10	0.00
Venezuelan 22 API and heavier												
Americas	0.05	-	-	-	-	-	-	-	-	-	-	-
Europe	0.09	0.04	-	-	-	-	-	-	-	0.09	-	-
Asia Oceania	-	-	-	-	-	-	-	-	-	-	-	-
Mexican Maya												
Americas	0.51	0.48	0.40	0.45	0.32	0.36	0.47	0.56	0.45	0.40	0.40	0.00
Europe	0.19	0.16	0.14	0.13	0.12	0.11	0.07	0.06	0.07	0.10	0.13	-0.03
Asia Oceania	0.13	0.12	0.14	0.14	0.13	0.08	0.05	0.03	0.07	0.05	0.19	-0.14
Russian Urals												
Americas	0.01	-	-	-	-	-	-	-	-	-	-	-
Europe	1.37	1.12	1.05	1.08	1.15	1.08	0.79	0.71	0.79	0.53	1.11	-0.58
Asia Oceania	-	-	0.01	0.03	-	-	-	-	-	-	-	-
Cabinda and Other Angola												
North America	0.01	0.01	-	-	-	-	-	-	-	-	-	-
Europe	0.15	0.12	0.03	0.03	0.04	0.06	0.26	0.21	0.41	0.30	-	-
Pacific	0.00	-	-	-	-	-	-	-	-	-	-	-
Nigerian Light ⁴												
Americas	0.03	-	0.02	0.03	-	-	-	-	-	-	0.03	-
Europe	0.51	0.49	0.41	0.40	0.52	0.47	0.43	0.42	0.45	0.32	0.45	-0.13
Asia Oceania	0.02	0.02	0.01	-	0.01	-	-	-	-	-	-	-
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	0.54	0.49	0.39	0.12	0.98	-0.86
Asia Oceania	0.03	0.01	0.02	0.01	0.03	0.02	0.02	0.02	-	-	0.02	-

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	May 22	Jun 22	Jul 22	Year Earlier	
											Jul 21	% change
Crude Oil												
Americas	2722	1895	2077	2368	2128	2096	2075	1970	2205	2335	2364	-1%
Europe	9872	8349	8516	8748	9137	8890	9196	9180	9337	9460	8607	10%
Asia Oceania	6541	5579	5519	5419	5876	6101	5363	5167	4881	6120	4988	23%
Total OECD	19136	15823	16113	16535	17141	17087	16633	16317	16423	17915	15958	12%
LPG												
Americas	26	28	21	22	25	39	21	16	24	20	24	-18%
Europe	434	422	404	378	424	470	503	474	513	535	409	31%
Asia Oceania	583	559	563	528	528	681	569	602	535	509	572	-11%
Total OECD	1042	1009	988	928	977	1189	1093	1092	1073	1064	1005	6%
Naphtha												
Americas	5	7	8	11	8	6	6	2	6	8	12	-32%
Europe	347	409	512	445	563	399	405	472	232	299	486	-39%
Asia Oceania	990	1003	1146	1226	1199	1078	971	930	1010	1130	1165	-3%
Total OECD	1342	1419	1667	1682	1770	1482	1382	1404	1248	1437	1663	-14%
Gasoline³												
Americas	812	576	805	973	574	485	890	942	1003	776	1042	-25%
Europe	112	109	106	75	89	102	125	117	99	111	43	159%
Asia Oceania	110	116	146	125	129	157	175	184	222	133	122	9%
Total OECD	1034	801	1057	1172	793	745	1190	1243	1324	1020	1206	-15%
Jet & Kerosene												
Americas	174	159	165	207	179	120	123	114	141	161	152	6%
Europe	520	337	334	349	411	306	429	395	428	500	378	32%
Asia Oceania	72	60	71	39	82	71	76	78	97	70	45	56%
Total OECD	766	556	570	596	673	497	629	587	666	731	575	27%
Gasoil/Diesel												
Americas	118	134	197	154	222	158	76	109	75	49	115	-57%
Europe	1300	1192	1192	1173	1262	1093	1145	1051	1099	1061	1256	-16%
Asia Oceania	261	328	352	344	377	299	352	390	384	305	365	-17%
Total OECD	1679	1654	1740	1670	1862	1551	1572	1550	1557	1414	1736	-19%
Heavy Fuel Oil												
Americas	116	143	102	91	104	139	135	119	165	59	72	-18%
Europe	223	295	374	435	375	302	253	273	230	251	380	-34%
Asia Oceania	101	88	119	121	129	117	96	72	124	48	137	-65%
Total OECD	440	526	594	648	607	559	484	464	519	358	590	-39%
Other Products												
Americas	715	592	581	607	510	497	535	461	480	605	644	-6%
Europe	865	574	575	585	689	667	553	546	514	664	598	11%
Asia Oceania	261	207	233	239	241	221	182	159	206	180	282	-36%
Total OECD	1841	1373	1390	1432	1440	1385	1271	1165	1200	1450	1524	-5%
Total Products												
Americas	1966	1639	1879	2065	1621	1444	1787	1763	1893	1679	2061	-19%
Europe	3800	3339	3497	3441	3814	3339	3414	3327	3116	3420	3549	-4%
Asia Oceania	2378	2360	2630	2623	2686	2624	2420	2416	2578	2375	2688	-12%
Total OECD	8144	7339	8006	8128	8121	7408	7620	7506	7587	7474	8299	-10%
Total Oil												
Americas	4689	3535	3956	4433	3749	3541	3861	3733	4098	4014	4425	-9%
Europe	13672	11688	12013	12188	12951	12229	12609	12507	12454	12880	12156	6%
Asia Oceania	8919	7939	8150	8041	8562	8725	7783	7583	7458	8495	7676	11%
Total OECD	27280	23162	24119	24663	25262	24495	24254	23823	24010	25389	24257	5%

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	May 22	Jun 22	Jul 22	Year Earlier	
											Jul 21	% change
Crude Oil												
Americas	2573	1835	1982	2277	2027	2033	2012	1914	2132	2248	2244	0%
Europe	8913	7115	7264	7455	7832	7551	7681	7460	7884	7839	7385	6%
Asia Oceania	5914	5051	4910	4772	5312	5480	4849	4708	4347	5570	4361	28%
Total OECD	17399	14002	14156	14504	15171	15063	14542	14082	14363	15657	13991	12%
LPG												
Americas	23	22	20	22	25	37	21	16	24	20	24	-18%
Europe	303	252	242	245	251	253	249	226	231	221	242	-9%
Asia Oceania	74	58	47	35	33	90	53	42	47	42	57	-27%
Total OECD	400	331	309	303	309	379	323	283	302	283	323	-12%
Naphtha												
Americas	2	1	4	5	5	3	2	1	3	2	5	-52%
Europe	320	390	425	337	485	338	332	371	229	298	394	-24%
Asia Oceania	895	832	975	1010	1073	942	929	905	978	1029	859	20%
Total OECD	1217	1223	1404	1352	1563	1283	1263	1277	1211	1329	1258	6%
Gasoline³												
Americas	304	195	248	312	176	111	233	217	257	232	325	-29%
Europe	108	104	100	70	80	84	103	95	83	87	37	137%
Asia Oceania	84	98	141	125	129	157	174	184	222	133	122	9%
Total OECD	496	397	489	507	385	352	511	496	561	452	484	-7%
Jet & Kerosene												
Americas	41	55	63	65	93	43	33	20	37	33	48	-30%
Europe	464	297	298	309	362	303	381	359	347	461	321	44%
Asia Oceania	72	60	71	39	82	71	76	78	97	70	45	56%
Total OECD	576	413	433	414	538	416	489	457	481	564	414	36%
Gasoil/Diesel												
Americas	86	103	134	94	146	87	26	33	36	10	69	-86%
Europe	1126	1062	1109	1070	1186	1026	1062	991	1050	996	1130	-12%
Asia Oceania	260	323	352	343	377	299	352	390	384	305	365	-17%
Total OECD	1472	1488	1595	1507	1709	1412	1439	1413	1470	1311	1564	-16%
Heavy Fuel Oil												
Americas	102	110	86	78	77	109	101	92	120	51	67	-24%
Europe	202	279	347	417	350	282	239	262	207	222	356	-38%
Asia Oceania	100	88	119	121	129	117	96	72	124	48	137	-65%
Total OECD	404	477	552	616	555	508	436	426	450	321	560	-43%
Other Products												
Americas	544	514	530	556	463	455	471	422	380	468	574	-19%
Europe	629	352	398	398	498	481	379	338	360	518	405	28%
Asia Oceania	177	130	155	151	150	148	114	103	115	112	177	-37%
Total OECD	1350	996	1083	1105	1111	1084	964	863	855	1098	1156	-5%
Total Products												
Americas	1102	1000	1085	1131	985	844	887	799	857	815	1111	-27%
Europe	3152	2735	2920	2847	3211	2767	2745	2642	2507	2804	2884	-3%
Asia Oceania	1662	1590	1860	1825	1974	1824	1792	1775	1966	1738	1763	-1%
Total OECD	5916	5325	5865	5804	6169	5435	5425	5216	5330	5357	5759	-7%
Total Oil												
Americas	3675	2835	3068	3408	3012	2877	2900	2713	2989	3063	3355	-9%
Europe	12064	9850	10183	10302	11043	10318	10425	10102	10390	10643	10269	4%
Asia Oceania	7576	6641	6769	6597	7286	7304	6642	6483	6314	7308	6125	19%
Total OECD	23315	19327	20020	20307	21341	20498	19967	19298	19693	21014	19749	6%

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	May 22	Jun 22	Jul 22	Year Earlier	
											Jul 21	% change
Crude Oil												
Americas	149	60	95	92	101	64	62	56	73	88	120	-27%
Europe	959	1234	1252	1293	1305	1339	1515	1720	1454	1621	1221	33%
Asia Oceania	628	527	610	646	563	621	514	459	533	549	626	-12%
Total OECD	1736	1821	1957	2031	1969	2024	2091	2235	2060	2258	1968	15%
LPG												
Americas	3	6	1	0	0	2	0	0	0	0	0	na
Europe	131	171	162	132	173	217	254	248	283	314	167	88%
Asia Oceania	508	501	516	493	495	591	517	560	488	467	515	-9%
Total OECD	642	678	679	625	669	810	771	808	771	781	681	15%
Naphtha												
Americas	3	6	4	6	2	2	4	1	2	6	7	-19%
Europe	27	20	87	108	79	61	73	101	2	1	92	-99%
Asia Oceania	96	170	172	216	126	136	42	25	32	101	306	-67%
Total OECD	125	196	263	330	207	200	119	127	37	108	405	-73%
Gasoline³												
Americas	508	382	557	660	399	375	656	725	746	545	716	-24%
Europe	4	5	6	5	9	18	22	22	17	24	6	305%
Asia Oceania	26	18	5	0	0	0	0	0	0	0	0	28%
Total OECD	538	404	567	665	408	393	679	747	763	568	722	-21%
Jet & Kerosene												
Americas	133	103	102	142	86	78	90	95	104	128	105	22%
Europe	56	40	35	40	49	3	48	35	82	39	57	-31%
Asia Oceania	0	0	0	0	0	0	1	0	0	0	0	na
Total OECD	190	144	138	182	135	81	139	130	185	167	162	3%
Gasoil/Diesel												
Americas	31	31	63	60	76	71	50	76	39	39	46	-15%
Europe	174	131	82	103	77	67	83	60	49	64	126	-49%
Asia Oceania	1	4	0	0	0	0	0	0	0	0	0	na
Total OECD	206	166	146	163	153	138	133	136	88	103	172	-40%
Heavy Fuel Oil												
Americas	14	33	16	13	27	31	34	27	45	8	5	56%
Europe	21	16	26	19	25	20	14	11	24	29	24	21%
Asia Oceania	1	0	0	0	0	0	0	0	0	0	0	na
Total OECD	36	49	42	32	52	50	48	38	68	37	29	27%
Other Products												
Americas	172	78	51	51	47	42	64	39	100	138	70	96%
Europe	236	222	178	187	191	187	174	208	154	146	193	-24%
Asia Oceania	83	77	78	89	91	73	69	55	91	69	105	-35%
Total OECD	491	377	307	327	329	302	307	302	345	352	369	-4%
Total Products												
Americas	864	639	794	933	636	600	899	963	1035	864	950	-9%
Europe	649	604	577	593	603	572	669	685	610	616	665	-7%
Asia Oceania	716	770	771	798	713	801	628	641	612	637	925	-31%
Total OECD	2229	2014	2141	2324	1952	1973	2196	2289	2256	2117	2541	-17%
Total Oil												
Americas	1014	699	888	1025	737	664	962	1019	1109	951	1070	-11%
Europe	1608	1838	1829	1886	1908	1911	2184	2405	2063	2237	1887	19%
Asia Oceania	1343	1297	1381	1444	1276	1422	1141	1100	1145	1186	1552	-24%
Total OECD	3965	3835	4098	4355	3921	3997	4287	4525	4317	4375	4508	-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 8
REGIONAL OECD CRUDE IMPORTS BY SOURCE¹
 (thousand barrels per day)

	2019	2020	2021	3Q21	4Q21	1Q22	2Q22	May 22	Jun 22	Jul 22	Year Earlier Jul 21	change
OECD Americas												
Venezuela	81	-	-	-	-	-	-	-	-	-	-	-
Other Central & South America	865	745	719	809	731	780	802	747	804	900	664	236
North Sea	148	59	92	92	101	64	62	56	73	65	120	-55
Other OECD Europe	2	1	3	-	-	-	-	-	-	-	-	-
Non-OECD Europe	-	-	-	-	-	-	-	-	-	-	-	-
Former Soviet Union	192	91	229	308	185	103	27	24	8	49	305	-256
Saudi Arabia	621	588	427	484	520	571	569	543	686	521	435	87
Kuwait	45	21	21	36	20	24	25	24	26	23	37	-14
Iran	-	-	3	-	-	6	-	-	-	-	-	-
Iraq	331	177	152	128	192	225	229	234	236	386	220	165
Oman	-	-	-	-	-	-	-	-	-	-	-	-
United Arab Emirates	3	5	17	44	22	10	19	-	-	32	34	-1
Other Middle East	-	-	-	-	-	-	-	-	-	-	-	-
West Africa ²	267	145	228	255	180	171	211	252	224	169	333	-164
Other Africa	137	45	161	167	157	144	131	90	148	168	170	-2
Asia	32	17	25	46	22	-	-	-	-	23	47	-24
Other	0	3	-	-	-	-	-	-	-	-	-	-
Total	2722	1895	2077	2368	2128	2096	2075	1970	2205	2335	2364	-29
of which Non-OECD	2573	1835	1982	2277	2027	2033	2012	1914	2132	2248	2244	4
OECD Europe												
Canada	60	95	83	89	55	79	139	184	162	190	103	87
Mexico + USA	900	1139	1169	1204	1250	1260	1376	1536	1292	1431	1118	313
Venezuela	106	44	-	-	-	-	-	-	-	103	-	-
Other Central & South America	118	208	219	263	194	217	402	317	710	602	222	380
Non-OECD Europe	14	25	23	28	23	20	12	10	13	6	34	-27
Former Soviet Union	4239	3504	3538	3525	3849	4060	3197	3148	2932	3095	3496	-401
Saudi Arabia	792	756	518	587	483	523	779	767	754	811	565	246
Kuwait	97	48	0	0	0	-	-	-	-	-	0	-
Iran	74	6	1	6	-	-	-	-	-	-	-	-
Iraq	1124	814	912	927	1018	881	1013	1061	1127	1173	971	202
Oman	-	-	-	-	-	-	-	-	-	-	-	-
United Arab Emirates	2	-	-	-	-	-	31	-	93	21	-	-
Other Middle East	3	8	9	12	6	-	6	18	-	9	-	-
West Africa ²	1140	1074	822	842	947	807	1169	1140	1311	1089	935	155
Other Africa	1180	596	1197	1228	1282	997	1038	959	909	929	1155	-227
Asia	-	0	0	0	-	5	-	-	-	-	-	-
Other	13	11	1	0	6	3	8	-	-	-	0	-
Total	9863	8329	8493	8712	9113	8853	9170	9140	9303	9459	8600	860
of which Non-OECD	8913	7115	7264	7455	7832	7551	7681	7460	7884	7839	7385	454
OECD Asia Oceania												
Canada	5	1	16	5	3	9	6	-	-	-	-	-
Mexico + USA	613	477	496	554	463	582	452	395	498	491	569	-78
Venezuela	-	-	-	-	-	-	-	-	-	-	-	-
Other Central & South America	48	91	110	93	97	129	102	96	111	142	116	26
North Sea	10	49	98	87	97	30	56	64	35	59	57	1
Other OECD Europe	-	-	-	-	-	-	-	-	-	-	-	-
Non-OECD Europe	-	-	-	-	-	-	-	-	-	-	-	-
Former Soviet Union	435	300	335	265	376	405	272	164	236	152	209	-56
Saudi Arabia	1878	1867	1766	1601	2020	2029	1862	1785	1652	1860	1389	471
Kuwait	666	584	506	493	563	624	472	409	441	537	546	-10
Iran	137	-	-	-	-	-	-	-	-	-	-	-
Iraq	364	224	167	160	192	172	204	189	231	274	187	87
Oman	59	22	32	49	22	28	39	48	-	113	64	49
United Arab Emirates	1256	1096	1083	1143	1184	1145	1200	1326	1133	1625	1034	591
Other Middle East	449	387	362	371	301	442	326	357	260	412	317	95
West Africa ²	56	65	71	67	79	52	61	90	29	76	60	15
Other Africa	90	42	56	85	39	42	31	19	50	20	101	-81
Non-OECD Asia	220	161	175	161	153	126	130	133	87	139	109	30
Other	254	210	241	278	280	277	151	91	117	220	223	-3
Total	6541	5577	5515	5411	5869	6093	5363	5167	4881	6120	4981	1138
of which Non-OECD	5914	5051	4910	4772	5312	5480	4849	4708	4347	5570	4361	1209
Total OECD Trade	19126	15801	16085	16491	17111	17042	16608	16278	16388	17914	15945	1969
of which Non-OECD	17399	14002	14156	14504	15171	15063	14542	14082	14363	15657	13991	1667

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	May 22	Jun 22	Jul 22	Year Earlier	
											Jul 21	change
OECD Americas												
Venezuela	4	-	-	-	-	-	-	-	-	-	-	-
Other Central & South America	83	40	41	37	51	12	44	50	50	45	12	32
ARA (Belgium Germany Netherlands)	188	149	194	240	96	126	255	230	367	238	281	-43
Other Europe	294	213	327	380	273	222	364	434	372	252	397	-145
FSU	79	56	83	92	58	31	3	-	-	-	90	-
Saudi Arabia	7	6	24	41	-	6	62	53	74	19	65	-46
Algeria	-	4	1	-	-	-	-	-	-	-	-	-
Other Middle East & Africa	14	13	13	15	4	8	14	10	18	27	22	5
Singapore	5	1	4	8	3	-	-	-	-	1	5	-5
OECD Asia Oceania	28	21	37	43	30	27	39	61	12	55	39	16
Non-OECD Asia (excl. Singapore)	112	72	81	116	60	53	108	104	110	141	131	10
Other	0	-	0	-	-	-	0	-	-	-	-	-
Total²	812	576	805	973	574	485	890	942	1003	776	1042	-265
of which Non-OECD	304	195	248	312	176	111	233	217	257	232	325	-94
OECD Europe												
OECD Americas	3	3	5	3	8	17	21	18	16	23	6	17
Venezuela	0	0	2	5	-	2	2	2	2	3	3	-1
Other Central & South America	3	4	7	11	5	14	4	3	6	8	-	-
Non-OECD Europe	18	16	10	10	6	5	6	-	15	3	10	-6
FSU	54	31	8	9	2	7	24	37	2	2	7	-5
Saudi Arabia	0	8	3	13	0	0	1	1	1	-	-	-
Algeria	0	1	-	-	-	-	12	5	14	11	-	-
Other Middle East & Africa	8	3	5	3	2	11	9	4	11	6	3	3
Singapore	3	2	0	0	0	1	2	3	1	1	0	1
OECD Asia Oceania	1	1	1	1	1	1	1	3	1	1	0	1
Non-OECD Asia (excl. Singapore)	0	0	3	2	3	3	2	1	3	2	2	1
Other	21	37	62	15	61	41	41	40	27	51	13	39
Total²	112	107	106	75	89	102	125	117	99	111	43	68
of which Non-OECD	108	104	100	70	80	84	103	95	83	87	37	50
OECD Asia Oceania												
OECD Americas	6	4	1	0	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	0	0	0
Other Europe	5	10	0	0	0	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	123	162	117	84	32
Non-OECD Asia (excl. Singapore)	21	37	29	19	0	14	44	53	51	7	29	-21
Other	17	9	12	9	9	9	9	9	9	9	9	0
Total²	110	116	146	125	129	157	175	184	222	133	122	11
of which Non-OECD	84	98	141	125	129	157	174	184	222	133	122	11
Total OECD Trade²	1034	799	1057	1172	793	745	1190	1243	1324	1020	1206	-186
of which Non-OECD	496	397	489	507	385	352	511	496	561	452	484	-32

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	May 22	Jun 22	Jul 22	Year Earlier	
											Jul 21	change
OECD Americas												
Venezuela	1	-	-	-	-	-	-	-	-	-	-	-
Other Central and South America	38	34	28	24	20	3	6	4	6	10	29	-19
ARA (Belgium Germany Netherlands)	5	11	34	30	22	40	6	11	7	5	26	-21
Other Europe	2	4	5	1	10	2	3	8	0	-	1	-
FSU	6	12	25	10	33	25	-	-	-	-	6	-
Saudi Arabia	3	8	15	11	18	18	15	19	25	-	-	-
Algeria	-	-	-	-	-	-	-	-	-	-	-	-
Other Middle East and Africa	2	9	25	18	26	8	-	-	-	-	-	-
Singapore	0	-	2	8	-	2	-	-	-	-	-	-
OECD Asia Oceania	24	16	25	29	44	29	42	58	32	34	18	16
Non-OECD Asia (excl. Singapore)	30	34	27	12	31	0	2	2	5	-	17	-
Other	7	6	12	11	18	31	3	8	-	-	17	-
Total²	118	134	197	154	222	158	76	109	75	49	115	-66
of which Non-OECD	86	103	134	94	146	87	26	33	36	10	69	-59
OECD Europe												
OECD Americas	138	99	40	55	33	31	61	40	29	55	80	-25
Venezuela	-	-	-	-	-	-	-	-	-	-	-	-
Other Central and South America	0	3	1	1	3	1	1	-	1	-	1	-
Non-OECD Europe	41	30	35	30	32	39	46	37	60	17	40	-23
FSU	608	627	611	546	516	595	472	425	493	547	633	-86
Saudi Arabia	205	193	140	142	153	98	163	151	224	174	165	9
Algeria	0	2	-	-	-	-	-	-	-	-	-	-
Other Middle East and Africa	83	71	158	198	222	137	160	192	151	164	142	23
Singapore	27	17	19	24	22	39	50	38	15	19	37	-19
OECD Asia Oceania	36	32	42	48	44	36	22	20	19	9	46	-37
Non-OECD Asia (excl. Singapore)	152	101	126	122	195	88	149	132	78	65	108	-44
Other	10	15	20	6	43	30	20	16	29	10	2	8
Total²	1300	1190	1191	1172	1262	1092	1145	1051	1099	1061	1256	-195
of which Non-OECD	1126	1062	1109	1070	1186	1026	1062	991	1050	996	1130	-133
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	-	-	-	-	-	1	-
Saudi Arabia	-	-	-	-	-	-	-	-	-	-	-	-
Algeria	-	-	-	-	-	-	-	-	-	-	-	-
Other Middle East and Africa	7	13	4	0	3	-	11	5	11	47	-	-
Singapore	111	91	109	153	110	123	117	135	126	130	130	0
Non-OECD Asia (excl. Singapore)	133	208	229	181	259	168	217	237	243	123	230	-107
Other	5	9	8	8	5	8	7	13	4	4	5	0
Total²	261	328	352	344	377	299	352	390	384	305	365	-61
of which Non-OECD	260	323	352	343	377	299	352	390	384	305	365	-61
Total OECD Trade²	1679	1652	1740	1670	1861	1550	1572	1550	1557	1414	1736	-322
of which Non-OECD	1472	1488	1595	1507	1709	1412	1439	1413	1470	1311	1564	-253

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	May 22	Jun 22	Jul 22	Year Earlier	
											Jul 21	change
OECD Americas												
Venezuela	0	-	-	-	-	-	-	-	-	-	-	-
Other Central and South America	7	5	1	-	-	-	-	-	-	-	-	-
ARA (Belgium Germany Netherlands)	-	-	5	14	-	-	0	0	-	-	8	-
Other Europe	0	4	7	6	10	0	1	2	0	-	16	-
FSU	-	0	4	0	16	3	-	-	-	-	-	-
Saudi Arabia	2	6	6	4	17	5	-	-	-	-	6	-
Algeria	-	1	4	3	5	-	-	-	-	-	-	-
Other Middle East and Africa	10	11	18	14	22	11	10	6	17	3	13	-10
Singapore	3	4	2	5	-	2	2	-	3	-	-	-
OECD Asia Oceania	133	100	91	122	76	78	90	93	104	128	80	48
Non-OECD Asia (excl. Singapore)	16	23	27	34	33	17	18	3	18	26	27	-1
Other	3	4	1	4	-	5	4	10	-	4	2	3
Total²	174	159	165	207	179	120	123	114	141	161	152	9
of which Non-OECD	41	55	63	65	93	43	33	20	37	33	48	-14
OECD Europe												
OECD Americas	20	13	3	1	9	1	4	4	4	4	1	3
Venezuela	-	-	-	-	-	-	-	-	-	-	-	-
Other Central and South America	1	0	0	-	1	-	1	2	-	1	-	-
Non-OECD Europe	2	0	0	-	0	-	4	7	0	4	-	-
FSU	41	21	27	30	21	20	12	1	14	18	44	-26
Saudi Arabia	105	40	27	11	21	37	58	45	64	81	15	66
Algeria	11	9	5	6	-	3	8	-	25	-	-	-
Other Middle East and Africa	199	155	155	179	168	154	186	160	200	205	226	-22
Singapore	29	10	11	23	15	6	11	-	4	-	-	-
OECD Asia Oceania	36	27	32	39	40	2	44	32	77	35	56	-21
Non-OECD Asia (excl. Singapore)	73	50	62	59	113	78	95	142	37	116	36	80
Other	2	10	9	1	22	4	2	2	2	36	0	35
Total²	520	336	333	349	411	306	425	394	428	499	378	121
of which Non-OECD	464	297	298	309	362	303	381	359	347	461	321	140
OECD Asia Oceania												
OECD Americas	-	-	0	0	0	0	0	0	0	0	0	0
Venezuela	-	-	-	-	-	-	-	-	-	-	-	-
Other Central and South America	-	-	-	-	-	-	-	-	-	-	-	-
ARA (Belgium Germany Netherlands)	-	-	0	-	-	-	-	-	-	-	-	-
Other Europe	-	-	0	0	-	-	1	-	-	-	0	-
FSU	-	-	-	-	-	-	-	-	-	-	-	-
Saudi Arabia	-	-	-	-	-	-	-	-	-	-	-	-
Algeria	-	-	-	-	-	-	-	-	-	-	-	-
Other Middle East and Africa	-	-	1	-	-	-	0	0	-	-	-	-
Singapore	21	14	16	19	19	26	28	23	45	48	15	33
Non-OECD Asia (excl. Singapore)	29	28	34	15	29	20	38	39	47	16	24	-8
Other	22	18	21	5	34	25	9	17	5	5	5	0
Total²	72	60	71	39	82	71	76	78	97	70	45	25
of which Non-OECD	72	60	71	39	82	71	76	78	97	70	45	25
Total OECD Trade²	766	555	570	596	673	497	624	587	665	730	575	155
of which Non-OECD	576	413	433	414	538	416	489	457	481	564	414	150

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	May 22	Jun 22	Jul 22	Year Earlier	
											Jul 21	change
OECD Americas												
Venezuela	7	-	-	-	-	-	-	-	-	-	-	-
Other Central and South America	50	52	34	39	44	55	53	59	77	43	39	4
ARA (Belgium Germany Netherlands)	6	12	6	9	9	6	11	15	18	3	-	-
Other Europe	8	21	10	4	18	25	23	12	26	5	5	0
FSU	29	43	34	19	18	46	24	-	15	-	19	-
Saudi Arabia	2	2	0	-	2	1	12	11	20	5	-	-
Algeria	8	2	7	3	13	-	10	21	9	0	7	-7
Other Middle East and Africa	5	10	8	15	0	6	1	1	-	2	1	1
Singapore	1	1	0	2	-	-	-	-	-	-	-	-
OECD Asia Oceania	-	-	0	1	-	-	-	-	-	-	0	-
Non-OECD Asia (excl. Singapore)	0	-	2	0	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-	-	-
Total²	116	143	102	91	104	139	135	119	165	59	72	-13
of which Non-OECD	102	110	86	78	77	109	101	92	120	51	67	-16
OECD Europe												
OECD Americas	7	12	24	14	20	13	6	7	7	16	16	-1
Venezuela	-	-	-	-	-	-	-	-	-	-	-	-
Other Central and South America	5	6	4	10	1	1	3	7	0	13	2	11
Non-OECD Europe	21	13	12	12	11	17	35	33	26	55	6	50
FSU	144	141	247	315	279	216	119	136	103	115	279	-163
Saudi Arabia	-	2	-	-	-	-	-	-	-	-	-	-
Algeria	0	2	2	2	3	-	13	10	-	5	-	-
Other Middle East and Africa	19	13	14	18	13	11	34	52	37	7	11	-4
Singapore	1	3	3	2	2	5	0	-	-	2	-	-
OECD Asia Oceania	14	4	3	5	5	7	7	4	17	13	7	6
Non-OECD Asia (excl. Singapore)	3	-	-	-	-	-	-	-	-	-	-	-
Other	8	93	59	55	41	30	33	22	37	22	56	-34
Total²	222	288	368	433	374	300	251	272	228	249	378	-129
of which Non-OECD	202	279	347	417	350	282	239	262	207	222	356	-134
OECD Asia Oceania												
OECD Americas	1	-	-	-	-	-	-	-	-	-	-	-
Venezuela	-	-	-	-	-	-	-	-	-	-	-	-
Other Central and South America	-	0	-	-	-	-	-	-	-	-	-	-
ARA (Belgium Germany Netherlands)	-	-	0	0	-	-	0	-	0	-	-	-
Other Europe	-	-	-	-	-	-	-	-	-	-	-	-
FSU	6	5	0	-	-	-	-	-	-	-	-	-
Saudi Arabia	1	1	13	13	25	12	29	-	67	26	35	-9
Algeria	-	-	-	-	-	-	-	-	-	-	-	-
Other Middle East and Africa	27	38	30	31	30	6	6	-	19	-	31	-
Singapore	25	18	29	22	23	34	21	26	13	8	13	-5
Non-OECD Asia (excl. Singapore)	40	26	47	56	51	64	39	46	24	14	59	-44
Other	1	-	-	-	-	-	-	-	-	-	-	-
Total²	101	88	119	121	129	117	96	72	124	48	137	-89
of which Non-OECD	100	88	119	121	129	117	96	72	124	48	137	-89
Total OECD Trade²	439	519	588	645	607	556	482	463	516	356	587	-231
of which Non-OECD	404	477	552	616	555	508	436	426	450	321	560	-240

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	3Q21	4Q21	1Q22	2Q22	Apr 22	May 22	Jun 22	Jul 22	Aug 22	Sep 22
CRUDE PRICES													
IEA CIF Average Import¹													
IEA Europe	64.25	42.91	70.67	73.11	79.39	97.95	111.07	105.00	109.47	118.56	112.91		
IEA Americas	56.93	37.31	64.78	67.32	73.13	86.94	106.20	101.68	105.59	111.31	101.49		
IEA Asia Oceania	66.38	46.28	70.41	74.07	80.92	89.86	113.01	111.16	110.95	117.54	116.34		
IEA Total	62.75	42.19	68.87	71.64	77.98	92.72	110.16	105.7	108.69	116.27	110.33		
SPOT PRICES²													
North Sea Dated	64.12	41.76	70.82	73.42	79.67	102.12	113.90	104.25	113.38	123.62	112.63	99.63	89.76
North Sea Dated M1	64.74	42.90	71.51	73.96	80.45	101.45	114.15	105.54	114.71	121.74	109.85	99.19	91.58
WTI (Cushing) M1	57.03	39.25	68.10	70.54	77.33	95.18	108.77	101.77	109.61	114.59	99.84	91.57	83.96
WTI (Houston) M1	61.87	40.71	69.01	71.17	78.27	96.77	109.96	102.93	110.80	115.83	101.85	93.61	86.34
Urals	63.31	41.21	69.00	71.16	78.05	89.49	79.11	69.58	78.53	88.77	83.05	74.63	68.59
Dubai M1	63.49	42.36	69.35	71.60	78.23	96.06	108.12	102.91	108.08	112.89	102.86	96.43	91.10
PRODUCT PRICES²													
Northwest Europe													
Gasoline	71.15	44.64	80.07	85.44	90.50	110.20	146.06	125.39	149.17	162.42	131.84	111.23	98.47
Diesel	79.28	49.34	78.41	80.71	91.93	124.88	160.84	151.26	152.16	179.05	153.09	142.81	139.29
Jet/Kero	80.15	45.80	77.31	79.62	91.14	122.94	165.15	154.57	162.13	178.37	147.78	142.85	134.91
Naphtha	56.62	40.18	71.58	75.06	82.44	99.99	97.26	101.89	99.79	90.20	86.05	74.25	70.37
HSFO	49.85	33.99	61.18	63.03	67.69	84.19	92.98	90.60	96.91	91.10	71.89	76.18	63.12
0.5% Fuel Oil	80.17	48.50	76.78	78.42	85.25	109.62	126.09	120.82	121.76	135.66	116.36	106.23	96.12
Mediterranean Europe													
Gasoline	71.09	45.57	80.50	86.29	90.87	111.66	147.99	125.59	148.43	168.80	139.15	112.32	99.07
Diesel	78.94	48.82	77.93	80.57	91.08	122.53	156.54	147.85	148.63	173.09	142.46	133.39	132.06
Jet/Kero	79.96	45.57	77.19	79.61	91.11	123.04	164.87	153.87	162.00	178.33	147.90	143.11	135.16
Naphtha	55.51	39.04	70.65	74.30	81.33	98.64	94.95	100.04	97.59	87.32	84.29	72.51	68.90
HSFO	52.01	34.17	60.05	62.22	66.73	82.75	89.63	88.55	93.44	86.65	71.69	72.15	52.07
US Gulf Coast													
Gasoline	71.11	47.30	86.49	91.76	95.15	116.70	153.69	133.04	157.34	169.71	134.83	115.54	106.77
Diesel	79.12	50.26	84.73	87.37	97.55	126.70	167.83	160.19	163.46	179.48	151.92	148.23	140.22
Jet/Kero	78.84	46.30	77.95	79.89	92.12	121.54	163.46	156.92	161.46	171.69	145.44	139.74	136.19
Naphtha	59.04	40.12	72.24	75.36	82.52	99.45	105.15	102.00	101.48	111.82	90.34	87.05	75.70
HSFO	52.53	34.71	59.90	62.33	67.41	83.38	93.04	89.41	94.62	94.92	84.50	81.74	61.76
0.5% Fuel Oil	74.08	49.88	79.69	80.73	89.03	114.08	133.17	127.06	131.87	140.31	125.31	111.24	99.54
Singapore													
Gasoline	70.10	45.28	78.49	81.41	91.16	111.63	137.95	123.18	140.99	149.10	116.35	107.19	94.03
Diesel	78.47	49.60	77.80	79.85	90.88	119.08	159.99	148.30	153.41	177.35	145.27	139.12	129.66
Jet/Kero	77.55	45.06	75.29	77.12	88.49	113.53	147.63	133.96	142.90	165.10	134.90	131.73	121.58
Naphtha	57.41	40.94	71.02	73.97	82.10	98.04	92.73	97.40	95.76	85.42	82.70	72.73	68.22
HSFO	57.46	38.33	63.20	66.08	70.13	85.69	98.18	103.97	98.44	92.45	73.83	74.95	60.36
0.5% Fuel Oil	75.66	52.85	80.81	81.99	91.25	115.97	139.05	124.83	136.42	155.05	135.90	110.92	101.48

¹IEA CIF Average Import price for Jul 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

September 2022

NATIONAL CURRENCY ¹							US DOLLARS						
Total	% change from		Ex-Tax	% change from		Price	Total	% change from		Ex-Tax	% change from		Price
	Aug-22	Sep-21		Aug-22	Sep-21			Aug-22	Sep-21		Aug-22	Sep-21	
Price			Price				Price			Price			
GASOLINE ² (per litre)													
France	1.572	- 12.8	- 0.7	0.869	-9.6	38.4	1.556	-14.8	-16.5	0.860	-11.7	16.4	
Germany	2.005	11.8	22.9	1.252	9.1	74.9	1.984	9.2	3.4	1.239	6.5	47.0	
Italy	1.703	- 5.2	2.3	0.918	-7.7	44.1	1.685	-7.4	-14.0	0.909	-9.9	21.2	
Spain	1.730	- 5.4	20.9	1.081	-7.0	52.3	1.712	-7.5	1.7	1.070	-9.1	28.0	
United Kingdom	1.666	- 4.9	23.5	0.858	-7.7	57.4	1.886	-10.1	1.8	0.971	-12.8	29.8	
Japan	169.7	0.2	7.1	97.7	0.2	11.8	1.185	-5.4	-17.6	0.682	-5.4	-14.0	
Canada	1.590	- 7.7	13.3	1.121	-9.5	21.2	1.193	-10.5	7.7	0.841	-12.2	15.2	
United States	0.978	- 6.9	16.6	0.847	-7.8	19.5	0.978	-6.9	16.6	0.847	-7.8	19.5	
AUTOMOTIVE DIESEL FOR NON COMMERCIAL USE (per litre)													
France	1.722	- 7.4	19.0	1.076	-1.3	80.2	1.704	-9.5	0.1	1.065	-3.6	51.6	
Germany	2.085	6.1	47.6	1.387	5.0	93.4	2.063	3.7	24.1	1.373	2.6	62.7	
Italy	1.807	0.7	19.4	1.114	0.9	78.8	1.788	-1.7	0.4	1.103	-1.4	50.4	
Spain	1.879	1.6	47.1	1.298	1.9	92.0	1.860	-0.8	23.7	1.285	-0.5	61.5	
United Kingdom	1.817	-2.6	32.1	0.984	-4.0	73.9	2.057	-8.0	9.0	1.114	-9.3	43.4	
Japan	149.7	0.1	8.1	104.1	0.2	11.0	1.045	-5.5	-16.8	0.727	-5.4	-14.6	
Canada	1.898	1.0	41.3	1.444	1.3	57.5	1.424	-2.1	34.3	1.083	-1.9	49.7	
United States	1.319	- 0.5	47.5	1.168	-0.5	57.0	1.319	-0.5	47.5	1.168	-0.5	57.0	
DOMESTIC HEATING OIL (per litre)													
France	1.525	0.0	67.0	1.115	0.0	84.3	1.510	-2.3	40.4	1.103	-2.3	54.9	
Germany	1.539	4.9	97.3	1.232	5.2	107.4	1.523	2.5	65.9	1.219	2.8	74.4	
Italy	1.812	- 0.2	38.7	1.082	-0.3	62.0	1.793	-2.5	16.6	1.071	-2.6	36.2	
Spain	1.351	0.8	79.2	1.020	0.9	93.8	1.337	-1.5	50.7	1.009	-1.4	63.0	
United Kingdom	1.036	2.5	68.9	0.885	2.7	87.2	1.173	-3.2	39.3	1.002	-2.9	54.3	
Japan ³	112.5	-	17.7	99.5	-	18.3	0.786	-5.6	-9.5	0.695	-5.6	-9.0	
Canada	1.803	- 0.2	46.0	1.606	-0.2	49.9	1.352	-3.3	38.7	1.205	-3.2	42.5	
United States	-	-	-	-	-	-	-	-	-	-	-	-	
LOW SULPHUR FUEL OIL FOR INDUSTRY ⁴ (per kg)													
France	0.797	- 3.3	28.0	0.658	-4.0	36.1	0.789	-5.6	7.6	0.651	-6.2	14.4	
Germany	-	-	-	-	-	-	-	-	-	-	-	-	
Italy	0.744	- 4.7	34.3	0.712	-4.9	36.4	0.736	-6.9	12.9	0.705	-7.1	14.7	
Spain	0.673	- 5.5	43.7	0.656	-5.6	45.4	0.666	-7.6	20.9	0.649	-7.8	22.3	
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 Dollars

² 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	3Q21	4Q21	1Q22	2Q22	Apr 22	May 22	Jun 22	Jul 22	Aug 22	Sep 22
NW Europe													
Light sweet hydroskimming	3.03	1.11	2.54	2.94	4.72	5.27	15.30	17.09	14.64	14.28	4.95	9.60	12.60
Light sweet cracking	5.40	2.07	3.51	4.08	6.56	8.85	22.18	23.39	20.28	23.01	12.43	14.77	18.74
Light sweet cracking + Petchem	6.90	3.23	6.55	7.00	9.19	10.99	26.45	28.08	23.72	27.78	15.19	16.73	19.25
Medium sour cracking	8.64	4.30	6.11	7.07	7.26	21.56	59.44	60.09	57.85	60.49	40.44	35.48	36.92
Mediumsour cracking + Petchem	10.09	5.44	9.07	9.91	9.81	23.64	63.59	64.64	61.19	65.11	43.13	37.38	37.42
Mediterranean													
Light sweet hydroskimming	4.13	2.36	2.90	3.36	4.38	4.14	13.88	16.67	12.22	12.96	1.68	8.32	13.17
Light sweet cracking	7.15	3.34	4.97	5.84	7.27	8.77	23.72	24.34	20.99	25.99	12.37	15.54	20.08
Medium sour cracking	10.61	5.70	5.68	6.66	7.80	11.85	30.25	27.54	29.79	33.30	18.30	20.66	22.75
US Gulf Coast													
Light sweet cracking	7.51	4.28	11.04	12.81	11.96	16.54	38.22	31.38	37.83	45.12	29.39	25.62	25.24
Medium sour cracking	11.95	6.61	15.79	17.87	18.71	25.08	47.39	39.42	45.88	56.49	38.88	34.26	32.85
Heavy sour coking	17.42	9.73	19.98	21.92	23.97	32.06	55.43	46.64	54.86	64.39	49.64	43.63	46.34
US Midwest													
Light sweet cracking	10.76	3.74	12.33	14.95	11.14	13.95	40.42	30.57	38.14	52.10	33.64	33.17	36.13
Heavy sour coking	23.67	13.26	26.02	29.17	27.74	32.07	60.64	48.28	59.13	73.93	55.07	50.68	56.76
Singapore													
Light sweet cracking	-1.24	0.20	3.10	3.13	5.56	7.94	18.69	16.27	15.50	24.03	12.04	11.75	8.85
Light sweet cracking + Petchem	0.32	2.03	4.82	4.35	7.03	8.63	20.69	18.47	17.00	26.32	13.24	13.84	11.28
Medium sour cracking	5.16	1.80	3.92	4.22	5.27	9.85	23.35	20.50	22.26	27.10	9.91	8.98	4.63
Medium sour cracking + Petchem	6.70	3.61	5.61	5.42	6.72	10.53	25.33	22.67	23.74	29.37	11.09	11.04	7.02

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

	May-22	Jun-22	Jul-22	Jul-21	Jul 22 vs Previous Month	Jul 22 vs Previous Year	Jul 22 vs 5 Year Average	5 Year Average
OECD Americas								
Naphtha	1.0	0.9	1.1	1.2	0.2	-0.1	-0.3	1.4
Motor gasoline	43.4	44.1	43.6	45.0	-0.6	-1.4	-1.1	44.7
Jet/kerosene	9.4	9.0	9.2	7.7	0.2	1.5	0.8	8.4
Gasoil/diesel oil	28.2	28.7	28.4	27.8	-0.3	0.6	0.1	28.3
Residual fuel oil	2.8	2.5	2.6	2.7	0.1	-0.1	-0.4	3.0
Petroleum coke	4.3	4.4	4.2	4.2	-0.2	0.0	-0.2	4.4
Other products	13.9	13.9	14.3	14.2	0.4	0.1	0.7	13.6
OECD Europe								
Naphtha	8.0	7.7	8.3	8.2	0.6	0.0	0.2	8.1
Motor gasoline	21.2	20.6	20.7	21.5	0.1	-0.8	0.2	20.6
Jet/kerosene	8.7	9.0	8.5	6.0	-0.5	2.5	0.7	7.8
Gasoil/diesel oil	39.0	38.8	39.8	41.0	1.1	-1.2	-0.8	40.7
Residual fuel oil	9.3	8.5	8.1	7.6	-0.4	0.5	-0.1	8.2
Petroleum coke	1.5	1.5	1.5	1.6	0.0	0.0	0.1	1.4
Other products	14.8	15.6	15.7	17.3	0.2	-1.6	-0.3	16.0
OECD Asia Oceania								
Naphtha	16.6	16.9	16.3	15.2	-0.6	1.0	0.5	15.7
Motor gasoline	20.9	21.6	21.3	23.1	-0.3	-1.8	-0.8	22.0
Jet/kerosene	12.3	11.5	12.9	12.0	1.4	0.9	-0.9	13.8
Gasoil/diesel oil	30.4	31.3	31.0	30.5	-0.3	0.5	0.6	30.4
Residual fuel oil	8.7	7.8	8.7	8.1	0.9	0.6	1.7	7.0
Petroleum coke	0.2	0.5	0.5	0.4	0.0	0.1	0.1	0.4
Other products	12.4	12.5	11.5	13.2	-0.9	-1.6	-1.2	12.8
OECD Total								
Naphtha	5.9	5.7	5.9	5.7	0.2	0.2	-0.1	6.0
Motor gasoline	32.5	32.8	32.5	34.0	-0.3	-1.5	-0.5	33.0
Jet/kerosene	9.7	9.4	9.6	7.9	0.2	1.7	0.4	9.1
Gasoil/diesel oil	32.1	32.4	32.5	32.4	0.1	0.1	-0.1	32.6
Residual fuel oil	5.9	5.3	5.4	5.1	0.1	0.3	0.1	5.3
Petroleum coke	2.7	2.8	2.7	2.7	-0.1	0.0	0.0	2.8
Other products	13.9	14.2	14.3	15.0	0.1	-0.7	0.0	14.2

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	Jul 22	Aug 22	Sep 22
ETHANOL									
OECD Americas	1063	934	1010	1058	1041	1027	1050	1016	1016
United States	1029	906	979	1023	1006	992	1015	980	980
Other ¹	34	28	30	35	35	35			
OECD Europe	97	93	103	101	111	108	113	106	106
France	21	17	18	22	27	18	29	13	13
Germany	12	11	12	18	21	11	21	6	6
Spain	9	8	10	7	7	11	7	13	13
United Kingdom	5	4	9	5	5	11	5	14	14
Other ¹	50	52	54	48	52	57			
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	1163	1157	1140	1167	1126	1126
Total Non-OECD Ethanol	809	735	703	312	849	1122	1183	1109	1073
Brazil	621	560	515	100	637	910	971	897	861
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	1476	2005	2262	2350	2235	2199
BIODIESEL									
OECD Americas	151	159	168	186	206	240	234	243	243
United States	145	153	160	181	201	229	229	229	229
Other ¹	7	6	7	5	5	11			
OECD Europe	295	281	313	303	313	334	298	353	353
France	43	41	43	48	56	43	47	41	41
Germany	69	61	66	61	60	68	57	73	73
Italy ¹	18	28	30	22	32	36			
Spain	42	30	39	34	33	44	33	49	49
Other	123	121	136	138	131	144	128	151	151
OECD Asia Oceania	15	12	12	10	14	12	15	11	11
Australia	0	0	0	0	0	0	0	0	0
Other ¹	15	12	12	10	14	12			
Total OECD Biodiesel	461	452	493	499	533	586	546	606	606
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	962	997	1050	1010	1070	1070
GLOBAL BIOFUELS	2839	2629	2752	2438	3002	3312	3360	3305	3269

¹ monthly data not available.

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