

Oil Market Report

14 October 2021

- The ongoing energy crisis has prompted a switch to oil that could boost demand by 500 kb/d compared with normal conditions. This contributed to an upward revision to our 2021 and 2022 forecast, by 170 kb/d and 210 kb/d respectively. Global oil demand is now forecast to rise by 5.5 mb/d in 2021 and 3.3 mb/d in 2022 when it reaches 99.6 mb/d, slightly above pre-Covid levels.
- World oil supply has resumed its uptrend as OPEC+ continues to unwind cuts, the US bounces back from Hurricane Ida and maintenance winds down. From September through end-2021, global output is set to rise 2.7 mb/d with OPEC+ accounting for 1.5 mb/d and non-OPEC+ pumping the rest. Total oil output fell 260 kb/d in September to 96 mb/d, led by steeper US hurricane losses.
- Global refinery activity in 3Q21 continued to disappoint, with lower throughputs in China and India in August only partially offset by a stronger performance in OECD Asia and Europe. Implied 3Q21 refined product balances show the largest draw in eight years, which explains the strong increase in refinery margins in September despite significantly higher crude prices.
- OECD total industry stocks drew by 28 mb in August to 2 824 mb, 162 mb below pre-Covid five-year average. Preliminary September data for the US, Europe and Japan show on-land industry stocks fell by a further 23 mb. Crude oil held in floating storage decreased by 8.5 mb to 98 mb in August.
- Crude oil prices hit a seven-year high in early October boosted by energy supply concerns and continued oil stock draws. North Sea Dated prices rose by \$3.65/bbl on average in September to \$74.40/bbl and WTI at Cushing \$3.84/bbl to \$71.56/bbl. Strong backwardation restrained crude price differentials to marker crudes over the month.



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Bumpy road ahead

Oil prices are scaling multi-year highs as a shortage of natural gas, LNG and coal boosts demand for oil, which could keep the market in deficit through at least the end of the year. Brent crude futures rose by more than \$10/bbl to surpass \$83/bbl, while WTI traded above \$80/bbl at the time of writing.

The surge in prices has swept through the entire global energy chain, fuelled by robust economic growth as the world emerges from the pandemic. Record coal and gas prices as well as rolling black-outs are prompting the power sector and energy-intensive industries to turn to oil to keep the lights on and operations humming. The higher energy prices are also adding to inflationary pressures that, along with power outages, could lead to lower industrial activity and a slowdown in the economic recovery.

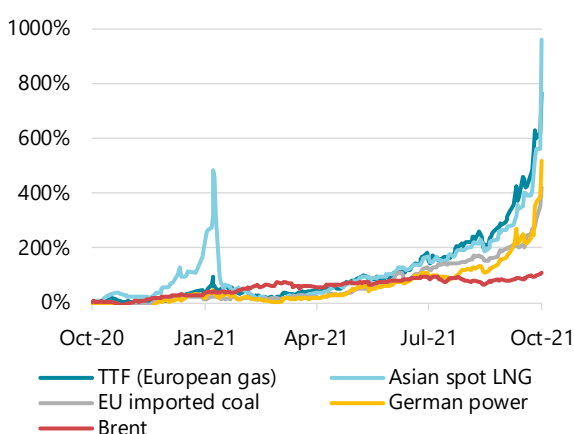
For now, a reduction in the number of new Covid cases and rising mobility are lending support to oil demand. Global gasoline demand is currently running 2% below pre-Covid levels compared with a deficit of more than 10% at the start of the year. Air-travel is lagging further behind. All in all, world oil demand is forecast to rise by 5.5 mb/d, to 96.3 mb/d in 2021 and 3.3 mb/d in 2022, when it is set to reach pre-Covid levels.

World oil supply, meanwhile, is projected to rise sharply in October as US output bounces back from Hurricane Ida and OPEC+ continues to unwind cuts. Earlier this month the producer group reconfirmed its agreement to boost output by 400 kb/d for November, despite calls from major consuming countries for a more substantial increase to stall the decline in global oil inventories and the rise in prices. Preliminary data shows OECD industry stocks fell 23 mb in September to stand 210 mb below their five-year average and at their lowest level since March 2015.

With OPEC+ currently on track to pump 700 kb/d below the call for its crude during 4Q21, inventories will continue to decline. As the bloc ramps up production, its spare capacity will dwindle. Compared with a cushion of 9 mb/d in 1Q21, effective spare capacity could fall below 4 mb/d by 2Q22 and be concentrated in only a few Middle Eastern countries, although supply is expected to exceed demand. Shrinking global spare capacity underscores the need for increased investments to meet demand further down the road.

As the IEA's *World Energy Outlook 2021* published this week highlights, the world is not investing enough to meet its future energy needs. Transition-related spending is gradually picking up, but remains far short of what is required to meet the rising demand for energy services in a sustainable way. At the same time, the amount being spent on oil appears to be geared towards a world of stagnant or falling demand. A surge in spending on clean energy transitions provides the way forward, but this needs to happen quickly or global energy markets will face a bumpy road ahead.

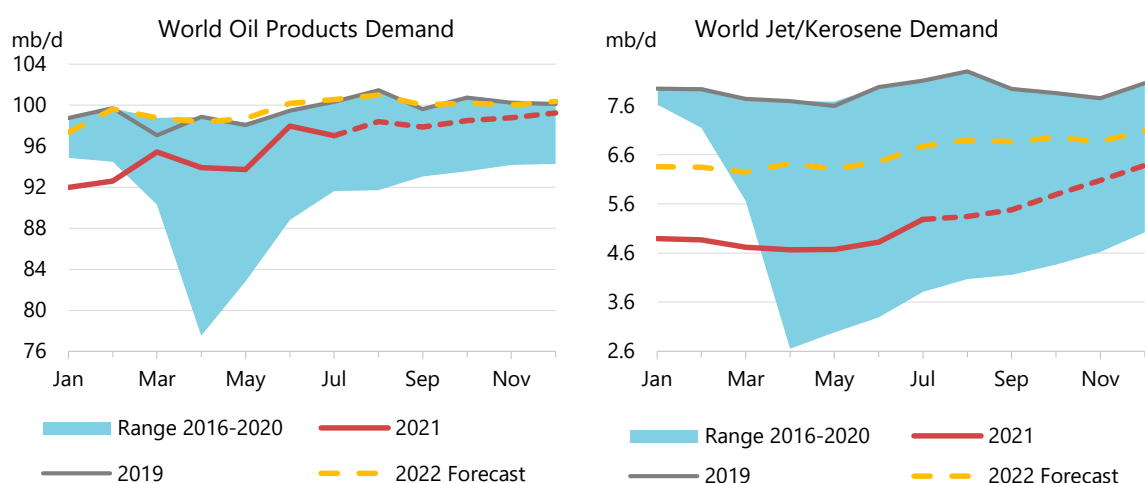
Evolution of Energy Prices, 2020-2021



Demand

Overview

Soaring natural gas prices have prompted a switch to oil that could boost demand by 500 kb/d compared with normal conditions, leading us to mark up our demand forecast for the second half of 2021 and 1Q22 by an average 330 kb/d (see *Box 1 Increasing use of oil in electricity generation*). Global oil demand is now forecast to rise by 5.5 mb/d in 2021 and 3.3 mb/d in 2022, when it returns to pre-Covid levels of 99.6 mb/d.



The upward forecast revisions due to fuel switching are tempered by a weaker GDP outlook and higher oil prices. World GDP growth was lowered to 5.9% in 2021 and 4.7% in 2022 as supply chain disruptions and the developing energy crisis dampen the economic outlook. Prior to the latest rise in energy prices, prompt economic indicators already showed a slowdown in economic activity across regions due mainly to the supply chain issues. Growth decelerated in Europe and in most of Asia, and appears weaker than expected in the US. Now, coal, natural gas and electricity shortages are disrupting economic activity in China, India and elsewhere. Expensive natural gas is not only impacting power generation but also other sectors like ammonia production, fertiliser plants, refining and manufacturing operations.

Oil price assumptions used in the forecast are significantly higher than in the last month's *Report*. Brent prices average \$70.40/bbl in 2021 and \$76.80/bbl in 2022, with 2021 prices roughly 70% greater than in 2020 and 10% above 2019. New historical data led to downward revisions to world demand of 140 kb/d in 2019 and 130 kb/d in 2020.

Global Demand by Product							
(thousand barrels per day)							
	Demand			Annual Chg (kb/d)		Annual Chg (%)	
	2020	2021	2022	2021	2022	2021	2022
LPG & Ethane	12 668	13 249	13 671	581	421	4.6	3.2
Naphtha	6 334	6 735	6 883	401	148	6.3	2.2
Motor Gasoline	23 472	25 421	26 153	1 948	732	8.3	2.9
Jet Fuel & Kerosene	4 645	5 275	6 654	629	1 379	13.5	26.1
Gas/Diesel Oil	26 381	27 516	28 035	1 135	519	4.3	1.9
Residual Fuel Oil	5 695	6 101	6 241	406	139	7.1	2.3
Other Products	11 590	12 017	11 963	427	- 54	3.7	-0.4
Total Products	90 787	96 314	99 600	5 528	3 286	6.1	3.4

After contracting by 950 kb/d m-o-m in July, global oil demand in August is estimated to have bounced back by a 1.4 mb/d, supported by strong deliveries in China (up 170 kb/d m-o-m), the US (970 kb/d m-o-m), the Middle East (190 kb/d m-o-m) and Russia (180 kb/d m-o-m). Lockdowns in China during August had little impact on oil consumption, with the exception of jet/kerosene, and pent up demand for transport fuels raised European deliveries. In September, we estimate that US oil demand fell by 750 kb/d on seasonality and as Hurricane Ida reduced ethane demand.

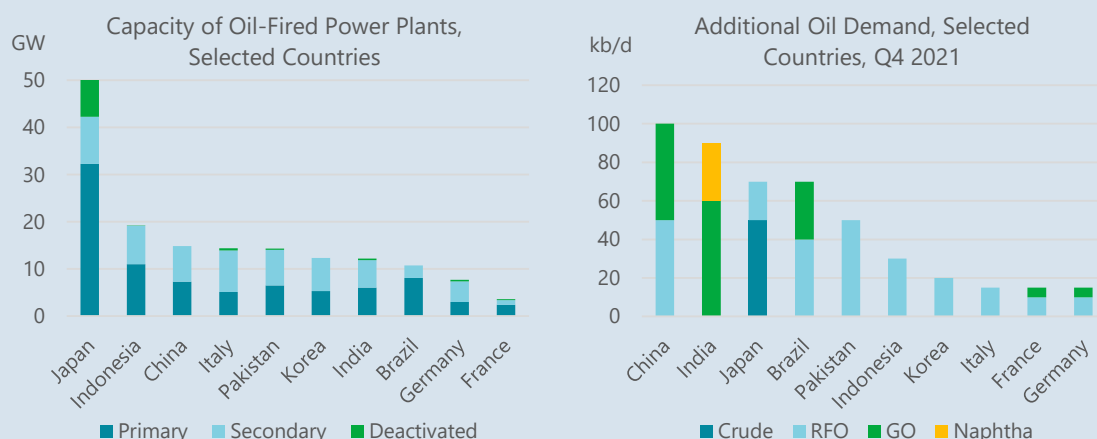
Global Demand by Region							
(thousand barrels per day)							
	Demand			Annual Chg (kb/d)		Annual Chg (%)	
	2020	2021	2022	2021	2022	2021	2022
Africa	3 790	3 972	4 066	182	94	4.8	2.4
Americas	28 037	30 211	31 088	2 174	877	7.8	2.9
Asia/Pacific	33 573	35 782	37 253	2 209	1 471	6.6	4.1
Europe	13 175	13 657	14 243	482	586	3.7	4.3
FSU	4 487	4 765	4 900	278	135	6.2	2.8
Middle East	7 725	7 927	8 050	202	123	2.6	1.6
World	90 787	96 314	99 600	5 528	3 286	6.1	3.4

Box 1. Increasing use of oil in electricity generation

An acute shortage of natural gas, LNG and coal supplies stemming from the gathering global economic recovery has sparked a precipitous run-up in prices for energy supplies and is triggering a massive switch to oil products and direct crude use for power generation. The supply crunch is impacting everything from power generation plants, to fertiliser producers, manufacturing operations and refineries. As a result, we estimate that this will boost oil demand by an additional 500 kb/d from September through 1Q22.

Provisional August data already indicates that there is some unseasonably high demand for fuel oil, crude and middle distillates for power plants across a number of countries, including China, Japan and Pakistan in Asia; Germany and France in Europe; and Brazil, where low hydro-reservoir levels have forced generators to seek alternative sources.

Our latest projections assume these elevated levels of consumption persist through the first quarter of 2022 and that, given the extent of the tightness in LNG and coal markets, larger quantities of oil products will be consumed in power plants across a wider range of countries.



Source: S&P Global 2021, World Electric Power Plants Database.

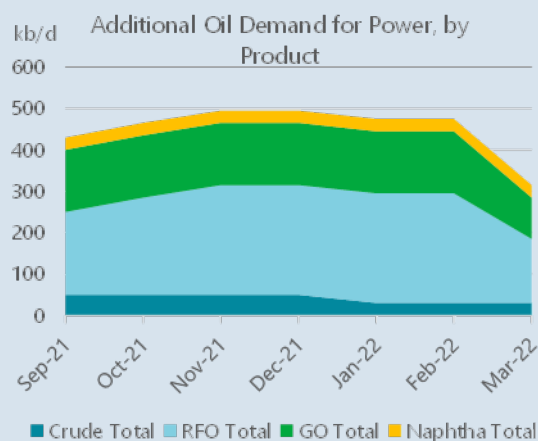
We have considered the capacity in each country for power plants that primarily consume oil products, plants typically using other fuels (especially gas) that can switch to oil and deactivated units which could use oil.

The ability of these plants to raise oil consumption is likely to be partially restricted by the immediate availability of alternative fuels and the activation of adequate storage and logistics, as well as by environmental rules. Applicable air quality regulations and CO₂ emission costs will limit switching away from gas. For many LNG consumers, contract pricing mechanisms for LNG imports, structured in a way that limit exposure to elevated spot pricing, will mitigate the need for other fuels.

In countries with particularly acute power shortages and relatively limited additional power plant capacity, we expect more distillates demand for back-up generators employed locally during electricity rationing. Back-up generators in India and China are forecast to boost oil demand by 60 kb/d and 50 kb/d, respectively.

As well as additional demand for power, oil products can substitute for gas in some industrial applications. We assume some switching to naphtha amongst Indian fertiliser producers contributing 30 kb/d of incremental naphtha demand.

Our current projections for additional demand from fuel switching are based on normal winter weather patterns so the forecast is sensitive to temperatures in regions with high demand. A warmer winter might lead to an earlier unwinding of increases and a colder one could lead to a further spike in demand.



OECD

OECD oil demand is estimated to have increased by a higher than normal 1.03 mb/d m-o-m to 46.2 mb/d in August, before easing again to a seasonal decline of 680 kb/d m-o-m in September. The proliferation of the Covid-19 Delta variant in OECD Europe and America seemed under control in September (with the exception of the UK). In Asia, the number of cases dropped drastically in Japan but remained elevated in Australia and South Korea.

Demand in the OECD declined by 340 kb/d m-o-m in July (the last month for which complete data is available) after a very strong increase (2.2 mb/d) in June. Pent-up travel demand boosted July deliveries in Europe by 320 mb/d m-o-m, while the Americas declined by 600 kb/d and Asia Pacific down by 60 kb/d.

OECD Demand based on Adjusted Preliminary Submissions - August 21																
(million barrels per day)																
	Gasoline		Jet/Kerosene		Diesel		Other Gasoil		LPG/Ethane		RFO		Other		Total Products	
	mb/d	% pa	mb/d	% pa	mb/d	% pa	mb/d	% pa	mb/d	% pa	mb/d	% pa	mb/d	% pa	mb/d	% pa
OECD Americas	11.11	11.0	1.82	59.2	4.68	9.5	0.60	4.3	3.40	8.3	0.58	14.6	3.38	3.9	25.47	11.7
US*	9.53	11.4	1.59	52.0	4.02	11.5	0.20	6.7	2.65	7.0	0.38	8.3	2.76	6.7	21.04	12.4
Canada	0.91	15.6	0.14	142.1	0.25	-4.9	0.37	3.7	0.39	17.4	0.04	7.2	0.42	-13.5	2.52	8.7
Mexico	0.60	-0.6	0.07	151.6	0.25	-3.2	0.03	-2.6	0.31	9.7	0.14	33.9	0.18	4.0	1.57	6.1
OECD Europe	2.18	6.8	1.08	54.4	5.12	6.0	1.37	21.7	1.13	3.9	0.78	15.1	2.30	4.0	13.73	10.2
Germany	0.51	6.0	0.20	103.9	0.72	2.9	0.29	42.1	0.12	14.3	0.06	35.3	0.39	10.3	2.28	15.4
United Kingdom	0.28	10.4	0.23	75.6	0.50	9.7	0.17	14.5	0.09	-21.0	0.02	-0.4	0.12	-3.5	1.39	13.4
France	0.25	12.9	0.13	47.6	0.74	6.8	0.12	97.4	0.13	14.3	0.03	3.9	0.20	2.7	1.61	14.3
Italy	0.19	11.6	0.07	53.6	0.47	8.1	0.07	18.3	0.09	0.4	0.06	2.0	0.27	7.2	1.20	9.8
Spain	0.14	6.8	0.10	64.9	0.45	9.5	0.18	5.4	0.04	-30.4	0.11	9.0	0.19	2.6	1.18	8.6
OECD Asia & Oceania	1.43	-2.0	0.38	4.3	1.28	0.9	0.47	8.3	0.67	-5.5	0.45	25.8	2.41	12.3	7.05	5.1
Japan	0.79	-6.6	0.18	-5.0	0.38	-1.7	0.27	3.9	0.31	-7.9	0.23	37.5	0.96	8.3	3.12	1.6
Korea	0.24	0.8	0.12	15.5	0.34	2.1	0.14	19.8	0.30	-4.5	0.19	15.0	1.28	16.8	2.57	10.0
Australia	0.27	11.3	0.06	36.6	0.50	2.1	0.00	-670.5	0.05	-4.5	0.01	6.6	0.11	4.4	1.00	6.4
OECD Total	14.72	9.0	3.28	48.8	11.08	6.9	2.45	14.3	5.20	5.4	1.81	17.4	8.09	6.3	46.25	10.2

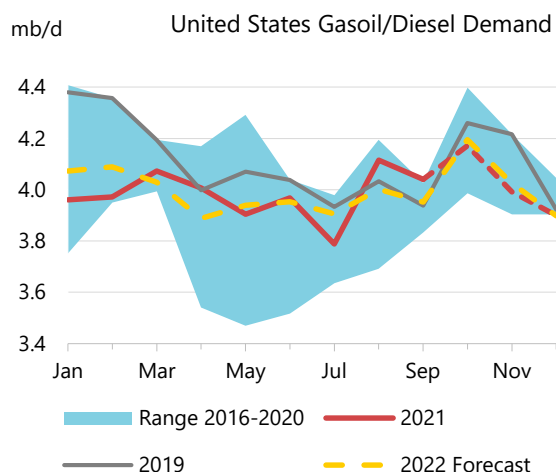
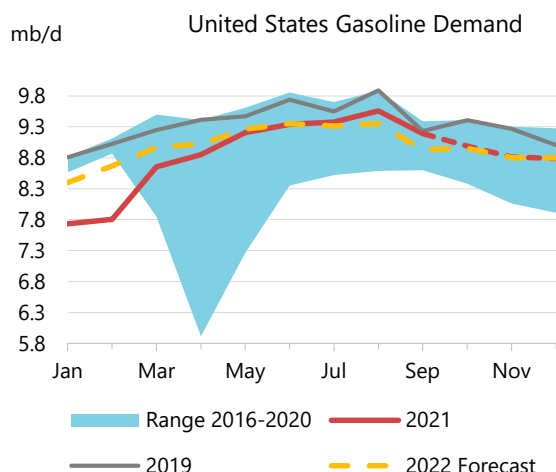
* Including US territories

OECD Americas

Oil demand in the OECD Americas rebounded by 1 mb/d m-o-m in August following a drop of 600 kb/d m-o-m in July. Demand is forecast to post a seasonal decline of 750 kb/d in September which would result in an overall increase of only 560 kb/d in 3Q21 compared to a much stronger rise of 1.6 mb/d in 2Q21. Oil demand rose by 260 kb/d in 3Q21 the US and 300 kb/d in Canada. Oil deliveries fell slightly in Mexico in 3Q21 (-30 kb/d).

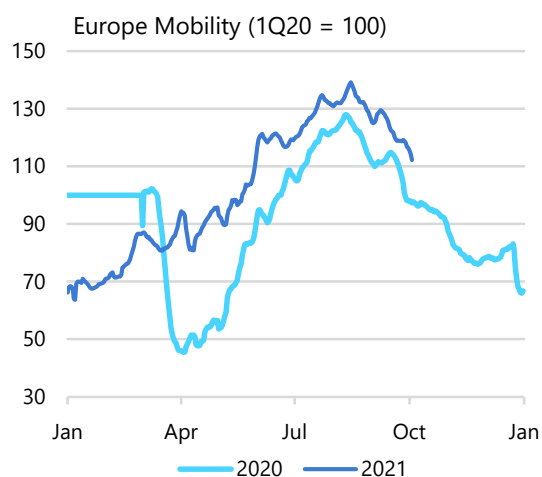
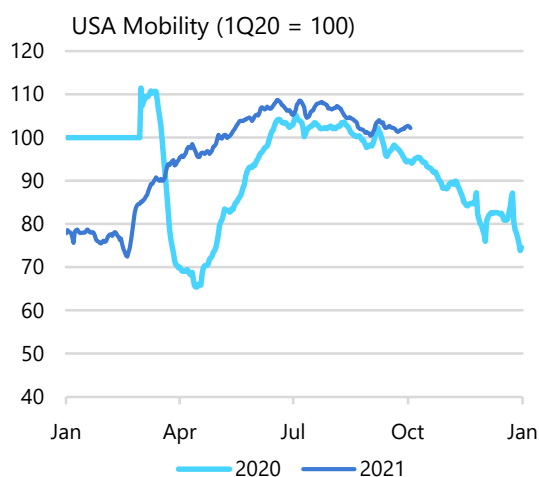
In the US, hard data are available through July and demand for August and September is estimated, based on weekly data. July data showed a drop in total US demand of 650 kb/d, largely due to lower LPG/ethane and diesel deliveries. In August, demand rose by 970 kb/d, due to higher diesel, but fell seasonally in September, according to provisional data. New data have led us to revise our historical estimates for US territories demand for the whole history and other products in 2021.

US GDP is forecast to rise by roughly 5.5% in 2021 and 4.4% in 2022, lower than what was expected last month, as the US economy has cooled as a result of the spreading of the Delta variant. Prompt indicators remain positive, however, and the Institute for Supply Management (ISM) Purchasing Managers' Index (PMI) pointed to strong manufacturing activity, increasing to 61.1 in September from 59.9 in August. After a significant jump at the start of the summer period, US mobility fell to last year's levels at the end of August but appeared stronger in September.



Gasoline demand in the US rose 40 kb/d m-o-m in July and 180 kb/d in August, according to weekly data. Gasoline deliveries in August are still expected to be 330 kb/d below pre-pandemic levels. In September, gasoline demand is estimated to have seasonally declined by 370 kb/d. High gasoline prices may also have taken their toll on demand: US gasoline prices are currently at their highest level since October 2014.

Jet/kerosene deliveries gained 70 kb/d m-o-m in July and a further 80 kb/d in August, according to preliminary data, before posting a seasonal decline of 105 kb/d in September. OAG data show that total scheduled airline seats in the US declined by 7% m-o-m in September, to roughly 15% below the pre-pandemic levels.



Canadian deliveries were 200 kb/d below pre-pandemic levels in July. Mobility indicators showed a strong increase in travel during the summer and a seasonal decline in September. Mobility indicators for Mexico appear relatively weak, unchanged from June to September. Mexican demand in July and August remained roughly 450 kb/d below pre-Covid levels. While jet/kerosene deliveries were 20% below pre-Covid levels in July and August, OAG data show that the volume of scheduled airline seats in September was only 9% below pre-Covid levels.

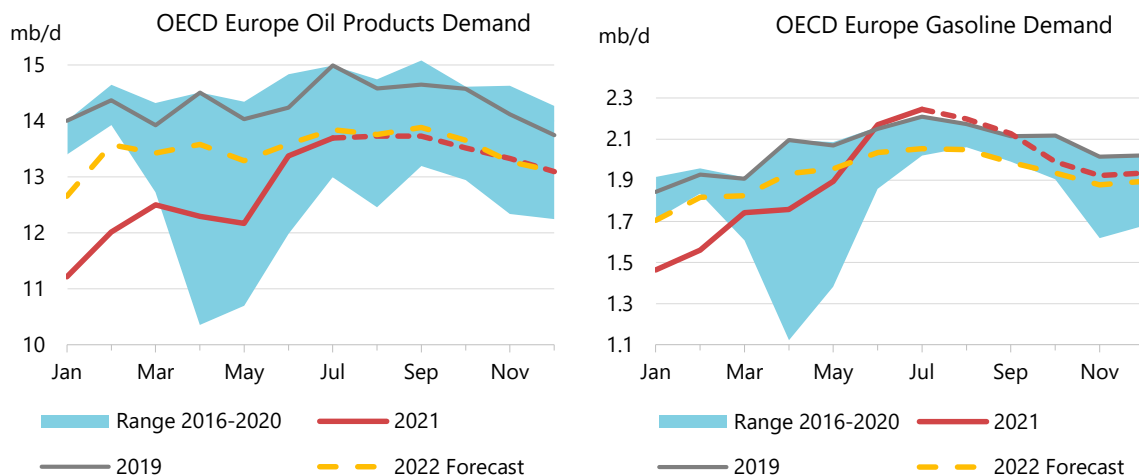
We forecast a seasonal dip in OECD Americas demand of 120 kb/d in 4Q21. Overall, demand should grow by 1.75 mb/d in 2021, before slowing to 800 kb/d in 2022.

OECD Europe

European oil demand grew by 320 kb/d in July, supported by increased travel during the summer vacation period after most Covid restrictions were lifted. We expect total oil consumption to grow by 40 kb/d in August to 13.7 mb/d. However, transport fuel demand remained strong in August.

Oil demand growth should come to an end in September, reflecting lower economic activity and seasonal factors. IHS Markit's Eurozone Manufacturing PMI fell from 61.4 in August to 58.6 in September. Supply constraints continued to restrain production, with shortages of electronic and raw materials reported by large manufacturers. Mobility declined seasonally in September after the summer vacations ended but remained above 2020 levels.

Jet kerosene demand increased by 175 kb/d in July and a further 150 kb/d m-o-m in August, to 1.08 mb/d. In August, passenger seat capacity grew by 6-8% in most of Europe, with the exception of the UK registering a robust 31% increase. In September, passenger seat capacity declined by 15% m-o-m in France, but rose by 1.4% in Germany and 10% in the UK, data from OAG showed. European air traffic is recovering only slowly compared to America, and passenger seat capacity in September remained 40% to 50% lower than pre-Covid levels. Globally, European jet kerosene demand is expected to increase by 345 kb/d q-o-q in 3Q21, to 1 mb/d – still some 730 kb/d below pre-Covid levels.



Gasoline demand is expected to increase by 250 kb/d q-o-q in 3Q21. Pent-up demand, high household savings, fear of using public transportation and low air traffic availability supported gasoline demand during the summer. Mobility data show that, while declining seasonally, September travel remained at high levels. After the vacation period, teleworking, high gasoline prices are likely to slow the growth in gasoline consumption.

Overall, gasoil demand grew by 420 kb/d in 2Q21 and is expected to expand by 260 kb/d in 3Q21. European manufacturing indicators are very positive and should support gasoil growth for the remainder of the year. In addition, the very high levels of natural gas prices should lead to additional use of gasoil in industry and in the generation of electricity.

European oil demand is now projected to rise by 1.1 mb/d q-o-q in 3Q21. Demand should then decline seasonally by 410 kb/d q-o-q in 4Q21. For 2021 as a whole, we forecast OECD European oil demand to increase by 460 kb/d and in 2022 rise by a further 570 kb/d.

OECD Asia Oceania

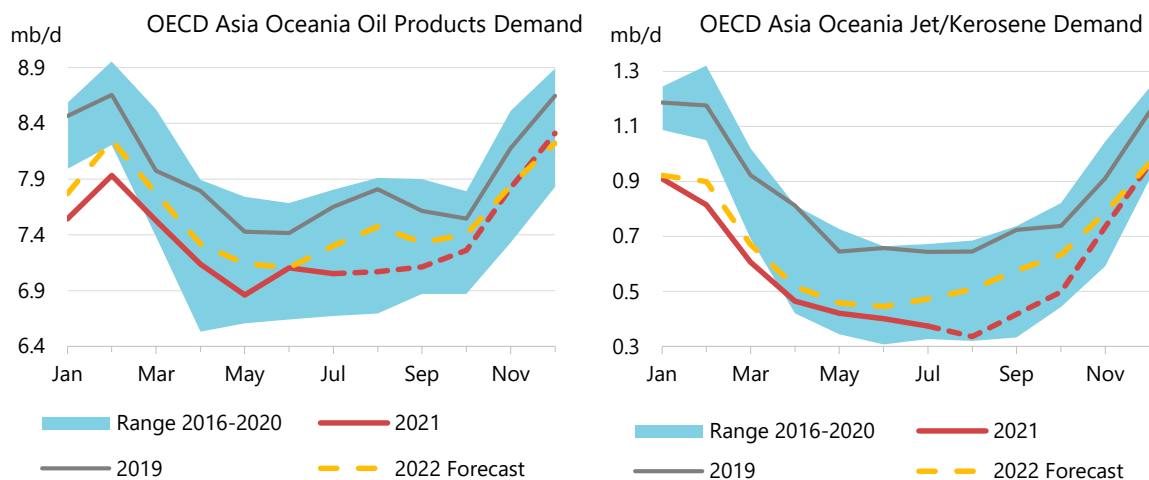
Asia Oceania oil deliveries posted very little change in July and August, decreasing by 55 kb/d m-o-m in July and remaining relatively steady in August (-10 kb/d m-o-m). In July, demand rose 60 kb/d in Japan but dropped 55 kb/d in Korea and 90 kb/d in Australia. The Covid situation in the OECD Asia Oceania region improved in September and Australia's Manufacturing PMI rose from 52 in August (a 14-month low) to 56.8 as manufacturers better adapted to Covid restrictions.

Preliminary data for Japan point to a stagnation m-o-m in August after a small increase in July, reflecting the impact of Covid restrictions on mobility. Covid-19 cases have been declining sharply in recent weeks, allowing the lifting of measures taken to contain the spreading of the virus. Japan's oil demand is expected to increase by 50 kb/d q-o-q in 3Q21 (while in the past demand usually posted a 100-150 kb/d growth).

Japan passenger seat capacity rose by 12% m-o-m in August and declined by 11% in September. Capacity remained 52% below September 2019 levels.

In Japan, very high LNG prices are expected to contribute to increased use of oil in power generation. In our forecast we have factored in 20 kb/d additional fuel oil demand in 4Q21 and 1Q22 as well as 50 kb/d more direct crude use.

Following a 45 kb/d q-o-q decline in 2Q21, Korean oil demand will increase 65 kb/d in 3Q21 (not far off historical seasonality). In this forecast we assumed that the exceptional rise in LNG prices should boost fuel burning in power generation by 20 kb/d in 4Q21 and 1Q22. Australian oil demand rose slightly q-o-q in 2Q21 (60 kb/d) to 1.1 mb/d and is forecast to decline by 85 kb/d in 3Q21.



For OECD Asia Oceania as a whole, we project demand to remain flat q-o-q in 3Q21 (+30 kb/d). Demand should then climb by a sharp 720 kb/d q-o-q in 4Q21 (part of it will be seasonal), as Covid comes under better control. Demand is forecast to rise by 250 kb/d y-o-y in 2021 and by 180 kb/d in 2022.

Non-OECD

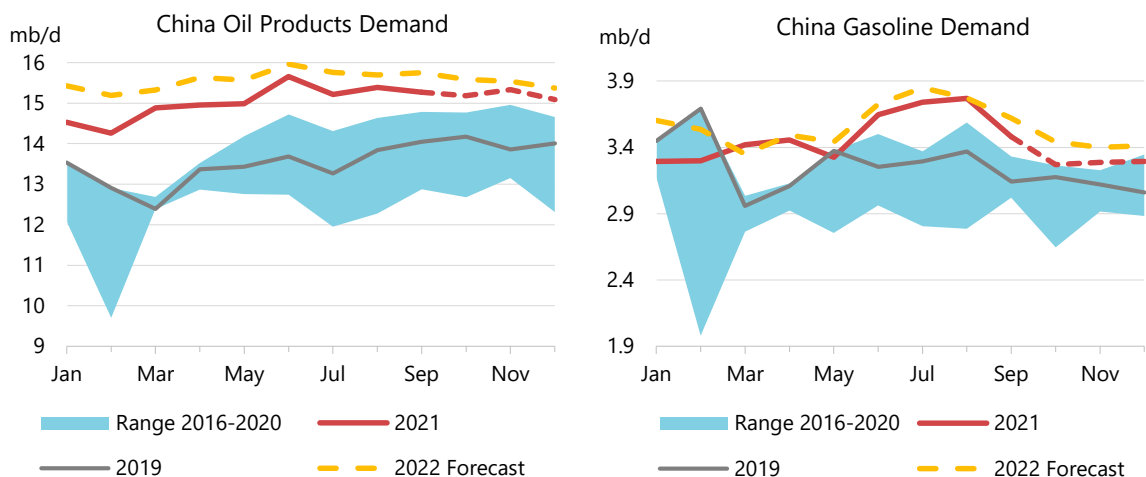
Overall, non-OECD oil demand rose by 330 kb/d in August, following the typical seasonal trend. Strong growth in China (+170 kb/d) and the Middle East (+190 kb/d), principally driven by

increased use of oil in Saudi Arabian power generation, counteracted drops in Africa (-50 kb/d) and other non-OECD Asia (-80 kb/d). While the wave of recent lockdowns in Asian countries had a strong impact on demand in some countries, this was less severe than anticipated, especially in China. As a result, we have increased our average 2021 demand outlook for non-OECD countries to 51.8 mb/d, 3.1 mb/d higher than 2020 and 20 kb/d above 2019 levels.

China

China has been particularly impacted by energy shortages. The Caixin Manufacturing PMI showed a stagnation in manufacturing activity, rising to 50 in September from 49.2 in August. Due in large part to coal and power shortages, Oxford Economics has cut its China GDP y-o-y growth forecast in 4Q21 from 5% to 3.6%. For the year as a whole, China's GDP is now expected to grow by 8% in 2021, before slowing to 5.4% in 2022.

August oil demand in China increased by 170 kb/d from July, despite widespread local lockdowns in response to renewed Covid-19 outbreaks. Several Chinese provinces imposed additional restrictions in July and August, with many of these lasting into September. Unexpectedly, demand increased very strongly for gasoil (+460 kb/d m-o-m) and slightly for gasoline (+30 kb/d m-o-m), while jet/kerosene demand slumped (-270 kb/d m-o-m).



Data from the University of Oxford indicates that the new restrictions primarily affected long-distance travel and public events and gatherings, but had considerably less impact on schools or workplaces with relatively limited stay-at-home orders. This is reflected in a reduced level of aviation activity during recent months as shown by OAG data from, remaining below 2020 levels in both August (-23%) and September (-6.8%).

Chinese demand is estimated to decline by 120 kb/d m-o-m in September, but still hold 480 kb/d higher on a year ago. This fall from August is partly driven by the higher prices and lower GDP growth. Gasoline demand is expected to fall (-290 kb/d m-o-m), also reflecting typical seasonality, with gasoil lower too (-100 kb/d m-o-m).

Provisional overall 3Q21 demand rose 90 kb/d q-o-q and by a steep 720 kb/d from 3Q20, primarily driven by very strong road fuel demand. We expect 4Q21 demand to be 90 kb/d lower q-o-q, with reduced gasoline demand outweighing a recovery in jet/kerosene and a seasonal increase in naphtha and LPG.

China: Demand by Product								
(thousand barrels per day)								
	Demand				Annual Chg (kb/d)		Annual Chg (%)	
	2019	2020	2021	2022	2021	2022	2021	2022
LPG & Ethane	1 737	1 837	2 128	2 194	290	66	15.8	3.1
Naphtha	1 338	1 444	1 610	1 713	166	103	11.5	6.4
Motor Gasoline	3 248	3 195	3 441	3 554	246	113	7.7	3.3
Jet Fuel & Kerosene	857	702	782	839	80	57	11.4	7.3
Gas/Diesel Oil	3 052	3 150	3 460	3 510	310	50	9.8	1.4
Residual Fuel Oil	432	433	524	542	91	18	21.0	3.4
Other Products	2 881	3 076	3 122	3 217	46	96	1.5	3.1
Total Products	13 546	13 837	15 067	15 570	1 230	502	8.9	3.3

We expect strong fuel oil demand to continue into 4Q21 and 1Q22, with consumption for power generation boosted by shortages of coal and high spot LNG prices. This will also support gasoil/diesel demand for use in local back-up generators. We have assumed 50 kb/d of additional fuel oil demand and 50 kb/d of gasoil.

Overall demand for 2021 is expected to be up by 8.9% (+1.2 mb/d) over 2020 levels and 11.2% higher than 2019. Average annual demand for 2022 is forecast to increase by 3.3% (+500 kb/d) from 2021 and 14.9% above the level of 2019.

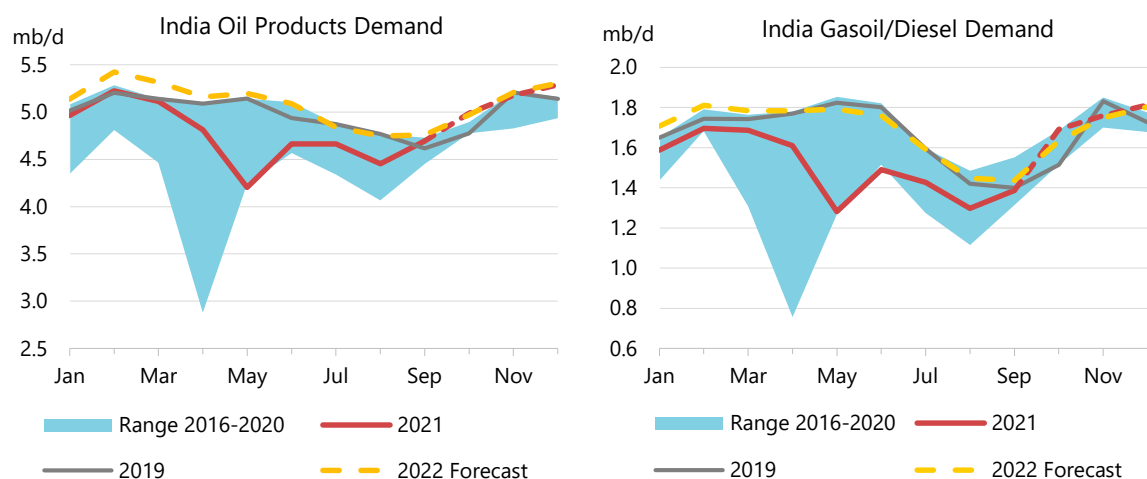
India

Overall oil deliveries in India fell seasonally with the monsoon in August (-210 kb/d m-o-m). Demand is set to rebound by 240 kb/d in September, again reflecting typical seasonal developments. Having been 130 kb/d lower m-o-m in August, gasoil demand rebounded by 90 kb/d in September. Overall demand for September was 80 kb/d higher than in September 2019. This apparent strength is primarily due to the unprecedented length of the 2019 monsoon season, which lasted several weeks longer than usual, rather than an indication of strong underlying demand.

Deliveries in 3Q21 increased by 50 kb/d q-o-q, with second quarter demand weighed down by Covid restrictions. Growth should quicken in 4Q21, to 550 kb/d q-o-q, supported by resurgent gasoil and seasonal LPG demand. We expect 4Q21 deliveries to punch above pre-pandemic levels.

Mobility data agrees with the considerable recovery observed in road fuel demand, although it does not indicate clear growth from 2019 levels. Information from *TomTom* suggests that traffic congestion in major Indian cities remains well below the level of 2019. Data from *OAG* shows a significant uptick in flights, at 19% higher m-o-m (+93% y-o-y) for August and 2.3% higher in September. This can be seen in the recent partial recovery in jet/kerosene demand (+20 kb/d m-o-m in each of August and September).

The global shortages gripping gas and coal markets appear to be having a particularly acute impact in India. Coal stocks at India's power plants are reported to be at very low levels. This has forced several plants to close because of a lack of fuel, with electricity supply insufficient to meet demand. While these concerns weigh on expectations of economic growth, they also boost our forecast for oil demand with substantial quantities of additional gas/diesel oil expected to be used in smaller generators by businesses, hospitals and public buildings.



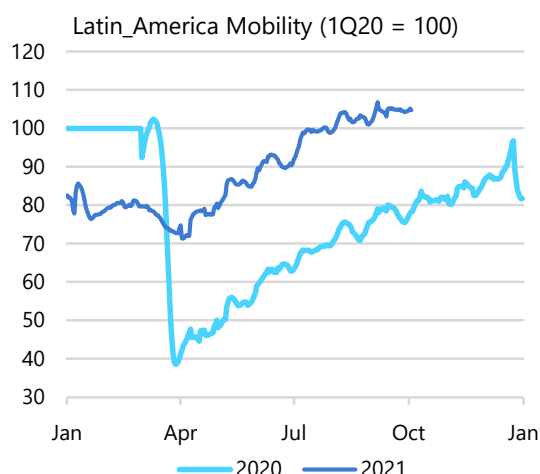
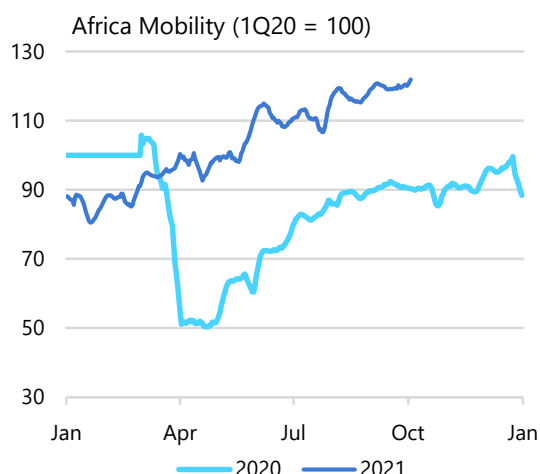
Our forecasts for both 2021 and 2022 demand are now slightly higher than in our September Report. This is primarily because of higher gasoil and naphtha demand. Projected average 2021 is now estimated to be 140 kb/d below the 2019 level while 2022 demand will surpass the level of 2019 by 100 kb/d, while 2021 is now estimated to be 140 kb/d below the 2019 level. Average 2022 deliveries for most products are forecast above their 2019 equivalents, with only jet/kerosene lower amongst the major products.

India: Demand by Product								
(thousand barrels per day)								
	Demand				Annual Chg (kb/d)		Annual Chg (%)	
	2019	2020	2021	2022	2021	2022	2021	2022
LPG & Ethane	837	871	894	922	23	27	2.7	3.1
Naphtha	308	319	325	318	6	- 7	1.9	-2.1
Motor Gasoline	734	667	741	750	74	9	11.1	1.2
Jet Fuel & Kerosene	225	120	134	189	14	55	11.7	41.1
Gas/Diesel Oil	1 667	1 414	1 560	1 691	146	131	10.3	8.4
Residual Fuel Oil	145	138	145	151	7	5	5.2	3.7
Other Products	1 076	1 008	1 052	1 073	44	22	4.3	2.1
Total Products	4 991	4 536	4 851	5 094	314	243	6.9	5.0

Other Non-OECD

African and Latin American economies appear to be improving. IHS Markit Brazil Manufacturing PMI rose to 54.4 in September from 53.6 in August as Covid restrictions eased and demand picked up. Recent data show a stabilisation in mobility in September in both regions after a strong increase from April through August. Economic activity is accelerating in these countries with Brazilian GDP growth in 2021 expected to reach 5.2% while growth in Argentina should average 7.6%.

In **Africa**, we estimate that 3Q21 saw an 80 kb/d slowing of demand q-o-q. 3Q21 was about 130 kb/d higher than the same period in 2020, but 280 kb/d lower than 3Q19.



Brazilian oil deliveries dipped by 10 kb/d m-o-m in August. Gasoil demand was slightly higher while gasoline demand was a little lower. Compared with the same period in 2019, August demand was about 20 kb/d stronger. The hydro-electricity problems currently affecting the country have led us to assume an additional 70 kb/d of demand during 4Q21 and 1Q22, divided between gasoil and fuel oil, reflecting greater use of oil-fired capacity and small generators.

In **Argentina**, overall August oil demand decreased in line with its typical seasonality, falling by 30 kb/d. August oil deliveries were 40 kb/d higher than August 2020, but 20 kb/d lower than August 2019. Nevertheless, 3Q21 demand was only 1.2% lower than in 3Q19.

Non-OECD: Demand by Region

(thousand barrels per day)

	Demand			Annual Chg (kb/d)		Annual Chg (%)	
	3Q19	1Q21	2Q21	3Q21	2Q21	3Q21	2Q21
Africa	4 136	4 068	3 932	3 853	522	133	15.3
Asia	27 267	28 185	28 167	27 951	2 767	1 108	10.9
FSU	4 902	4 557	4 681	4 900	630	247	15.5
Latin America	6 384	5 845	5 899	6 207	912	508	18.3
Middle East	8 659	7 669	7 795	8 373	709	195	10.0
Non-OECD Europe	797	743	739	799	59	33	8.7
Total Products	52 144	51 067	51 213	52 083	5 598	2 225	12.3

August oil demand for **Pakistan** was up 5 kb/d compared with July and 90 kb/d higher than August 2019. For the year as a whole, we now forecast 2021 to exceed pre-pandemic 2019 levels by 9% (+40 kb/d). Recent data show that record spot LNG prices are boosting fuel oil requirements in the Pakistani power sector, with August fuel deliveries above 100 kb/d vs. 65 kb/d in 2020.

Saudi Arabian demand continued its recent increase in July, to 40 kb/d higher than June. Growth in July was overwhelming the result of increased consumption of crude oil in the power sector, necessitated by very high temperatures. There was a substantial shift (which we estimate to have been about 170 kb/d) away from fuel oil for this application, in favour of direct crude use.

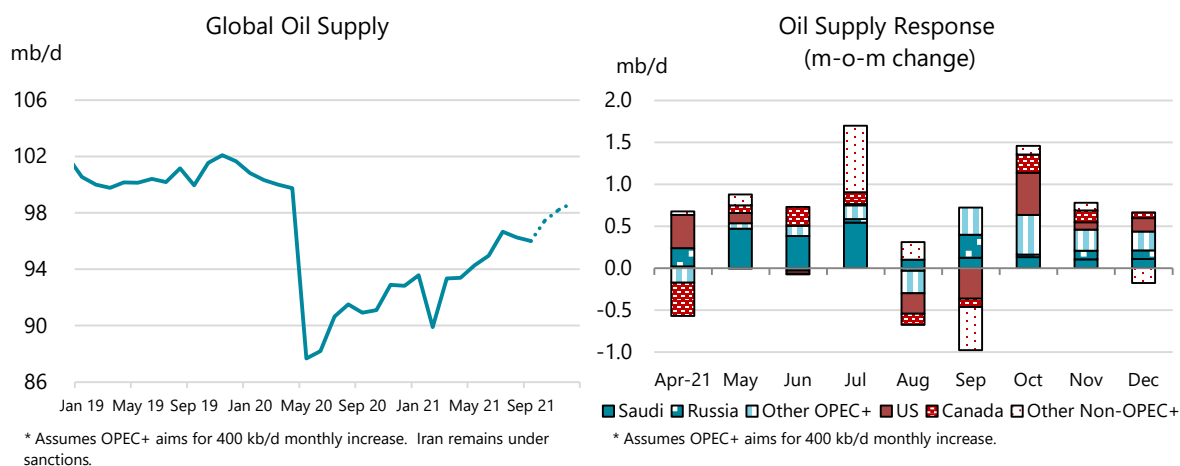
Supply

Overview

The growth trajectory in global supply resumed in October just as the prospect of higher fuel use amid the worsening energy crisis propelled crude oil prices above \$80/bbl. World oil production is expected to rise by a steep 2.7 mb/d from September to the end of this year. OPEC+ oil supply makes up 1.5 mb/d of this increase, while output from outside the alliance (non-OPEC+) accounts for roughly 1.2 mb/d.

After a second month of declines in September, global oil supply is ramping up as the US bounces back from Hurricane Ida, field maintenance elsewhere winds down and OPEC+ implements its monthly increases. Oil output is now on a path to hit pre-Covid-19 rates in 1H22, barring any unanticipated disruptions.

Total oil production fell 260 kb/d month-on-month (m-o-m) in September to 96 mb/d, led by steeper losses in the US from Hurricane Ida along with reduced flows from maintenance in Canada and Norway and seasonally lower output of biofuels. A substantial boost from OPEC+ was not enough to compensate for nearly 1 mb/d of lost output from outside the alliance. Total OPEC+ oil production, including condensates and NGLs, rose 720 kb/d as Russian condensate output recovered from a fire, Kazakhstan emerged from maintenance and the bloc further eased its historic 2020 curbs. World supply in September was up 5.1 mb/d year-on-year (y-o-y).



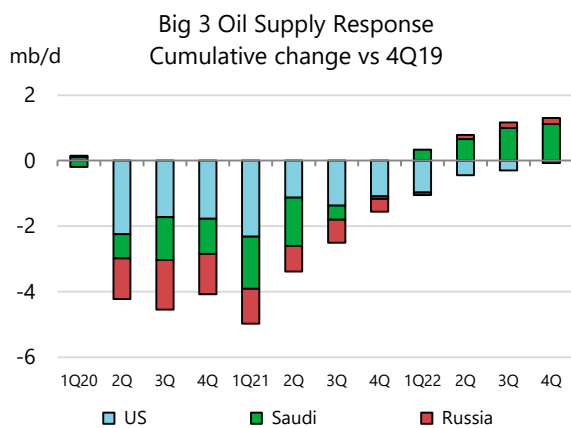
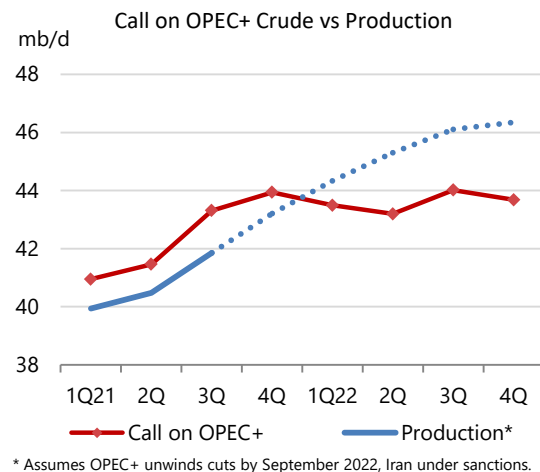
At their monthly meeting in early October, OPEC+ ministers reconfirmed a 400 kb/d increase for November 2021 despite calls from the US and other major consuming countries to boost supply more significantly. They are due to convene again on 4 November.

Global oil output for 2021 is now set to expand by an average 1.4 mb/d. OPEC+ accounts for 1 mb/d and non-OPEC+ for 390 kb/d, compared to declines of 5.5 mb/d and 1.3 mb/d, respectively, in 2020.

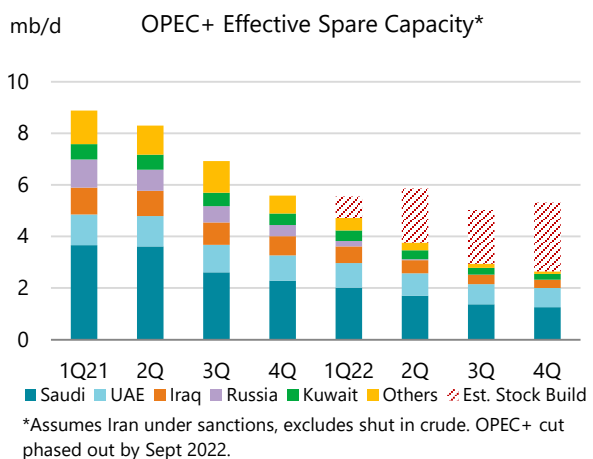
Despite higher anticipated flows from OPEC+, our balances suggest the producer group will still pump 700 kb/d below the requirement for its crude during the fourth quarter. However, if OPEC+ continues to unwind its cuts, the bloc could pump 800 kb/d above the call on its crude in 1Q22, assuming Iran remains under sanctions. By 2Q22, OPEC+ crude oil output could rise to 2.1 mb/d above the call. These possible stock builds in 2022 could offset the extended period of inventory draws that are expected to last until the end of 2021.

Higher flows from OPEC+ and those outside the bloc could see world oil supply expand by more than 6 mb/d in 2022. We anticipate a smaller impact from maintenance compared to the lengthy outages this year due to the difficult operating environment caused by Covid-19. That should help non-OPEC+ to deliver gains of 1.8 mb/d, with the US accounting for 56% of the overall growth. Canada, Brazil and Norway will also post increases as output is restored and new projects ramp up. And if OPEC+ were to unwind its cuts fully, the bloc could end up pumping around 4 mb/d more than in 2021.

While the world's 'Big Three' oil producers – the US, Saudi Arabia and Russia – are all expected to post strong growth in 2022, the US will only get close to pre-Covid rates towards the end of next year. In sharp contrast, Saudi oil production is expected to rise above pre-Covid rates by the first quarter of 2022. Russian oil output could rise 120 kb/d above 4Q19 during the second quarter, but further upside would require increased investment in drilling.



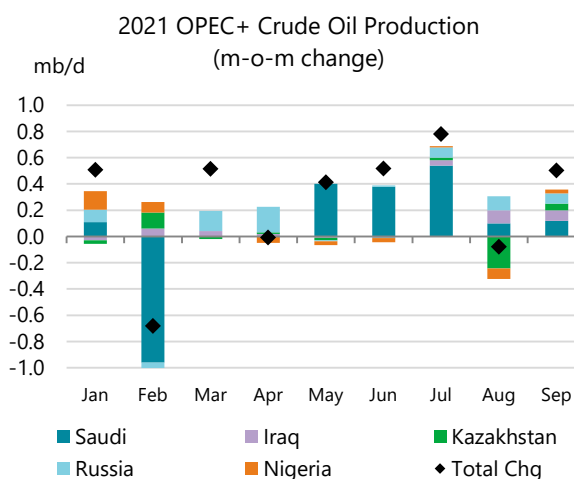
* Assumes OPEC+ aims for monthly 400 kb/d increase.



As OPEC+ unwinds its cuts, the Middle East will straddle virtually all of the bloc's remaining spare production capacity. From 1Q21 when there was 9 mb/d of effective spare capacity, the group's cushion falls below 5 mb/d in 1Q22 and under 4 mb/d in 2Q22. By then, spare capacity is held primarily by Saudi Arabia, the UAE, Iraq and Kuwait. Russia will be pumping flat out, based on our crude oil capacity estimate of 10.45 mb/d. Given our current 2022 demand forecast, global stocks could potentially build by 800 kb/d in 1Q22, 2.1 mb/d in 2Q22 and 2.4 mb/d in 2H22. In addition, if and when Iranian sanctions are eased, our assumption is that shut-in capacity of 1.3 mb/d could return to the market in short order.

Saudi, Russia, Iraq drive OPEC+ boost

OPEC+ crude oil supply rose 500 kb/d in September to 42.2 mb/d, led by higher output from Saudi Arabia, Iraq and Russia. Kazakhstan also saw a solid gain as it emerged from maintenance. Most other producers party to the supply pact delivered modest increases. Overall compliance with the output targets was 116%, with operational constraints in some members such as Angola, Nigeria and Malaysia preventing OPEC+ from delivering its full allotted increases. Should additional quantities be needed in the coming months, Middle East producers and Russia are likely to fill the gap.



	Aug 2021 Supply	Sep 2021 Supply	September Compliance	Sep 2021 Target	Oct 2021 Target	Sustainable Capacity ²	Spare Cap vs Sep
Algeria	0.92	0.94	94%	0.93	0.94	1.01	0.07
Angola	1.13	1.11	232%	1.35	1.36	1.19	0.08
Congo	0.26	0.25	197%	0.29	0.29	0.29	0.04
Equatorial Guinea	0.10	0.10	180%	0.11	0.11	0.12	0.02
Gabon	0.18	0.20	-59%	0.17	0.17	0.21	0.01
Iraq	4.07	4.15	92%	4.11	4.15	4.93	0.78
Kuwait	2.44	2.47	102%	2.48	2.51	2.97	0.50
Nigeria	1.24	1.27	260%	1.61	1.63	1.68	0.41
Saudi Arabia	9.56	9.68	102%	9.70	9.81	12.18	2.50
UAE	2.77	2.80	99%	2.80	2.83	3.83	1.03
Total OPEC-10	22.67	22.97	118%	23.54	23.79	28.41	5.44
Iran ³	2.42	2.46				3.80	1.34
Libya ³	1.15	1.15				1.18	0.03
Venezuela ³	0.57	0.57				0.58	0.01
Total OPEC	26.81	27.15				33.97	6.82
Azerbaijan	0.60	0.59	148%	0.63	0.64	0.63	0.04
Kazakhstan	1.28	1.33	187%	1.51	1.52	1.65	0.32
Mexico ⁴	1.62	1.65		1.75	1.75	1.67	0.02
Oman	0.76	0.76	114%	0.78	0.79	0.87	0.11
Russia	9.73	9.81	92%	9.70	9.81	10.36	0.55
Others ⁵	0.86	0.86	188%	0.98	0.99	0.95	0.09
Total Non-OPEC	14.85	15.01	113%	15.35	15.50	16.13	1.12
OPEC-10 + Non-OPEC⁴	37.52	37.98	116%	38.89	39.29	44.54	6.56
Total OPEC+	41.66	42.16				50.10	7.94

1 Excludes condensates.

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

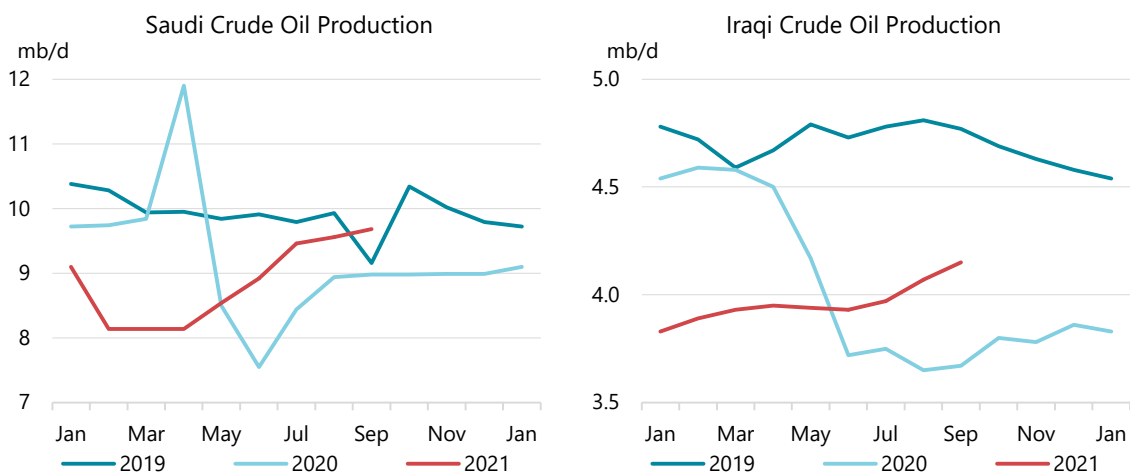
3 Iran, Libya, Venezuela exempt from cuts.

4 Mexico excluded from OPEC+ compliance. Only cut in May, June 2020.

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

Output of crude from the OPEC members rose 340 kb/d in September to 27.15 mb/d, with Saudi Arabia and Iraq continuing to lead production gains. Driven by Russia, crude flows from the group's non-OPEC countries rose 160 kb/d to 15.01 mb/d. In line with its agreement, the bloc will further ease curbs for October, with cuts versus baseline production at 4.6 mb/d compared to the record 9.7 mb/d when they were first enforced in May 2020.

Saudi Arabia delivered the biggest increase in September, pumping 9.68 mb/d (+120 kb/d m-o-m and +700 kb/d y-o-y), slightly below its higher September quota. Saudi crude exports to world markets edged up to 6.4 mb/d, according to *Kpler* data. As per the new OPEC+ deal, the kingdom's supply target in October will rise to 9.81 mb/d, which would leave 2.4 mb/d to spare. Despite having an ample spare cushion now, Saudi Aramco is aiming to bolster its crucial position in the oil market by boosting production capacity from 12 mb/d to 13 mb/d by 2027, excluding the Neutral Zone shared with Kuwait. Aramco CEO Amin Nasser said the phased expansion will include existing and new fields, with an emphasis on the offshore. The phased project is now in the front-end engineering and design (FEED) stage, which will take about two years to finish.



Supply from **Iraq**, including the Kurdistan Regional Government, rose 80 kb/d to 4.15 mb/d (+480 kb/d y o y) – slightly above its September quota. A substantial boost in northern exports pushed up total Iraqi shipments of crude by 120 kb/d to 3.5 mb/d, the highest since May 2020. On the upstream front, Baghdad, which struck a \$27 billion deal with TotalEnergies to develop projects in the south, has given the all clear for the Iraqi National Oil Co (INOC) to take a 40% stake as a financing partner. INOC and state Dhi Qar Oil Co are meanwhile in talks with Chevron to develop exploration blocks in Nasiriyah in the southern province of Dhi Qar.

Crude oil production also rose elsewhere in the Gulf during September. **Kuwaiti** output increased by 30 kb/d to 2.47 mb/d, a gain of 170 kb/d y-o-y. As it pushes ahead with capacity expansion plans, Kuwait Oil Co has brought online a new 100 kb/d gathering centre in the north of the country. Production in the **UAE** increased by a similar amount to reach 2.8 mb/d. Crude output in **Oman** rose marginally to 760 kb/d while production from **Bahrain** held broadly steady at 180 kb/d.

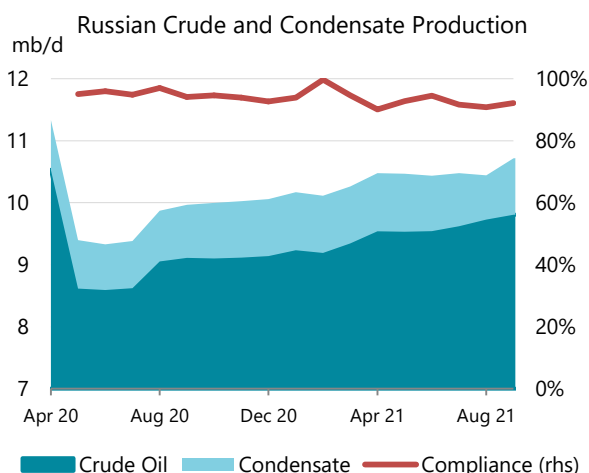
Supply from **Iran**, exempt from output cuts, edged up 40 kb/d m-o-m to 2.46 mb/d in September, and was up 480 kb/d on a year ago. As for exports, Iran's estimated crude oil sales to China have risen to around 600 kb/d on average during the first nine months of this year compared to 300 kb/d in the same period in 2020. That is still far below the 2.5 mb/d of oil, including condensates, that Iran was shipping before the US re-imposed sanctions in 2018. For September, tanker tracking shows shipments to China rising above 500 kb/d from roughly 350 kb/d the previous month.

A stronger recovery in Iranian exports and production hinges on progress in talks to revive the 2015 Joint Comprehensive Plan of Action nuclear deal with world powers. Those talks are currently stalled. An eventual agreement would allow for significantly higher Iranian production, likely after a period of two to six months. If sanctions are eased, we believe Iran will be able to

ramp up swiftly towards sustainable production capacity of 3.8 mb/d. Iran also has about 53 mb of crude and condensate stored on tankers (versus 59 mb in August) along with around 73 mb stored on land (versus 78 mb in August). Iran's oil sector is meanwhile undergoing a reshuffle, with Oil Minister Javad Owji tapping Mohsen Khojasteh Mehr, a former deputy minister for planning, as head of the National Iranian Oil Co (NIOC).

Crude supply from **Russia** rose 80 kb/d in September to 9.81 mb/d, with compliance holding at 92%. Bashneft, Slavneft and Lukoil drove the increase in crude production. Total oil supply, including condensates and NGLs, climbed by 275 kb/d m-o-m to 11.06 mb/d, the highest since April 2020, after condensate output nearly recovered to July levels following a fire at a Gazprom processing plant in West Siberia in August. Total condensate production for September rose 200 kb/d m-o-m to 910 kb/d.

As per the OPEC+ pact, Russia's crude oil supply target will rise by around 100 kb/d per month. In that case, Russia will have to hold crude oil supply steady in October to meet its target of 9.8 mb/d.

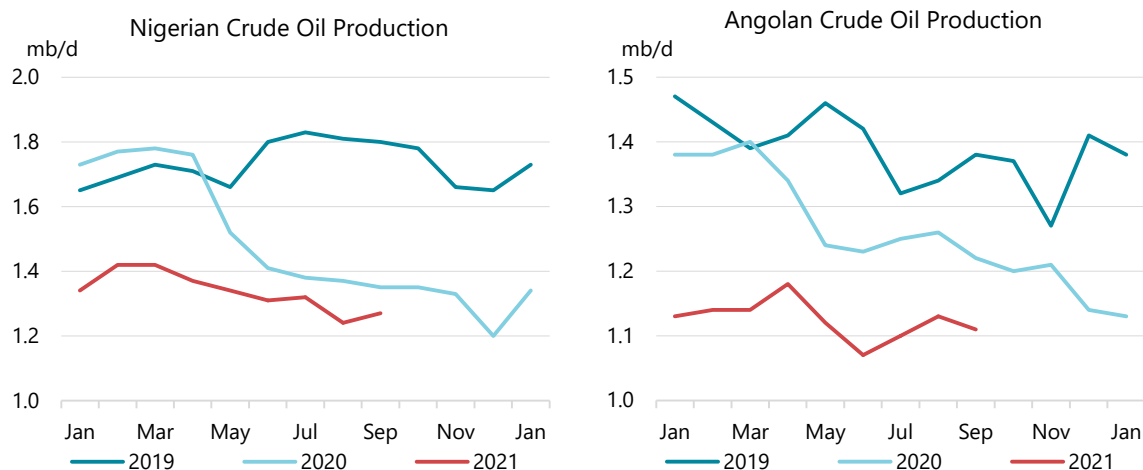


Kazakh output rose 50 kb/d to 1.33 mb/d in September as maintenance at the Tengiz oil field wound down. Early indications are that production this month should return to pre-maintenance rates of roughly 1.5 mb/d. Scheduled work at Tengiz began at the start of August and was due to finish by 10 September. In the longer term, a project to expand Tengiz output to 850 kb/d from current rates of roughly 550 kb/d has been delayed to as late as mid-2024. If all goes to plan, production from the giant Kashagan oil field, the second largest source of CPC crude blend, is due to reach 500 kb/d from August 2022 after modernisation and a maintenance shutdown. The field is now pumping just over 300 kb/d.

Crude supply from **Azerbaijan** dipped to 590 kb/d due to scheduled maintenance on the Chirag platform that began on 23 September. Production is set to slip further this month with maintenance set to run until 18 October. The Chirag platform pumps around 30 kb/d from the Azeri-Chirag-Guneshli (ACG) fields in the Caspian Sea. As a result of the maintenance, loadings of Azeri BTC crude oil from the Turkish Mediterranean were set at 475 kb/d in October compared to 510 kb/d in September. Elsewhere in the offshore, Lukoil purchased a 25% share in the Shallow Water Absheron Peninsula (SWAP) exploration venture from operator BP. It will also spend \$2.25 billion to buy a share in the Shah Deniz gas and condensate field from Petronas. The purchase of the 15.5% stake in the BP operated field is subject to approval by Socar. Shah Deniz is currently producing around 115 kb/d of condensate.

Combined production from African members of OPEC+ inched up during September. Production in **Nigeria** rose by 30 kb/d to 1.27 mb/d, down 80 kb/d on a year ago. Exports of crude rose sharply during September, but hefty volumes were drawn from storage due to ongoing technical problems with some operations. While supply from Forcados recovered, flows from Bonny Light fell. Other major crude streams such as Qua Iboe and Escravos have also been struggling with technical and operational issues.

Oil Minister Timipre Sylva has attributed production issues to technical problems from re-starting wells that were shut due to OPEC+ cuts and has said that output will rebound by November and through the end of the year. "When you shut down a reservoir, to restart it, sometimes there are challenges," Sylva was quoted as saying.



In **Angola**, crude oil output slipped by 20 kb/d in September to 1.11 mb/d, (-110 kb/d y-o-y) and 240 kb/d lower than its supply target due to maintenance. Stocks were drawn down in September to boost export levels. Production has been hovering around 17-year lows due to operational issues and lack of investment in the offshore. Eni, however, has had more success in the upstream. It has started up the Cabaca North field that will add 15 kb/d to output from deepwater Block 15/o6. It will be routed to the Olombendo floating production, storage and offloading (FPSO) vessel in the block's eastern hub. Cabaca North follows the August launch of its Cuica project that also flows to the eastern hub. Eni is also planning to start up the Ndungu field on the west of Block 15/o6. Crude oil supply edged up in **Algeria**, **Gabon** and **South Sudan**; held steady in **Equatorial Guinea** and **Sudan** and dipped in **Congo**.

Output in **Libya**, spared from official OPEC+ cuts, was largely unchanged at 1.15 mb/d, but still up 1.01 mb/d on a year ago. Libya's energy sector has been hit hard by a prolonged civil war, militant attacks, a lack of maintenance and chronic underinvestment. In the shorter term, National Oil Corp has an ambitious plan to boost output of oil, including condensates, to 1.5 mb/d this year from roughly 1.2 mb/d now. That effort will require rehabilitation of a number of fields in the eastern Sirte Basin, replacement of damaged storage tanks at the eastern Ras Lanuf and Es Sider terminals and repair of major pipelines.

For Latin American members, exempt from OPEC+ curbs, Mexican flows edged up while Venezuela saw production hold steady. **Mexican** crude supply rose 30 kb/d to 1.65 mb/d in September, following a fire that shut in output from the Ku-Maloob-Zaap (KMZ) fields in August. Total oil supply rebounded to 1.9 mb/d. Data from the Comisión Nacional de Hidrocarburos show KMZ supply falling 60 kb/d in August, with the outage seemingly having a lesser impact than previously indicated by Pemex directly following the incident. Production is forecast to hold steady in 4Q21 and gain 50 kb/d in 2022, supported by new flows from recent shallow water developments.

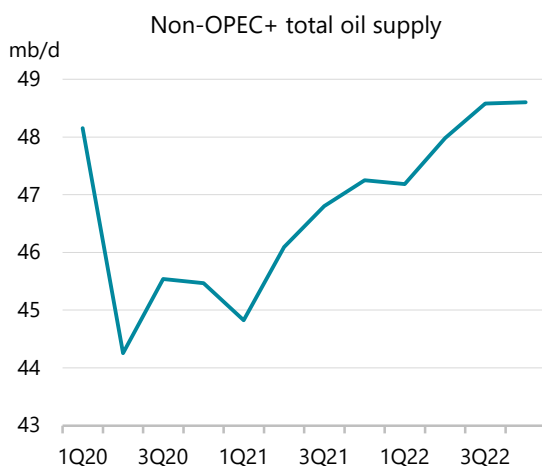
Crude oil supply in **Venezuela** was unchanged m-o-m at 570 kb/d, up 140 kb/d on a year ago. Petroleos de Venezuela (PDVSA) has reportedly resumed imports of Iranian fuel and condensate to help plug a shortage of gasoline and diesel to bolster output of upgraded crude oil in the vast Orinoco Belt.

In Asia, **Malaysia** looks set for a prolonged period of lower output following a leak in a compressor at the Gumusut-Kakap project offshore Sabah. The fault was reportedly found on a compressor that was shut in August during maintenance. During September, crude oil production crept up to 390 kb/d, down 45 kb/d y-o-y. In **Brunei**, crude supply slipped to 80 kb/d.

Non-OPEC+ dips, strong growth ahead

Supply from countries not party to the OPEC+ agreement (non-OPEC+) plunged by 980 kb/d m-o-m in September (+90 kb/d y-o-y). At 46.1 mb/d, production was the lowest since April 2021 and over 2 mb/d below pre-Covid-19 levels (4Q19 was 48.5 mb/d). The causes of the output dip were temporary or seasonal, with a strong recovery in non-OPEC+ supply likely already underway in October and expected to continue into 2022.

By end-September it was clear that, in terms of shut-in volumes, Hurricane Ida was the most significant storm to hit the US Gulf Coast in over 10 years. Ida passed through the Gulf of Mexico (GoM) in late August but the prolonged shutdowns triggered by the storm made a much larger



dent in September supply. By early October, over 95% of GoM supply was back online with the remaining 70 kb/d of outages likely to linger into 1Q22. Elsewhere, planned maintenance cut into production in Norway and Canada while seasonally declining Brazilian ethanol led a drop in biofuels output.

Non-OPEC+ supply is forecast to rise by 1.2 mb/d in 4Q21 to 47.3 mb/d by December. The post-Ida recovery in the US will be supported by growth in the shale patch. Expanded takeaway capacity in Canada will allow flows to

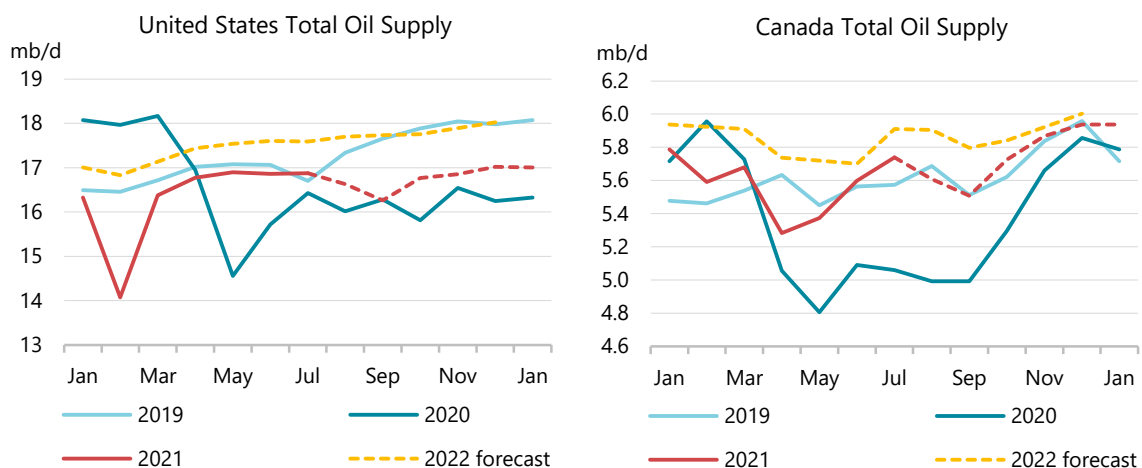
return to record highs, while new projects ramp up in Norway and Brazil. Annual gains of 390 kb/d for non-OPEC+ in 2021 will accelerate to 1.8 mb/d in 2022. This assumes that next year US producers step up spending to allow light tight oil output (LTO) to grow by 620 kb/d y-o-y (from 120 kb/d in 2021). It is also expected that global flows in 2022 will suffer less disruption from unexpected outages and prolonged maintenance. These have been a feature of 2021 due to the difficult operating environment caused by Covid-19 and as firms perform catch-up maintenance delayed by the pandemic in 2020.

US supply plunged 370 kb/d in September to an estimated 16.3 mb/d. This was the first time production has slipped below 2020 levels since April. Logistical disruptions, power cuts and port closures in the wake of Hurricane Ida kept an average of 44% of GoM supply offline. By early October, these issues were largely resolved. Damage to offshore facilities was minimal and quickly remedied, with most platforms now manned and production restored by the third week of September. However, Shell's WD-143 transfer station suffered "comprehensive damage" and will likely not be able to resume full operations before 1Q22. The GoM production forecast has been lowered by around 70 kb/d in 4Q21 and 1Q22 to reflect this. By early October, Ida had triggered total outages of over 33 mb, the largest supply losses caused by a storm since Hurricane Ike in 2008. Furthermore, the extended WD-143 downtime could see an additional 12 mb of outages by end 1Q22.

Fortunately, the recovery from Ida was little affected by Hurricane Nicolas which made landfall in Texas on 14 September. Other positive news for the GoM came as BP brought Thunderhorse Phase 2 online in late September. Supply from the first two wells will ramp up to 25 kboe/d, and in total, the eight-well project is expected to add 50 kb/d. When announcing first oil, BP reiterated its commitment to the GoM where it has a production goal of 400 kboe/d by the mid-2020s, up from around 300 kboe/d currently. According to BP, the region provides some of the most economic and lowest carbon intensity barrels in its global portfolio.

July data from the Energy Information Administration (EIA) show total US supply at 16.9 mb/d, flat m-o-m. While Alaskan supply dipped 60 kb/d m-o-m due to maintenance in the Prudhoe Bay area and at the Alpine field, Permian growth and higher GoM supply was sufficient to offset that. The Permian is expected to provide modest gains of 120 kb/d by year-end. Baker Hughes data show total US oil rig counts rising to 428 at the end of September, a 17-month high. Shell announced the sale of its Permian assets to ConocoPhillips. The \$9.5 bn deal, expected to close in 4Q21, will see the transfer of assets currently producing around 180 kb/d and marks Shell's exit from US shale.

The unusually large impact of Hurricane Ida means US supply is now expected to post a modest loss of 60 kb/d in 2021. In 2022, gains of 1 mb/d are underpinned by higher LTO (+620 kb/d), rising NGLs (+210 kb/d) and the ramp up of new supply from the GoM (+190 kb/d). Alaskan output will hold steady as new projects operated by ConocoPhillips offset declining flows from mature fields.



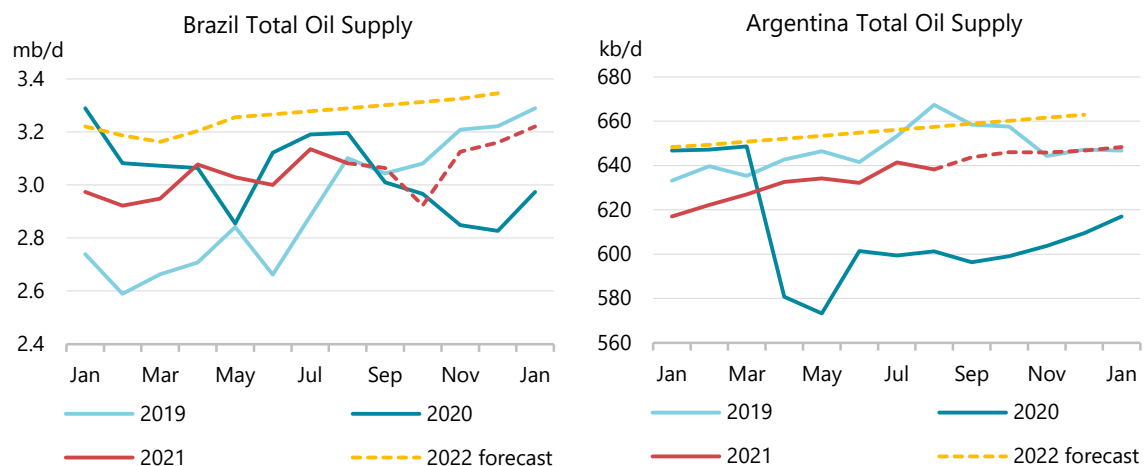
Seasonal maintenance at oil sand upgrading facilities caused a 100 kb/d m-o-m dip in **Canadian** supply, to 5.5 mb/d in September. This was the second monthly decline, with August flows hampered by the start of Suncor Base Plant scheduled maintenance. Data from the Albertan Energy Regulator show the province's output declining 70 kb/d m-o-m in August, to 4.1 mb/d.

Canada's offshore production fell to a seven-month low of 260 kb/d in August, according to the Offshore Petroleum Board, on weaker output from the Hebron field. Canada's offshore sector is expected to see the first annual decline in six years in 2021 (-10 kb/d y-o-y), however, hopes of a revival come as ExxonMobil announced that it will step up drilling activity at the Hebron and Hibernia fields. This follows the decision by Suncor Energy to restart production from the Terra Nova FPSO which is now expected back online in 4Q22. Furthermore, Cenovus is re-evaluating the 2020 mothballing of the 75 kb/d West White Rose project, and has agreed to sell part of its stake in the field should the project move forward.

Enbridge announced that the refurbished Line 3 pipeline would be in service from 1 October, after environmental challenges had repeatedly delayed the project. The pipeline, which transports crude from Canada to the US Midcontinent, has been returned to its 760 kb/d capacity, having operated at half this level in recent years. This new takeaway capacity will allow Canadian producers to increase output in 4Q21, along with the seasonal return of flows after maintenance. Despite challenges to other export pipeline projects, including repeated delays to the Trans Mountain pipeline expansion, there is expected to be sufficient pipe and rail export capacity to allow Canadian supplies to grow 220 kb/d in 2022, following gains of 290 kb/d in 2021.

Brazilian supply fell to around 3.1 mb/d in September (-20 kb/d m-o-m) according to daily data from the Agencia Nacional do Petroleo (ANP). Once again unplanned outages, this time in the Campos basin, disrupted flows. However, this was offset by new production from the Sepia field, which Petrobras brought online on August 24. ANP data for the first week of October show a steep drop in Santos basin production, at the Buzios and Lula fields. Scheduled maintenance has taken two Buzios FPSOs offline (these usually produce a combined 300 kb/d), and output from Lula's FPSO Cidade de Mangaratiba (usually producing 110 kb/d) fell to zero.

Supply has failed to return to pre-pandemic highs of over 3.2 mb/d in 2021 due to recurrent disruptions, partly caused by Covid-19 operational challenges. These issues are assumed to persist through 2021 with no growth expected for the year as a whole. However, strong gains of 200 kb/d are forecast for 2022. Along with rising flows from Sepia, Petrobras is expected to see first oil from the Mero field in 1Q22 while Equinor will restart the Peregrino field in 2Q22.



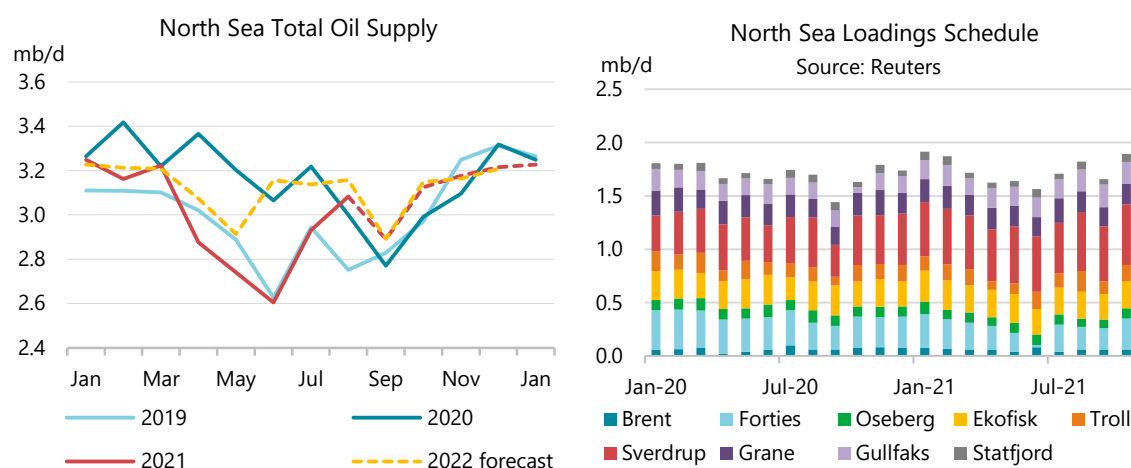
Government data show that the steady monthly gains seen in 2021 in **Argentina** stalled in August, when supply held at 640 kb/d (+40 kb/d y-o-y). This level was a 17-year high. Growth is thought to have returned in September and will continue to end-year, supported by high fracking activity in the Vaca Muerta play. Output is expected to reach 650 kb/d by end 2021, and rise a further 20 kb/d in 2022. State-owned YPF announced its spending plan for 2022, with investments of \$3.5 bn (+30% y-o-y). The firm sees the Vaca Muerta as key to its production growth targets but has also allocated some spending to stymie declines at mature assets.

Colombian supply dipped 10 kb/d to 750 kb/d in September. Output was little disrupted by the forced two-day shutdown of the 30 kb/d La Cira Infatas field, following a pipeline bombing by rebels. However, at end month labour union action saw road blocks restrict access to oil fields and, if these continue, more shut-ins may take place. Government data to August show supply rebounding following months where anti-government protests had disrupted operations.

However, in 2021 supply is on track to fall 50 kb/d, with very little progress toward achieving pre-pandemic levels of around 900 kb/d. In 2022, output is expected to slump a further 30 kb/d.

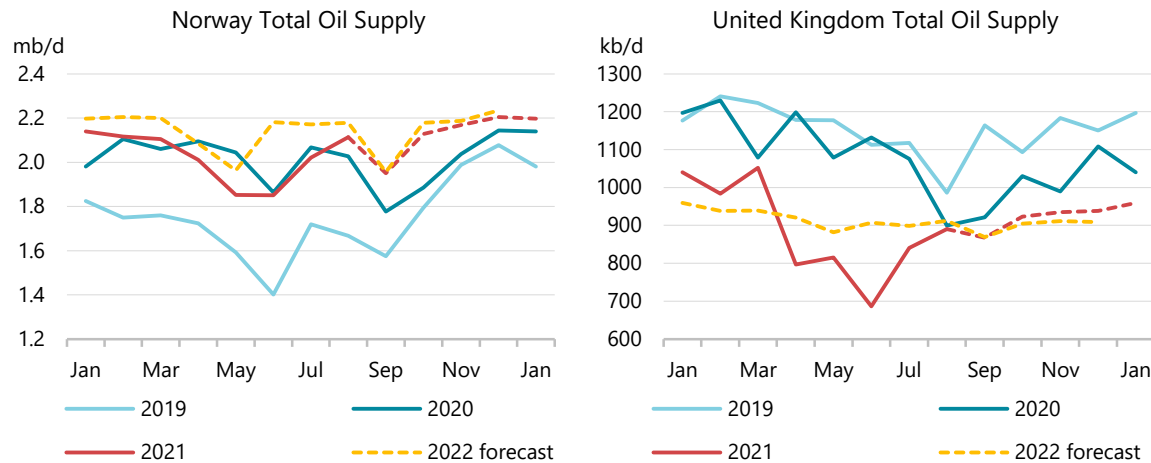
Supply in **Ecuador** has consistently hovered at around 500 kb/d in 2021, with easing to 480 kb/d expected in 2022. In **Peru**, output of around 120 kb/d in September was flat y-o-y. Increased production from Petrotal's Block 95 and Perenco's Block 67 offset the impact of shut-ins at northern fields.

In September, North Sea production fell by an estimated 190 kb/d m-o-m from a six-month high of 3.1 mb/d as seasonal maintenance reduced Norwegian output. Loading programmes for September show reduced exports of Troll, Johan Sverdrup and Statfjord streams. Preliminary loading schedules for October show regional supply rebounding to their highest since January 2021 as Norway's output returns and Forties exports gain 90 b/d m-o-m (to 290 kb/d). North Sea supply is forecast to rise to 3.2 mb/d at end-2021, however, for the year as a whole flows are down 140 kb/d following heavy maintenance and unplanned outages. New projects on stream in Norway will support a return to growth of 100 kb/d in 2022.



Preliminary data from the Petroleum Directorate indicate that **Norwegian** flows rose 90 kb/d m-o-m in August, to 2.1 mb/d, as output finally made a full recovery from protracted maintenance in 2Q21. A number of new projects have recently come online, such as Equinor's Martin Linge, Neptune Energy's Duva and Lundin's Solveig; or are due to start up in 4Q21, such as Repsol's Yme. These will contribute to Norway's 2022 gains of 90 kb/d, following growth of 50 kb/d in 2021. Several more Norwegian upstream projects are expected to get the green light by the end of 2022 thanks to temporary tax breaks introduced to support the industry during the pandemic.

Department of Business, Energy and Industry data for August show that **UK** supply rose 50 kb/d m-o-m to 890 kb/d. Despite the completion of heavy work programmes associated with the full shutdown of the Forties pipeline in May and June, supply is holding at around 140 kb/d below 1Q21 levels. Production is expected to creep up to 940 kb/d at end 2021. Harbour Energy stated that it anticipates a 4Q21 recovery at Elgin-Franklin, where supply has been down by almost 50% (to 30 kb/d) in 1H21 due to outages of the Graben Area Export Line. The firm also touted improved well results at the West of Shetland's Clair field, following earlier disappointments. Despite this, there is little in the pipeline to boost UK supply next year. With less Forties maintenance planned in 2022, output should average 910 kb/d (+20 kb/d), having dropped 180 kb/d in 2021 largely due to the shutdown of the Forties pipeline.



Chinese supply is holding steady at around 4.1 mb/d, and is expected to remain around 150 kb/d above year-ago levels to the end of 2021. Healthy investment from the domestic operators should sustain this level of output next year. **Indian** supply was estimated at 720 kb/d in September (-10 kb/d y-o-y) and **Indonesian** output was 670 kb/d (-10 kb/d y-o-y).

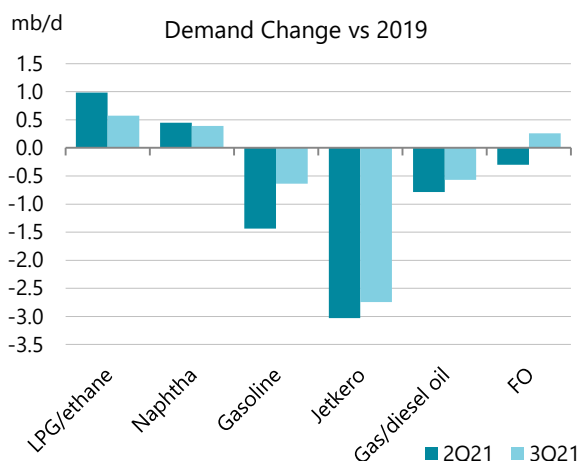
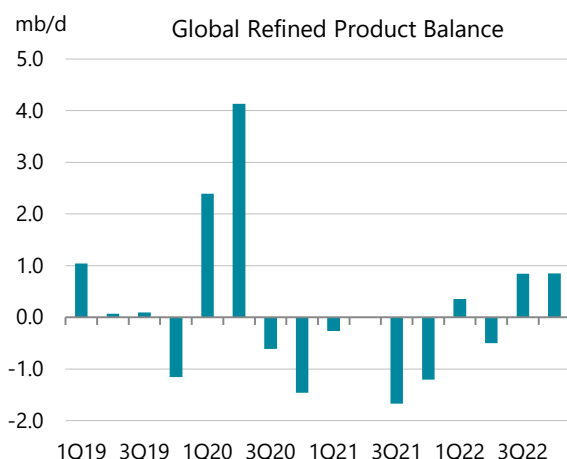
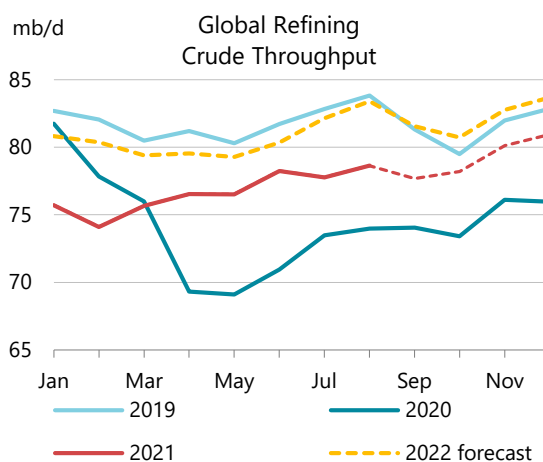
In **Ghana**, output is estimated to have fallen 60 kb/d m-o-m in September due to a planned shutdown of the Jubilee field after producing 70 kb/d in 1H21. Operator Tullow has sanctioned two projects, Jubilee South East and Jubilee North East, to maintain the field's output from 2023. Supply from Ghana is expected to average 170 kb/d in 2021 and 2022. Tullow also operates the TEN fields, which produce around 40 kb/d while Eni's OTCP adds 40 kb/d.

Refining

Overview

Global refinery throughput climbed 870 kb/d month-on-month (m-o-m) in August to a new post-pandemic high of 78.5 mb/d. Stronger activity in OECD Asia and Europe more than offset surprise falls in China and India. However, August gains were likely erased in September as Hurricane Ida, seasonal maintenance and indications of stagnant Chinese activity resulted in an estimated 950 kb/d fall m-o-m to 77.6 mb/d.

Refinery performance in 3Q21 has disappointed overall compared to expectations earlier in the year. Our current estimate is down by almost 1.7 mb/d from our May forecast, when we projected refinery runs to match refined product demand levels in 3Q21 (which is now also estimated some 400 kb/d lower). Instead, our top-down approximation of refined product balances shows a 1.7 mb/d draw in 3Q21, the largest in eight years. This has likely been the main driving force behind the strong pricing in product markets that saw 3Q21 margins doubling in Europe and Singapore to reach 1Q20 levels.



Our 4Q21 forecast sees prolonged tightness in product markets, with stocks expected to continue to draw. Lacklustre Chinese activity, which is transitioning from a 1.5 mb/d y-o-y growth in 1H21 to a 190 kb/d decline in 2H21, seasonal maintenance, as well as higher natural gas and electricity costs are likely to cap refinery runs to the upside. Demand developments also continue posing challenges to refiners. Demand for LPG, naphtha, fuel oil and other niche products has been higher than pre-pandemic levels in both 2Q21 and 3Q21. Gasoline, diesel and jet fuel overall are still lagging, despite episodic weekly or monthly seasonal peaks registered in individual countries

for road transport fuels. These three fuels remain the pillar for refinery margins for the majority of refiners with the exception of petrochemical integrated plants.

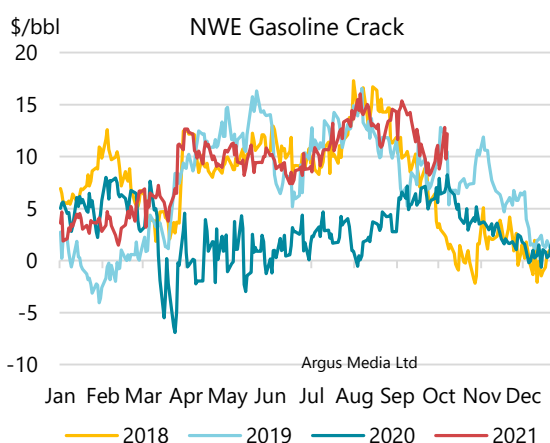
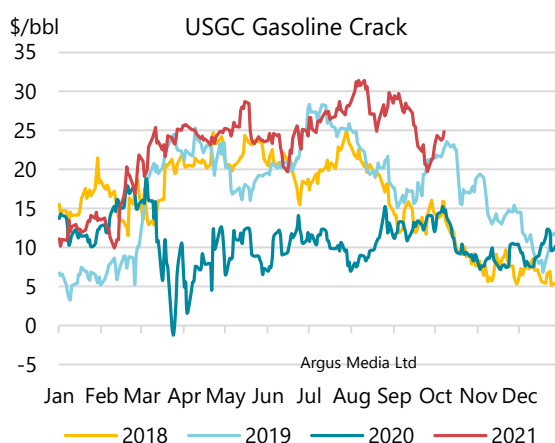
Global Refinery Crude Throughput ¹														
	2019	2020	1Q21	2Q21	Jul-21	Aug-21	Sep-21	3Q21	Oct-21	Nov-21	Dec-21	4Q21	2021	2022
(million barrels per day)														
Americas	19.1	16.5	16.5	18.1	18.4	18.4	17.6	18.1	17.8	18.6	19.0	18.5	17.8	18.8
Europe	12.2	10.7	10.2	10.7	11.2	11.6	11.3	11.3	11.1	11.4	11.3	11.2	10.9	11.4
Asia Oceania	6.8	5.9	5.8	5.5	5.5	6.0	5.9	5.8	5.9	6.1	6.1	6.0	5.8	5.8
Total OECD	38.0	33.1	32.5	34.2	35.1	36.0	34.7	35.3	34.8	36.0	36.4	35.7	34.4	36.0
FSU	6.8	6.4	6.6	6.5	6.5	6.9	6.6	6.7	6.5	6.8	7.0	6.8	6.6	6.8
Non-OECD Europe	0.5	0.4	0.4	0.5	0.4	0.4	0.3	0.4	0.5	0.5	0.4	0.5	0.4	0.5
China	13.0	13.4	14.0	14.3	13.9	13.7	13.7	13.7	13.8	13.9	14.1	14.0	14.0	14.4
Other Asia	10.3	9.2	9.5	9.5	9.6	9.2	9.8	9.5	9.8	9.9	10.0	9.9	9.6	10.0
Latin America	3.2	3.0	3.2	3.1	3.2	3.2	3.2	3.2	3.3	3.3	3.4	3.3	3.2	3.4
Middle East	7.8	6.8	7.1	7.1	7.3	7.4	7.4	7.4	7.6	7.7	7.7	7.7	7.3	7.9
Africa	2.0	1.9	1.8	1.7	1.7	1.8	1.9	1.8	1.9	1.9	1.9	1.9	1.8	2.0
Total Non-OECD	43.6	41.1	42.6	42.8	42.6	42.5	42.8	42.7	43.3	44.0	44.4	43.9	43.0	45.1
Total	81.6	74.2	75.1	77.0	77.7	78.5	77.6	77.9	78.1	80.0	80.8	79.6	77.4	81.1
Year-on-year change	-0.5	-7.4	-3.3	7.3	4.3	4.7	3.6	4.2	4.8	4.0	5.0	4.6	3.2	3.6

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

Product cracks and refinery margins

The rising tide of energy prices in September did not leave oil products behind, with cracks increasing despite substantially higher crude prices, which were up by \$3-4/bbl. Hurricane Ida outages were the common theme for crude and product markets as Gulf of Mexico oil production and PADD 3 refining throughputs were affected to a similar degree.

In September, US gasoline cracks registered their first monthly fall since June. After having enjoyed one of the strongest summer rides, US gasoline cracks went back to lower May levels on a monthly average basis. Excluding the renewable volume obligation (RVO) costs, which have declined from their peak in May, the underlying gasoline cracks in September were as strong as in July at about \$19/bbl.



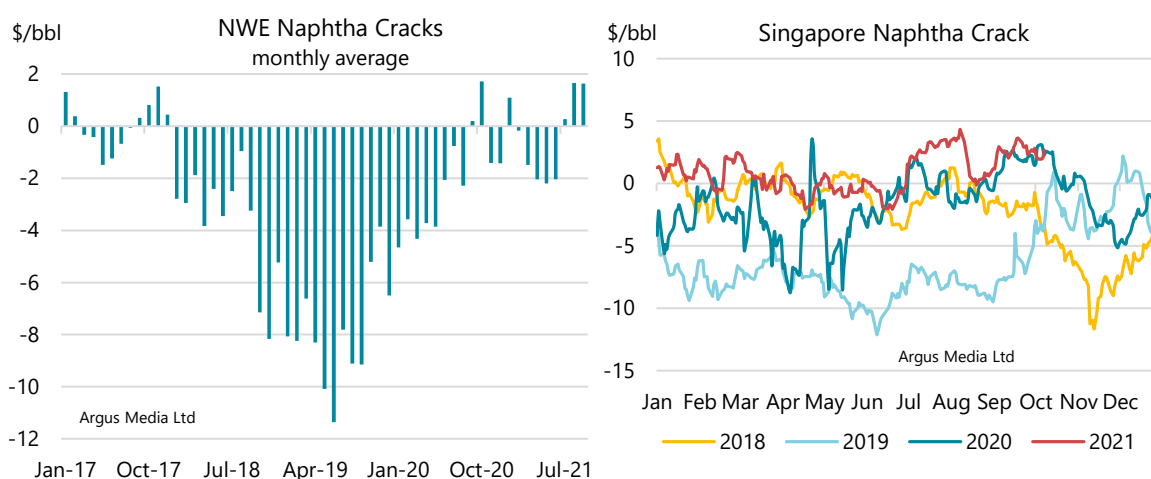
In Europe, gasoline cracks fell \$1.70/bbl on seasonally lower demand and a move to winter specification product, which allows blending of cheaper components such as butane. In Singapore, gasoline cracks were only slightly lower m-o-m, reflecting tighter fundamentals East

of Suez than in the dominant Atlantic Basin, in part due to significant reductions in Chinese and Indian exports in recent months.

Spot Product Prices															
(monthly and weekly averages, \$/bbl)															
	Jul	Aug	Sep	Sep-Aug Chg	%	Week Ending						Jul	Aug	Sep	Chg
						10 Sep	17 Sep	24 Sep	01 Oct	08 Oct					
Rotterdam, Barges FOB															
											Differential to North Sea Dated				
Gasoline EBOB oxy	86.22	84.32	86.31	1.98	2.4	86.56	86.32	84.80	88.14	92.80	11.23	13.57	11.91	-1.67	
Naphtha	75.26	72.43	76.04	3.60	5.0	73.78	76.26	76.74	80.13	83.07	0.27	1.68	1.64	-0.05	
Jet/Kerosene	78.49	75.92	82.07	6.15	8.1	79.02	81.34	83.17	87.53	92.63	3.50	5.17	7.67	2.50	
ULSD 10ppm	80.29	77.67	84.35	6.68	8.6	81.26	83.74	85.48	89.60	94.93	5.29	6.92	9.95	3.03	
Gasoil 0.1%	79.15	76.03	82.90	6.87	9.0	79.79	82.21	83.98	88.48	93.67	4.16	5.28	8.51	3.22	
VGO 2.0%	77.57	73.52	78.18	4.66	6.3	75.87	77.80	79.09	81.83	84.38	2.58	2.77	3.78	1.01	
Fuel Oil 0.5%	80.97	76.51	81.33	4.82	6.3	79.25	81.20	82.24	84.40	87.65	5.98	5.76	6.94	1.17	
LSFO 1%	72.02	69.35	74.86	5.51	7.9	72.51	73.98	76.13	79.16	82.25	-2.97	-1.40	0.47	1.86	
HSFO 3.5%	63.99	61.71	66.05	4.34	7.0	64.07	65.28	66.86	70.29	75.41	-11.00	-9.03	-8.35	0.69	
Mediterranean, FOB Cargoes															
											Differential to Urals				
Premium Unl 10 ppm	86.87	84.87	87.66	2.79	3.3	88.51	87.82	85.88	89.22	93.59	13.78	16.79	15.01	-1.79	
Naphtha	74.03	71.28	74.92	3.65	5.1	72.74	75.20	75.63	78.83	81.76	0.93	3.20	2.27	-0.93	
Jet Aviation fuel	77.48	75.05	81.21	6.16	8.2	78.22	80.49	82.30	86.49	91.57	4.39	6.97	8.56	1.59	
ULSD 10ppm	80.19	77.54	84.05	6.51	8.4	80.98	83.49	85.15	89.37	94.59	7.09	9.47	11.40	1.94	
Gasoil 0.1%	79.20	76.65	82.81	6.16	8.0	79.62	82.25	83.98	88.14	93.32	6.11	8.57	10.16	1.59	
LSFO 1%	72.71	70.60	75.89	5.29	7.5	73.47	74.96	77.12	80.38	83.61	-0.38	2.52	3.24	0.72	
HSFO 3.5%	62.36	60.35	65.26	4.91	8.1	63.29	64.62	66.11	69.38	74.31	-10.74	-7.72	-7.39	0.33	
US Gulf, FOB Pipeline															
											Differential to WTI Houston				
Super Unleaded	99.52	96.96	97.86	0.90	0.9	98.05	99.52	95.93	97.66	103.89	26.79	28.64	25.26	-3.38	
Jet/Kerosene	79.25	76.45	84.05	7.60	9.9	80.39	83.88	85.11	89.13	94.29	6.53	8.13	11.46	3.33	
ULSD 10ppm	87.04	84.70	90.38	5.68	6.7	87.68	89.96	90.57	95.18	100.95	14.32	16.38	17.79	1.40	
Heating Oil	74.65	72.05	78.52	6.47	9.0	74.32	78.29	79.74	84.55	90.35	1.93	3.73	5.93	2.19	
No. 6 3%*	60.93	60.92	65.20	4.28	7.0	63.66	64.24	65.26	69.42	72.60	-11.79	-7.39	-7.40	0.00	
Singapore, FOB Cargoes															
											Differential to Dubai				
Premium Unleaded	85.14	81.13	84.06	2.93	3.6	81.56	83.98	85.10	88.15	92.24	12.26	11.81	11.49	-0.32	
Naphtha	75.57	71.01	75.15	4.14	5.8	72.80	74.99	76.63	78.86	81.18	2.69	1.70	2.59	0.89	
Jet/Kerosene	77.25	74.05	79.88	5.83	7.9	76.53	79.09	81.19	85.91	90.37	4.36	4.74	7.32	2.58	
Gasoil 0.001%	79.88	76.53	82.92	6.38	8.3	79.87	82.21	84.02	88.56	92.90	6.99	7.22	10.35	3.13	
Fuel Oil 0.5%	82.77	79.12	83.94	4.82	6.1	82.31	84.05	84.64	86.19	88.36	9.89	9.81	11.38	1.57	
HSFO 180 CST	66.22	65.07	73.48	8.40	12.9	72.28	73.81	74.81	76.11	79.05	-6.66	-4.24	0.91	5.15	
HSFO 380 CST 4%	64.56	63.34	70.30	6.96	11.0	68.95	70.22	71.33	73.33	77.22	-8.32	-5.98	-2.27	3.71	
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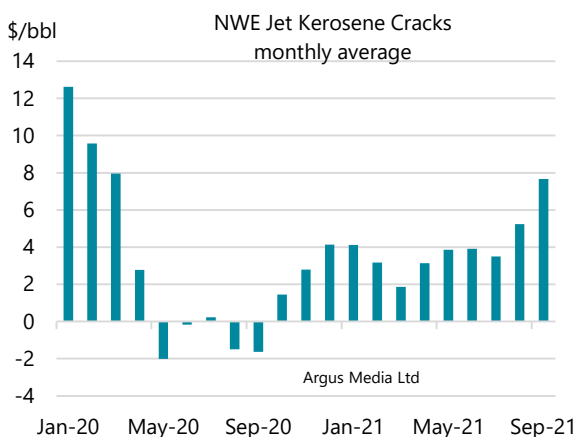
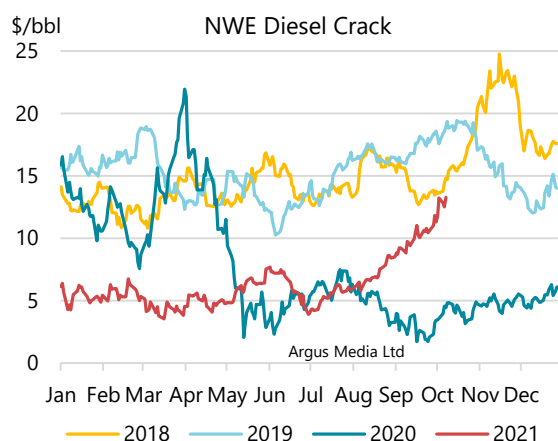
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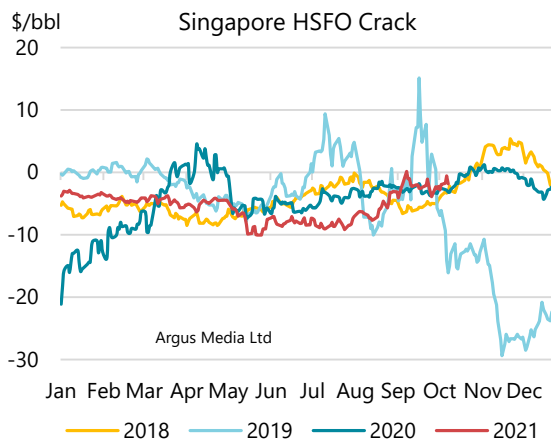
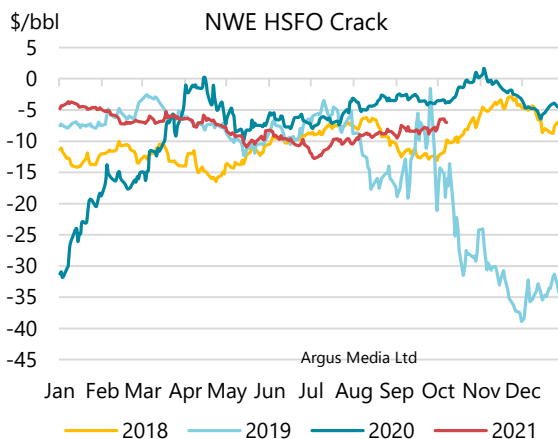


Naphtha in Europe was at a premium to crude oil for a third consecutive month. The crack remained essentially flat m-o-m, despite the fall in gasoline cracks, as propane-driven tightness in the petrochemical feedstock market offered support for Atlantic Basin pricing, and led Singapore cracks higher m-o-m. Naphtha demand increased slightly in 2020 and is estimated 400 kb/d higher than pre-Covid levels this year.

Diesel cracks across the main trading regions posted their strongest post-Covid monthly increase, at about \$3/bbl. Exports from the largest seaborne hub, the US Gulf Coast, fell 200 kb/d m-o-m, according to cargo tracking data, due to hurricane-related refinery outages. This tightened the Atlantic Basin markets just as demand in Europe started picking up after the peak summer holiday season in August. In Asia, previously abundant Chinese exports have slowed to a trickle, according to the latest customs data. European diesel cracks finally broke away from the sub-\$7/bbl range where they were stuck since May 2020. In September, they averaged \$10/bbl.



Jet cracks also surged to the highest marks since 1Q20, following a boost to air travel, at least in the Atlantic Basin. This coincided with the disappearance of jet fuel oversupply as refiners have continued their downward adjustments to the product's yields. There is likely to be some inertia in reversing yield losses, especially if diesel/gasoil strength persists.



Fuel oil cracks, which are usually sensitive to crude oil prices and tend to be inversely related to their changes, increased m-o-m. In Singapore, gains in high sulphur fuel oil cracks of almost \$4/bbl topped diesel and jet increases. Singapore inventories fell in the first half of the month, reportedly causing delays in bunker supplies to vessels equipped with scrubbers. August and September usually see a seasonal increase in fuel oil imports in many Asian countries, but some of the region's major suppliers – Russia and the Middle East – saw exports falling in September. Record high natural gas prices might have also diverted some residual fuel to the power

generation sector (see *Box 1 Increasing use of oil in electricity generation*). At the same time, the 0.5% sulphur marine bunker fuel cracks increased by a more modest \$1/bbl.

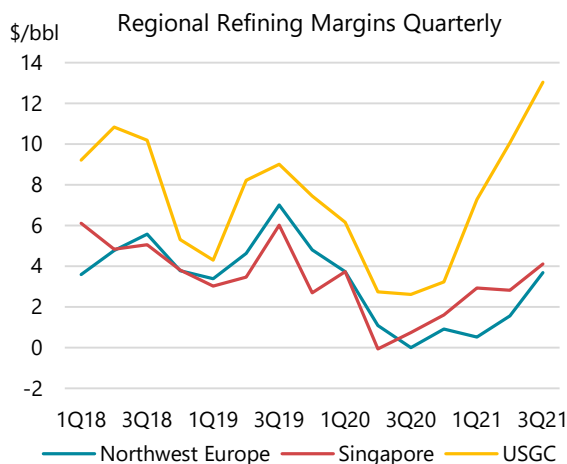
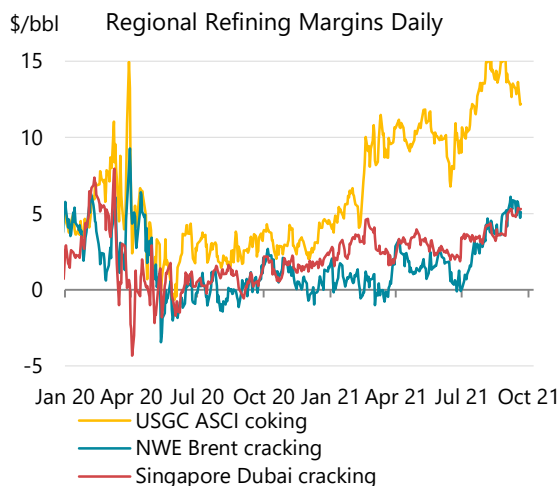
IEA/KBC Global Indicator Refining Margins ¹											
	Monthly Average				Change	Average for week ending:					
	Jun 21	Jul 21	Aug 21	Sep 21	Sep-Aug	10 Sep	17 Sep	24 Sep	01 Oct	08 Oct	
NW Europe											
Brent (Cracking)	1.25	1.89	4.09	5.11	↑	1.02	5.69	5.53	4.63	4.84	5.69
Urals (Cracking)	1.94	3.07	4.85	5.84	↑	0.99	5.29	6.52	5.96	6.31	7.17
Brent (Hydroskimming)	-1.13	-0.79	1.23	2.60	↑	1.37	2.95	2.87	2.50	2.50	2.96
Urals (Hydroskimming)	-2.02	-1.53	0.17	1.23	↑	1.05	0.51	1.76	1.62	1.87	2.80
Mediterranean											
Es Sider (Cracking)	2.47	3.42	5.48	6.65	↑	1.17	7.10	6.95	6.30	6.76	7.27
Urals (Cracking)	0.94	1.77	4.69	5.38	↑	0.69	5.32	5.42	5.33	5.77	6.76
Es Sider (Hydroskimming)	0.88	1.70	3.78	4.88	↑	1.10	5.29	5.07	4.71	4.96	5.13
Urals (Hydroskimming)	-3.19	-2.74	0.24	0.76	↑	0.52	0.77	0.75	0.81	1.02	2.03
US Gulf Coast											
Mars (Cracking)	4.22	6.32	9.86	8.10	↓	-1.77	8.14	8.34	7.72	7.91	10.07
50/50 HLS/LLS (Coking)	12.41	14.47	17.31	16.25	↓	-1.07	16.71	16.87	15.89	15.21	17.79
50/50 Maya/Mars (Coking)	7.66	9.34	12.64	11.22	↓	-1.42	11.89	11.63	10.34	10.34	12.58
ASCI (Coking)	9.26	11.64	14.57	12.91	↓	-1.66	13.24	13.20	12.42	12.46	14.71
US Midwest											
30/70 WCS/Bakken (Cracking)	14.84	14.80	16.90	14.03	↓	-2.87	15.55	14.48	12.81	12.96	15.58
Bakken (Cracking)	17.36	17.33	19.23	16.55	↓	-2.69	17.91	17.25	15.44	15.28	17.88
WTI (Coking)	17.24	17.82	20.00	17.29	↓	-2.70	18.90	18.04	15.98	16.05	19.64
30/70 WCS/Bakken (Coking)	18.34	18.44	20.13	17.12	↓	-3.01	18.56	17.78	15.87	15.92	18.89
Singapore											
Dubai (Hydroskimming)	-4.01	-3.58	-2.34	0.03	↑	2.38	0.37	-0.06	0.23	0.35	1.52
Tapis (Hydroskimming)	0.78	-0.34	1.45	2.25	↑	0.79	2.48	3.04	2.27	1.57	1.59
Dubai (Hydrocracking)	2.33	3.38	3.78	5.18	↑	1.39	5.12	5.02	5.31	5.86	6.94
Tapis (Hydrocracking)	0.33	-0.42	1.53	2.22	↑	0.69	2.25	2.90	2.31	2.09	2.70

¹ Global Indicator Refining Margins are calculated for various complexity configurations, each optimised for processing the specific crude(s) in a specific refining centre. Margins include energy cost, but exclude other variable costs, depreciation and amortisation. Consequently, reported margins should be taken as an indication, or proxy, of changes in profitability for a given refining centre. No attempt is made to model or otherwise comment upon the relative economics of specific refineries running individual crude slates and producing custom product sales, nor are these calculations intended to infer the marginal values of crude for pricing purposes.

Source: IEA, KBC Advanced Technologies (KBC)

The fall in gasoline cracks more than offset gains in other products for US refiners, as they have much higher gasoline yields. US margins were down m-o-m, with higher natural gas prices also playing a role. Currently, natural gas is included in energy costs calculations only for the US Gulf Coast and Midcontinent refinery margins, but will be included in all regional margins in our upcoming new methodology (see *Box 2 Natural gas prices lead to higher refinery hydrogen costs*). In September, Europe and Singapore margins were boosted by strong middle distillates and resilient fuel oil cracks.

Refinery margins in 3Q21 doubled q-o-q in Europe and increased in Singapore and the US. North Sea Dated and Singapore Dubai cracking margins converged at around \$4/bbl, returning to 1Q20 levels. In the US, 3Q21 margins reached a historical record. However, net of incremental RVO costs, which amounted to \$5/bbl, they were equivalent to 1Q20 levels.

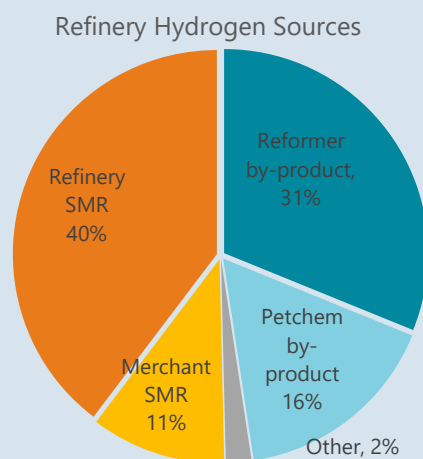


Box 2. Natural gas prices lead to higher refinery hydrogen costs

On 4 October, the IEA released its Global Hydrogen Review 2021, an annual publication that tracks hydrogen production and consumption, as well as developments in policy, investments and infrastructure. The main focus of the report is hydrogen's application in meeting climate goals, notably by linking renewable electricity supply with an expanding set of uses – transport, heating and feedstock. Currently, the refining industry is the second-largest hydrogen-consuming sector after chemicals, using about 39 mt of hydrogen a year. About 30% of an average refinery hydrogen demand comes from naphtha reformers that produce a high-value gasoline feedstock called reformat, although this share varies for individual refineries. Petrochemical crackers and propane dehydrogenation units also provide by-product hydrogen. Refineries that do not have integrated crackers usually buy the excess hydrogen from petrochemical operators.

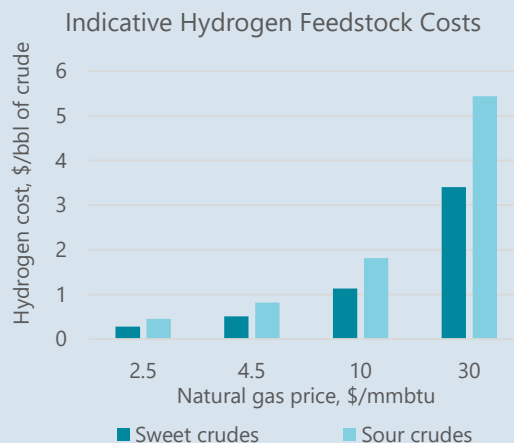
On-purpose hydrogen production accounts for just over half of total supply, ranging from experimental electrolysis technologies to solids gasification to the traditional stalwart – steam methane reforming (SMR). SMRs split natural gas into hydrogen and carbon dioxide. We estimate that some 40% of refinery hydrogen comes from refinery-owned SMR, with another 11% purchased from merchant plants.

Refineries use hydrogen primarily as feedstock and reagent in hydrotreaters and hydrocrackers to remove sulphur and other impurities and to saturate aromatic and olefinic compounds. In general terms, the amount of hydrogen required depends on the feedstock sulphur content and the quality standards of the final products, and can be as high as 3 kg/barrel. An average refinery would need to procure about 70% of this, putting the natural gas requirement in the range of 0.1-0.3 mmbtu per barrel of crude refined. In 2019, when average gas prices in Europe were \$4.5/mmbtu, hydrogen production costs per barrel of crude refined in Europe averaged around



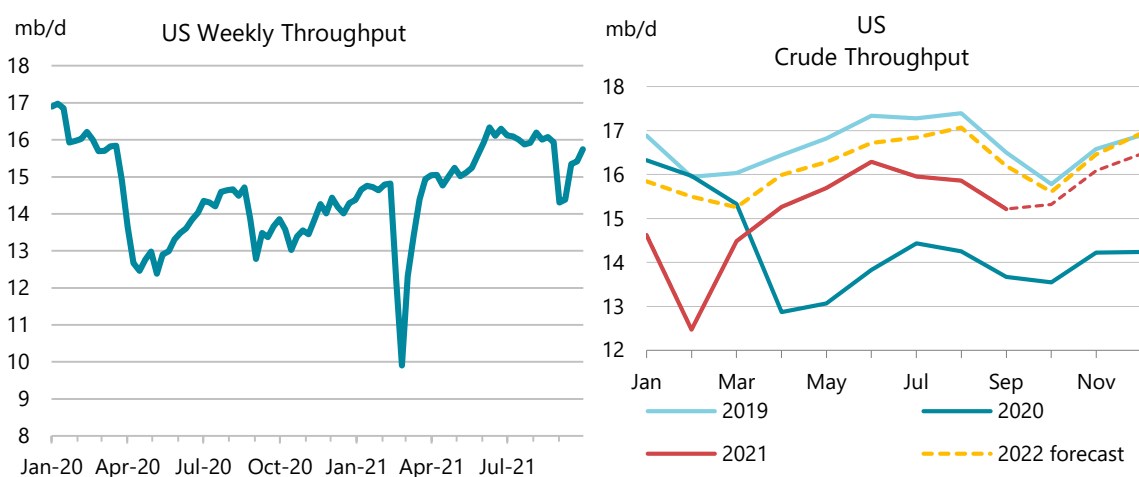
\$0.60/bbl. In recent weeks, with spot natural gas prices reaching historical records, the indicative hydrogen production costs have shot up to \$5-6/bbl. In China, refineries also use coal gasification for hydrogen production and are likely to face similar cost increases.

Traditionally, most refinery margin indicators exclude energy costs to avoid excess volatility and to better show the impact of product price movements. However, in the current circumstances of increased volatility across the whole energy market, and the role of refinery margins as a general indicator of the industry, we are in the process of revamping our methodology to include energy costs, and hydrogen productions costs in particular in our refinery margin calculations.



Regional refining developments

By end-September, refinery throughput in the hurricane-affected US PADD 3 rebounded to 8.3 mb/d, just 300 kb/d shy of the pre-storm weekly rate. Two refineries with a total capacity of 460 kb/d remained offline. Shell announced it will restart its 215 kb/d Norco refinery mid-October, together with the associated petrochemical units. The site was among the last facilities to have its electricity supply restored. Phillips66's Alliance refinery, meanwhile, was the most affected site in terms of physical damage and is expected to undergo several months of repairs. The refinery was announced for sale days before the storm hit. There is already a first bidder that reportedly plans to cease refinery operations and convert the site to a crude export terminal.



Hurricane landfalls on the US Gulf Coast usually coincide with a seasonal refinery slowdown that reflects lower gasoline demand and the start of autumn maintenance. Therefore, the hurricane impact on refining activity needs to be discerned from the seasonal factors. In years without major hurricanes, US PADD 3 throughput in September falls by 200 kb/d on average m-o-m. This

year, the monthly fall amounted to 750 kb/d, implying a 500 kb/d impact from Hurricane Ida. This compares to net impact of 400 kb/d from Hurricane Laura last year and 1.2 mb/d from Hurricane Harvey in 2017. After a 2 mb/d year-on-year (y-o-y) fall in 1Q21, US throughput was up y-o-y by 2 mb/d on average in 2Q-3Q21, with similar growth expected in 4Q21.

Mexican refinery throughput was flat at 660 kb/d in August despite a major refinery fire. In **Canada**, July throughput data were finalised 130 kb/d lower, but, at 1.7 mb/d, remained at the peak post-Covid rate.

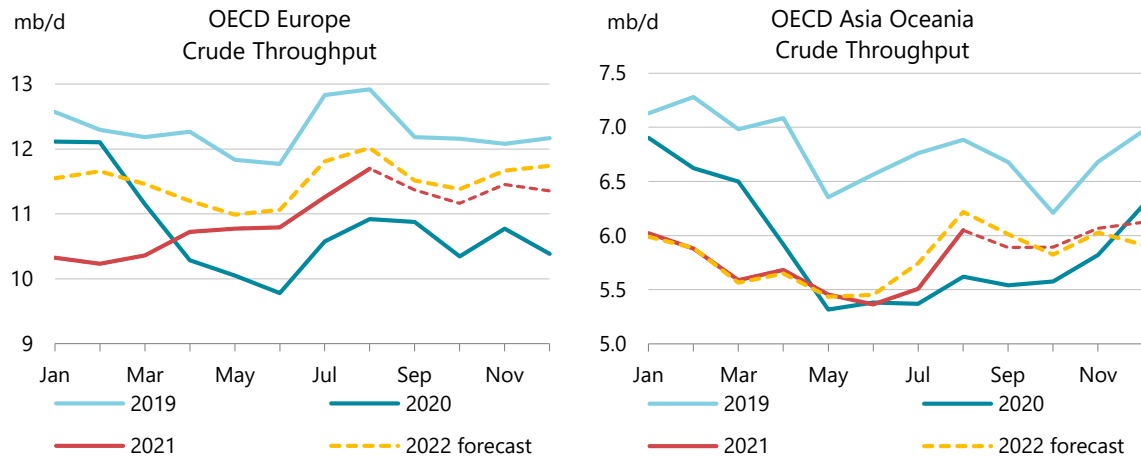
Refinery Crude Throughput and Utilisation in OECD Countries (million barrels per day)										
	Mar 21	Apr 21	May 21	Jun 21	Jul 21	Aug 21	Change from		Utilisation rate	
							Jul 21	Aug 20	Aug 21	Aug 20
US ¹	14.38	15.16	15.59	16.19	15.85	15.76	-0.09	1.61	88%	77%
Canada	1.69	1.55	1.44	1.71	1.73	1.74	0.01	0.30	86%	71%
Chile	0.20	0.17	0.17	0.18	0.17	0.21	0.04	0.09	92%	53%
Mexico	0.82	0.63	0.69	0.67	0.65	0.66	0.01	0.04	40%	37%
OECD Americas¹	17.17	17.58	17.93	18.75	18.41	18.37	-0.04	2.04	84%	73%
France	0.61	0.62	0.62	0.72	0.79	0.82	0.03	0.11	72%	58%
Germany	1.54	1.72	1.66	1.58	1.71	1.81	0.10	0.06	90%	86%
Italy	1.18	1.22	1.21	1.31	1.21	1.26	0.05	0.05	78%	70%
Netherlands	1.12	1.04	1.08	0.98	0.99	1.05	0.05	0.14	87%	75%
Spain	1.06	1.09	1.11	1.04	1.17	1.24	0.07	0.17	88%	76%
United Kingdom	0.70	0.90	0.94	0.96	1.01	1.03	0.01	0.19	86%	70%
Other OECD Europe ²	4.04	4.02	4.05	4.10	4.28	4.39	0.11	0.06	87%	85%
OECD Europe	10.26	10.62	10.67	10.69	11.16	11.60	0.44	0.78	85%	77%
Japan	2.45	2.41	2.13	2.12	2.25	2.67	0.42	0.33	78%	66%
South Korea	2.53	2.59	2.66	2.56	2.63	2.76	0.13	0.09	78%	76%
Other Asia Oceania ³	0.61	0.67	0.65	0.67	0.62	0.61	0.00	0.01	118%	69%
OECD Asia Oceania	5.58	5.67	5.45	5.35	5.50	6.04	0.54	0.43	81%	71%
OECD Total	33.01	33.88	34.04	34.80	35.06	36.00	0.94	3.25	84%	74%

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

² Includes Lithuania

³ Includes Israel

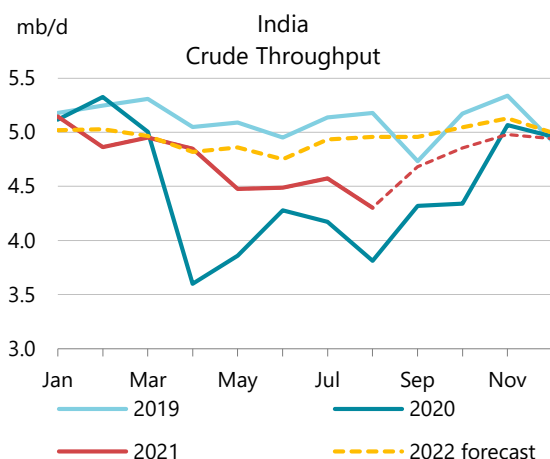
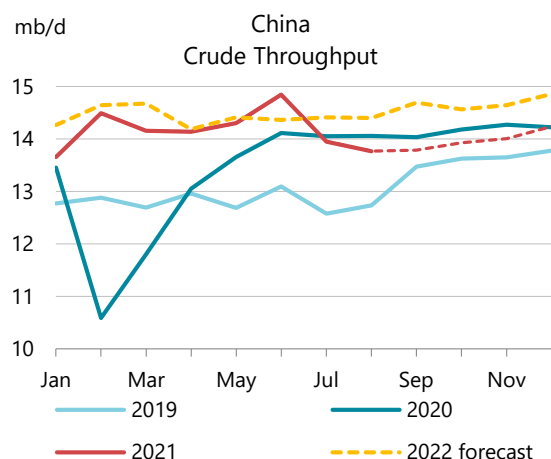
Europe was one of the few regions that posted large m-o-m gains in August versus falling or stagnant throughputs in most parts of the world. Runs were up by 440 kb/d to the highest post-Covid level of 11.6 mb/d, with **Germany, Netherlands, Spain** and **Italy** driving the gains. In September, throughput was estimated 330 kb/d lower m-o-m on planned refinery works. In early October, two refineries in **France** suffered accidents. As a result, TotalEnergies' 110 kb/d Feyzin refinery is likely to stay offline for several weeks. In August, French refinery throughput was at 820 kb/d, its highest since October 2020, supported by the restart of crude distillation at TotalEnergies' Gonfreville refinery in June after an 18 months outage. Even so, the average utilisation rate in the country was only 72%, one of the lowest in Europe.



In a rare development, OECD Asia registered the largest m-o-m increase in August, rising 540 kb/d. Runs were also up 430 kb/d compared with a year earlier. The 130 kb/d Oita refinery in **Japan** restarted in August after a 14-month shutdown. Refinery intake at just under 2.7 mb/d was the highest since December 2020, when colder weather boosted heating kerosene demand. Weekly data for September indicate a modest seasonal slowdown. **Korean** runs reached the highest rate since March 2020 with increasing domestic demand following easing of Covid-19 restrictions. Exports of light cycle oil and mixed aromatics to China fell due to tax-related changes. On the other hand, lower Chinese exports of finished gasoline and diesel offered more room for Korean exporters in the Asia Pacific markets and beyond. **Australian** throughput in July fell to just below 300 kb/d for the first time in at least four decades as ExxonMobil's 90 kb/d Altona refinery cut runs in preparation for permanent shutdown in August. Cargo tracking data show no crude imports into the Altona port in September.

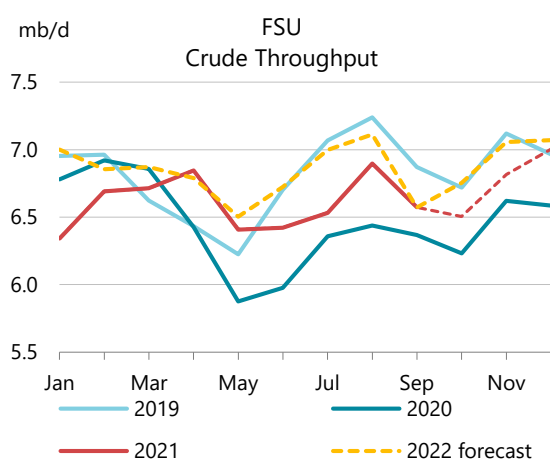
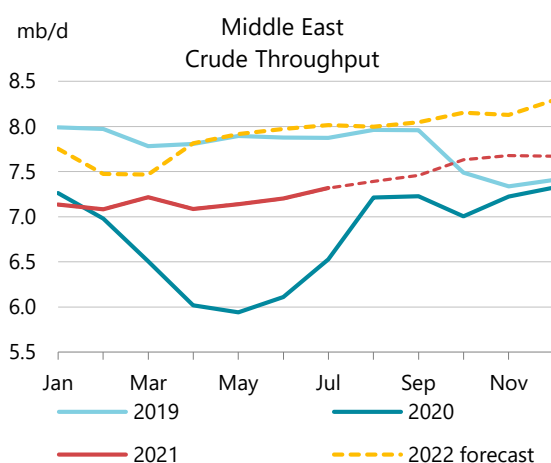
Chinese refinery throughput did not rebound as expected in August, but declined by a further 180 kb/d to 13.7 mb/d, and down 290 kb/d y-o-y. Once again, the monthly falls came from provinces dominated by independent refineries – Shandong, Liaoning and Zhejiang. The annual decline was also dominated by these three provinces (-265 kb/d y-o-y), particularly Shandong, where refinery intake in August was down 400 kb/d from near-record levels in June. Meanwhile, secondary feedstock processing has also likely declined due to decreased imports of taxable diluted bitumen and lower local refinery output of domestic feedstock. Imports of diluted bitumen plunged to 85 kb/d in August, from the peak of 960 kb/d in June. Gasoline and diesel exports fell to only 200 kb/d, just half of January-July average.

Various surveys indicate that refinery intake either fell further or stayed flat in September. Power rationing measures implemented by local governments in several provinces also affected refinery operations. While the refining industry is expecting to receive an exceptional fourth batch of crude quotas this year to provide a boost to feedstock supply for the private sector, there was not a lot of interest in the strategic petroleum reserves auction conducted in September. Only 4.4 mb of 7.4 mb offered was eventually sold. Meanwhile, shortages in other energy sources are likely to dampen prospects of refinery throughput recovery. Natural gas, and, more crucially, coal, are used in Chinese refining for hydrogen production or other energy needs. We have revised down September-December forecast by 400 kb/d, which has brought our 2021 Chinese growth estimate down to 630 kb/d.



Indian refinery throughput also fell unexpectedly in August, by 270 kb/d. At 4.3 mb/d, runs were at their lowest since August 2020. Several refineries started maintenance and demand for premium transport fuels fell m-o-m. **Brunei** reported record run rates of almost 200 kb/d in September as Hengyi Petrochemical's 165 kb/d plant ramped up intake. Petronas announced that its 300 kb/d RAPID refinery restart was pushed back again, resulting in a downward revision to our **Malaysian** forecast. The **Philippines** reported refinery runs for June at 60% utilisation rates for the country's sole remaining refinery. The rest of the months are estimated from crude import data.

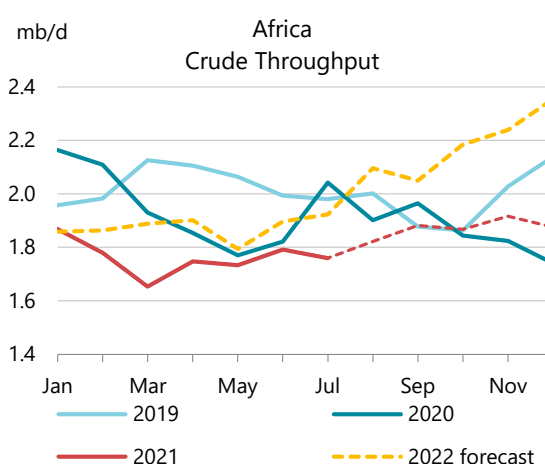
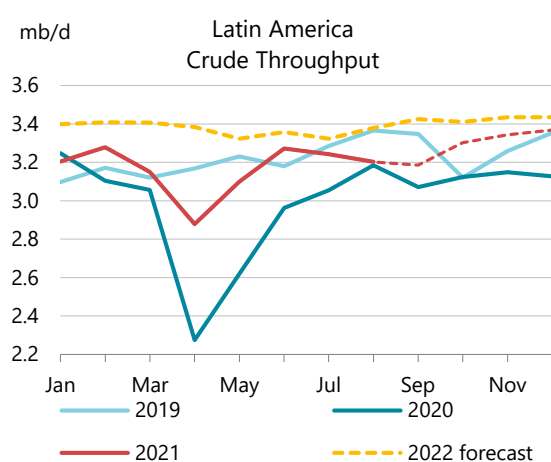
Middle East refinery intake inched up in July to 7.3 mb/d, and was 790 kb/d higher y-o-y. Even so, average utilisation rates were at a low 74%. **Kuwait** officially inaugurated its clean fuels project late September, with the two upgraded and integrated refineries now technically able to produce road fuels meeting Euro-4 and Euro-5 specifications (50 ppm and 10 ppm sulphur limits, respectively). The country has substantially increased the imports of fuel oil this year, due to lower domestic production.



Russian refinery throughput in September fell 310 kb/d m-o-m from the post-Covid peak of 5.8 mb/d in August as seasonal maintenance kicked in. Outages will continue in October, with runs expected to drop further. **Kazakh** refinery runs returned to pre-Covid levels in July and August, but the government is considering extending the ban on transport fuel exports, introduced in May. Subsidised fuel prices have reportedly encouraged a substantial increase in fuel tourism for personal vehicles and road freight from neighbouring countries, which, like

Kazakhstan, are party to the Eurasian customs union. According to a Kazakh energy vice-minister, August diesel consumption hit a record level at 125 kb/d.

In Latin America, throughput fell in August on refinery maintenance in **Brazil** and a refinery fire in **Colombia**. Brazilian refinery intake fell 70 kb/d m-o-m to just 1.8 mb/d. There was yet another disappointment for Petrobras as negotiations for the sale of a third refinery ended without a deal being reached. Out of six refineries with a total capacity of 1.1 mb/d (excluding two specialised mini-refineries) slated for divestment, the sale of only two refineries has progressed into final stages of regulatory approval. Negotiations failed for three refineries with a combined capacity of 540 kb/d. Refinery utilisation rates are not particularly low, close to global averages at around 80-82%, but the country has the largest product deficit in Latin America, importing large volumes of diesel and naphtha. About a quarter of product supply comes from biofuels, which are subject to crop volatility.

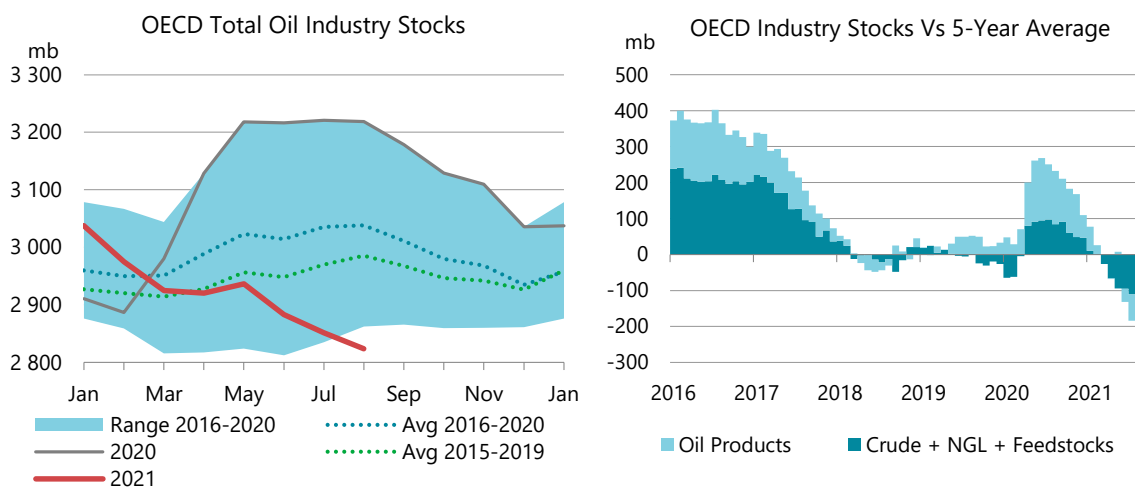


African runs dropped 30 kb/d m-o-m and 280 kb/d y-o-y in July as **South African** shutdowns added to lower intake in **Egypt**. Refinery throughput in South Africa was estimated at around 40% utilisation rates in July and August, based on crude flow data from *Kpler*. **Algerian** refinery throughput dipped 20 kb/d y-o-y in June and July.

Stocks

Overview

OECD total industry stocks posted a large decline for the third consecutive month in August, driving them outside the bottom of the most recent five-year range. OECD total industry stocks fell 27.9 mb, or 900 kb/d, to 2 824 mb. A less than seasonal build in industry product stocks was the main driver. Total inventories stood 214.8 mb below the 2016-2020 average and 162.2 mb lower than the pre-Covid 2015-2019 average. In terms of forward demand, OECD industry stocks covered 61.8 days at end-August, a decrease of 0.4 days month-on-month (m-o-m) and 3.7 days less than the 2016-2020 five-year average.



OECD industry crude inventories fell by 28.6 mb in August. At 1 040 mb, they were 202.9 mb below their peak reached in May last year, representing an average draw of 445 kb/d since then. Crude stocks in OECD Americas and Europe declined by more than usual, falling 14.8 mb and 11.6 mb, respectively. Crude inventories in the OECD Asia Oceania also declined, by 2.2 mb, in line with the seasonal trend.

In August, OECD oil product inventories built by 4.2 mb, to 1 480 mb, when they typically build by 24.8 mb. Middle distillate stocks posted a counter-seasonal draw of 1.2 mb compared with the typical increase of 14.4 mb for the month. Motor gasoline stocks also fell by 6.5 mb. By contrast, other oil stocks increased by 10 mb, led by the Asia Oceania region and Europe. Fuel oil stocks built counter-seasonally by 1.9 mb.

Preliminary oil industry data for September showed stocks falling in all regions, making it the fourth monthly decline in a row. Crude oil, NGLs and feedstock inventories were down by 12.8 mb in total. Product stocks fell by a combined 10 mb. US crude oil holdings declined by 4 mb, larger than the usual fall of 2.7 mb. Product stocks in the US drew by 1.5 mb, led by middle distillate inventories (-6.1 mb). European crude stocks were down 3.4 mb in September, with Italy leading the draw at 2.9 mb. Product inventories in Europe fell by 9.1 mb, with middle distillates posting the largest decline at 6.1 mb. Japanese crude oil stocks fell by 6.2 mb, largely in line with the usual trend while total products rose counter-seasonally by 0.6 mb, led by middle distillates at 1.7 mb.

Preliminary Industry Stock Change in August 2021 and Second Quarter 2021												
August 2021 (preliminary)					Second Quarter 2021							
(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	-14.8	-11.6	-2.2	-28.6	-0.5	-0.4	-0.1	-0.9	0.2	-0.2	-0.2	-0.2
Gasoline	-6.4	-0.8	0.8	-6.5	-0.2	0.0	0.0	-0.2	-0.1	-0.1	0.0	-0.1
Middle Distillates	-5.9	-3.1	7.8	-1.2	-0.2	-0.1	0.3	0.0	-0.1	0.0	0.0	-0.1
Residual Fuel Oil	0.2	1.3	0.5	1.9	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0
Other Products	1.8	2.3	5.9	10.0	0.1	0.1	0.2	0.3	-0.4	-0.1	0.0	-0.5
Total Products	-10.4	-0.3	14.9	4.2	-0.3	0.0	0.5	0.1	-0.6	-0.1	0.0	-0.7
Other Oils ¹	-6.0	0.7	1.8	-3.4	-0.2	0.0	0.1	-0.1	0.0	0.0	0.0	-0.1
Total Oil	-31.2	-11.2	14.5	-27.9	-1.0	-0.4	0.5	-0.9	-0.4	-0.2	-0.3	-1.0

¹ Other oils includes NGLs, feedstocks and other hydrocarbons.

OECD stock data for July were revised up by 1.8 mb to 2 852 mb. Crude oil inventories in Europe were adjusted lower by 8 mb and those in the Americas higher by 4.8 mb. An upward revision of 1 mb to product stocks mainly came from the Asia Oceania region. June figures were revised down following the submission of more complete data (-0.9 mb combined, to 2 883 mb).

Revisions versus September 2021 Oil Market Report								
(million barrels)								
	Americas		Europe		Asia Oceania		OECD	
	Jun-21	Jul-21	Jun-21	Jul-21	Jun-21	Jul-21	Jun-21	Jul-21
Crude Oil	1.4	4.8	0.0	-8.0	0.0	0.3	1.4	-3.0
Gasoline	-0.9	0.7	0.0	-4.3	0.0	0.9	-0.9	-2.7
Middle Distillates	-0.9	2.1	0.0	-0.2	0.0	1.0	-0.8	2.9
Residual Fuel Oil	-0.3	-0.4	0.0	3.3	0.0	0.0	-0.4	2.8
Other Products	-0.2	-2.3	0.0	0.7	0.0	-0.4	-0.2	-2.0
Total Products	-2.2	0.1	0.0	-0.6	0.0	1.5	-2.3	1.0
Other Oils ¹	0.0	1.6	0.0	2.1	0.0	0.2	0.0	3.8
Total Oil	-0.8	6.4	0.0	-6.6	0.0	2.0	-0.9	1.8

¹ Other oils includes NGLs, feedstocks and other hydrocarbons.

Implied balance

The global supply and demand balance shows implied stock draws of 2.1 mb/d in August. Stock data available to date for August show an even larger decline, of 2.8 mb/d in total. OECD industry crude stocks, including NGLs and feedstocks, led the way with a 1 mb/d draw, notably in the Americas (-670 kb/d). By contrast, product stocks in the three OECD regions rose by a combined 135 kb/d, led by Asia Pacific (480 kb/d). Non-OECD crude oil inventories, excluding China, drew by 325 kb/d, according to satellite data from *Kayrros* and *Kpler*. Crude oil on water, including floating storage, decreased by a large 1.6 mb/d while products on water fell by 315 kb/d, based on tanker flow data from *Kpler*.

In 2Q21, the supply and demand balance shows a stock draw of 980 kb/d, slightly less than the 1 mb/d decline in 1Q21. On the other hand, reported and assessed stock draws in 2Q21 show much larger declines of 2.4 mb/d. The gap between reported and assessed data and the implied balance may reflect unreported stock builds in some regions, higher demand, lower supplies or a combination of the above. Increased refinery runs ahead of the Northern Hemisphere summer season pushed crude oil demand higher and helped lower inventories in both OECD (-580 kb/d) and non-OECD economies excluding China (-490 kb/d). Crude oil and products on the water showed a steady decline in 2Q21, falling by a combined 420 kb/d. The Chinese crude balance,

derived from reported crude production, refinery runs and net crude imports, registered three consecutive months of declines in 2Q21 amid high refinery throughputs and lower imports.

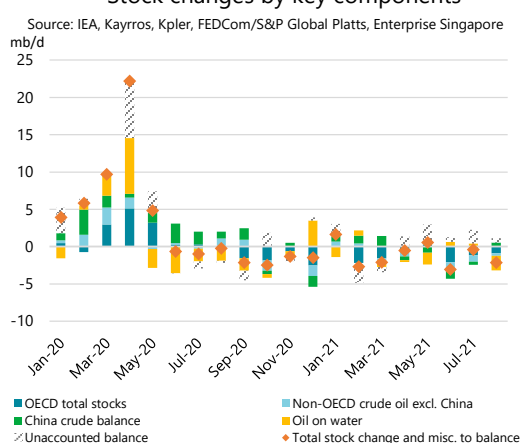
Implied total oil balance (mb/d)												
	Jan-21	Feb-21	Mar-21	1Q21	Apr-21	May-21	Jun-21	2Q21	1H21	Jul-21	Aug-21	Sep-21*
OECD industry crude oil, NGLs and feedstocks	-0.81	0.12	-0.27	-0.34	-0.50	-0.42	-0.81	-0.58	-0.46	-0.61	-1.03	-0.43
OECD industry product stocks	0.87	-2.35	-1.34	-0.90	0.36	0.94	-0.97	0.12	-0.39	-0.41	0.13	-0.33
OECD government stocks	0.05	0.05	0.05	0.05	-0.24	-0.19	-0.30	-0.24	-0.10	-0.12	-0.01	-0.11
Non-OECD crude oil excluding China	0.58	0.44	-0.25	0.25	-0.91	0.45	-1.03	-0.49	-0.12	-0.87	-0.33	-0.56
Independent product stocks (Fujairah and Singapore)	-0.04	-0.01	-0.09	-0.05	0.13	-0.03	-0.02	0.03	-0.01	-0.20	-0.12	-0.19
Crude oil on water including floating storage	-1.00	-0.18	-1.59	-0.95	0.91	-1.20	0.45	0.04	-0.45	0.42	-1.62	
Products on water including floating storage	-0.39	0.87	0.67	0.37	-1.16	-0.41	0.19	-0.46	-0.05	0.00	-0.32	
Total known stock change excluding China (as above)	-0.75	-1.06	-2.82	-1.56	-1.42	-0.86	-2.49	-1.58	-1.57	-1.80	-3.29	
IEA estimate - Chinese crude balance	0.69	1.04	1.42	1.05	-0.50	-0.80	-1.18	-0.83	0.10	-0.43	0.54	
Total known and estimated stock change	-0.06	-0.02	-1.40	-0.51	-1.92	-1.66	-3.67	-2.41	-1.47	-2.23	-2.75	
Total stock change and misc. to balance**	1.62	-2.70	-2.11	-1.01	-0.51	0.55	-3.04	-0.98	-1.00	-0.38	-2.14	
Unaccounted balance	1.68	-2.67	-0.70	-0.50	1.41	2.21	0.63	1.42	0.47	1.85	0.61	

* OECD stocks are extrapolated using data from Energy Information Administration, Euroilstock and Petroleum Association of Japan for September

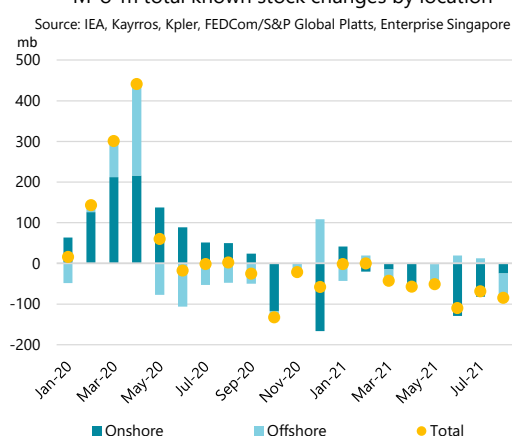
** Assessed supply minus assessed demand from the IEA oil market balance.

Source: IEA, EIA, PAJ, Euroilstock, Kayros, Kpler, FEDCom/S&P Global Platts, Enterprise Singapore, Refinitiv

Stock changes by key components



M-o-m total known stock changes by location

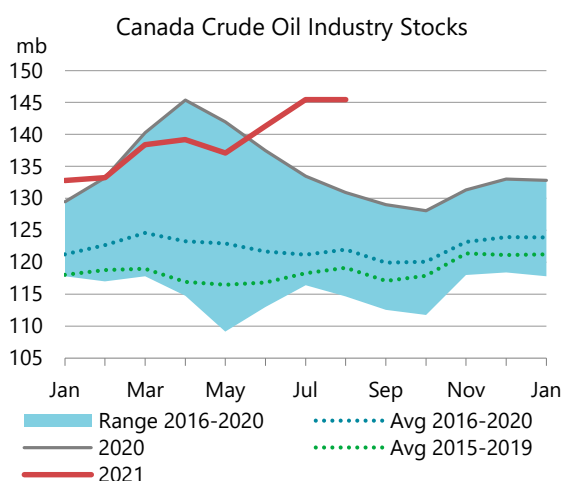
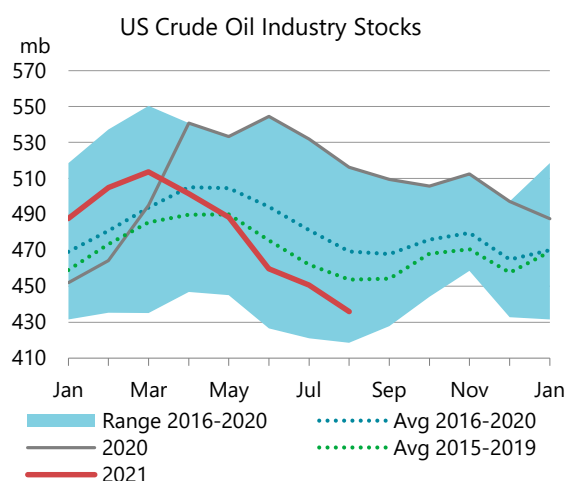


Recent OECD industry stock changes

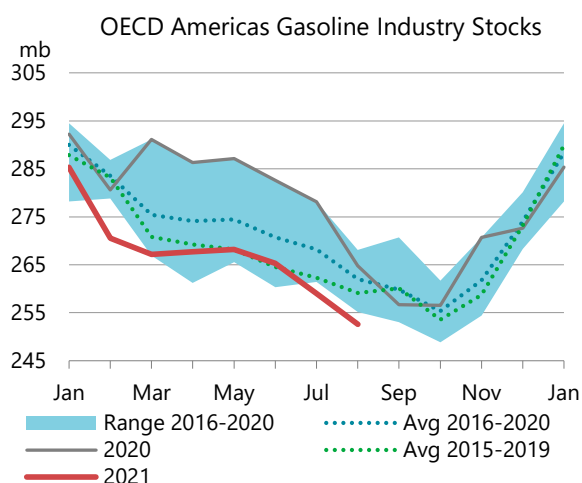
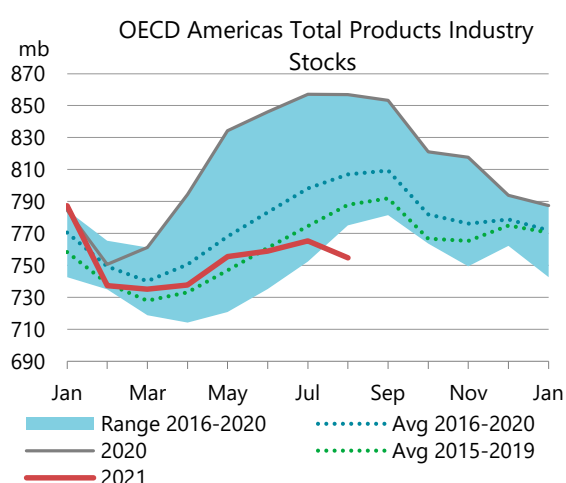
OECD Americas

Industry stocks in the OECD Americas fell counter-seasonally, by 31.2 mb, in August. At 1 522 mb, regional inventories were 181.2 mb lower than a year ago and 75.5 mb below the five-year average. Crude and NGLs holdings were down by 20.7 mb while oil product stocks drew by 10.4 mb as Hurricane Ida disrupted production and import flows.

Total crude stocks fell by 14.8 mb m-o-m. At 604 mb, they stood 11.6 mb below the latest five-year average but were still above the pre-pandemic average by 5.3 mb. The overall declining trend in regional crude oil stocks masks diverging trends between countries. While US stocks have been on a steady decline, Canadian crude oil inventories have been increasing in recent months, and stocks are now at above average levels and near the peak of last year. The higher inventory levels follow a strong rebound in production this year, combined with the anticipated Enbridge Line 3 replacement project, which is expected to push through an additional 370 kb/d of exports to the US from October.



Total product stocks in the OECD Americas fell counter-seasonally in August. Overall, product stocks remain at 755 mb, down 10.4 mb from the previous month. Gasoline stocks drew sharply again for the second month (-6.4 mb). Middle distillate stocks fell 5.9 mb, counter-seasonal to the 0.5 mb increase typically seen for the month. An increase in US exports of gasoline over the summer, when gasoline exports are typically lower during this time, contributed to the overall decline in stocks.

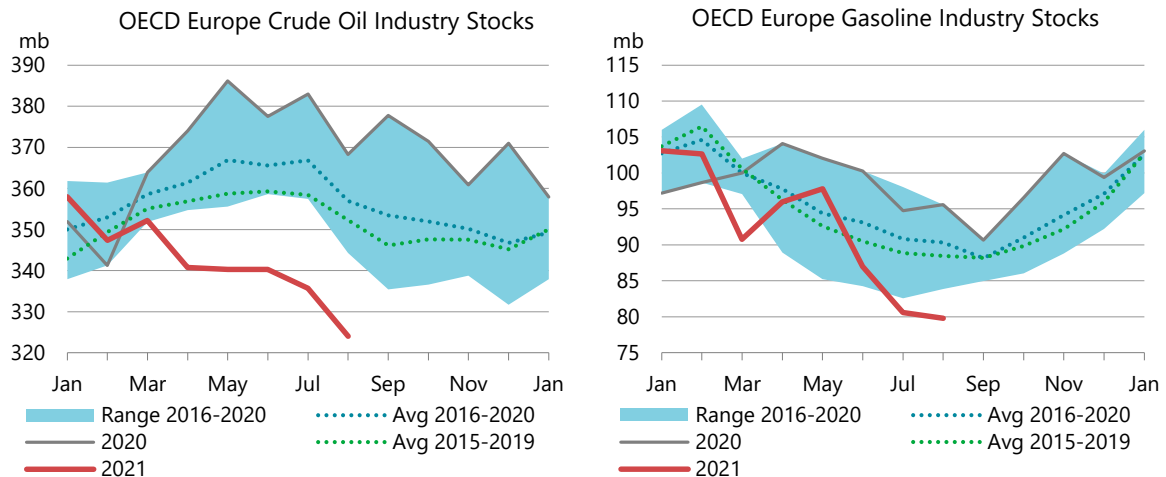


Weekly data from the Energy Information Administration (EIA) for September show crude stocks falling yet again, by 4 mb, larger than the 2.7 mb typical average decline. Crude stocks in the Midcontinent PADD 2 region led the decrease at 3.1 mb, which is counter-seasonal to the usual 2.3 mb build. PADD 3 (Gulf Coast) fell by 1.3 mb, in line with the seasonal trend. US Strategic Petroleum Reserve (SPR) volumes drew 3.4 mb m-o-m to 617.9 mb. In August, 20 mb of SPR crude volumes were sold, of which 3.1 mb were withdrawn in September in addition to 300 kb released in response to Hurricane Ida. The remaining 16.9 mb is expected to be delivered before 15 December this year.

Total US product stocks fell 1.5 mb in September, more than the usual 0.3 mb decline for the month. Middle distillate inventories drew by 6.1 mb, a substantial draw compared to the 0.6 mb average decline. Refinery runs in the US were 650 kb/d lower than in August due to Hurricane Ida and refinery shutdowns, contributing to lower product stocks in September.

OECD Europe

OECD Europe total industry stocks fell by 11.2 mb in August. The draw left the end-month stock level of 73.6 mb below the five-year average, with overall stocks sitting at 942 mb. Crude stocks decreased by 11.6 mb, largely in line with the seasonal trend. Crude inventories in the Netherlands drew by 5.6 mb, when they typically fall by 1 mb. The UK and Italy reduced their stocks by 3.5 mb and 3.1 mb, respectively. By contrast, German crude inventories rose for a third consecutive month, by 3.2 mb. Overall, regional crude stocks stood at 324 mb, down 44.2 mb from the previous year and 32.9 mb lower than the five-year average.



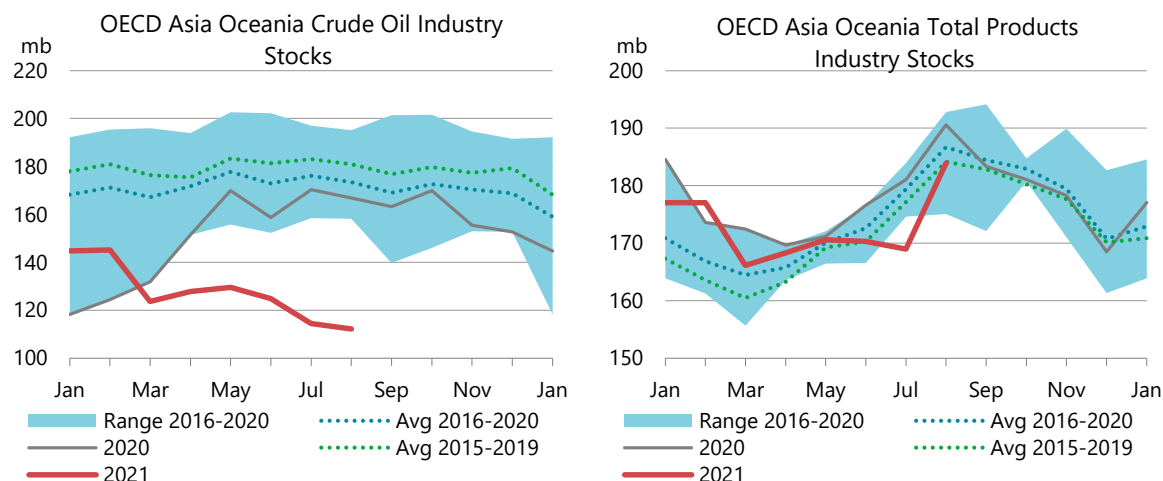
Total products in Europe were largely unchanged m-o-m, at 541 mb. While gasoline stocks for August show only a slight decrease of 0.8 mb, steady declines since June have eroded stock levels to well below the five-year average. European gasoline stocks for August, at 79.3 mb, were at their lowest level in ten years. Peak summer gasoline demand and weak refinery runs combined were behind the drawdown of stocks. Middle distillates fell counter-seasonally, by 3.1 mb, the third consecutive month of decline.

Preliminary September data from *Euroilstock* showed total industry stocks falling by 12.5 mb. Crude oil volumes were down by 3.4 mb while total oil products fell by 9.1 mb. Gasoline and middle distillate stocks declined by 4.9 mb and 6.1 mb, respectively. By contrast, fuel oil increased by 1.9 mb while naphtha stocks were unchanged.

OECD Asia Oceania

Total industry stocks in OECD Asia Oceania rose by 14.5 mb in August, to 359 mb, led by higher product stocks. Crude oil inventories fell 2.2 mb m-o-m, in line with seasonal trends even as Japanese crude stocks rose by a counter-seasonal 1.5 mb. Korean crude oil stocks fell by 3.8 mb. At end-August, crude oil inventories stood 54.6 mb below year ago levels.

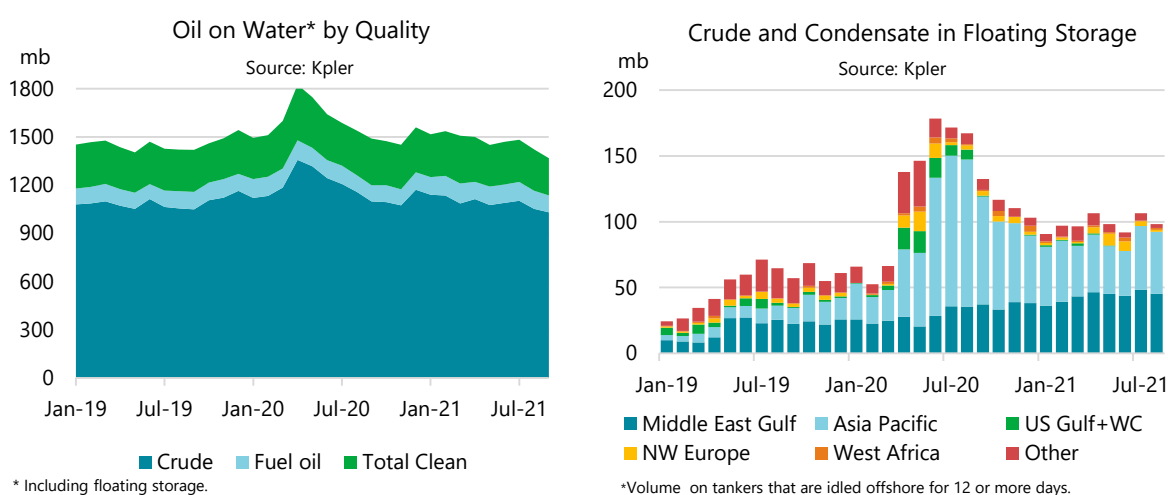
Oil product stocks rose substantially due to higher refinery runs. Japan's refinery throughputs were up 420 kb/d, while Korean runs increased 125 kb/d m-o-m. Middle distillate stocks built by 7.8 mb, higher than the average increase of 4.7 mb for the month. Another large increase came from other products, rising 5.9 mb, almost double the usual 3.3 mb. As Japan and Korea move into the maintenance season, product stocks are expected to decline.



Preliminary data from the *Petroleum Association of Japan* show crude oil inventories falling in September by 6.2 mb m-o-m, when they typically decline by 4.9 mb. Total product stocks increased counter-seasonally by 0.6 mb. Middle distillate stocks led the build at 1.7 mb. Gasoline and residual fuel oil inventories rose by 0.2 mb each. Other oil product stocks drew by 1.5 mb.

Other stock developments

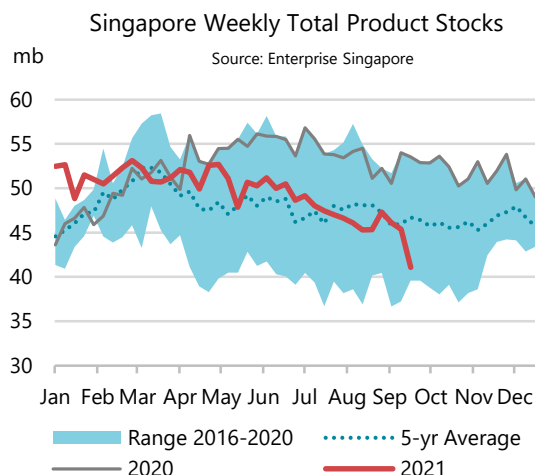
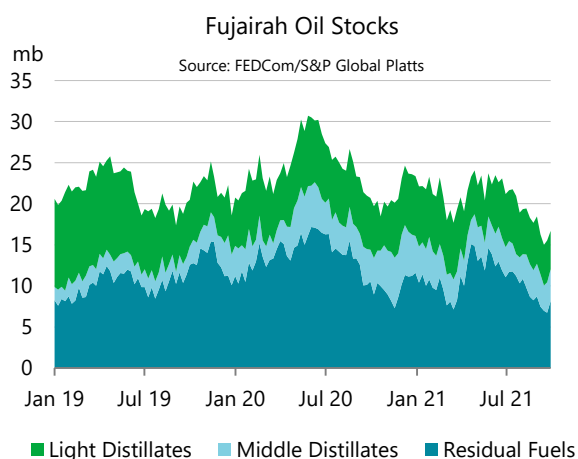
From this month's *Report*, we use tanker tracking data from *Kpler* for oil on the water and floating storage analysis. In August, volumes of oil on the water, including floating storage, declined by a large 60 mb, according to *Kpler*. The decrease in oil on the water was led by crude, which fell 50.2 mb m-o-m as seaborne crude oil exports from Iran and Nigeria decreased by 13.2 mb and 11.6 mb m-o-m, respectively, while those from Norway increased by 5.1 mb. Fuel oil volumes on the water also fell by 4.6 mb while clean products decreased by 5.3 mb.



Crude oil and condensate volumes held in tankers that idled offshore more than 12 days fell by 8.5 mb to 98.1 mb in August, according to data from *Kpler*. The Middle East Gulf led the decrease at 3.2 mb. Floating volumes in Northwest Europe and Asia Pacific declined by 2 mb and 1.2 mb, respectively.

In Fujairah, independent product stocks were down for a fifth consecutive month, by 1.8 mb to 16 mb in September, according to data from *FEDCom* and *S&P Global Platts*. Total product stocks declined to their lowest since February 2018. Residual fuel oil inventories plunged by 1 mb m-o-m as bunker fuel demand strengthened across many ports and as some utilities switched from gas to fuel oil for power generation. Light distillate stocks decreased by 0.8 mb. Middle distillate stocks were unchanged.

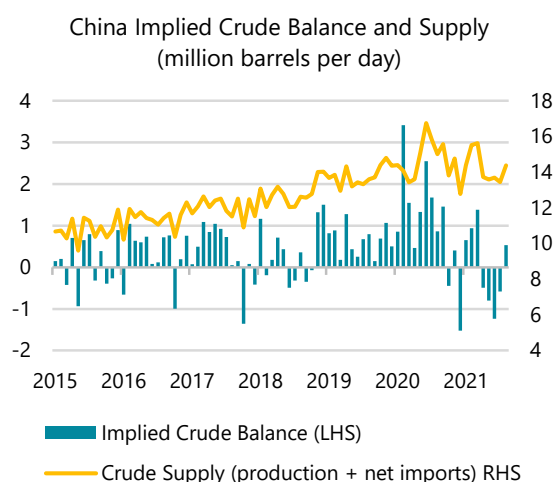
Independent product stocks in Singapore, the world's largest bunkering hub, fell by 4 mb in September, according to data from *Enterprise Singapore*. Residual fuel oil inventories led the way with a 1.7 mb draw. This is partly attributable to increased fuel oil exports to the East Asia region where demand has been picking up. Light and middle distillate stocks also fell by 1.4 mb and 0.9 mb, respectively.



The Chinese implied crude balance showed an increase for the first time since March this year. Crude stocks built by 16.5 mb, or 530 kb/d, in August, according to data derived from reported crude production, refinery runs and net crude imports. Higher net crude imports (+890 kb/d m-o-m) and lower refinery runs (-180 kb/d m-o-m) played a role.

Total oil stocks in the 16 non-OECD economies reported to the *JODI-Oil* database drew 5.9 mb m-o-m in July, led by a decrease in product inventories (3.3 mb). Oil product stocks fell 3.1 mb in Peru, 0.9 mb in Croatia and 0.5 mb in Chinese Taipei. India and Algeria built their product stocks by 0.8 mb and 0.6 mb, respectively.

Crude oil and NGLs fell by a combined 2.6 mb m-o-m. Crude stocks were lower in Peru (-1.8 mb), India (-1.6 mb) and Croatia (-1.2 mb). By contrast, crude oil inventories rose by 1.3 mb in Chinese Taipei, 0.9 mb in Romania and 0.8 mb in Iraq.

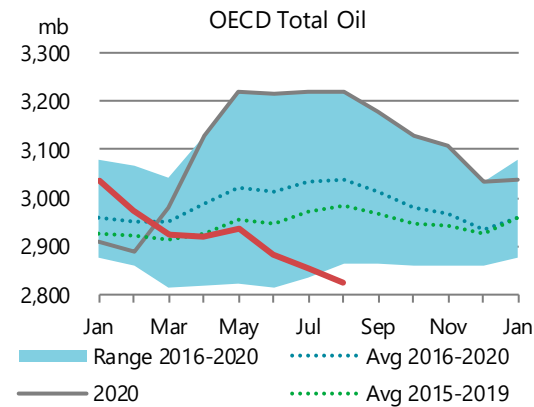
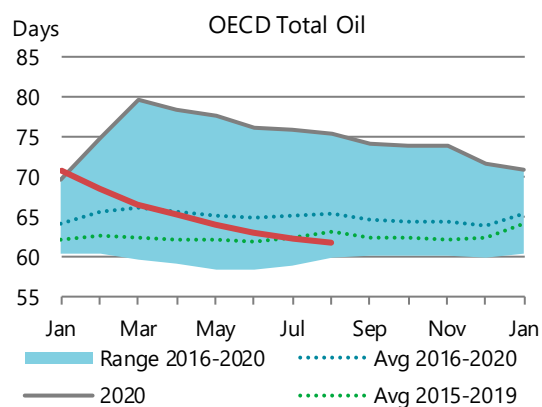
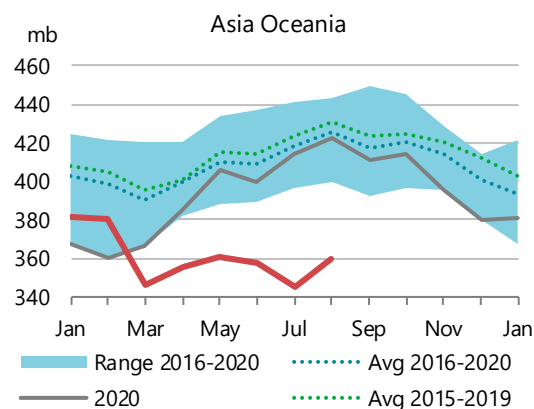
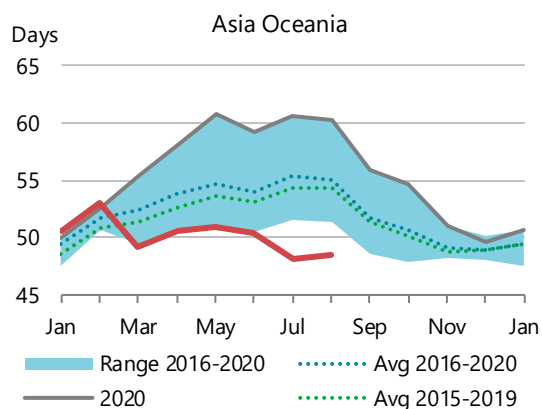
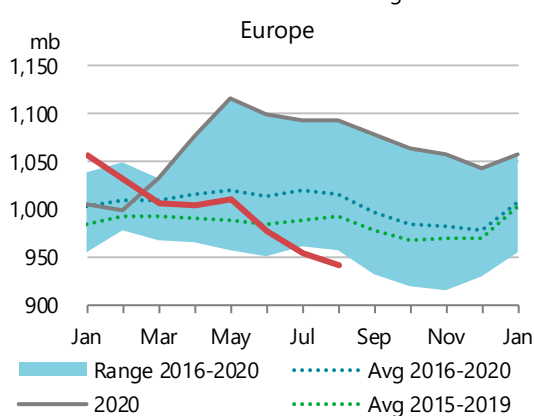
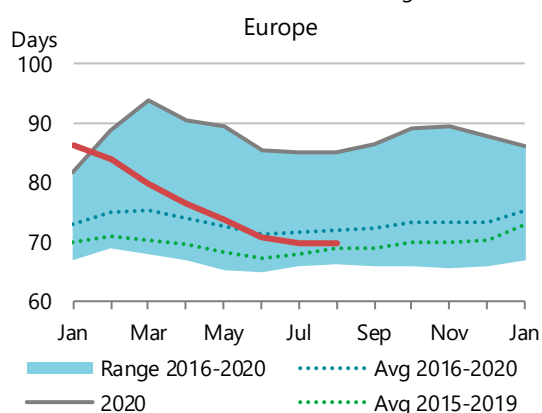
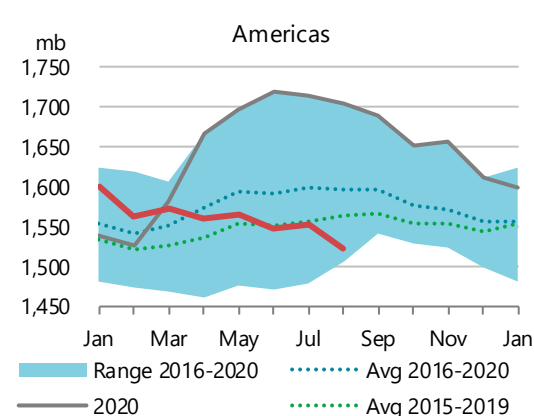
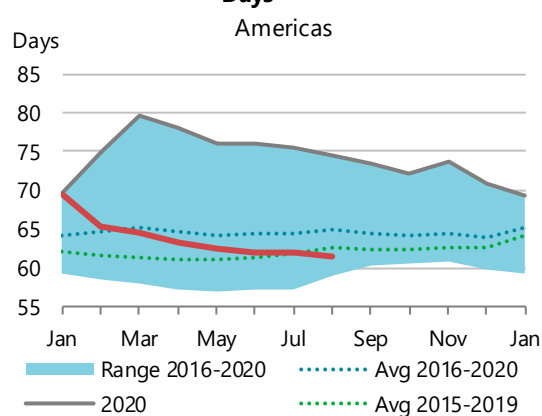


Regional OECD End-of-Month Industry Stocks

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

Days¹

Million Barrels



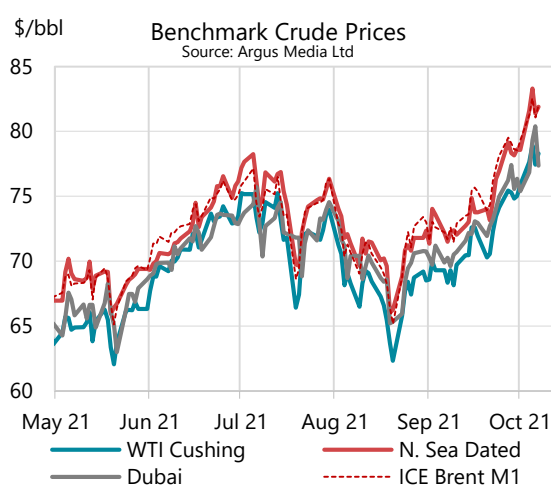
¹ Days of forward demand are based on average OECD demand over the next three months.

Prices

Overview

Oil prices pitched to seven-year highs in early October along with surging natural gas and coal prices that heightened concerns about fuel switching. Brent futures rose to more than \$82/bbl in the first week of the month, almost \$10/bbl higher than the first week of September and over \$11/bbl above the August average. Futures and benchmark crude prices reflected concerns over energy shortages, recent oil stock draws and the anticipated supply deficit in 4Q21. By contrast, physical price differentials for most sweet and sour grades versus the key marker crudes remain subdued.

In September, ICE Brent futures rose \$4.37/bbl month-on-month (m-o-m) to \$74.88/bbl. By contrast, North Sea Dated prices fell back to a discount versus futures after tensions eased in the North Sea crude market, gaining only \$3.65/bbl to average \$74.40/bbl. In the first week of October, the discount flipped to a premium of \$0.45/bbl on rapidly rising refinery demand for light sweet crudes in Europe. WTI (Cushing) increased \$3.84/bbl m-o-m to \$71.56/bbl as the prolonged effects of Hurricane Ida affected local balances. Dubai prices rose by \$3.25/bbl to \$72.56/bbl, weighed down by increased Middle East OPEC.



Crude Prices and Differentials (\$/bbl)						
	Month		Week of	Chng Sep-21		
	Sep-20	Aug-21	Sep-21	04 Oct	m-o-m	y-o-y
Crude Futures (M1)						
NYMEX WTI	39.63	67.71	71.54	78.33	3.83	31.91
ICE Brent	41.87	70.51	74.88	81.85	4.37	33.01
Crude Marker Grades						
North Sea Dated	40.58	70.75	74.40	82.20	3.65	33.82
WTI (Cushing)	39.60	67.73	71.56	78.33	3.84	31.96
Dubai	41.45	69.32	72.57	78.99	3.25	31.12
Differential to North Sea Dated						
WTI (Cushing)	-0.98	-3.02	-2.83	-3.88	0.19	-1.85
Dubai	0.87	-1.43	-1.83	-3.21	-0.40	-2.70
Differential to ICE Brent						
North Sea Dated	-1.29	0.24	-0.48	0.35	-0.72	0.81
NYMEX WTI	-2.24	-2.80	-3.34	-3.52	-0.54	-1.10

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

Futures prices initially lingered near end-August levels before taking-off after 15 September with the jump in gas and coal prices. Financial markets pressured crude futures in the first half of the month via multiple factors: weak US jobs creation; uncertainty about the needed hike in the US federal debt ceiling; lower Chinese and European PMI data for August and September; as well as instability in the Chinese financial market (notably linked to heavily indebted real estate developer, Evergrande).

Despite easing economic drivers, oil market fundamentals remained robust, and the renewed 400 kb/d hikes in the OPEC+ production targets at their monthly meeting in October (in line with group's multi-month plan) did not change market expectations. Supply and demand forecasts imply a steady draw on global oil stocks through year end, at least. In this context, incremental demand from fuel switching from gas to oil would be a strong tonic for prices as it could further tighten the oil market. Some degree of displacement has already begun, as exhibited by buying

of heavy fuel oil cargoes for power generation East of Suez and in Europe. Broad market estimates for the potential extent of this movement range from a high end of 1-2 mb/d to more reasonable estimates of 400 kb/d to 600 kb/d that reflect the complexities of such short-term adjustments (see *Box 1 Increasing use of oil in electricity generation*). The extreme gas-to-oil price gap may lead to a swing of gas from reinjection for oil recovery to supply for the gas market (possibly already occurring in Norway in modest volumes according to Gassco's website).

While higher gas prices will boost oil demand, it will also have material consequences for industry, power generation, and consumers, depressing economic growth and lifting inflation. Higher inflation expectations could increase investor positioning in oil as a cross-asset hedge. Monetary policy in several countries already reflects higher inflation as several central banks have increased policy rates in recent weeks. And financial markets anticipate that tapering of the US Federal Reserve's monetary support would begin before 2022.

In the physical crude market, buying accelerated as refiners organized supply ahead of the roll-off of autumn maintenance programmes. Refiners have been responding to stronger refinery margins, particularly supported by middle distillate cracks. Nevertheless, crude price differentials to marker crudes were restrained over the month due to strong backwardation.

After a long summer of uncertainty, Chinese refiners lifted buying and are positioning for a fourth and final batch of crude import quotas for independent refiners in 4Q21. But higher energy prices and efforts to contain China's energy and CO₂ emissions intensity may result in continued product export restrictions and reduced refinery runs that would limit crude oil imports. Government imposed electricity rationing in China has already affected refineries and utilities as refiners often produce and sell their own electricity (two Sinopec refineries in Jiangsu cut runs in September).

The overlap between oil and gas markets has also been visible in sweet-sour crude price differentials. Refiners use gas to heat furnaces for distillation (the heavier the crude, the hotter the furnace) and to produce hydrogen for deep conversion and desulphurisation of feedstock and products (the higher the sulphur content the greater the hydrogen pressure required). Consequently, with swingeing gas prices, refiners favour light low sulphur crudes, boosting their premiums versus heavier high sulphur grades. Heavy fuel oil demand for oil to liquids substitution in power generation has somewhat mitigated this pressure.

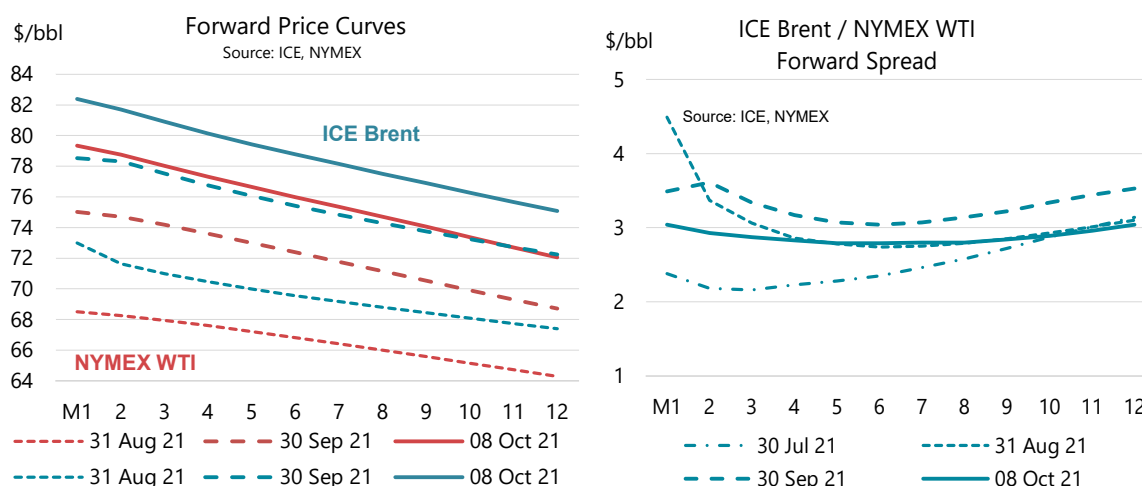
Futures markets

After a late-August rebound, crude futures prices remained relatively stable through 10 September before rising sharply, in several bounds, through early-October. Between the first week of September and the first week of October, ICE Brent and NYMEX WTI prices surged by around \$10/bbl to \$81.85/bbl and \$78.33/bbl, respectively.

The ICE Brent premium to NYMEX WTI widened overall in late August and continued to deepen on average in September by \$0.54/bbl to \$3.34/bbl and to \$3.52/bbl in the first week of October. After a long period of very narrow differentials since late May, the spread rose in late August. The post-Ida spread in September averaged around \$1/bbl more than in the period from early-June to mid-August, and facilitated a steady flow of light sweet US grades to Europe during September.

Backwardation on ICE Brent crude futures for the 12-month spread remained close to \$6/bbl over the month, rising to \$6.60/bbl in the first week of October. Backwardation on NYMEX WTI crude

futures recovered after the sharp collapse in late August and rose \$2/bbl on the 12-month strip to \$6.30/bbl at the end of September and to \$7.30/bbl in the first week of October. The rise in backwardation particularly affected contracts in the first three months. As well, from end-July to early-October the premium for ICE Brent versus NYMEX WTI narrowed and flattened across the initial 4-5 months of contracts.

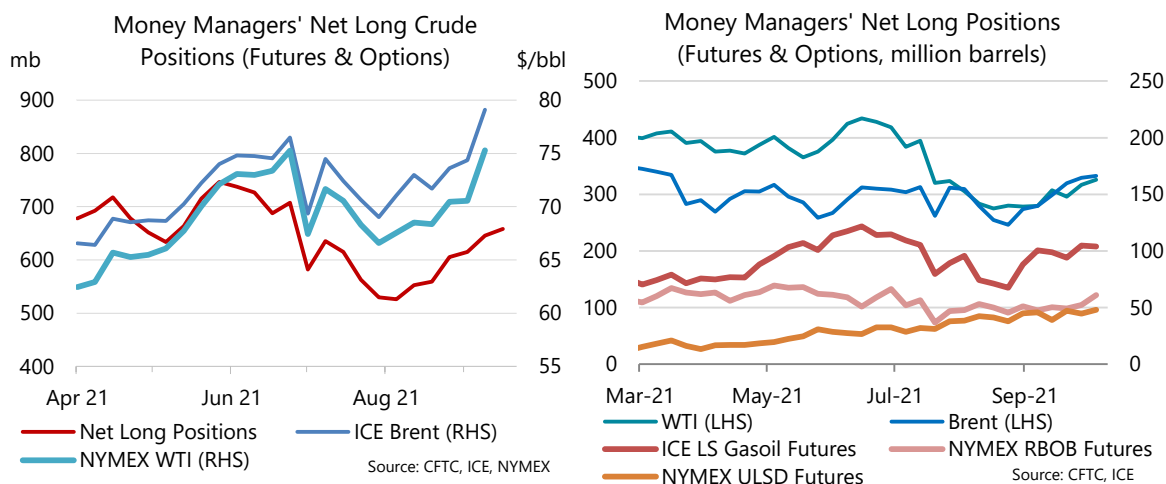


Prompt NYMEX RBOB futures fell \$2.72/bbl in September, the only oil futures contract to lose ground during the month. Consequently, the NYMEX RBOB-WTI crack narrowed by \$6.55/bbl to \$19.36/bbl, its lowest level since February. From 15 September, retailers were able to market winter grade fuels which are cheaper and easier to produce, though US refining activity suffered in September due to Hurricane Ida.

Prompt Month Oil Futures Prices (monthly and weekly averages, \$/bbl)												
	Sep-20	Jul-21	Aug-21	Sep-21	Sep-21		Week Commencing:					
					m-o-m Chg	y-o-y Chg	30 Aug	06 Sep	13 Sep	20 Sep	27 Sep	04 Oct
NYMEX												
Light Sweet Crude Oil (WTI)	39.63	72.43	67.71	71.54	3.83	31.91	69.12	68.88	71.62	72.07	75.30	78.33
RBOB	49.40	95.23	93.62	90.90	-2.72	41.50	92.60	89.42	91.50	89.91	93.73	98.07
ULSD	47.34	89.40	87.00	92.43	5.42	45.09	90.11	89.44	91.94	92.91	97.58	103.37
ULSD (\$/mmbtu)	8.35	15.77	15.34	16.30	0.96	7.95	15.89	15.77	16.21	16.39	17.21	18.23
Henry Hub Natural Gas (\$/mmbtu)	2.28	3.82	4.03	5.12	1.08	2.84	4.53	4.86	5.28	4.94	5.70	5.80
ICE												
Brent	41.87	74.29	70.51	74.88	4.37	33.01	72.73	72.18	74.72	75.96	79.01	81.85
Gasoil	44.13	80.41	77.79	84.43	6.63	40.30	81.35	81.21	83.85	85.56	89.93	95.10
Prompt Month Differentials												
NYMEX WTI - ICE Brent	-2.24	-1.86	-2.80	-3.34	-0.54	-1.10	-3.61	-3.30	-3.10	-3.89	-3.71	-3.52
NYMEX ULSD - WTI	7.71	16.97	19.29	20.89	1.59	13.18	20.99	20.56	20.32	20.84	22.28	25.04
NYMEX RBOB - WTI	9.77	22.80	25.91	19.36	-6.55	9.59	23.48	20.54	19.88	17.84	18.43	19.74
NYMEX 3-2-1 Crack (RBOB)	9.08	20.85	23.70	19.87	-3.84	10.78	22.65	20.54	20.02	18.84	19.71	21.51
NYMEX ULSD - Natural Gas (\$/mmbtu)	6.07	11.95	11.31	11.19	-0.13	5.12	11.36	10.91	10.94	11.44	11.51	12.43
ICE Gasoil - ICE Brent	2.26	6.12	7.28	9.55	2.26	7.29	8.62	9.03	9.13	9.60	10.92	13.25

Source: ICE, NYMEX.

Prompt NYMEX ULSD futures rose \$5.42/bbl in September, outstripping NYMEX WTI so that the NYMEX ULSD crack gained \$1.59/bbl to \$20.89/bbl and reached \$25.04/bbl in the first week of October. ICE Gasoil saw even steeper gains, rising \$6.63/bbl m-o-m to \$84.43/bbl and ICE Gasoil versus Brent cracks increased by \$2.26/bbl m-o-m to \$9.55/bbl and reached \$13.25/bbl in the first week of October. A strengthening recovery in air travel, robust freight transportation activity, the seasonal uptick in heating oil markets, as well as reduced refinery activity due to outages and maintenance have combined to boost gasoil cracks.



Money Manager net long positions in oil futures and options rose steadily over the month of September. The rebound takes positions back to their level of early July. The increase accompanied the steady strengthening of crude and oil product prices over the month.

Net length on crude futures rose 18% over the four weeks to 5 October (ICE Brent 19%, NYMEX WTI 16%). Outright long positions increased overall on both contracts (+14%) while outright short positions declined (-4%) with NYMEX WTI contracting (-9%) but ICE Brent stagnating (+2%). The jump in net long positions reflects a bullish outlook on prices in the coming weeks motivated by expectations of a significant crude stock draw as well as a spill over of tensions from the coal and natural gas markets into oil.

Net long positions on product futures increased 10% overall in the four weeks to 5 October. Net long positions on the middle distillate contracts rose only modestly (ICE Gasoil +3%, NYMEX ULSD +5%) while those on NYMEX RBOB gasoline components were higher by 29%. Outright long positions on product contracts mostly stagnated over the month (+1% overall and +/-2% for each contract). On the other hand, Money Managers made sharp reductions in outright short positions (ICE Gasoil -25%, NYMEX ULSD -24%, NYMEX RBOB -46%). Short covering coincides with the shift to winter specification for products in the Northern Hemisphere (usually bearish for gasoline prices but bullish for gasoil/diesel) and other strong product demand drivers that will boost price tensions versus crude.

Spot crude oil prices

Physical crude prices tracked crude futures higher over the month of September. Marker crude prices saw stronger increases for the principal sweet grades, North Sea Dated and WTI, than for sour Dubai. Autumn refinery turnarounds peak in October and fall in November (-1 mb/d m-o-m) and December (-2.5 mb/d m-o-m). Accordingly, in September crude buying accelerated for November and December. But, strong backwardation held back the evolution of grade price differentials to the marker crudes.

Sour crude price differentials in the Atlantic Basin were supported by the difficult offshore recovery following the passage of Hurricane Ida. Subsequent outages left a significant hole in global sour crude supply. *Force majeure* on several US Gulf Coast sour crude cargoes destined for Asia supported Atlantic Basin sour crude differentials in the first half of September as buyers attempted to replace the barrels. As well, a shorter than expected September Russian Urals loading programme contributed to tighten the sour crude market. These factors partly offset

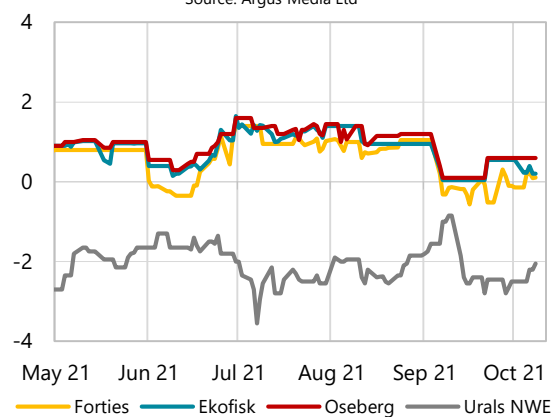
rising OPEC+ production that has been pushing more sour crude into the market and the impact of higher sour crude refining costs.

Sweet crudes price differentials in the Atlantic Basin suffered from an overhang of barrels. The expected 400 kb/d post maintenance ramp-up in North Sea production – from a September low point to the highest level since March in October – weighed on the market. Ample US WTI sweet crude exports to Europe, supported by the widening North Sea premium to WTI at Houston, further boosted regional supply. Demand for West African barrels was muted during part of September as regional Asian holidays withdrew some buyers from the market and as the continued wide Dubai discount to North Sea Dated undermined the economics of the trade. More generally, Chinese buying in the Atlantic Basin has eased since July as independent refiner import quotas were limited.

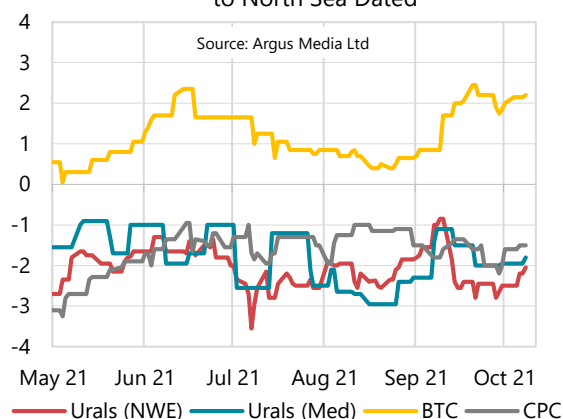
On average for the month, the spread for North Sea Dated versus ICE Brent flipped from a \$0.24/bbl premium to a \$0.48/bbl discount. The discount deepened to over \$1/bbl in mid-month before flipping again to a premium in early October of \$0.35/bbl.

The premiums for North Sea grades versus the marker fell sharply in September versus August. Forties fell \$0.92/bbl to -\$0.02/bbl, Ekofisk dropped by \$0.76/bbl to \$0.34/bbl and Oseberg slipped by \$0.78/bbl to a still robust \$0.42/bbl.

\$/bbl Crude Prices vs. North Sea Dated
Source: Argus Media Ltd



\$/bbl Urals, CPC, Azeri Light price differentials to North Sea Dated
Source: Argus Media Ltd



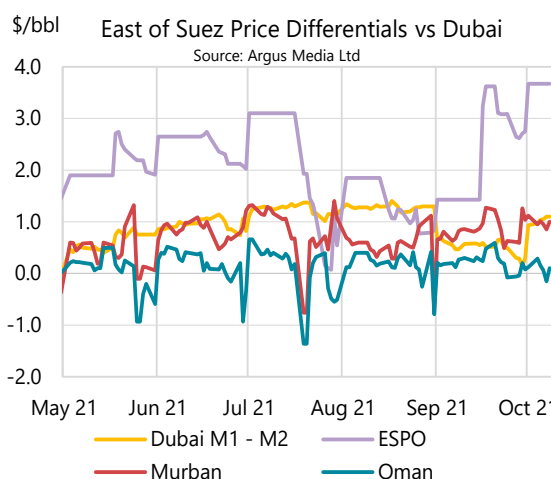
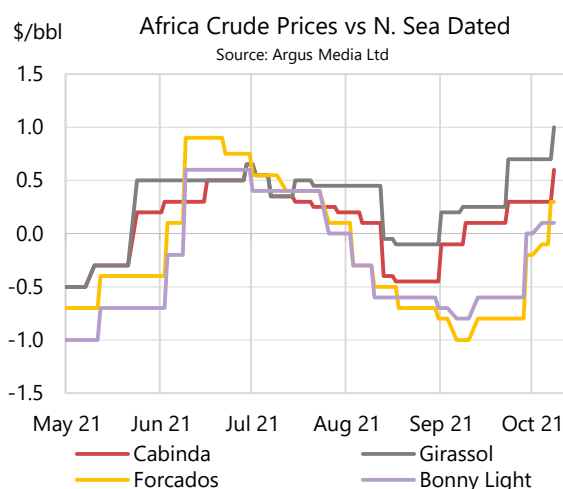
The Urals discount to North Sea Dated in Northwest Europe narrowed sharply in the first 10 days of September as sour crude market tensions rose due to production losses on the US Gulf Coast. The discount fell back to below its July levels in the second half of the month as production recovered.

In the Mediterranean, the Urals discount to North Sea Dated has taken longer to widen but by end-September had fallen to levels commensurate with June. Urals has recently competed well with Middle East sour grades because it is less sour and less heavy, which reduces its refining costs. The BTC Blend premium versus North Sea Dated rose \$1.03/bbl m-o-m in September to \$1.66/bbl and exceeded \$2/bbl in the latter half of the month with heightened regional demand for sweet distillate-rich grades.

West African grade differentials versus North Sea Dated recovered in late-September despite the strong Brent backwardation that widened the Dubai to North Sea discount. The progressive clearing of barrels pushed West African differentials back to premiums versus North Sea Dated by early October. The heavy sweet Angolan grades progressed following their late August

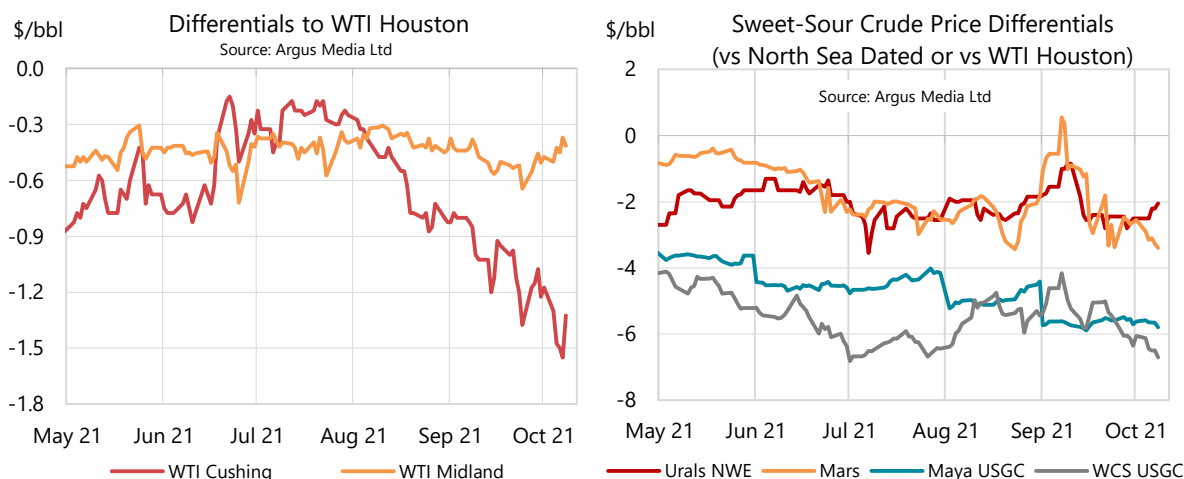
collapse, sustained by moderate Chinese buying. The differentials to North Sea Dated for the light sweet Nigerian grades continued to deteriorate into the first decade of September before steadying and rebounding late in the month. European demand for the Nigerian grades picked up in mid-month following disruptions to Libyan loadings. Late in the month, as regional Asian holidays wrapped up, stronger Indian crude demand appeared and was supported by strong naphtha and diesel cracks that offset the Dubai to North Sea discount.

Overall, Nigerian Bonny Light premiums to North Sea Dated lost \$0.10/bbl, deepening their discount to -\$0.60/bbl in September. Forcados premiums lost \$0.28/bbl to reach a discount of -\$0.79/bbl. The Angolan differentials rose overall, with Cabinda gaining \$0.29/bbl and flipping to a premium of \$0.10/bbl while Girassol increased \$0.22/bbl to \$0.36/bbl.



Middle East crudes benefitted from the wide Dubai to North Sea discount that made them quite competitive, largely offsetting the impact of rising OPEC output. Nevertheless, clearing the November trade cycle required a drop in differentials for some spot grades. The December cycle looks to be more in demand, particularly if Chinese buying rises. An uncertain buying horizon combined with high natural gas prices has stimulated strong demand from China's independent refiners for light sweet ESPO. Murban premiums to Dubai rose \$0.32/bbl m-o-m to \$0.84/bbl in September, Upper Zakum +\$0.05/bbl to \$0.11/bbl, and Oman +\$0.05/bbl m-o-m to \$0.21/bbl. ESPO premiums to Dubai rose \$1.64/bbl to \$1.73/bbl and reached \$2.62/bbl in the first week of October.

The premium for WTI at Houston versus Cushing widened by \$0.44/bbl m-o-m to \$1.03/bbl while that for WTI at Midland rose \$0.32/bbl to \$0.54/bbl. US PADD 2 crude stocks have fallen to the bottom of their five-year range, yet supply into the region has increased with higher exports from Western Canada (most recently thanks to Enbridge's Line 3 replacement, which came into operation on 1 October). On the other hand, tightening international markets and the fall in PADD3 crude stocks after Hurricane Ida combined to lift WTI prices at Houston to attract more barrels for local refiners. The same effect supported WTI prices at Midland versus Cushing, drawing more crude toward export outlets on the western side of the Gulf.



Discounts for Western Canadian Select (WCS) at Hardisty, Alberta versus WTI at Cushing narrowed by a further \$1.54/bbl in September to -\$12.20/bbl. The post-September production recovery continued to be offset by pipeline fill for Enbridge's Line 3 plus local refinery uptake, easing pipeline apportionment to the US market that depresses crude prices in Western Canada versus WTI at Cushing. Outages from Hurricane Ida in September caused a sharp spike in Mars prices versus WTI, but the price tensions eased progressively as supply recovered in the first half of September. The Mars discount to WTI at Houston narrowed by \$0.68/bbl m-o-m in September to \$1.72/bbl, but widened to -\$3.16/bbl in the first week of October. The WCS discount to WTI at Houston narrowed overall by \$0.08/bbl m-o-m to -\$5.36/bbl, but the return of offshore sour crude production from mid-September depressed the differential that widened to -\$6.45/bbl in the first week of October.

Spot Crude Oil Prices and Differentials (monthly and weekly averages, \$/bbl)												
	Sep-20	Jul-21	Aug-21	Sep-21	Sep-21		Week Commencing:					
					m-o-m Chg	y-o-y Chg	30 Aug	06 Sep	13 Sep	20 Sep	27 Sep	04 Oct
Crudes												
North Sea Dated	40.58	74.99	70.75	74.40	3.65	33.82	72.83	72.06	73.62	75.02	78.56	82.20
North Sea Mth 1	41.52	75.03	70.96	75.76	4.80	34.24	73.29	73.40	75.30	76.80	79.77	83.04
WTI (Cushing) Mth 1	39.60	72.46	67.73	71.56	3.84	31.96	69.12	68.88	71.62	72.15	75.30	78.33
WTI (Houston) Mth 1	40.41	72.72	68.32	72.59	4.28	32.18	69.92	69.80	72.67	73.29	76.46	79.76
Urals (NWE)	40.50	72.45	68.58	72.35	3.77	31.85	71.09	71.01	71.27	72.51	75.98	79.91
Urals (Mediterranean)	40.98	73.09	68.08	72.65	4.57	31.67	70.53	70.66	72.20	73.12	76.58	80.28
Dubai (1st month)	41.45	72.88	69.32	72.57	3.25	31.12	70.55	70.20	72.38	73.38	76.18	78.99
Tapis (Dated)	39.48	77.33	72.22	76.30	4.08	36.81	74.11	73.56	75.12	77.27	81.31	84.95
Differential to North Sea Dated												
WTI (Houston) versus North Sea Mth 1	-1.11	-2.30	-2.64	-3.17	-0.53	-2.06	-3.37	-3.59	-2.63	-3.52	-3.32	-3.28
Urals (NWE)	-0.08	-2.55	-2.17	-2.05	0.12	-1.97	-1.74	-1.05	-2.35	-2.51	-2.58	-2.29
Urals (Mediterranean)	0.40	-1.90	-2.67	-1.75	0.92	-2.15	-2.30	-1.40	-1.42	-1.90	-1.98	-1.92
Dubai versus North Sea Mth 1	-0.08	-2.14	-1.64	-3.20	-1.55	-3.12	-2.75	-3.20	-2.92	-3.42	-3.59	-4.05
Tapis (Dated)	-1.10	2.34	1.47	1.90	0.43	3.00	1.28	1.50	1.50	2.25	2.75	2.75
Prompt Month Differential												
North Sea Dated vs. ICE Brent	-1.29	0.70	0.24	-0.48	-0.72	0.81	0.10	-0.12	-1.10	-0.94	-0.45	0.35
Forward Cash Brent Mth1-Mth2	-0.36	0.76	0.43	0.77	0.35	1.13	0.84	0.86	0.65	0.87	0.75	0.73
Forward WTI Cushing Mth1-Mth2	-0.28	0.52	0.26	0.23	-0.03	0.51	0.25	0.23	0.23	0.12	0.34	0.39
Forward Dubai Mth1-Mth2	-0.32	1.23	1.29	0.51	-0.78	0.83	0.92	0.52	0.56	0.56	0.39	1.05

Source: Argus Media Ltd, ICE

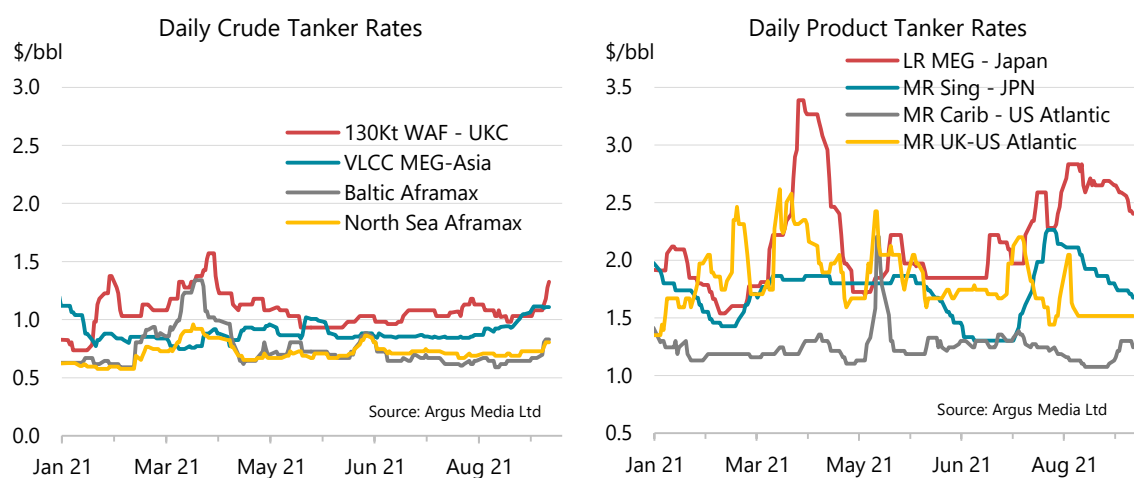
Freight

Global shipping activity fell slightly in September (-1.1% m-o-m) and annual growth dropped to 4% y-o-y. The monthly contraction was driven by slower activity in the largest sectors, dry bulk

(-0.7% m-o-m) and liquids tankers (-1.1% m-o-m), while other sectors continued to expand activity.

Tanker activity remains below its pre-pandemic levels, sustaining the overall capacity overhang. Despite high scrap steel prices, ship scrapping has lagged deliveries of new tankers through the year-to-date, leaving ample available capacity in the market. Scrapping is expected to accelerate in 4Q21 and into 2022, helping to rebalance the market.

While crude price backwardation supports buying short-haul crudes, it has been aggravated in Europe by increased demand for local sweet grades to cut processing costs. This has partially offset the demand for more tonne-miles arising from the slow ramp-up in OPEC+ crude exports. But the early-October uptick in chartering lifted crude tanker freight rates above breakeven levels for the first time since June.



Crude tanker freight rates moved higher on most segments of the market throughout September. VLCC rates from the Middle East Gulf (MEG) to Asia rose to a nine-month high while 130 ktonne Aframax rates hit their highest levels since March this year when rates surged after the Ever Given container ship blocked the Suez Canal. Chartering in the Atlantic Basin accelerated in the first 10 days of October due to stronger European refinery demand for regional sweet crudes. VLCC rates increased with the incremental tanker requirements due to monthly OPEC+ production increases and rising Middle East crude exports as seasonal crude burning rolls-off. While crude tanker freight rates have increased in the past two months, for the moment they have only risen to within the lowest values seen in 2019.

Product tanker rates remain depressed in the Atlantic Basin, declining overall m-o-m. Hurricane Ida provided a brief fillip for rates on transatlantic routes as US imports of European gasoline rose to offset the temporary refinery outages on the US Gulf Coast.

Freight rates on Asian routes for medium range (MR) and long-range (LR) vessels eased in September following their sharp run-up in July and August. Rates rose after Chinese product exports collapsed due to regulatory changes. The loss was offset by increased exports to Northeast Asia from Singapore and from refiners in the Middle East Gulf that drove up freight rates along these routes. Rates have eased as more tankers arrived in the region to ply this profitable trade, increasing available tonnage.

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

	2018	2019	1Q20	2Q20	3Q20	4Q20	2020	1Q21	2Q21	3Q21	4Q21	2021	1Q22	2Q22	3Q22	4Q22	2022
OECD DEMAND																	
Americas	25.4	25.5	24.3	19.8	22.6	23.0	22.4	22.7	24.3	24.9	24.8	24.2	24.3	25.1	25.5	25.1	25.0
Europe	14.3	14.3	13.3	11.0	12.9	12.5	12.4	11.9	12.6	13.7	13.3	12.9	13.2	13.5	13.8	13.3	13.5
Asia Oceania	8.0	7.9	7.9	6.6	6.8	7.4	7.1	7.7	7.0	7.1	7.8	7.4	7.9	7.2	7.4	7.8	7.6
Total OECD	47.7	47.7	45.5	37.5	42.3	42.8	42.0	42.3	44.0	45.7	45.9	44.5	45.4	45.7	46.7	46.3	46.0
NON-OECD DEMAND																	
FSU	4.7	4.7	4.6	4.1	4.7	4.7	4.5	4.6	4.7	4.9	4.9	4.8	4.8	4.7	5.0	5.1	4.9
Europe	0.8	0.8	0.7	0.7	0.8	0.8	0.7	0.7	0.7	0.8	0.8	0.8	0.7	0.8	0.8	0.8	0.8
China	13.0	13.5	11.8	14.1	14.6	14.8	13.8	14.6	15.2	15.3	15.2	15.1	15.3	15.7	15.7	15.5	15.6
Other Asia	14.0	14.0	13.5	11.3	12.3	13.4	12.6	13.6	13.0	12.7	14.1	13.3	14.4	14.1	13.6	14.3	14.1
Americas	6.3	6.3	5.8	5.0	5.7	5.9	5.6	5.8	5.9	6.2	6.1	6.0	6.0	6.1	6.2	6.2	6.1
Middle East	8.2	8.2	7.9	7.1	8.2	7.8	7.7	7.7	7.8	8.4	7.9	7.9	7.8	7.9	8.5	8.0	8.1
Africa	4.2	4.2	4.1	3.4	3.7	3.9	3.8	4.1	3.9	3.9	4.0	4.0	4.1	4.1	4.0	4.1	4.1
Total Non-OECD	51.1	51.8	48.4	45.6	49.9	51.2	48.8	51.1	51.2	52.1	53.0	51.8	53.1	53.4	53.9	53.9	53.6
Total Demand¹	98.8	99.5	93.9	83.1	92.1	94.0	90.8	93.4	95.2	97.8	98.9	96.3	98.6	99.1	100.5	100.2	99.6
OECD SUPPLY																	
Americas	23.0	24.8	25.9	22.6	23.2	23.7	23.8	23.3	24.2	24.2	24.7	24.1	24.9	25.2	25.6	25.8	25.4
Europe	3.5	3.4	3.7	3.6	3.4	3.5	3.6	3.6	3.1	3.4	3.6	3.4	3.6	3.4	3.4	3.5	3.5
Asia Oceania	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Total OECD⁴	26.9	28.6	30.1	26.8	27.1	27.8	27.9	27.4	27.8	28.0	28.8	28.0	29.0	29.2	29.5	29.9	29.4
NON-OECD SUPPLY																	
FSU	14.6	14.6	14.8	13.2	12.8	13.2	13.5	13.4	13.7	13.7	14.1	13.7	14.5	14.7	14.8	14.8	14.7
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	3.8	3.9	4.0	4.0	4.0	3.9	4.0	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
Other Asia	3.4	3.3	3.2	3.0	2.9	3.0	3.0	3.0	2.9	2.8	2.8	2.9	2.8	2.8	2.8	2.7	2.8
Americas	5.1	5.3	5.6	5.1	5.4	5.2	5.3	5.3	5.3	5.4	5.4	5.3	5.5	5.5	5.6	5.7	5.6
Middle East	3.1	3.1	3.1	3.1	3.0	3.1	3.1	3.1	3.1	3.1	3.2	3.1	3.3	3.3	3.3	3.3	3.3
Africa	1.5	1.5	1.4	1.4	1.4	1.3	1.4	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.2	1.3
Total Non-OECD⁴	31.6	31.8	32.2	29.9	29.6	29.8	30.4	30.2	30.5	30.5	31.0	30.6	31.5	31.8	31.9	31.9	31.8
Processing gains ³	2.4	2.4	2.3	2.0	2.1	2.1	2.1	2.1	2.2	2.3	2.3	2.3	2.4	2.4	2.4	2.4	2.4
Global Biofuels	2.7	2.8	2.2	2.5	3.1	2.6	2.6	2.1	2.9	3.2	2.9	2.8	2.5	3.2	3.5	3.0	3.0
Total Non-OPEC Supply	63.5	65.6	66.8	61.1	61.9	62.2	63.0	61.9	63.4	64.1	65.0	63.6	65.4	66.5	67.2	67.2	66.6
OPEC²																	
Crude	31.4	29.6	28.2	25.6	24.1	24.9	25.7	25.3	25.5	26.9							
NGLs	5.5	5.4	5.4	5.1	5.1	5.1	5.2	5.2	5.3	5.3	5.3	5.3	5.5	5.5	5.5	5.5	5.5
Total OPEC	36.8	35.0	33.6	30.7	29.1	30.0	30.9	30.5	30.8	32.2							
Total Supply	100.4	100.6	100.4	91.8	91.0	92.3	93.9	92.4	94.2	96.3							
STOCK CHANGES AND MISCELLANEOUS																	
Reported OECD																	
Industry	0.1	0.1	1.0	2.6	-0.4	-1.6	0.4	-1.2	-0.5								
Government	-0.1	0.0	0.0	0.3	-0.1	-0.1	0.0	0.0	-0.2								
Total	0.0	0.0	1.0	2.9	-0.5	-1.7	0.4	-1.2	-0.7								
Floating storage/Oil in transit	0.3	0.1	0.6	0.4	-1.6	0.8	0.0	-0.6	-0.4								
Miscellaneous to balance ⁵	1.2	1.0	4.9	5.4	1.1	-0.8	2.6	0.8	0.1								
Total Stock Ch. & Misc	1.5	1.1	6.5	8.8	-1.1	-1.7	3.1	-1.0	-1.0	-1.5							
Memo items:																	
Call on OPEC crude + Stock ch. ⁶	29.8	28.5	21.7	16.8	25.2	26.6	22.6	26.3	26.5	28.3	28.5	27.4	27.7	27.1	27.8	27.5	27.5

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

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

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

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

⁶ Equals the arithmetic difference between total demand minus total non-OPEC supply minus OPEC NGLs.

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

	2018	2019	1Q20	2Q20	3Q20	4Q20	2020	1Q21	2Q21	3Q21	4Q21	2021	1Q22	2Q22	3Q22	4Q22	2022
OECD DEMAND																	
Americas	-0.2	-0.1	-0.2	-0.2	-0.2	-0.2	-0.2	-	0.1	-0.3	-0.2	-0.1	-0.2	-0.1	-0.1	-	-0.1
Europe	-	-	-	-	-	-	-	-	-	0.2	-	0.1	0.2	0.1	0.2	0.2	0.2
Asia Oceania	-	-	-	-	-	-	-	-	-	-	-	-	-	-0.1	-	-	-
Total OECD	-0.2	-0.1	-0.2	-0.2	-0.2	-0.2	-0.2	-	0.1	-0.1	-0.2	-	-	-	0.1	0.1	-
NON-OECD DEMAND																	
FSU	-	-	-	-	-	-	-	-	-	0.1	0.1	-	-	-	-	-	-
Europe	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
China	-	-	-	0.1	-	-	-	-	-	0.4	-	0.1	0.2	0.1	0.2	-	0.1
Other Asia	-	-	-	-	-	-	-	-	-	-	0.1	-	0.1	-	-	-	-
Americas	-	-	-	-	-	-	-	-	-	0.1	0.1	-	-	-	-	-	-
Middle East	-	-	-	-	-	-	-	-	-	-0.1	-	-	-	-	-	-	-
Africa	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Non-OECD	-	-	-	0.1	-	-	-	-	-	0.6	0.3	0.2	0.4	0.1	0.2	-0.1	0.2
Total Demand	-0.2	-0.1	-0.2	-	-0.2	-0.2	-0.1	-	0.1	0.5	0.1	0.2	0.4	0.1	0.3	-	0.2
OECD SUPPLY																	
Americas	-	-	-	-	-	-	-	-	-	-	-0.1	-	-0.1	-	-	-	-
Europe	-	-	-	-	-	-	-	-	-	0.1	-	-	-	-	0.1	-	-
Asia Oceania	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total OECD	-	-	-	-	-	-	-	-	-	0.1	-0.1	-	-0.1	-	0.1	-	-
NON-OECD SUPPLY																	
FSU	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Europe	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
China	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other Asia	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Americas	-	-	-	-	-	-	-	-	-	-	-0.1	-	-	-	-	-	-
Middle East	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Africa	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Non-OECD	-	-	-	-	-	-	-	-	-	-0.1	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
Processing gains	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Global Biofuels	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Non-OPEC Supply	-	-	-	-	-	-	-	-	-	-	-0.3	-0.1	-0.2	-0.1	-	-0.1	-0.1
OPEC																	
Crude	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NGLs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total OPEC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Supply	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
STOCK CHANGES AND MISCELLANEOUS																	
REPORTED OECD																	
Industry	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Government	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Floating storage/Oil in transit	0.3	-0.1	0.2	-0.2	-0.3	-0.1	-0.1	0.3	0.4	-	-	-	-	-	-	-	-
Miscellaneous to balance	-0.2	0.2	-	0.2	0.5	0.2	0.2	-0.2	-0.5	-	-	-	-	-	-	-	-
Total Stock Ch. & Misc	0.2	0.1	0.2	-	0.2	0.2	0.1	0.1	-0.1	-	-	-	0.5	0.2	0.3	0.1	0.3
Memo items:																	
Call on OPEC crude + Stock ch.	-0.2	-0.1	-0.2	-	-0.2	-0.2	-0.1	-	0.1	0.5	0.4	0.2	0.5	0.2	0.3	0.1	0.3

Note: When submitting their monthly oil statistics, OECD Member countries periodically update data for prior periods. Similar updates to non-OECD data can occur.

Table 1b
WORLD OIL SUPPLY AND DEMAND (Including OPEC+ based on current agreement¹)
(million barrels per day)

	2018	2019	1Q20	2Q20	3Q20	4Q20	2020	1Q21	2Q21	3Q21	4Q21	2021	1Q22	2Q22	3Q22	4Q22	2022
Total Demand	98.8	99.5	93.9	83.1	92.1	94.0	90.8	93.4	95.2	97.8	98.9	96.3	98.6	99.1	100.5	100.2	99.6
OECD SUPPLY																	
Americas ²	20.9	22.8	23.9	20.7	21.3	21.8	21.9	21.3	22.3	22.2	22.7	22.1	22.9	23.3	23.6	23.8	23.4
Europe	3.5	3.4	3.7	3.6	3.4	3.5	3.6	3.6	3.1	3.4	3.6	3.4	3.6	3.4	3.4	3.5	3.5
Asia Oceania	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Total OECD (non-OPEC+)	24.8	26.7	28.1	24.8	25.2	25.9	26.0	25.5	25.8	26.1	26.8	26.1	27.0	27.2	27.5	27.9	27.4
NON-OECD SUPPLY																	
FSU ³	0.3	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	0.4
Europe	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
China	3.8	3.9	4.0	4.0	4.0	3.9	4.0	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
Other Asia ⁴	2.6	2.5	2.4	2.3	2.3	2.3	2.3	2.2	2.2	2.2	2.1	2.2	2.1	2.1	2.1	2.0	2.1
Latin America	5.1	5.3	5.6	5.1	5.4	5.2	5.3	5.3	5.3	5.4	5.4	5.3	5.5	5.5	5.6	5.7	5.6
Middle East ⁵	2.0	1.9	1.9	1.9	1.9	1.9	1.9	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Africa ⁶	1.3	1.2	1.2	1.2	1.1	1.1	1.2	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.0	1.0	1.1
Total Non-OECD (non-OPEC+)	15.2	15.3	15.6	15.0	15.2	14.9	15.1	15.1	15.1	15.2	15.1	15.1	15.2	15.2	15.3	15.3	15.3
Processing Gains	2.4	2.4	2.3	2.0	2.1	2.1	2.1	2.1	2.2	2.3	2.3	2.3	2.4	2.4	2.4	2.4	2.4
Global Biofuels	2.7	2.8	2.2	2.5	3.1	2.6	2.6	2.1	2.9	3.2	2.9	2.8	2.5	3.2	3.5	3.0	3.0
Total Non-OPEC+	45.0	47.2	48.2	44.3	45.5	45.5	45.9	44.8	46.1	46.8	47.2	46.2	47.2	48.0	48.6	48.6	48.1
OPEC+ CRUDE																	
Algeria	1.0	1.0	1.0	0.9	0.8	0.9	0.9	0.9	0.9	0.9	1.0	0.9	1.0	1.0	1.0	1.0	1.0
Angola	1.5	1.4	1.4	1.3	1.2	1.2	1.3	1.1	1.1	1.1	1.2	1.1	1.2	1.2	1.1	1.1	1.1
Azerbaijan	0.7	0.7	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	0.6	0.6
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	3.6	2.4	2.0	1.9	2.0	2.1	2.0	2.3	2.4	2.5	2.5	2.4	2.5	2.5	2.5	2.5	2.5
Iraq	4.6	4.7	4.6	4.1	3.7	3.8	4.0	3.9	3.9	4.1	4.2	4.0	4.3	4.5	4.6	4.7	4.5
Kazakhstan	1.6	1.6	1.7	1.5	1.4	1.4	1.5	1.5	1.5	1.4	1.5	1.5	1.6	1.6	1.6	1.6	1.6
Kuwait	2.7	2.7	2.7	2.4	2.2	2.3	2.4	2.3	2.4	2.4	2.5	2.4	2.6	2.7	2.8	2.8	2.7
Libya	1.0	1.1	0.3	0.1	0.1	0.9	0.4	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
Malaysia	0.5	0.5	0.5	0.4	0.4	0.4	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Mexico	1.8	1.7	1.7	1.6	1.6	1.6	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
Nigeria	1.6	1.7	1.8	1.6	1.4	1.3	1.5	1.4	1.3	1.3	1.4	1.4	1.5	1.5	1.6	1.6	1.5
Oman	0.9	0.8	0.9	0.8	0.7	0.7	0.8	0.7	0.7	0.8	0.8	0.8	0.8	0.8	0.9	0.9	0.9
Russia	10.4	10.4	10.4	9.2	8.9	9.1	9.4	9.3	9.5	9.7	9.9	9.6	10.2	10.4	10.4	10.5	10.4
Saudi Arabia	10.3	9.9	9.8	9.3	8.8	9.0	9.2	8.5	8.5	9.6	9.9	9.1	10.2	10.6	10.9	11.0	10.7
South Sudan	0.1	0.2	0.2	0.2	0.2	0.1	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
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	3.0	3.2	3.2	2.9	2.8	2.5	2.9	2.6	2.6	2.8	2.9	2.7	2.9	3.0	3.1	3.2	3.1
Venezuela	1.4	0.9	0.8	0.5	0.4	0.4	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
OPEC+ Crude	47.8	45.9	44.6	40.2	38.2	39.3	40.6	39.9	40.5	41.8	43.2	41.4	44.3	45.3	46.1	46.3	45.5
OPEC+ NGLs & Condensate	7.5	7.5	7.5	7.2	7.2	7.4	7.3	7.5	7.5	7.5	7.6	7.5	7.8	7.8	7.8	7.8	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+	55.4	53.5	52.2	47.6	45.5	46.8	48.0	47.5	48.1	49.5	51.0	49.0	52.2	53.2	54.0	54.3	53.4
Total Supply Oil	100.4	100.6	100.4	91.8	91.0	92.3	93.9	92.4	94.2	96.3	98.1	95.3	99.4	101.2	102.6	102.9	101.5

Memo items:

Call on OPEC+ crude + Stock ch 46.3 44.8 38.1 31.5 39.3 41.0 37.5 40.9 41.5 43.3 43.9 42.4 43.5 43.2 44.0 43.7 43.6

¹ From Sept 2021 OPEC+ supply reflects latest OPEC+ deal and individual country's sustainable capacity. Libya, Iran, Venezuela held at most recent level through 2022.

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

	2019	1Q20	2Q20	3Q20	4Q20	2020	1Q21	2Q21	3Q21	4Q21	2021	1Q22	2Q22	3Q22	4Q22	2022
Demand (mb/d)																
Americas	25.47	24.31	19.85	22.64	22.98	22.44	22.73	24.33	24.89	24.77	24.19	24.30	25.06	25.47	25.10	24.99
Europe	14.31	13.34	11.01	12.88	12.51	12.44	11.91	12.61	13.72	13.31	12.89	13.21	13.48	13.83	13.34	13.47
Asia Oceania	7.93	7.86	6.60	6.75	7.35	7.14	7.67	7.04	7.07	7.79	7.39	7.91	7.18	7.38	7.82	7.57
Total OECD	47.72	45.51	37.46	42.27	42.84	42.02	42.30	43.98	45.68	45.88	44.47	45.42	45.72	46.68	46.26	46.02
Asia	27.54	25.32	25.40	26.84	28.15	26.43	28.18	28.17	27.95	29.25	28.39	29.71	29.83	29.38	29.81	29.68
Middle East	8.24	7.85	7.09	8.18	7.78	7.72	7.67	7.79	8.37	7.86	7.93	7.82	7.93	8.49	7.96	8.05
Americas	6.29	5.77	4.99	5.70	5.90	5.59	5.84	5.90	6.21	6.14	6.02	5.96	6.05	6.20	6.19	6.10
FSU	4.72	4.57	4.05	4.65	4.67	4.49	4.56	4.68	4.90	4.92	4.77	4.75	4.72	5.04	5.08	4.90
Africa	4.24	4.12	3.41	3.72	3.91	3.79	4.07	3.93	3.85	4.04	3.97	4.14	4.06	3.95	4.11	4.07
Europe	0.78	0.74	0.68	0.77	0.77	0.74	0.74	0.74	0.80	0.77	0.76	0.74	0.76	0.81	0.79	0.77
Total Non-OECD	51.82	48.38	45.62	49.86	51.17	48.77	51.07	51.21	52.08	52.98	51.84	53.13	53.35	53.87	53.94	53.58
World	99.54	93.88	83.07	92.13	94.01	90.79	93.37	95.19	97.76	98.86	96.31	98.55	99.08	100.54	100.20	99.60
of which: US\$0	20.46	19.50	16.07	18.45	18.72	18.19	18.45	20.03	20.31	20.09	19.72	19.64	20.24	20.47	20.26	20.15
Europe 5*	8.20	7.62	5.93	7.11	7.03	6.92	6.68	7.03	7.61	7.52	7.21	7.61	7.57	7.67	7.51	7.59
China	13.55	11.82	14.14	14.57	14.80	13.84	14.57	15.20	15.29	15.20	15.07	15.32	15.72	15.73	15.50	15.57
Japan	3.74	3.78	2.93	3.06	3.53	3.33	3.73	3.08	3.13	3.69	3.41	3.84	3.18	3.32	3.69	3.51
India	4.99	4.94	3.90	4.28	5.02	4.54	5.10	4.56	4.60	5.15	4.85	5.29	5.15	4.78	5.16	5.09
Russia	3.57	3.52	3.08	3.58	3.50	3.42	3.49	3.59	3.76	3.69	3.63	3.66	3.58	3.87	3.84	3.74
Brazil	3.08	2.95	2.64	2.99	3.13	2.93	2.97	2.98	3.19	3.15	3.07	3.00	2.99	3.10	3.13	3.06
Saudi Arabia	3.12	2.93	2.77	3.30	3.01	3.00	2.77	3.07	3.35	3.03	3.06	2.77	2.90	3.24	2.94	2.96
Canada	2.51	2.42	1.97	2.25	2.14	2.19	2.12	2.16	2.46	2.49	2.31	2.36	2.38	2.60	2.53	2.47
Korea	2.60	2.53	2.45	2.36	2.40	2.44	2.55	2.50	2.57	2.67	2.57	2.61	2.55	2.61	2.62	2.60
Mexico	1.96	1.85	1.40	1.50	1.58	1.58	1.62	1.63	1.60	1.68	1.63	1.75	1.91	1.88	1.80	1.83
Iran	1.93	1.97	1.78	1.89	1.88	1.88	1.97	1.78	1.86	1.89	1.87	1.99	1.88	1.90	1.90	1.92
Total	69.70	65.82	59.03	65.36	66.75	64.25	66.01	67.62	69.72	70.26	68.42	69.84	70.03	71.19	70.87	70.49
% of World	70.0%	70.1%	71.1%	70.9%	71.0%	70.8%	70.7%	71.0%	71.3%	71.1%	71.0%	70.9%	70.7%	70.8%	70.7%	70.8%
Annual Change (% per annum)																
Americas	0.2	-2.9	-21.6	-12.6	-10.3	-11.9	-6.5	22.6	9.9	7.8	7.8	6.9	3.0	2.3	1.3	3.3
Europe	0.0	-5.3	-22.8	-12.6	-11.6	-13.1	-10.8	14.5	6.5	6.4	3.7	10.9	6.9	0.8	0.2	4.5
Asia Oceania	-1.0	-6.0	-12.6	-12.3	-9.6	-10.0	-2.5	6.7	4.7	6.0	3.5	3.2	2.0	4.4	0.3	2.4
Total OECD	-0.0	-4.2	-20.5	-12.6	-10.6	-11.9	-7.1	17.4	8.1	7.1	5.8	7.4	4.0	2.2	0.8	3.5
Asia	2.0	-7.0	-8.0	-1.6	0.4	-4.0	11.3	10.9	4.1	3.9	7.4	5.4	5.9	5.1	1.9	4.5
Middle East	0.2	-2.1	-12.2	-5.6	-5.3	-6.3	-2.3	10.0	2.4	1.1	2.6	2.0	1.7	1.3	1.2	1.6
Americas	0.6	-6.5	-20.5	-10.7	-6.8	-11.1	1.2	18.3	8.9	4.0	7.7	1.9	2.6	0.0	0.9	1.3
FSU	0.8	1.6	-12.6	-5.1	-3.7	-5.0	-0.3	15.5	5.3	5.3	6.2	4.3	0.9	2.9	3.3	2.8
Africa	0.7	-4.3	-20.4	-10.1	-8.1	-10.7	-1.3	15.3	3.6	3.3	4.8	1.8	3.3	2.6	1.9	2.4
Europe	3.4	-1.8	-13.4	-4.0	-3.1	-5.6	0.6	8.7	4.3	0.9	3.5	0.1	3.4	0.8	1.6	1.4
Total Non-OECD	1.4	-5.1	-11.7	-4.4	-2.5	-5.9	5.6	12.3	4.5	3.5	6.3	4.0	4.2	3.4	1.8	3.3
World	0.7	-4.7	-15.9	-8.3	-6.3	-8.8	-0.6	14.6	6.1	5.2	6.1	5.6	4.1	2.8	1.4	3.4
Annual Change (mb/d)																
Americas	0.06	-0.73	-5.48	-3.26	-2.65	-3.03	-1.58	4.48	2.25	1.79	1.74	1.58	0.73	0.58	0.33	0.80
Europe	0.00	-0.75	-3.25	-1.86	-1.64	-1.88	-1.43	1.60	0.84	0.80	0.46	1.30	0.88	0.11	0.03	0.57
Asia Oceania	-0.08	-0.50	-0.95	-0.95	-0.78	-0.79	-0.19	0.44	0.32	0.44	0.25	0.24	0.14	0.31	0.02	0.18
Total OECD	-0.01	-1.98	-9.68	-6.07	-5.06	-5.70	-3.21	6.52	3.41	3.04	2.45	3.12	1.74	1.00	0.39	1.55
Asia	0.55	-1.91	-2.21	-0.42	0.11	-1.10	2.87	2.77	1.11	1.10	1.96	1.53	1.66	1.42	0.56	1.29
Middle East	0.02	-0.17	-0.99	-0.48	-0.43	-0.52	-0.18	0.71	0.20	0.09	0.20	0.15	0.13	0.11	0.10	0.12
Americas	0.04	-0.40	-1.29	-0.69	-0.43	-0.70	0.07	0.91	0.51	0.24	0.43	0.11	0.15	0.00	0.05	0.08
FSU	0.04	0.07	-0.59	-0.25	-0.18	-0.24	-0.02	0.63	0.25	0.25	0.28	0.19	0.04	0.14	0.16	0.14
Africa	0.03	-0.18	-0.87	-0.42	-0.34	-0.45	-0.05	0.52	0.13	0.13	0.18	0.07	0.13	0.10	0.08	0.09
Europe	0.03	-0.01	-0.11	-0.03	-0.02	-0.04	0.00	0.06	0.03	0.01	0.03	0.00	0.03	0.01	0.01	0.01
Total Non-OECD	0.70	-2.61	-6.05	-2.29	-1.30	-3.06	2.69	5.60	2.23	1.81	3.08	2.06	2.14	1.78	0.96	1.73
World	0.69	-4.59	-15.73	-8.36	-6.36	-8.76	-0.52	12.12	5.64	4.84	5.53	5.18	3.88	2.78	1.34	3.29
Revisions to Oil Demand from Last Month's Report (mb/d)																
Americas	-0.14	-0.17	-0.15	-0.16	-0.17	-0.16	-0.04	0.08	-0.28	-0.20	-0.11	-0.20	-0.05	-0.10	-0.02	-0.09
Europe	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.20	0.04	0.06	0.18	0.11	0.19	0.15	0.16
Asia Oceania	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.01	0.01	0.00	-0.06	-0.04	-0.05	-0.04
Total OECD	-0.14	-0.17	-0.15	-0.16	-0.17	-0.16	-0.04	0.09	-0.05	-0.16	-0.04	-0.01	0.00	0.05	0.09	0.03
Asia	0.00	0.00	0.14	0.00	0.00	0.03	0.03	-0.02	0.47	0.16	0.16	0.33	0.14	0.25	-0.01	0.18
Middle East	0.00	0.00	0.00	0.00	0.00	0.00	-0.03	-0.03	-0.06	-0.05	-0.04	-0.04	-0.04	-0.04	-0.03	-0.04
Americas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.06	0.03	0.03	-0.03	-0.05	-0.04	-0.02
FSU	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.02	0.07	0.06	0.04	0.03	0.03	0.03	0.00	0.02
Africa	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.03	0.02	0.02	0.03	0.03	0.03	0.03
Europe	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.01	0.00	0.00	0.00	0.01	0.00	0.00
Total Non-OECD	-	0.00	0.14	0.00	0.00	0.03	0.01	-0.02	0.58	0.26	0.21	0.38	0.14	0.23	-0.05	0.17
World	-0.14	-0.17	-0.01	-0.16	-0.17	-0.13	-0.02	0.07	0.53	0.09	0.17	0.37	0.14	0.29	0.04	0.21
Revisions to Oil Demand Growth from Last Month's Report (mb/d)																
World	0.04	-0.02	0.11	-0.02	-0.03	0.01	0.15	0.08	0.69	0.26	0.30	0.39	0.07	-0.24	-0.06	0.04

* France, Germany, Italy, Spain and UK

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

	Latest month vs.										
	2019	2020	3Q20	4Q20	1Q21	2Q21	May 21	Jun 21	Jul 21 ²	Jun 21	Jul 20
Americas											
LPG and ethane	3.40	3.46	3.16	3.75	3.66	3.50	3.60	3.62	3.36	-0.26	0.10
Naphtha	0.25	0.25	0.25	0.26	0.23	0.27	0.27	0.27	0.27	-0.01	0.01
Motor gasoline	11.04	9.53	10.02	9.55	9.38	10.57	10.60	10.88	10.95	0.07	0.98
Jet and kerosene	2.05	1.23	1.10	1.24	1.28	1.49	1.47	1.59	1.70	0.12	0.61
Gasoil/diesel oil	5.37	4.92	4.79	5.08	5.08	5.03	4.98	5.04	4.75	-0.29	0.05
Residual fuel oil	0.54	0.40	0.50	0.41	0.54	0.51	0.53	0.61	0.56	-0.04	0.05
Other products	2.82	2.66	2.82	2.70	2.56	2.95	2.88	3.07	2.88	-0.19	0.15
Total	25.47	22.44	22.64	22.98	22.73	24.33	24.32	25.08	24.47	-0.60	1.96
Europe											
LPG and ethane	1.20	1.08	1.10	1.06	1.12	1.07	1.01	1.11	1.19	0.08	0.07
Naphtha	1.02	1.07	1.03	1.16	1.22	0.99	1.00	0.93	1.00	0.07	-0.08
Motor gasoline	2.04	1.75	2.05	1.72	1.57	1.92	1.88	2.15	2.23	0.08	0.15
Jet and kerosene	1.56	0.73	0.66	0.65	0.61	0.67	0.62	0.76	0.93	0.18	0.36
Gasoil/diesel oil	6.46	5.96	6.09	6.07	5.70	6.12	5.83	6.54	6.44	-0.10	0.26
Residual fuel oil	0.84	0.68	0.69	0.68	0.69	0.69	0.68	0.70	0.73	0.03	0.04
Other products	1.20	1.15	1.26	1.17	1.00	1.14	1.15	1.19	1.18	-0.01	-0.09
Total	14.31	12.44	12.88	12.51	11.91	12.61	12.17	13.37	13.70	0.32	0.70
Asia Oceania											
LPG and ethane	0.82	0.78	0.72	0.79	0.86	0.77	0.72	0.81	0.77	-0.04	0.04
Naphtha	1.98	1.82	1.82	1.75	1.97	1.86	1.88	1.85	1.91	0.06	0.10
Motor gasoline	1.52	1.35	1.42	1.42	1.32	1.37	1.33	1.39	1.38	-0.01	-0.02
Jet and kerosene	0.89	0.61	0.37	0.69	0.82	0.47	0.46	0.44	0.41	-0.03	0.05
Gasoil/diesel oil	1.93	1.79	1.73	1.89	1.82	1.82	1.75	1.84	1.76	-0.08	0.03
Residual fuel oil	0.43	0.43	0.39	0.44	0.50	0.41	0.39	0.41	0.44	0.03	0.06
Other products	0.37	0.35	0.30	0.38	0.37	0.35	0.34	0.37	0.38	0.00	0.11
Total	7.93	7.14	6.75	7.35	7.67	7.04	6.87	7.11	7.05	-0.06	0.37
OECD											
LPG and ethane	5.41	5.32	4.98	5.59	5.64	5.35	5.33	5.55	5.32	-0.23	0.21
Naphtha	3.26	3.15	3.10	3.16	3.42	3.12	3.15	3.04	3.17	0.13	0.02
Motor gasoline	14.59	12.64	13.49	12.69	12.28	13.85	13.80	14.41	14.55	0.14	1.11
Jet and kerosene	4.50	2.57	2.13	2.58	2.71	2.62	2.55	2.79	3.05	0.26	1.02
Gasoil/diesel oil	13.75	12.67	12.61	13.04	12.61	12.98	12.56	13.43	12.96	-0.47	0.35
Residual fuel oil	1.81	1.51	1.58	1.53	1.72	1.60	1.60	1.72	1.74	0.02	0.15
Other products	4.40	4.16	4.38	4.25	3.92	4.44	4.37	4.63	4.43	-0.20	0.18
Total	47.72	42.02	42.27	42.84	42.30	43.98	43.36	45.56	45.22	-0.34	3.04

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. North America 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)

	2019	2020	3Q20	4Q20	1Q21	2Q21	May 21	Jun 21	Jul 21 ²	Latest month vs.	
										Jun 21	Jul 20
United States³											
LPG and ethane	2.63	2.74	2.48	3.01	2.85	2.76	2.90	2.81	2.55	-0.26	-0.01
Naphtha	0.21	0.18	0.19	0.19	0.16	0.21	0.21	0.20	0.22	0.01	0.02
Motor gasoline	9.27	8.05	8.51	8.06	8.00	9.07	9.14	9.27	9.31	0.04	0.85
Jet and kerosene	1.75	1.08	0.97	1.10	1.14	1.34	1.32	1.43	1.49	0.07	0.52
Gasoil/diesel oil	4.08	3.78	3.70	3.94	3.97	3.93	3.87	3.94	3.66	-0.28	0.04
Residual fuel oil	0.27	0.21	0.32	0.22	0.26	0.25	0.26	0.34	0.33	-0.01	-0.02
Other products	2.24	2.13	2.28	2.21	2.05	2.47	2.40	2.55	2.34	-0.21	0.11
Total	20.46	18.19	18.45	18.72	18.45	20.03	20.09	20.54	19.89	-0.64	1.51
Japan											
LPG and ethane	0.43	0.41	0.35	0.42	0.50	0.40	0.35	0.41	0.37	-0.03	0.02
Naphtha	0.74	0.68	0.67	0.71	0.74	0.68	0.69	0.65	0.64	-0.01	-0.01
Motor gasoline	0.85	0.76	0.81	0.78	0.71	0.71	0.68	0.73	0.78	0.05	0.00
Jet and kerosene	0.47	0.36	0.19	0.44	0.55	0.24	0.23	0.21	0.20	-0.01	0.01
Diesel	0.44	0.40	0.39	0.42	0.41	0.39	0.35	0.40	0.39	-0.01	0.00
Other gasoil	0.33	0.30	0.27	0.33	0.35	0.28	0.26	0.28	0.26	-0.02	-0.02
Residual fuel oil	0.23	0.21	0.19	0.23	0.27	0.21	0.19	0.22	0.24	0.03	0.05
Other products	0.24	0.20	0.19	0.20	0.20	0.18	0.20	0.17	0.24	0.07	0.06
Total	3.74	3.33	3.06	3.53	3.73	3.08	2.93	3.06	3.12	0.06	0.11
Germany											
LPG and ethane	0.12	0.11	0.11	0.10	0.11	0.13	0.12	0.13	0.12	-0.01	-0.01
Naphtha	0.27	0.29	0.28	0.32	0.35	0.28	0.31	0.23	0.27	0.04	-0.04
Motor gasoline	0.50	0.45	0.49	0.44	0.40	0.44	0.43	0.48	0.47	-0.01	-0.04
Jet and kerosene	0.22	0.10	0.09	0.08	0.09	0.11	0.11	0.12	0.15	0.02	0.06
Diesel	0.76	0.71	0.75	0.71	0.60	0.71	0.67	0.76	0.74	-0.02	-0.03
Other gasoil	0.34	0.36	0.25	0.33	0.22	0.26	0.25	0.25	0.21	-0.04	-0.08
Residual fuel oil	0.06	0.05	0.05	0.05	0.05	0.04	0.04	0.04	0.05	0.01	-0.02
Other products	0.08	0.08	0.09	0.07	0.05	0.06	0.07	0.06	0.05	-0.01	-0.03
Total	2.35	2.15	2.12	2.11	1.88	2.03	2.00	2.07	2.05	-0.03	-0.20
Italy											
LPG and ethane	0.10	0.09	0.09	0.10	0.11	0.09	0.08	0.09	0.09	0.00	0.00
Naphtha	0.11	0.10	0.11	0.12	0.11	0.10	0.11	0.08	0.08	0.00	-0.03
Motor gasoline	0.18	0.14	0.17	0.14	0.13	0.17	0.17	0.19	0.21	0.01	0.03
Jet and kerosene	0.11	0.04	0.04	0.04	0.02	0.04	0.03	0.05	0.06	0.01	0.03
Diesel	0.47	0.42	0.48	0.45	0.44	0.49	0.48	0.53	0.54	0.01	0.04
Other gasoil	0.07	0.06	0.06	0.07	0.05	0.06	0.05	0.07	0.07	0.00	0.00
Residual fuel oil	0.06	0.06	0.06	0.06	0.05	0.05	0.05	0.06	0.07	0.00	0.00
Other products	0.15	0.14	0.15	0.15	0.14	0.16	0.16	0.16	0.17	0.01	0.00
Total	1.26	1.05	1.17	1.13	1.04	1.15	1.13	1.24	1.28	0.04	0.07
France											
LPG and ethane	0.14	0.11	0.12	0.11	0.12	0.13	0.13	0.12	0.12	0.00	0.01
Naphtha	0.11	0.12	0.11	0.14	0.15	0.12	0.11	0.11	0.12	0.00	-0.01
Motor gasoline	0.20	0.17	0.22	0.17	0.18	0.20	0.19	0.24	0.25	0.01	0.01
Jet and kerosene	0.17	0.09	0.08	0.08	0.08	0.07	0.07	0.08	0.10	0.02	0.03
Diesel	0.76	0.67	0.76	0.69	0.68	0.72	0.67	0.81	0.80	-0.01	-0.01
Other gasoil	0.14	0.14	0.06	0.13	0.17	0.09	0.08	0.08	0.08	0.00	0.01
Residual fuel oil	0.05	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.04	0.01	0.00
Other products	0.11	0.09	0.11	0.09	0.07	0.09	0.09	0.13	0.13	-0.01	0.01
Total	1.69	1.42	1.51	1.44	1.47	1.45	1.37	1.61	1.63	0.03	0.06
United Kingdom											
LPG and ethane	0.13	0.13	0.12	0.12	0.13	0.09	0.09	0.08	0.09	0.02	-0.04
Naphtha	0.03	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.00	-0.01	-0.02
Motor gasoline	0.29	0.22	0.24	0.23	0.20	0.26	0.26	0.28	0.28	0.00	0.07
Jet and kerosene	0.34	0.19	0.13	0.17	0.17	0.14	0.14	0.13	0.12	0.00	0.02
Diesel	0.52	0.43	0.44	0.46	0.42	0.50	0.48	0.54	0.53	0.00	0.13
Other gasoil	0.14	0.11	0.13	0.11	0.11	0.14	0.14	0.14	0.14	0.01	0.03
Residual fuel oil	0.02	0.02	0.02	0.02	0.02	0.01	0.01	0.02	0.02	0.00	0.00
Other products	0.12	0.10	0.10	0.10	0.09	0.11	0.11	0.12	0.11	-0.01	0.02
Total	1.58	1.21	1.20	1.22	1.16	1.25	1.23	1.31	1.30	-0.01	0.21
Canada											
LPG and ethane	0.39	0.37	0.35	0.37	0.46	0.40	0.37	0.46	0.44	-0.02	0.07
Naphtha	0.02	0.03	0.03	0.04	0.03	0.03	0.03	0.04	0.03	-0.01	0.01
Motor gasoline	0.88	0.75	0.81	0.74	0.67	0.77	0.73	0.86	0.89	0.03	0.08
Jet and kerosene	0.17	0.07	0.06	0.06	0.05	0.05	0.05	0.07	0.10	0.03	0.04
Diesel	0.26	0.27	0.26	0.26	0.27	0.27	0.26	0.27	0.26	-0.01	0.00
Other gasoil	0.38	0.33	0.35	0.35	0.32	0.32	0.32	0.35	0.33	-0.02	0.02
Residual fuel oil	0.04	0.04	0.03	0.03	0.04	0.03	0.02	0.03	0.02	-0.01	-0.01
Other products	0.36	0.33	0.36	0.29	0.28	0.28	0.28	0.32	0.33	0.01	0.00
Total	2.51	2.19	2.25	2.14	2.12	2.16	2.05	2.39	2.40	0.01	0.21

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)

	2020	2021	2022	2Q21	3Q21	4Q21	1Q22	2Q22	Jul 21	Aug 21	Sep 21
OPEC											
Crude Oil											
Saudi Arabia	9.21			8.53	9.57				9.46	9.56	9.68
Iran	2.00			2.40	2.46				2.50	2.42	2.46
Iraq	4.05			3.94	4.06				3.97	4.07	4.15
UAE	2.86			2.64	2.76				2.72	2.77	2.80
Kuwait	2.41			2.35	2.44				2.42	2.44	2.47
Angola	1.27			1.12	1.11				1.10	1.13	1.11
Nigeria	1.49			1.34	1.28				1.32	1.24	1.27
Libya	0.35			1.15	1.16				1.18	1.15	1.15
Algeria	0.90			0.89	0.92				0.91	0.92	0.94
Congo	0.30			0.27	0.25				0.25	0.26	0.25
Gabon	0.20			0.18	0.19				0.19	0.18	0.20
Equatorial Guinea	0.11			0.11	0.10				0.10	0.10	0.10
Venezuela	0.53			0.55	0.57				0.57	0.57	0.57
Total Crude Oil	25.69			25.48	26.88				26.69	26.81	27.15
of which Neutral Zone ¹	0.11			0.26	0.24				0.23	0.22	0.26
Total NGLs²	5.17	5.28	5.50	5.28	5.32	5.32	5.50	5.50	5.32	5.32	5.32
Total OPEC³	30.86			30.76	32.20				32.01	32.13	32.47
NON-OPEC⁴											
OECD											
Americas											
United States	16.56	16.49	17.52	16.84	16.59	16.88	16.99	17.52	16.88	16.63	16.26
Mexico	1.93	1.95	2.00	1.96	1.95	1.96	1.96	1.99	1.97	1.91	1.95
Canada	5.35	5.64	5.86	5.42	5.62	5.84	5.92	5.72	5.74	5.61	5.51
Chile	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Europe											
UK	3.57	3.41	3.50	3.10	3.36	3.56	3.60	3.43	3.31	3.48	3.29
Norway	1.08	0.90	0.91	0.77	0.87	0.93	0.95	0.90	0.84	0.89	0.87
Others	2.01	2.06	2.14	1.90	2.03	2.17	2.20	2.08	2.02	2.11	1.95
Asia Oceania											
Australia	0.48	0.45	0.45	0.43	0.46	0.46	0.45	0.45	0.45	0.47	0.47
Others	0.52	0.50	0.51	0.46	0.52	0.52	0.52	0.51	0.52	0.52	0.52
Australia	0.45	0.43	0.44	0.39	0.45	0.45	0.45	0.44	0.44	0.45	0.45
Others	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.08	0.07	0.07
Total OECD	27.94	28.00	29.40	27.79	28.05	28.77	29.01	29.18	28.42	28.16	27.54
NON-OECD											
Former USSR											
Russia	13.50	13.73	14.69	13.69	13.66	14.15	14.47	14.71	13.74	13.44	13.79
Azerbaijan	10.61	10.85	11.69	10.80	10.89	11.19	11.51	11.71	10.82	10.78	11.06
Kazakhstan	0.70	0.70	0.72	0.69	0.71	0.71	0.72	0.72	0.72	0.71	0.69
Others	1.84	1.82	1.91	1.84	1.70	1.88	1.87	1.92	1.85	1.59	1.68
Asia											
China	0.36	0.36	0.37	0.35	0.36	0.36	0.37	0.37	0.36	0.36	0.36
Malaysia	6.99	6.93	6.85	6.96	6.87	6.88	6.90	6.87	6.86	6.88	6.87
India	3.97	4.07	4.07	4.09	4.07	4.08	4.08	4.08	4.05	4.08	4.08
Indonesia	0.60	0.56	0.58	0.57	0.53	0.54	0.58	0.58	0.55	0.52	0.52
Others	0.75	0.73	0.70	0.72	0.73	0.72	0.72	0.71	0.73	0.72	0.72
Europe											
Others	0.73	0.68	0.65	0.68	0.67	0.67	0.66	0.65	0.68	0.67	0.67
Americas											
Brazil	0.93	0.89	0.84	0.90	0.87	0.88	0.86	0.85	0.85	0.89	0.87
Argentina	0.12	0.11	0.10	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
Colombia	5.32	5.35	5.56	5.31	5.42	5.39	5.46	5.52	5.45	5.41	5.39
Ecuador	3.04	3.04	3.24	3.04	3.09	3.07	3.16	3.22	3.14	3.08	3.06
Others	0.61	0.64	0.66	0.63	0.64	0.65	0.65	0.65	0.64	0.64	0.64
Middle East											
Oman	0.79	0.74	0.71	0.72	0.75	0.74	0.73	0.72	0.74	0.75	0.75
Qatar	0.48	0.50	0.48	0.50	0.50	0.50	0.49	0.48	0.50	0.50	0.50
Others	0.40	0.43	0.48	0.42	0.44	0.43	0.43	0.45	0.44	0.44	0.44
Africa											
Egypt	3.06	3.14	3.29	3.12	3.15	3.20	3.26	3.28	3.14	3.14	3.16
Others	0.96	0.98	1.08	0.96	0.98	1.02	1.05	1.07	0.97	0.98	0.99
Global Biofuels											
Global Biofuels	1.82	1.87	1.90	1.87	1.87	1.87	1.90	1.90	1.87	1.87	1.87
Others	0.28	0.29	0.31	0.28	0.29	0.30	0.31	0.31	0.29	0.29	0.30
Total Non-OECD	1.38	1.31	1.27	1.34	1.29	1.29	1.29	1.27	1.32	1.30	1.23
Egypt	0.60	0.57	0.54	0.58	0.57	0.56	0.55	0.55	0.57	0.57	0.57
Others	0.78	0.74	0.72	0.76	0.72	0.73	0.73	0.72	0.75	0.73	0.67
TOTAL NON-OPEC	63.01	63.62	66.58	63.44	64.10	65.00	65.38	66.48	64.64	64.12	63.52
TOTAL SUPPLY	93.86			94.21	96.30				96.65	96.25	95.99

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. NGLs in Qatar and 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)

	2020	2021	2022	2Q21	3Q21	4Q21	1Q22	2Q22	Jul 21	Aug 21	Sep 21
United States											
Alaska	448	440	450	443	411	451	461	457	380	414	441
California	404	372	358	374	370	366	363	359	371	370	369
Texas	4854	4719	5047	4808	4828	4835	4900	4985	4810	4877	4795
Federal Gulf of Mexico ²	1644	1702	1890	1791	1523	1695	1812	1883	1845	1534	1179
Other US Lower 48	3934	3860	4159	3864	3950	3962	4104	4188	3902	3973	3974
NGLs ³	5175	5299	5508	5459	5403	5465	5254	5542	5455	5349	5406
Other Hydrocarbons	100	103	110	104	109	106	102	109	114	114	99
Total	16558	16494	17523	16844	16593	16880	16995	17524	16876	16631	16263
Canada											
Alberta Light/Medium/Heavy	423	428	422	429	434	432	427	424	429	444	429
Alberta Bitumen	1718	1993	2222	1886	2025	2167	2142	2184	1901	1989	2191
Saskatchewan	435	443	431	437	445	440	437	433	451	444	442
Other Crude	490	467	436	469	464	464	438	436	479	449	465
NGLs	949	1009	1032	1004	1007	1011	1038	1027	1033	1013	973
Other Upgraders	219	172	177	163	167	179	194	163	194	170	135
Synthetic Crudes	1116	1131	1139	1029	1076	1151	1249	1051	1252	1098	872
Total	5349	5643	5859	5417	5619	5844	5924	5719	5738	5608	5509
Mexico											
Crude	1721	1772	1829	1781	1774	1783	1792	1818	1795	1752	1775
NGLs	206	171	161	175	166	168	165	162	172	158	169
Total	1932	1948	1995	1961	1945	1956	1962	1985	1972	1915	1949
UK											
Brent Fields	35	26	21	29	19	22	24	24	25	16	16
Forties Fields	297	196	188	133	179	216	210	178	164	181	193
Ninian Fields	31	27	24	24	28	26	25	24	29	26	28
Flotta Fields	51	59	69	37	68	71	71	66	55	74	74
Other Fields	575	522	540	502	504	526	544	540	511	524	476
NGLs	88	67	70	42	68	71	71	71	56	69	81
Total	1078	898	912	767	866	932	946	903	840	890	868
Norway⁵											
Ekofisk-Ula Area	132	140	128	141	139	140	137	129	147	128	143
Oseberg-Troll Area	234	219	242	190	215	242	243	237	208	226	211
Statfjord-Gullfaks Area	230	268	266	244	279	285	278	271	281	288	268
Hallenbanken Area	280	276	300	237	276	287	290	296	270	292	267
Sleipner-Frigg Area	743	827	886	824	812	869	881	881	778	821	837
Other Fields	101	61	59	67	32	65	96	-9	68	69	-44
NGLs	288	265	264	200	276	279	275	269	269	292	268
Total	2007	2055	2145	1905	2029	2167	2201	2075	2021	2114	1950
Other OECD Europe											
Denmark	71	65	61	67	66	65	63	61	67	66	65
Italy	101	101	109	79	110	111	110	110	104	108	117
Turkey	62	67	67	67	68	68	68	67	68	68	68
Other	90	102	96	100	101	101	99	97	97	104	103
NGLs	7	7	6	7	7	6	6	6	7	7	7
Non-Conventional Oils	151	113	108	109	112	114	108	108	103	119	113
Total	481	454	447	430	463	465	455	450	446	472	473
Australia											
Gippsland Basin	8	5	5	6	6	6	6	5	6	6	6
Cooper-Eromanga Basin	35	25	22	25	24	24	23	23	24	24	24
Carnarvon Basin	106	113	113	105	123	120	117	114	121	127	121
Other Crude	202	191	204	163	196	200	206	204	188	196	204
NGLs	102	95	95	87	99	97	96	95	104	97	95
Total	453	430	439	386	447	445	448	442	443	450	450
Other OECD Asia Oceania											
New Zealand	21	18	17	18	19	18	17	17	19	18	18
Japan	4	4	4	4	4	4	4	4	4	4	4
NGLs	11	10	9	10	10	10	9	9	10	10	10
Non-Conventional Oils	34	39	42	38	42	42	42	42	43	42	41
Total	71	72	72	71	74	73	73	72	76	74	73
OECD											
Crude Oil	19480	19511	20668	19349	19493	20060	20390	20511	19598	19612	19261
NGLs	6834	6929	7152	6992	7043	7112	6922	7188	7112	7000	7015
Non-Conventional Oils ⁴	1624	1561	1580	1447	1511	1597	1699	1478	1711	1548	1266
Total	27938	28001	29401	27788	28047	28769	29011	29177	28421	28161	27542

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 counted as crude oil.

⁴ Does not include biofuels.

⁵ North Sea production is grouped by area including all fields being processed through the named field complex, ie, not just the field of that name.

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

	2020	2021	2022	1Q21	2Q21	3Q21	4Q21	1Q22	Jul 21	Aug 21	Sep 21
OPEC+											
Crude Oil											
Algeria	0.90	0.91	0.99	0.87	0.89	0.92	0.95	0.98	0.91	0.92	0.94
Angola	1.27	1.14	1.14	1.14	1.12	1.11	1.17	1.16	1.10	1.13	1.11
Azerbaijan	0.61	0.60	0.61	0.59	0.60	0.60	0.61	0.60	0.61	0.60	0.59
Bahrain	0.17	0.18	0.19	0.17	0.17	0.18	0.19	0.19	0.18	0.18	0.18
Brunei	0.08	0.09	0.09	0.09	0.09	0.08	0.09	0.09	0.07	0.09	0.08
Congo	0.30	0.27	0.28	0.28	0.27	0.25	0.29	0.28	0.25	0.26	0.25
Equatorial Guinea	0.11	0.11	0.12	0.11	0.11	0.10	0.12	0.12	0.10	0.10	0.10
Gabon	0.20	0.18	0.18	0.17	0.18	0.19	0.17	0.17	0.19	0.18	0.20
Iran	2.00	2.42	2.50	2.32	2.40	2.46	2.50	2.50	2.50	2.42	2.46
Iraq	4.05	4.02	4.51	3.88	3.94	4.06	4.19	4.33	3.97	4.07	4.15
Kazakhstan	1.50	1.48	1.63	1.49	1.52	1.38	1.54	1.59	1.53	1.28	1.33
Kuwait	2.41	2.42	2.72	2.34	2.35	2.44	2.53	2.61	2.42	2.44	2.47
Libya	0.35	1.15	1.15	1.15	1.15	1.16	1.15	1.15	1.18	1.15	1.15
Malaysia	0.46	0.42	0.44	0.45	0.43	0.39	0.41	0.44	0.40	0.38	0.39
Mexico	1.66	1.67	1.68	1.67	1.69	1.65	1.66	1.66	1.68	1.62	1.65
Nigeria	1.49	1.35	1.53	1.39	1.34	1.28	1.40	1.46	1.32	1.24	1.27
Oman	0.76	0.76	0.85	0.73	0.74	0.76	0.80	0.82	0.75	0.76	0.76
Russia	9.42	9.61	10.38	9.26	9.54	9.72	9.91	10.23	9.62	9.73	9.81
Saudi Arabia	9.21	9.13	10.67	8.47	8.53	9.57	9.91	10.23	9.46	9.56	9.68
South Sudan	0.16	0.15	0.15	0.14	0.16	0.16	0.15	0.15	0.16	0.15	0.16
Sudan	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
UAE	2.86	2.72	3.08	2.61	2.64	2.76	2.86	2.95	2.72	2.77	2.80
Venezuela	0.53	0.56	0.57	0.55	0.55	0.57	0.57	0.57	0.57	0.57	0.57
Total Crude Oil	40.57	41.38	45.53	39.94	40.48	41.85	43.21	44.33	41.74	41.66	42.16
<i>of which Neutral Zone</i>	<i>0.11</i>			<i>0.23</i>	<i>0.26</i>				<i>0.23</i>	<i>0.22</i>	<i>0.26</i>
Total NGLs	7.44	7.65	7.91	7.59	7.64	7.61	7.75	7.89	7.64	7.49	7.71
TOTAL OPEC+	48.0	49.0	53.4	47.5	48.1	49.5	51.0	52.2	49.4	49.1	49.9
NON-OPEC+											
OECD											
Americas²	21.92	22.14	23.39	21.34	22.27	22.22	22.73	22.93	22.62	22.25	21.78
United States	16.56	16.49	17.52	15.64	16.84	16.59	16.88	16.99	16.88	16.63	16.26
Canada	5.35	5.64	5.86	5.69	5.42	5.62	5.84	5.92	5.74	5.61	5.51
Chile	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Europe	3.57	3.41	3.50	3.61	3.10	3.36	3.56	3.60	3.31	3.48	3.29
UK	1.08	0.90	0.91	1.03	0.77	0.87	0.93	0.95	0.84	0.89	0.87
Norway	2.01	2.06	2.14	2.12	1.90	2.03	2.17	2.20	2.02	2.11	1.95
Others	0.48	0.45	0.45	0.46	0.43	0.46	0.46	0.45	0.45	0.47	0.47
Asia Oceania	0.52	0.50	0.51	0.51	0.46	0.52	0.52	0.52	0.52	0.52	0.52
Australia	0.45	0.43	0.44	0.44	0.39	0.45	0.45	0.45	0.44	0.45	0.45
Others	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.08	0.07	0.07
Total OECD (non-OPEC+)	26.01	26.05	27.41	25.45	25.83	26.10	26.81	27.05	26.45	26.25	25.59
Non-OECD											
FSU	0.36	0.36	0.37	0.35	0.35	0.36	0.36	0.37	0.36	0.36	0.36
Asia	6.27	6.26	6.16	6.29	6.28	6.24	6.22	6.21	6.22	6.25	6.24
China	3.97	4.07	4.07	4.06	4.09	4.07	4.08	4.08	4.05	4.08	4.08
India	0.75	0.73	0.70	0.74	0.72	0.73	0.72	0.72	0.73	0.72	0.72
Indonesia	0.73	0.68	0.65	0.70	0.68	0.67	0.67	0.66	0.68	0.67	0.67
Others	0.82	0.78	0.73	0.79	0.79	0.77	0.76	0.74	0.76	0.78	0.77
Europe	0.12	0.11	0.10	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
Americas	5.32	5.35	5.56	5.27	5.31	5.42	5.39	5.46	5.45	5.41	5.39
Brazil	3.04	3.04	3.24	2.95	3.04	3.09	3.07	3.16	3.14	3.08	3.06
Argentina	0.61	0.64	0.66	0.62	0.63	0.64	0.65	0.65	0.64	0.64	0.64
Colombia	0.79	0.74	0.71	0.75	0.72	0.75	0.74	0.73	0.74	0.75	0.75
Ecuador	0.48	0.50	0.48	0.51	0.50	0.50	0.50	0.49	0.50	0.50	0.50
Others	0.4	0.4	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Middle East	1.92	1.97	2.01	1.96	1.97	1.97	1.98	2.01	1.97	1.97	1.97
Qatar	1.82	1.87	1.90	1.86	1.87	1.87	1.87	1.90	1.87	1.87	1.87
Others	0.10	0.10	0.11	0.10	0.10	0.10	0.11	0.11	0.10	0.11	0.10
Africa	1.2	1.1	1.1	1.12	1.12	1.07	1.08	1.08	1.10	1.08	1.02
Egypt	0.60	0.57	0.54	0.57	0.58	0.57	0.56	0.55	0.57	0.57	0.57
Others	0.56	0.53	0.51	0.55	0.54	0.50	0.52	0.52	0.53	0.51	0.45
Total non-OECD (non-OPEC+)	15.15	15.14	15.26	15.11	15.15	15.17	15.14	15.23	15.22	15.19	15.09
Processing gains	2.11	2.25	2.38	2.13	2.22	2.34	2.32	2.38	2.35	2.38	2.29
Global biofuels	2.58	2.79	3.05	2.14	2.89	3.23	2.90	2.52	3.26	3.29	3.14
TOTAL NON-OPEC+	45.85	46.24	48.09	44.83	46.09	46.84	47.17	47.17	47.27	47.10	46.12
TOTAL SUPPLY	93.86	95.27	101.53	92.36	94.21	96.30	98.13	99.39	96.65	96.25	95.99

¹ From Sept 2021 OPEC+ supply reflects latest OPEC+ deal and individual country's sustainable capacity. Libya, Iran, Venezuela held at most recent level through 2022.

² Excludes Mexico

Table 4
OECD STOCKS AND QUARTERLY STOCK CHANGES

	RECENT MONTHLY STOCKS ²					PRIOR YEARS' STOCKS ²			STOCK CHANGES			
	in Million Barrels					in Million Barrels			in mb/d			
	Apr2021	May2021	Jun2021	Jul2021	Aug2021*	Aug2018	Aug2019	Aug2020	3Q2020	4Q2020	1Q2021	2Q2021
OECD INDUSTRY-CONTROLLED STOCKS ¹												
OECD Americas												
Crude	662.1	647.0	622.6	618.6	603.8	566.8	583.5	667.0	-0.36	-0.10	0.26	-0.57
Motor Gasoline	267.3	267.7	264.8	258.5	252.1	267.6	258.5	264.3	-0.28	0.17	-0.06	-0.02
Middle Distillate	202.5	207.9	210.0	211.9	205.9	205.1	208.1	242.8	-0.07	-0.11	-0.16	-0.01
Residual Fuel Oil	38.6	40.4	38.7	36.1	36.3	34.2	34.2	41.1	-0.09	-0.01	0.02	-0.01
Total Products ³	737.7	755.7	759.0	765.3	754.9	775.1	811.7	856.8	0.08	-0.65	-0.65	0.26
Total ⁴	1561.1	1565.7	1547.9	1552.9	1521.7	1506.6	1564.4	1703.0	-0.33	-0.83	-0.44	-0.27
OECD Europe												
Crude	340.8	340.3	340.3	335.7	324.0	351.1	360.1	368.2	0.00	-0.07	-0.21	-0.13
Motor Gasoline	95.5	97.3	86.5	80.1	79.3	83.4	87.4	95.1	-0.10	0.09	-0.10	-0.04
Middle Distillate	312.5	316.4	306.0	295.6	292.6	270.9	288.5	349.8	-0.05	-0.19	-0.06	-0.07
Residual Fuel Oil	66.2	68.0	64.6	63.7	65.0	58.1	64.3	71.6	-0.06	-0.01	-0.01	-0.02
Total Products ³	582.6	591.6	559.3	541.5	541.2	527.2	554.2	637.4	-0.20	-0.18	-0.22	-0.19
Total ⁴	1004.6	1010.5	977.8	953.6	942.4	956.7	1000.5	1092.5	-0.21	-0.39	-0.42	-0.31
OECD Asia Oceania												
Crude	127.8	129.5	125.0	114.5	112.3	158.2	159.9	166.8	0.05	-0.12	-0.33	0.01
Motor Gasoline	29.0	29.0	29.4	25.9	26.7	24.9	25.7	26.2	0.02	-0.01	0.04	0.00
Middle Distillate	62.5	64.7	65.3	66.1	73.9	73.1	77.8	78.4	0.05	-0.06	-0.03	0.02
Residual Fuel Oil	19.1	17.6	16.8	17.7	18.2	18.6	19.8	16.5	0.00	-0.02	0.02	0.00
Total Products ³	168.3	170.6	170.4	169.0	183.9	175.1	192.8	190.6	0.07	-0.16	-0.02	0.05
Total ⁴	355.0	360.6	357.5	345.0	359.5	399.2	419.0	422.9	0.12	-0.34	-0.38	0.12
Total OECD												
Crude	1130.8	1116.8	1087.9	1068.7	1040.1	1076.1	1103.5	1202.1	-0.31	-0.29	-0.28	-0.68
Motor Gasoline	391.7	393.9	380.8	364.5	358.0	375.8	371.7	385.6	-0.37	0.26	-0.12	-0.06
Middle Distillate	577.4	588.9	581.4	573.6	572.4	549.1	574.3	671.1	-0.07	-0.36	-0.25	-0.05
Residual Fuel Oil	123.9	125.9	120.0	117.5	119.5	110.9	118.3	129.2	-0.15	-0.04	0.03	-0.04
Total Products ³	1488.6	1517.8	1488.7	1475.8	1480.0	1477.4	1558.7	1684.8	-0.05	-0.99	-0.89	0.12
Total ⁴	2920.7	2936.8	2883.2	2851.5	2823.7	2862.5	2983.9	3218.4	-0.41	-1.55	-1.24	-0.46
OECD GOVERNMENT-CONTROLLED STOCKS ⁵												
OECD Americas												
Crude	633.4	627.6	621.3	621.3	621.3	660.0	644.8	647.5	-0.15	-0.04	0.00	-0.18
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	205.9	206.2	205.8	204.4	203.6	211.2	205.8	208.0	-0.01	-0.02	0.02	-0.02
Products	281.4	281.4	278.9	277.8	278.1	272.7	275.3	281.6	0.04	0.00	0.03	-0.05
OECD Asia Oceania												
Crude	374.6	374.5	374.5	373.9	373.9	383.3	378.6	377.5	0.00	-0.03	0.00	0.00
Products	38.8	38.8	38.8	38.8	38.8	38.7	38.9	39.4	0.00	0.00	0.00	0.00
Total OECD												
Crude	1213.9	1208.3	1201.6	1199.6	1198.8	1254.5	1229.2	1233.0	-0.16	-0.10	0.02	-0.20
Products	322.3	322.3	319.7	318.6	319.0	313.5	316.2	322.9	0.05	-0.01	0.03	-0.05
Total ⁴	1538.4	1532.5	1523.6	1519.9	1519.5	1571.1	1547.7	1558.0	-0.11	-0.11	0.05	-0.24

* estimated

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

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

5 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		
	2020	2021	%	2020	2021	%	2020	2021	%	2020	2021	%	2020	2021	%
United States²															
Crude	483.3	501.9	3.8	529.0	489.7	-7.4	521.6	476.6	-8.6	532.7	448.0	-15.9	520.1	438.9	-15.6
Motor Gasoline	261.8	237.6	-9.2	258.5	238.4	-7.8	259.0	239.9	-7.4	254.5	237.2	-6.8	250.4	230.8	-7.8
Middle Distillate	168.4	186.4	10.7	192.6	178.1	-7.5	218.7	185.0	-15.4	220.5	186.4	-15.5	221.9	187.5	-15.5
Residual Fuel Oil	34.8	30.9	-11.2	36.2	31.3	-13.5	38.5	31.7	-17.7	39.5	31.1	-21.3	35.9	29.1	-18.9
Other Products	218.7	199.6	-8.7	230.6	210.1	-8.9	240.2	219.9	-8.5	256.7	225.9	-12.0	273.7	239.5	-12.5
Total Products	683.7	654.5	-4.3	717.9	657.9	-8.4	756.4	676.5	-10.6	771.2	680.6	-11.7	781.9	686.9	-12.1
Other ³	159.6	145.3	-9.0	156.8	141.8	-9.6	154.3	140.7	-8.8	153.8	142.9	-7.1	152.0	143.0	-5.9
Total	1326.6	1301.7	-1.9	1403.7	1289.4	-8.1	1432.3	1293.8	-9.7	1457.7	1271.5	-12.8	1454.0	1268.8	-12.7
Japan															
Crude	84.4	64.5	-23.6	97.4	69.8	-28.3	98.6	78.4	-20.5	91.0	76.0	-16.5	94.1	70.5	-25.1
Motor Gasoline	11.7	12.4	6.0	13.1	12.9	-1.5	12.5	14.9	19.2	11.5	14.3	24.3	11.9	9.9	-16.8
Middle Distillate	27.5	27.4	-0.4	29.0	29.2	0.7	30.5	32.2	5.6	31.9	31.5	-1.3	33.0	30.8	-6.7
Residual Fuel Oil	6.4	6.5	1.6	7.6	7.2	-5.3	7.6	7.6	0.0	7.5	7.0	-6.7	7.4	7.1	-4.1
Other Products	33.4	31.6	-5.4	32.9	31.9	-3.0	37.1	33.1	-10.8	36.6	31.9	-12.8	36.0	31.7	-11.9
Total Products	79.0	77.9	-1.4	82.6	81.2	-1.7	87.7	87.8	0.1	87.5	84.7	-3.2	88.3	79.5	-10.0
Other ³	51.8	47.3	-8.7	55.0	49.7	-9.6	55.5	51.0	-8.1	55.7	51.3	-7.9	53.6	51.1	-4.7
Total	215.2	189.7	-11.8	235.0	200.7	-14.6	241.8	217.2	-10.2	234.2	212.0	-9.5	236.0	201.1	-14.8
Germany															
Crude	51.9	52.7	1.5	51.5	49.0	-4.9	51.1	46.7	-8.6	51.4	48.7	-5.3	49.9	51.2	2.6
Motor Gasoline	11.1	8.9	-19.8	9.8	10.2	4.1	10.0	11.3	13.0	9.6	9.4	-2.1	8.9	9.1	2.2
Middle Distillate	23.1	22.7	-1.7	21.8	24.1	10.6	26.1	26.7	2.3	25.3	24.1	-4.7	25.5	25.8	1.2
Residual Fuel Oil	7.0	7.5	7.1	7.8	7.8	0.0	7.6	7.9	3.9	8.2	7.9	-3.7	7.4	7.9	6.8
Other Products	9.7	9.5	-2.1	9.5	10.0	5.3	10.0	10.3	3.0	9.3	9.9	6.5	9.5	10.1	6.3
Total Products	50.9	48.6	-4.5	48.9	52.1	6.5	53.7	56.2	4.7	52.4	51.3	-2.1	51.3	52.9	3.1
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	102.8	101.3	-1.5	100.4	101.1	0.7	104.8	102.9	-1.8	103.8	100.0	-3.7	101.2	104.1	2.9
Italy															
Crude	44.8	39.9	-10.9	42.4	38.6	-9.0	39.8	42.9	7.8	41.6	42.7	2.6	43.2	36.0	-16.7
Motor Gasoline	13.9	9.8	-29.5	14.1	12.6	-10.6	12.9	12.1	-6.2	13.0	10.4	-20.0	11.5	9.4	-18.3
Middle Distillate	32.9	28.6	-13.1	33.7	28.8	-14.5	33.0	30.0	-9.1	32.9	29.4	-10.6	31.2	22.6	-27.6
Residual Fuel Oil	9.3	8.1	-12.9	9.5	7.4	-22.1	9.0	7.3	-18.9	9.2	7.5	-18.5	8.0	7.0	-12.5
Other Products	17.2	16.1	-6.4	17.8	15.7	-11.8	18.6	15.0	-19.4	17.8	14.7	-17.4	17.4	14.7	-15.5
Total Products	73.3	62.6	-14.6	75.1	64.5	-14.1	73.5	64.4	-12.4	72.9	62.0	-15.0	68.1	53.7	-21.1
Other ³	16.8	15.8	-6.0	17.8	16.2	-9.0	16.6	16.5	-0.6	17.5	16.0	-8.6	17.8	14.9	-16.3
Total	134.9	118.3	-12.3	135.3	119.3	-11.8	129.9	123.8	-4.7	132.0	120.7	-8.6	129.1	104.6	-19.0
France															
Crude	11.7	12.8	9.4	11.5	12.8	11.3	14.2	12.4	-12.7	11.9	13.0	9.2	14.0	13.6	-2.9
Motor Gasoline	4.9	3.9	-20.4	5.3	4.8	-9.4	4.5	4.9	8.9	4.9	3.6	-26.5	4.5	3.8	-15.6
Middle Distillate	22.5	22.3	-0.9	20.2	21.9	8.4	20.1	23.1	14.9	22.9	22.9	0.0	22.0	21.6	-1.8
Residual Fuel Oil	1.2	2.0	66.7	1.2	1.8	50.0	0.9	1.9	111.1	1.6	1.7	6.2	1.6	2.0	25.0
Other Products	4.8	3.5	-27.1	4.8	3.4	-29.2	4.7	3.7	-21.3	4.1	3.2	-22.0	4.2	3.3	-21.4
Total Products	33.4	31.7	-5.1	31.5	31.9	1.3	30.2	33.6	11.3	33.5	31.4	-6.3	32.3	30.7	-5.0
Other ³	8.2	7.9	-3.7	9.6	7.9	-17.7	9.3	7.8	-16.1	8.7	8.4	-3.4	8.7	7.6	-12.6
Total	53.3	52.4	-1.7	52.6	52.6	0.0	53.7	53.8	0.2	54.1	52.8	-2.4	55.0	51.9	-5.6
United Kingdom															
Crude	29.3	26.5	-9.6	30.3	24.8	-18.2	30.0	29.3	-2.3	32.1	26.5	-17.4	31.8	26.8	-15.7
Motor Gasoline	10.5	9.3	-11.4	10.8	8.9	-17.6	9.2	9.6	4.3	9.5	9.0	-5.3	9.8	9.4	-4.1
Middle Distillate	27.2	26.0	-4.4	31.5	25.4	-19.4	31.3	25.6	-18.2	32.3	24.2	-25.1	32.1	24.5	-23.7
Residual Fuel Oil	1.7	1.4	-17.6	1.5	1.3	-13.3	1.3	1.5	15.4	1.8	1.3	-27.8	1.5	1.5	0.0
Other Products	7.2	5.9	-18.1	7.2	6.3	-12.5	6.8	6.6	-2.9	6.3	6.4	1.6	7.2	6.3	-12.5
Total Products	46.6	42.6	-8.6	51.0	41.9	-17.8	48.6	43.3	-10.9	49.9	40.9	-18.0	50.6	41.7	-17.6
Other ³	7.6	7.8	2.6	8.1	7.9	-2.5	7.6	8.1	6.6	7.9	8.8	11.4	7.8	8.8	12.8
Total	83.5	76.9	-7.9	89.4	74.6	-16.6	86.2	80.7	-6.4	89.9	76.2	-15.2	90.2	77.3	-14.3
Canada⁴															
Crude	140.3	138.4	-1.4	145.4	139.2	-4.3	142.0	137.1	-3.5	137.5	141.3	2.8	133.5	145.4	8.9
Motor Gasoline	17.2	16.2	-5.8	15.6	16.8	7.7	15.0	15.5	3.3	15.6	14.9	-4.5	15.0	15.1	0.7
Middle Distillate	12.9	15.0	16.3	12.0	15.1	25.8	12.6	12.7	0.8	12.5	13.7	9.6	13.1	15.0	14.5
Residual Fuel Oil	2.8	3.3	17.9	2.8	2.5	-10.7	2.5	3.6	44.0	2.6	2.9	11.5	2.7	3.1	14.8
Other Products	10.2	10.4	2.0	10.6	10.4	-1.9	10.3	10.4	1.0	9.4	10.1	7.4	9.6	10.3	7.3
Total Products	43.1	44.9	4.2	41.0	44.8	9.3	40.4	42.2	4.5	40.1	41.6	3.7	40.4	43.5	7.7
Other ³	14.3	17.8	24.5	18.5	19.0	2.7	21.4	21.7	1.4	24.8	23.2	-6.5	28.4	25.7	-9.5
Total	197.7	201.1	1.7	204.9	203.0	-0.9	203.8	201.0	-1.4	202.4	206.1	1.8	202.3	214.6	6.1

¹ Stocks are primary national territory stocks on land (excluding utility stocks and including pipeline and entrapment 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 barrels² and 'days')

	End June 2020		End September 2020		End December 2020		End March 2021		End June 2021 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	202.3	90	195.7	92	199.1	94	201.0	93	206.1	-
Chile	12.4	44	11.9	32	11.0	33	9.7	30	11.7	-
Mexico	23.6	18	35.1	25	36.3	26	38.1	27	36.4	-
United States ⁴	2115.7	115	2067.4	110	1983.4	108	1941.5	97	1894.8	-
Total⁴	2376.1	106	2332.2	102	2252.0	100	2212.4	92	2171.2	87
OECD Asia Oceania										
Australia	41.3	42	40.9	39	40.2	39	43.5	40	39.8	-
Israel	-	-	-	-	-	-	-	-	-	-
Japan	553.8	181	559.5	158	532.4	143	506.5	164	528.6	-
Korea	213.4	90	219.4	91	213.3	84	201.5	81	194.9	-
New Zealand	7.8	52	8.4	51	8.0	51	8.3	57	7.6	-
Total	816.3	121	828.2	113	793.8	104	759.7	108	770.9	109
OECD Europe⁵										
Austria	22.7	89	24.4	107	23.6	113	23.6	97	23.0	-
Belgium	50.1	94	52.8	94	51.7	82	51.2	82	51.0	-
Czech Republic	23.2	105	22.7	115	23.8	134	23.1	108	21.8	-
Denmark	34.1	240	32.1	241	32.3	257	31.7	229	27.8	-
Estonia	4.4	155	3.6	139	3.7	150	2.9	107	2.9	-
Finland	39.7	204	43.3	235	38.5	235	39.1	230	39.5	-
France	165.5	110	167.7	116	158.4	107	162.1	112	163.0	-
Germany	281.3	133	276.6	131	278.2	148	278.0	137	275.8	-
Greece	38.3	149	34.9	150	35.0	153	34.4	144	30.5	-
Hungary	26.2	155	26.9	152	26.8	172	25.8	147	25.6	-
Ireland	12.3	94	12.2	85	11.9	94	11.7	86	12.4	-
Italy	142.3	121	139.9	124	135.8	130	131.3	114	133.6	-
Latvia	3.4	85	3.5	103	3.2	101	3.0	82	3.0	-
Lithuania	7.7	106	7.6	120	7.9	146	7.8	116	8.5	-
Luxembourg	0.7	14	0.6	12	0.6	13	0.6	13	0.8	-
Netherlands	174.4	207	165.5	194	156.6	195	158.1	196	147.2	-
Norway	27.3	125	31.8	136	30.1	114	28.2	146	23.6	-
Poland	82.3	114	82.2	122	81.6	131	82.0	125	78.6	-
Portugal	22.0	102	22.3	108	22.4	123	20.7	98	19.9	-
Slovak Republic	12.1	143	12.6	157	12.7	171	12.4	144	12.4	-
Slovenia	5.4	111	5.4	131	5.3	126	5.3	117	5.3	-
Spain	128.0	115	126.7	112	123.1	110	121.7	106	118.1	-
Sweden	71.9	271	66.5	268	63.0	220	48.8	162	45.3	-
Switzerland	34.4	197	34.5	196	34.0	206	33.7	192	33.9	-
Turkey	86.0	79	89.9	98	85.4	107	84.4	91	85.1	-
United Kingdom	89.9	75	83.5	68	85.5	74	76.9	61	76.2	-
Total	1585.6	123	1569.6	125	1531.3	129	1498.7	119	1464.7	107
Total OECD	4778.1	114	4730.0	111	4577.0	109	4470.8	102	4406.8	96
DAYS OF IEA Net Imports⁶ -		258		254		245		241		167

1 Total Stocks are industry and government-controlled stocks (see breakdown in 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 2021 forward demand figures are IEA Secretariat forecasts.

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

5 Data not available for Iceland.

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

TOTAL OECD STOCKS

CLOSING STOCKS	Total	Government ¹ controlled <i>Millions of Barrels</i>	Industry	Total	Government ¹ controlled <i>Days of Fwd. Demand²</i>	Industry
2Q2018	4387	1575	2812	91	33	58
3Q2018	4436	1570	2866	93	33	60
4Q2018	4425	1552	2873	93	33	61
1Q2019	4435	1557	2878	94	33	61
2Q2019	4487	1549	2938	93	32	61
3Q2019	4492	1544	2948	94	32	62
4Q2019	4432	1535	2896	98	34	64
1Q2020	4517	1537	2980	121	41	80
2Q2020	4778	1561	3217	114	37	76
3Q2020	4730	1551	3179	111	36	75
4Q2020	4577	1541	3036	109	37	72
1Q2021	4471	1546	2925	102	35	67
2Q2021	4407	1524	2883	96	33	63

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 2Q2021 (when latest forecasts are used).

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

	2018	2019	2020	3Q20	4Q20	1Q21	2Q21	May 21	Jun 21	Jul 21	Year Earlier Jul 20	change
Saudi Light & Extra Light												
Americas	0.66	0.20	0.26	0.03	0.11	0.18	0.31	0.26	0.41	0.42	0.03	0.39
Europe	0.69	0.68	0.60	0.50	0.53	0.43	0.40	0.40	0.41	0.55	0.38	0.17
Asia Oceania	1.45	1.42	1.39	1.34	1.44	1.41	1.12	1.15	1.10	0.95	1.61	-0.66
Saudi Medium												
Americas	0.30	0.12	0.14	0.06	0.03	0.06	-	-	-	-	-	-
Europe	0.01	0.02	0.02	0.01	0.01	0.01	-	-	-	0.01	-	-
Asia Oceania	0.41	0.23	0.25	0.25	0.26	0.22	0.17	0.15	0.18	0.20	0.24	-0.03
Canada Heavy												
Americas	2.41	2.27	2.39	2.23	2.55	2.62	2.43	2.48	2.42	2.41	2.33	0.09
Europe	0.04	0.04	0.03	0.03	0.03	0.04	0.03	0.00	0.02	0.05	0.02	0.03
Asia Oceania	0.00	0.00	0.00	0.01	-	0.01	0.04	0.05	0.05	-	-	-
Iraqi Basrah Light²												
Americas	0.50	0.31	0.11	0.07	0.05	0.06	0.05	0.15	-	0.12	-	-
Europe	0.76	0.85	0.58	0.54	0.54	0.56	0.63	0.61	0.74	0.58	0.57	0.01
Asia Oceania	0.43	0.37	0.22	0.23	0.20	0.15	0.17	0.16	0.13	0.19	0.12	0.06
Kuwait Blend												
Americas	0.02	-	-	-	-	-	-	-	-	-	-	-
Europe	0.13	0.11	0.04	0.01	-	-	-	-	-	-	0.02	-
Asia Oceania	0.66	0.61	0.55	0.43	0.47	0.47	0.45	0.42	0.43	0.51	0.38	0.13
Iranian Light												
Americas	-	-	-	-	-	-	-	-	-	-	-	-
Europe	0.16	0.00	-	-	-	-	-	-	-	-	-	-
Asia Oceania	0.01	0.00	-	-	-	-	-	-	-	-	-	-
Iranian Heavy³												
Americas	-	-	-	-	-	-	-	-	-	-	-	-
Europe	0.35	0.04	-	-	-	-	-	-	-	-	-	-
Asia Oceania	0.28	0.14	-	-	-	-	-	-	-	-	-	-
BFOE												
Americas	0.00	0.00	-	-	-	-	0.00	0.00	0.00	0.02	-	-
Europe	0.35	0.37	0.43	0.48	0.43	0.39	0.28	0.40	0.18	0.43	0.55	-0.11
Asia Oceania	0.09	0.01	0.03	0.06	0.03	0.08	0.07	0.10	0.03	-	-	-
Kazakhstan												
Americas	-	-	-	-	-	-	0.03	-	-	-	-	-
Europe	0.75	0.76	0.76	0.78	0.74	0.75	0.75	0.81	0.68	0.84	0.84	0.00
Asia Oceania	0.19	0.18	0.07	0.08	0.03	0.07	0.10	0.07	0.10	0.10	0.03	0.07
Venezuelan 22 API and heavier												
Americas	0.44	0.05	-	-	-	-	-	-	-	-	-	-
Europe	0.03	0.09	0.04	0.08	0.01	-	-	-	-	-	0.12	-
Asia Oceania	-	-	-	-	-	-	-	-	-	-	-	-
Mexican Maya												
Americas	0.63	0.51	0.48	0.47	0.37	0.36	0.45	0.41	0.54	0.40	0.52	-0.12
Europe	0.21	0.19	0.16	0.16	0.18	0.15	0.15	0.13	0.17	0.13	0.16	-0.03
Asia Oceania	0.08	0.13	0.12	0.10	0.16	0.15	0.12	0.13	0.10	0.19	0.12	0.07
Russian Urals												
Americas	0.01	0.01	-	-	-	-	-	-	-	-	-	-
Europe	1.40	1.37	1.20	1.13	1.07	1.05	1.11	1.12	1.28	0.97	0.99	-0.03
Asia Oceania	0.00	-	-	-	-	0.01	-	-	-	-	-	-
Cabinda and Other Angola												
North America	0.06	0.01	0.01	-	-	-	-	-	-	-	-	-
Europe	0.14	0.15	0.12	0.09	0.10	0.02	0.04	0.09	0.03	-	0.05	-
Pacific	0.01	0.00	-	-	-	-	-	-	-	-	-	-
Nigerian Light⁴												
Americas	0.01	0.03	-	-	-	-	0.06	0.06	0.07	0.03	-	-
Europe	0.53	0.51	0.49	0.57	0.52	0.41	0.31	0.29	0.35	0.45	0.53	-0.08
Asia Oceania	0.02	0.02	0.02	0.01	0.02	0.00	0.01	0.03	-	-	0.01	-
Libya Light and Medium												
Americas	-	0.00	-	-	-	-	0.03	0.10	-	0.09	-	-
Europe	0.62	0.67	0.19	0.04	0.49	0.75	0.79	0.72	0.73	0.98	0.02	0.96
Asia Oceania	0.02	0.03	0.01	-	-	0.01	0.02	0.03	0.01	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 B 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)

	2018	2019	2020	3Q20	4Q20	1Q21	2Q21	May 21	Jun 21	Jul 21	Year Earlier	
											Jul 20	% change
Crude Oil												
Americas	3759	2698	1880	1671	1625	1698	2111	2097	2247	2364	1864	27%
Europe	9814	9872	8349	8145	8053	7741	8374	8612	8557	8606	8025	7%
Asia Oceania	6697	6542	5603	5237	5511	5336	5459	5414	5196	4994	5291	-6%
Total OECD	20269	19111	15833	15053	15189	14775	15944	16122	16000	15965	15180	5%
LPG												
Americas	22	26	28	26	26	21	16	14	13	24	38	-37%
Europe	457	434	422	430	429	394	421	456	388	399	455	-12%
Asia Oceania	553	582	559	532	506	642	555	535	610	562	565	-1%
Total OECD	1032	1042	1009	988	961	1057	992	1005	1011	985	1059	-7%
Naphtha												
Americas	8	5	7	10	5	7	7	12	7	12	7	69%
Europe	391	347	409	339	410	523	486	573	362	501	474	6%
Asia Oceania	1021	993	1005	981	889	1087	1076	1103	1152	1167	1022	14%
Total OECD	1420	1345	1422	1330	1303	1617	1569	1688	1521	1681	1504	12%
Gasoline³												
Americas	773	817	567	695	565	598	1074	1097	1037	1042	654	59%
Europe	110	112	109	92	108	101	157	167	85	35	140	-75%
Asia Oceania	113	114	126	175	116	155	196	168	207	125	257	-52%
Total OECD	996	1043	802	962	789	854	1427	1433	1329	1201	1051	14%
Jet & Kerosene												
Americas	140	175	158	175	145	108	166	191	169	152	157	-3%
Europe	509	520	337	302	295	281	291	343	234	386	227	70%
Asia Oceania	89	76	63	41	58	100	71	48	86	50	44	13%
Total OECD	738	771	558	518	498	489	528	582	489	588	428	37%
Gasoil/Diesel												
Americas	124	118	135	91	256	267	149	185	174	115	72	60%
Europe	1339	1300	1192	1105	1178	1099	1172	1130	1232	1267	1146	11%
Asia Oceania	253	262	328	365	320	336	353	323	358	368	401	-8%
Total OECD	1716	1680	1656	1561	1754	1701	1673	1639	1763	1750	1619	8%
Heavy Fuel Oil												
Americas	161	116	143	136	129	116	96	66	152	72	87	-17%
Europe	197	223	295	318	310	368	315	330	256	371	400	-7%
Asia Oceania	162	101	88	118	80	109	116	94	99	137	139	-2%
Total OECD	520	440	526	571	519	594	527	490	507	581	627	-7%
Other Products												
Americas	679	713	592	606	515	507	698	722	771	644	646	0%
Europe	1011	865	574	541	491	515	512	496	558	571	514	11%
Asia Oceania	263	268	241	229	232	246	260	273	259	310	203	52%
Total OECD	1952	1846	1406	1376	1238	1268	1470	1490	1588	1525	1363	12%
Total Products												
Americas	1908	1971	1629	1739	1641	1623	2206	2287	2323	2061	1662	24%
Europe	4013	3800	3339	3126	3221	3282	3354	3496	3115	3531	3356	5%
Asia Oceania	2454	2397	2410	2440	2200	2674	2627	2543	2771	2719	2633	3%
Total OECD	8374	8168	7378	7305	7062	7579	8187	8326	8209	8311	7651	9%
Total Oil												
Americas	5666	4669	3510	3410	3266	3321	4317	4384	4570	4425	3526	26%
Europe	13827	13672	11688	11271	11274	11023	11728	12108	11672	12137	11381	7%
Asia Oceania	9151	8939	8014	7677	7711	8011	8087	7957	7968	7713	7924	-3%
Total OECD	28644	27279	23211	22358	22251	22354	24131	24448	24210	24275	22831	6%

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

² Excludes intra-regional trade.

³ Includes additives.

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

	2018	2019	2020	3Q20	4Q20	1Q21	2Q21	May 21	Jun 21	Jul 21	Year Earlier	
											Jul 20	% change
Crude Oil												
Americas	3606	2553	1820	1643	1547	1615	2007	2009	2107	2244	1837	22%
Europe	9088	8913	7115	6869	6786	6604	7101	7310	7157	7385	6876	7%
Asia Oceania	6249	5914	5076	4816	5003	4710	4840	4836	4515	4368	4997	-13%
Total OECD	18943	17380	14011	13328	13336	12928	13949	14155	13778	13997	13710	2%
LPG												
Americas	15	23	22	23	18	19	16	14	13	24	33	-27%
Europe	350	303	252	246	231	244	228	202	247	242	277	-12%
Asia Oceania	158	74	57	61	65	58	60	63	34	57	47	20%
Total OECD	523	400	331	330	314	321	304	280	294	323	357	-9%
Naphtha												
Americas	4	2	1	1	1	4	2	1	4	5	0	16173%
Europe	360	320	390	328	377	424	424	527	259	420	465	-10%
Asia Oceania	924	898	835	840	744	870	948	941	1000	862	864	0%
Total OECD	1288	1220	1226	1169	1122	1298	1375	1470	1263	1286	1329	-3%
Gasoline³												
Americas	271	308	194	226	167	174	330	392	298	325	250	30%
Europe	105	108	104	87	103	98	151	157	84	29	135	-79%
Asia Oceania	90	88	109	152	116	144	189	168	207	125	218	-43%
Total OECD	466	504	406	465	386	416	669	717	589	478	603	-21%
Jet & Kerosene												
Americas	56	39	54	53	47	31	63	69	75	48	37	29%
Europe	445	464	297	259	278	248	273	322	208	329	215	53%
Asia Oceania	89	76	63	41	58	100	71	48	86	50	44	13%
Total OECD	590	579	414	353	382	378	406	438	369	427	297	44%
Gasoil/Diesel												
Americas	100	86	103	69	190	203	94	111	106	69	53	30%
Europe	1160	1126	1062	914	1082	1027	1094	1075	1120	1132	994	14%
Asia Oceania	253	261	324	358	316	336	353	323	358	368	381	-4%
Total OECD	1513	1473	1489	1341	1588	1566	1541	1509	1584	1568	1428	10%
Heavy Fuel Oil												
Americas	147	102	110	113	97	105	84	56	145	67	83	-19%
Europe	185	202	279	298	295	340	281	284	234	347	379	-8%
Asia Oceania	162	100	88	118	80	109	116	94	99	137	139	-2%
Total OECD	493	404	477	529	472	554	481	434	479	551	601	-8%
Other Products												
Americas	522	542	514	526	466	469	631	658	667	574	568	1%
Europe	702	629	352	335	334	358	337	320	367	382	330	16%
Asia Oceania	182	184	164	152	162	176	198	188	209	205	128	60%
Total OECD	1406	1355	1030	1013	962	1004	1166	1166	1243	1161	1027	13%
Total Products												
Americas	1115	1103	998	1012	986	1005	1219	1301	1309	1111	1024	9%
Europe	3307	3152	2735	2466	2699	2739	2788	2887	2519	2881	2795	3%
Asia Oceania	1857	1681	1640	1722	1540	1793	1934	1826	1994	1803	1823	-1%
Total OECD	6279	5936	5373	5200	5225	5537	5941	6014	5823	5795	5642	3%
Total Oil												
Americas	4721	3656	2818	2654	2533	2620	3227	3310	3416	3355	2861	17%
Europe	12395	12064	9850	9336	9485	9342	9889	10197	9676	10266	9671	6%
Asia Oceania	8106	7595	6716	6538	6543	6503	6775	6662	6509	6171	6820	-10%
Total OECD	25223	23316	19384	18528	18561	18465	19890	20169	19601	19792	19352	2%

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

2 Excludes intra-regional trade

3 Includes additives

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

	2018	2019	2020	3Q20	4Q20	1Q21	2Q21	May 21	Jun 21	Jul 21	Year Earlier	
											Jul 20	% change
Crude Oil												
Americas	153	145	60	28	78	83	104	88	141	120	26	354%
Europe	726	959	1234	1276	1268	1137	1272	1302	1400	1221	1149	6%
Asia Oceania	448	628	527	421	508	627	619	577	681	626	294	113%
Total OECD	1326	1731	1821	1724	1853	1846	1995	1967	2222	1968	1469	34%
LPG												
Americas	7	3	6	4	8	3	0	0	0	0	6	-100%
Europe	107	131	171	184	197	150	193	254	141	157	179	-12%
Asia Oceania	395	508	501	470	442	584	495	471	575	505	518	-2%
Total OECD	508	642	678	658	647	737	688	725	717	662	702	-6%
Naphtha												
Americas	4	3	6	9	4	3	4	10	3	7	7	4%
Europe	31	27	20	12	33	99	62	46	103	82	9	786%
Asia Oceania	97	96	170	140	144	217	128	162	152	306	158	93%
Total OECD	132	125	196	161	181	319	195	218	258	394	174	126%
Gasoline³												
Americas	502	509	373	469	398	423	744	705	738	716	404	77%
Europe	5	4	5	5	5	3	7	11	2	6	5	20%
Asia Oceania	23	26	18	23	0	11	8	0	0	0	39	-100%
Total OECD	530	539	396	497	403	437	759	716	740	722	448	61%
Jet & Kerosene												
Americas	84	136	104	123	99	77	103	122	94	105	120	-13%
Europe	64	56	40	43	18	33	19	21	26	57	11	400%
Asia Oceania	0	0	0	0	0	0	0	0	0	0	0	na
Total OECD	148	192	144	165	116	110	122	143	120	162	132	23%
Gasoil/Diesel												
Americas	25	32	32	22	66	64	55	75	67	46	19	147%
Europe	178	174	131	191	96	72	77	55	112	136	153	-11%
Asia Oceania	0	1	4	7	3	0	0	0	0	0	20	-100%
Total OECD	203	207	167	220	166	136	132	130	179	182	191	-5%
Heavy Fuel Oil												
Americas	15	14	33	22	33	11	12	10	7	5	5	19%
Europe	12	21	16	20	15	29	34	46	22	24	21	13%
Asia Oceania	0	1	0	0	0	0	0	0	0	0	0	na
Total OECD	27	36	49	42	47	39	46	56	29	29	26	14%
Other Products												
Americas	157	171	78	79	48	38	67	64	104	70	78	-10%
Europe	308	236	222	206	158	157	175	176	191	189	183	3%
Asia Oceania	81	83	77	77	70	70	62	84	50	105	75	39%
Total OECD	546	490	377	363	276	264	304	324	345	364	336	8%
Total Products												
Americas	793	867	631	727	655	618	986	986	1013	950	638	49%
Europe	706	649	604	660	522	543	566	608	596	650	561	16%
Asia Oceania	597	716	770	718	660	881	693	718	777	916	810	13%
Total OECD	2095	2232	2005	2105	1836	2043	2246	2312	2387	2516	2010	25%
Total Oil												
Americas	945	1012	691	755	733	701	1090	1074	1154	1070	665	61%
Europe	1432	1608	1838	1935	1789	1681	1839	1910	1997	1871	1710	9%
Asia Oceania	1044	1343	1297	1139	1168	1508	1312	1295	1459	1542	1104	40%
Total OECD	3421	3963	3827	3830	3690	3889	4241	4279	4609	4484	3479	29%

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

2 Excludes intra-regional trade

3 Includes additives

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

	2018	2019	2020	3Q20	4Q20	1Q21	2Q21	May 21	Jun 21	Jul 21	Year Earlier	
											Jul 20	change
OECD Americas												
Venezuela	506	81	-	-	-	-	-	-	-	-	-	-
Other Central & South America	795	867	745	782	750	648	689	749	656	664	776	-113
North Sea	150	143	60	28	78	83	93	88	107	120	26	94
Other OECD Europe	1	2	1	-	-	-	11	-	33	-	-	-
Non-OECD Europe	-	-	-	-	-	-	-	-	-	-	-	-
Former Soviet Union	145	189	91	80	96	128	295	335	342	305	87	218
Saudi Arabia	983	601	572	441	293	333	370	318	469	435	673	-238
Kuwait	78	45	21	29	16	7	20	-	-	37	67	-30
Iran	-	-	-	-	-	12	-	-	-	-	-	-
Iraq	519	331	177	143	107	115	172	162	180	220	136	84
Oman	-	-	-	-	-	-	-	-	-	-	-	-
United Arab Emirates	5	3	5	2	10	-	-	-	-	34	5	29
Other Middle East	-	-	-	-	-	-	-	-	-	-	-	-
West Africa ²	317	267	145	128	188	207	273	256	304	333	71	262
Other Africa	196	137	45	34	67	149	172	159	156	170	9	161
Asia	61	32	17	4	11	17	16	30	-	47	13	34
Other	3	0	3	-	10	-	-	-	-	-	-	-
Total	3759	2698	1880	1671	1625	1698	2111	2097	2247	2364	1864	500
of which Non-OECD	3606	2553	1820	1643	1547	1615	2007	2009	2107	2244	1837	406
OECD Europe												
Canada	81	60	95	80	117	108	81	20	74	103	82	22
Mexico + USA	645	900	1139	1196	1150	1029	1191	1282	1326	1118	1068	50
Venezuela	57	106	44	91	13	-	-	-	-	-	129	-
Other Central & South America	132	118	208	248	205	143	272	256	340	222	179	43
Non-OECD Europe	12	14	25	21	34	23	19	13	31	34	19	15
Former Soviet Union	4149	4240	3506	3409	3270	3291	3458	3604	3438	3496	3412	84
Saudi Arabia	818	792	756	637	602	517	484	479	475	566	492	73
Kuwait	137	97	48	7	30	-	-	-	-	0	18	-18
Iran	536	74	6	4	2	-	-	-	-	-	7	-
Iraq	962	1124	814	822	759	765	916	818	1071	971	915	56
Oman	-	-	-	-	-	-	-	-	-	-	-	-
United Arab Emirates	2	2	-	-	-	-	-	-	-	-	-	-
Other Middle East	-	3	8	13	1	6	12	9	11	-	-	-
West Africa ²	1115	1140	1074	1128	976	780	719	844	636	935	1186	-252
Other Africa	1161	1180	596	450	858	1065	1204	1241	1150	1155	501	655
Asia	-	-	0	1	-	-	-	-	-	-	-	-
Other	9	13	11	12	5	-	-	-	-	-	18	-
Total	9816	9863	8330	8119	8022	7727	8356	8565	8553	8600	8026	573
of which Non-OECD	9088	8913	7115	6869	6786	6604	7101	7310	7157	7385	6876	509
OECD Asia Oceania												
Canada	3	5	1	6	-	17	38	50	55	-	-	-
Mexico + USA	344	613	477	336	444	493	491	429	525	569	294	275
Venezuela	-	-	-	-	-	-	-	-	-	-	-	-
Other Central & South America	35	48	91	75	114	107	145	102	205	116	77	39
North Sea	100	10	49	79	64	116	90	99	101	57	-	-
Other OECD Europe	-	-	-	-	-	-	-	-	-	-	-	-
Non-OECD Europe	-	-	-	-	-	-	-	-	-	-	-	-
Former Soviet Union	435	435	300	286	295	328	372	353	274	209	158	51
Saudi Arabia	2040	1878	1867	1858	1976	1868	1574	1592	1480	1389	2171	-782
Kuwait	672	666	584	459	508	482	484	447	464	546	400	146
Iran	274	137	-	-	-	-	-	-	-	-	-	-
Iraq	435	364	224	226	205	151	165	155	129	187	125	62
Oman	56	59	22	35	19	15	43	16	82	64	49	15
United Arab Emirates	1098	1256	1096	975	960	908	1094	1213	880	1034	1093	-59
Other Middle East	450	449	387	374	374	396	383	382	363	317	403	-86
West Africa ²	95	56	65	70	49	46	119	153	121	118	31	87
Other Africa	105	90	42	40	23	59	35	26	20	44	51	-7
Non-OECD Asia	319	220	161	128	207	193	161	166	156	108	96	12
Other	235	255	234	290	268	155	264	231	339	231	344	-114
Total	6697	6542	5602	5237	5505	5336	5455	5414	5196	4988	5291	-303
of which Non-OECD	6249	5914	5076	4816	5003	4710	4840	4836	4515	4368	4997	-629
Total OECD Trade	20271	19103	15812	15027	15152	14761	15923	16075	15996	15952	15181	770
of which Non-OECD	18943	17380	14011	13328	13336	12928	13949	14155	13778	13997	13710	287

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)

	2018	2019	2020	3Q20	4Q20	1Q21	2Q21	May 21	Jun 21	Jul 21	Year Earlier	
											Jul 20	change
OECD Americas												
Venezuela	23	4	-	-	-	-	-	-	-	-	-	-
Other Central & South America	64	83	40	44	24	10	67	66	28	12	52	-40
ARA (Belgium Germany Netherlands)	167	189	146	199	138	127	312	251	375	281	155	126
Other Europe	323	293	207	255	241	275	380	388	316	397	248	149
FSU	80	100	67	71	89	100	112	124	110	98	53	45
Saudi Arabia	11	7	6	16	-	4	50	65	84	65	36	29
Algeria	1	-	4	5	-	4	-	-	-	-	4	-
Other Middle East & Africa	19	14	13	15	20	23	12	19	11	22	5	16
Singapore	8	5	1	3	-	4	3	3	6	5	-	-
OECD Asia Oceania	13	28	21	15	19	21	52	66	48	39	1	38
Non-OECD Asia (excl. Singapore)	84	116	72	84	53	47	99	116	98	131	100	31
Other	0	0	-	-	-	0	-	-	-	-	-	-
Total²	794	838	578	707	585	615	1088	1097	1077	1050	654	396
of which Non-OECD	271	308	194	226	167	174	330	392	298	325	250	75
OECD Europe												
OECD Americas	4	3	3	3	4	2	5	7	2	6	4	2
Venezuela	0	0	0	-	-	1	1	0	-	3	-	-
Other Central & South America	5	3	4	2	5	8	2	1	3	-	6	-
Non-OECD Europe	11	18	16	18	12	9	16	10	13	10	16	-7
FSU	70	62	44	26	41	24	15	14	16	28	25	3
Saudi Arabia	2	0	8	5	21	-	-	-	-	-	14	-
Algeria	0	0	1	-	-	-	-	-	-	-	-	-
Other Middle East & Africa	4	8	3	3	3	8	6	5	2	3	3	0
Singapore	2	3	2	2	1	-	-	-	-	0	2	-2
OECD Asia Oceania	1	1	1	1	1	1	2	4	-	0	1	-1
Non-OECD Asia (excl. Singapore)	2	0	0	-	2	3	2	2	2	2	-	-
Other	20	21	37	45	27	57	117	132	63	7	88	-80
Total²	122	121	120	106	116	113	166	175	100	59	158	-99
of which Non-OECD	105	108	104	87	103	98	151	157	84	29	135	-106
OECD Asia Oceania												
OECD Americas	4	6	4	0	0	2	0	0	0	0	0	0
Venezuela	-	-	-	-	-	-	-	-	-	-	-	-
Other Central & South America	-	-	-	-	-	-	-	-	-	-	-	-
ARA (Belgium Germany Netherlands)	13	14	4	6	-	9	7	-	-	0	14	-14
Other Europe	7	5	10	17	-	-	-	-	-	-	25	-
FSU	1	0	2	-	-	-	-	-	-	-	-	-
Saudi Arabia	0	1	-	-	-	-	-	-	-	-	-	-
Algeria	-	-	-	-	-	-	-	-	-	-	-	-
Other Middle East & Africa	1	-	1	3	-	-	-	-	-	-	-	-
Singapore	49	46	51	72	44	86	98	89	128	77	122	-45
Non-OECD Asia (excl. Singapore)	19	21	37	55	52	39	58	60	59	29	74	-45
Other	20	21	19	19	19	20	33	19	20	19	19	0
Total²	114	114	128	173	116	155	196	168	207	125	254	-130
of which Non-OECD	90	88	109	152	116	144	189	168	207	125	218	-93
Total OECD Trade²	1029	1073	826	987	816	883	1450	1440	1384	1234	1067	167
of which Non-OECD	466	504	406	465	386	416	669	717	589	478	603	-125

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)

	2018	2019	2020	3Q20	4Q20	1Q21	2Q21	May 21	Jun 21	Jul 21	Year Earlier	
											Jul 20	change
OECD Americas												
Venezuela	4	1	-	-	-	-	-	-	-	-	-	-
Other Central and South America	30	38	34	40	39	40	30	39	39	29	25	4
ARA (Belgium Germany Netherlands)	6	5	11	2	36	51	31	34	48	26	-	-
Other Europe	3	2	5	2	4	3	9	24	1	1	3	-1
FSU	16	6	12	-	26	35	21	28	32	6	-	-
Saudi Arabia	17	3	8	10	17	23	9	26	-	-	15	-
Algeria	-	-	-	-	-	-	-	-	-	-	-	-
Other Middle East and Africa	8	2	9	4	29	48	8	8	3	-	-	-
Singapore	1	0	-	-	-	-	2	2	3	-	-	-
OECD Asia Oceania	15	24	16	18	26	10	15	17	17	18	16	3
Non-OECD Asia (excl. Singapore)	23	30	34	13	64	48	16	7	17	17	13	4
Other	-	7	6	3	15	8	8	-	11	17	-	-
Total²	124	118	135	91	256	267	149	185	174	115	72	43
of which Non-OECD	100	86	103	69	190	203	94	111	106	69	53	16
OECD Europe												
OECD Americas	154	138	99	156	64	34	38	25	77	89	131	-42
Venezuela	-	-	-	-	-	-	-	-	-	-	-	-
Other Central and South America	4	0	3	7	2	-	1	-	-	1	2	-1
Non-OECD Europe	39	41	30	34	33	28	30	31	26	31	42	-11
FSU	714	685	661	555	633	721	716	713	698	657	566	91
Saudi Arabia	225	205	193	183	260	131	114	96	120	152	177	-25
Algeria	-	0	2	-	-	-	-	-	-	-	-	-
Other Middle East and Africa	76	83	71	68	73	65	129	149	125	146	59	87
Singapore	14	27	17	10	13	10	18	32	14	30	16	14
OECD Asia Oceania	25	36	32	36	32	38	39	30	35	46	21	25
Non-OECD Asia (excl. Singapore)	151	152	101	72	89	72	108	66	197	111	92	19
Other	12	10	15	11	10	23	7	13	-16	25	60	-35
Total²	1413	1378	1224	1131	1210	1122	1201	1155	1276	1290	1167	122
of which Non-OECD	1160	1126	1062	914	1082	1027	1094	1075	1120	1132	994	138
OECD Asia Oceania												
OECD Americas	-	1	4	7	3	-	-	-	-	-	20	-
Venezuela	-	-	-	-	-	-	-	-	-	-	-	-
Other Central and South America	-	-	0	-	0	-	-	-	-	-	-	-
ARA (Belgium Germany Netherlands)	-	-	0	-	-	-	0	0	-	-	-	-
Other Europe	-	-	-	-	-	-	-	-	-	-	-	-
FSU	4	4	2	1	1	1	1	1	1	1	2	-1
Saudi Arabia	3	-	-	-	-	-	-	-	-	-	-	-
Algeria	-	-	-	-	-	-	-	-	-	-	-	-
Other Middle East and Africa	8	7	13	23	8	13	-	-	-	-	19	-
Singapore	141	111	91	103	85	82	92	71	123	131	96	35
Non-OECD Asia (excl. Singapore)	91	133	208	214	215	229	249	237	229	230	242	-12
Other	5	5	10	16	8	11	11	15	5	5	22	-17
Total²	253	262	328	365	320	336	353	323	358	368	401	-34
of which Non-OECD	253	261	324	358	316	336	353	323	358	368	381	-14
Total OECD Trade²	1790	1758	1687	1588	1785	1724	1702	1663	1807	1772	1640	132
of which Non-OECD	1513	1473	1489	1341	1588	1566	1541	1509	1584	1568	1428	140

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)

	2018	2019	2020	3Q20	4Q20	1Q21	2Q21	May 21	Jun 21	Jul 21	Year Earlier	
											Jul 20	change
OECD Americas												
Venezuela	6	0	-	-	-	-	-	-	-	-	-	-
Other Central and South America	2	7	5	7	5	3	-	-	-	-	4	-
ARA (Belgium Germany Netherlands)	0	-	-	-	-	4	0	-	1	8	-	-
Other Europe	0	0	4	8	4	6	5	11	3	16	8	8
FSU	0	-	0	1	-	-	0	-	1	-	-	-
Saudi Arabia	1	2	6	1	14	-	4	6	6	6	-	-
Algeria	-	-	1	3	-	9	0	-	-	-	-	-
Other Middle East and Africa	2	10	11	13	18	6	31	28	36	13	17	-4
Singapore	6	3	4	3	-	-	2	3	2	-	-	-
OECD Asia Oceania	84	136	100	115	95	67	98	111	90	80	112	-32
Non-OECD Asia (excl. Singapore)	27	14	22	24	10	13	25	31	31	27	16	11
Other	11	3	4	-	-	-	-	-	-	2	-	-
Total²	140	175	158	175	145	108	166	191	169	152	157	-5
of which Non-OECD	56	39	54	53	47	31	63	69	75	48	37	11
OECD Europe												
OECD Americas	32	20	13	5	1	1	2	3	0	1	8	-7
Venezuela	1	-	-	-	-	-	-	-	-	-	-	-
Other Central and South America	2	1	0	-	-	-	-	-	-	-	-	-
Non-OECD Europe	6	2	0	1	-	-	-	-	-	-	3	-
FSU	40	45	22	14	26	34	25	28	26	41	6	35
Saudi Arabia	98	105	40	25	30	36	39	21	33	15	15	0
Algeria	9	11	9	6	6	6	8	-	8	-	10	-
Other Middle East and Africa	197	199	155	166	153	137	136	162	157	196	145	50
Singapore	25	29	10	6	8	3	4	11	-	-	3	-
OECD Asia Oceania	32	36	27	37	16	32	17	19	25	56	4	52
Non-OECD Asia (excl. Singapore)	69	73	50	38	54	17	59	72	42	31	16	15
Other	1	2	10	4	2	12	2	28	-56	48	17	31
Total²	512	523	337	302	296	278	292	344	236	388	228	161
of which Non-OECD	445	464	297	259	278	248	273	322	208	329	215	114
OECD Asia Oceania												
OECD Americas	-	-	-	-	-	-	-	-	-	-	-	-
Venezuela	-	-	-	-	-	-	-	-	-	-	-	-
Other Central and South America	-	-	-	-	-	-	-	-	-	-	-	-
ARA (Belgium Germany Netherlands)	-	-	-	-	-	-	-	-	-	-	-	-
Other Europe	-	-	-	-	-	-	-	-	-	-	-	-
FSU	-	-	-	-	-	-	-	-	-	-	-	-
Saudi Arabia	1	-	-	-	-	-	-	-	-	-	-	-
Algeria	-	-	-	-	-	-	-	-	-	-	-	-
Other Middle East and Africa	1	-	-	-	-	3	-	-	-	-	-	-
Singapore	28	21	14	17	10	6	18	8	27	18	10	8
Non-OECD Asia (excl. Singapore)	26	29	28	16	28	55	37	22	40	24	24	0
Other	33	26	21	9	19	36	17	18	19	8	10	-2
Total²	89	76	63	41	58	100	71	48	86	50	44	6
of which Non-OECD	89	76	63	41	58	100	71	48	86	50	44	6
Total OECD Trade²	741	774	558	518	499	486	529	582	491	590	429	161
of which Non-OECD	590	579	414	353	382	378	406	438	369	427	297	130

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)

	2018	2019	2020	3Q20	4Q20	1Q21	2Q21	May 21	Jun 21	Jul 21	Year Earlier	
											Jul 20	change
OECD Americas												
Venezuela	42	7	-	-	-	-	-	-	-	-	-	-
Other Central and South America	72	50	52	34	38	29	25	7	57	39	27	12
ARA (Belgium Germany Netherlands)	7	6	12	9	15	3	2	6	-	-	0	-
Other Europe	7	8	21	13	17	8	10	4	7	5	4	1
FSU	23	30	44	43	51	62	36	40	46	19	18	2
Saudi Arabia	-	2	2	7	-	-	0	-	1	-	21	-
Algeria	-	8	2	0	-	8	4	6	6	7	-	-
Other Middle East and Africa	7	5	10	30	7	6	11	2	29	1	18	-16
Singapore	-	1	1	-	-	-	-	-	-	-	-	-
OECD Asia Oceania	-	-	-	-	-	-	-	-	-	0	-	-
Non-OECD Asia (excl. Singapore)	0	0	-	-	-	-	8	-	6	-	-	-
Other	2	-	-	-	-	-	-	-	-	-	-	-
Total²	161	117	145	136	129	116	96	66	152	72	87	-15
of which Non-OECD	147	102	110	113	97	105	84	56	145	67	83	-16
OECD Europe												
OECD Americas	4	7	12	17	12	28	32	44	20	16	19	-3
Venezuela	-	-	-	-	-	-	-	-	-	-	-	-
Other Central and South America	3	5	6	14	5	5	1	2	2	2	12	-9
Non-OECD Europe	17	21	13	16	21	12	13	15	14	6	15	-9
FSU	154	154	149	141	156	272	154	127	186	288	141	147
Saudi Arabia	1	-	2	-	-	-	-	-	-	-	-	-
Algeria	1	0	2	-	-	3	-	-	-	-	-	-
Other Middle East and Africa	15	19	13	9	14	14	10	4	9	11	9	2
Singapore	-	1	3	1	4	2	7	-	13	-	2	-
OECD Asia Oceania	8	14	4	3	3	0	2	1	2	7	2	6
Non-OECD Asia (excl. Singapore)	0	3	-	-	-	-	-	-	-	-	-	-
Other	5	8	93	113	99	48	94	127	8	47	190	-144
Total²	208	232	295	313	315	384	313	322	254	378	390	-11
of which Non-OECD	185	202	279	298	295	340	281	284	234	347	379	-32
OECD Asia Oceania												
OECD Americas	0	1	-	-	-	-	-	-	-	-	-	-
Venezuela	-	-	-	-	-	-	-	-	-	-	-	-
Other Central and South America	-	-	0	-	0	-	-	-	-	-	-	-
ARA (Belgium Germany Netherlands)	-	-	-	-	-	-	-	-	-	-	-	-
Other Europe	-	-	-	-	-	-	-	-	-	-	-	-
FSU	16	6	5	2	-	1	-	-	-	-	5	-
Saudi Arabia	-	1	1	3	-	-	14	21	22	35	-	-
Algeria	-	-	-	-	-	-	-	-	-	-	-	-
Other Middle East and Africa	23	27	38	61	35	32	27	28	17	31	75	-44
Singapore	37	25	18	23	14	27	44	17	19	13	29	-15
Non-OECD Asia (excl. Singapore)	85	40	26	29	31	49	30	27	42	59	31	28
Other	0	1	-	-	-	-	-	-	-	-	-	-
Total²	162	101	88	118	80	109	116	94	99	137	139	-2
of which Non-OECD	162	100	88	118	80	109	116	94	99	137	139	-2
Total OECD Trade²	531	450	528	567	524	609	524	482	505	588	616	-29
of which Non-OECD	493	404	477	529	472	554	481	434	479	551	601	-50

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)

	2018	2019	2020	4Q20	1Q21	2Q21	3Q21	Apr 21	May 21	Jun 21	Jul 21	Aug 21	Sep 21
CRUDE OIL PRICES													
IEA CIF Average Import¹													
IEA Americas	60.02	56.93	37.31	40.17	53.66	63.76		60.38	63.14	67.39	68.34		
IEA Europe	70.52	64.25	42.85	43.99	60.09	67.22		63.85	66.96	70.68	73.48		
IEA Asia Oceania	72.46	66.38	46.28	44.27	57.82	67.63		65.94	67.05	70.26	73.53		
IEA Total	67.77	62.75	42.16	43.00	57.61	66.29		63.44	65.86	69.55	72.00		
FOB Spot													
North Sea Dated	71.27	64.12	41.76	44.03	61.07	68.84	73.42	64.59	68.54	72.96	74.99	70.75	74.40
Brent (Asia) Mth 1	72.23	64.86	44.86	45.86	61.55	69.50	74.09	65.58	68.50	74.09	75.36	71.12	75.70
WTI (Cushing) Mth 1	65.20	57.03	39.25	42.63	58.13	66.19	70.54	61.71	65.18	71.38	72.46	67.73	71.56
Urals (Mediterranean)	70.17	64.31	41.93	44.49	60.41	67.48	71.32	63.15	67.30	71.57	73.09	68.08	72.65
Dubai (1st month)	69.65	63.49	42.36	44.62	60.20	67.01	71.60	62.92	66.34	71.50	72.88	69.32	72.57
Tapis (Dated)	73.17	69.16	43.28	44.21	62.30	69.81	75.30	65.74	69.45	74.00	77.33	72.22	76.30
PRODUCT PRICES													
Rotterdam, Barges FOB													
Premium Unl 10 ppm	78.78	71.35	44.65	46.99	65.71	78.57	85.64	75.04	78.36	81.96	86.22	84.32	86.31
Naphtha	64.48	56.27	39.64	43.64	60.82	66.69	74.61	62.39	66.32	70.92	75.26	72.43	76.04
Jet/Kerosene	86.39	79.24	44.79	46.75	64.04	72.52	78.87	67.80	72.45	76.88	78.49	75.92	82.07
ULSD 10ppm	86.22	79.45	49.32	48.86	66.15	74.64	80.81	69.58	74.53	79.34	80.29	77.67	84.35
Gasoiil 0.1 %	84.28	77.73	48.10	48.05	65.02	73.43	79.41	68.19	73.42	78.21	79.15	76.03	82.90
LSFO 1%	63.22	62.21	42.78	46.27	62.77	66.88	72.12	64.69	65.89	69.73	72.02	69.35	74.86
HSFO 3.5%	61.13	50.31	34.43	41.40	55.34	60.08	63.95	57.61	58.94	63.31	63.99	61.71	66.05
Mediterranean, FOB Cargoes													
Premium Unl 10 ppm	79.41	71.31	45.59	47.42	66.81	77.94	86.49	74.64	77.42	81.40	86.87	84.87	87.66
Naphtha	66.08	54.43	37.81	42.80	59.29	65.19	73.44	60.82	64.72	69.56	74.03	71.28	74.92
Jet Aviation Fuel	85.37	77.76	43.28	46.01	62.77	71.22	77.96	66.44	71.03	75.73	77.48	75.05	81.21
ULSD 10ppm	86.03	79.05	48.76	49.02	65.71	74.07	80.64	68.98	73.90	78.85	80.19	77.54	84.05
Gasoiil 0.1 %	84.74	77.70	47.60	48.48	64.76	72.94	79.60	67.95	72.48	77.86	79.20	76.65	82.81
LSFO 1%	64.31	63.90	44.06	47.07	63.60	67.84	73.10	65.86	66.78	70.56	72.71	70.60	75.89
HSFO 3.5%	62.06	52.17	34.36	39.72	53.60	58.23	62.69	55.68	57.32	61.34	62.36	60.35	65.26
US Gulf, FOB Pipeline													
Super Unleaded	85.71	79.24	50.64	0.00	76.13	90.78	97.57	86.58	90.81	94.75	98.99	96.43	97.33
Unleaded	80.10	72.28	46.02	0.00	72.92	85.70	91.72	82.38	85.60	88.96	92.39	91.17	91.63
Jet/Kerosene	85.12	78.81	46.20	49.16	65.77	73.74	79.86	69.66	73.41	77.94	79.25	76.45	84.05
ULSD 10 ppm	85.94	79.09	50.17	52.24	71.63	82.05	87.33	76.25	82.82	86.89	87.04	84.70	90.38
No. 6 3% ²	60.20	52.57	34.63	40.20	51.93	57.77	62.33	56.04	56.54	60.55	60.93	60.92	65.20
Singapore, FOB Cargoes													
Premium Unleaded	80.21	72.55	46.65	48.72	67.39	76.86	83.45	73.94	76.11	80.31	85.14	81.13	84.06
Naphtha	67.50	57.15	40.77	43.51	61.09	66.41	73.93	62.40	65.94	70.64	75.57	71.01	75.15
Jet/Kerosene	85.05	77.26	44.83	47.08	63.47	71.52	77.10	66.74	71.71	75.91	77.25	74.05	79.88
Gasoiil 0.05%	84.33	77.23	48.43	48.38	64.93	72.28	77.16	67.73	72.11	76.78	77.93	73.77	79.66
HSFO 180 CST	67.04	58.62	39.32	44.09	56.74	61.28	68.34	59.02	59.71	64.79	66.22	65.07	73.48
HSFO 380 CST 4%	66.01	57.57	38.25	43.26	56.09	60.20	66.13	58.00	58.63	63.64	64.56	63.34	70.30

¹ IEA CIF Average Import price for July is an estimate.

IEA Americas includes United States and Canada.

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

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

² Waterborne

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Table 14
MONTHLY AVERAGE END-USER PRICES FOR PETROLEUM PRODUCTS

September 2021

NATIONAL CURRENCY *							US DOLLARS						
Total	% change from		Ex-Tax	% change from			Total	% change from		Ex-Tax	% change from		
Price	Aug-21	Sep-20	Price	Aug-21	Sep-20		Price	Aug-21	Sep-20	Price	Aug-21	Sep-20	
GASOLINE ¹ (per litre)													
France	1.583	0.3	19.0	0.628	0.6	50.6	1.863	0.3	18.9	0.739	0.7	50.4	
Germany	1.631	0.8	26.6	0.716	1.6	57.4	1.920	0.8	26.5	0.843	1.6	57.2	
Italy	1.665	0.7	19.6	0.637	1.4	54.2	1.960	0.7	19.5	0.750	1.5	54.0	
Spain	1.431	1.0	22.8	0.710	1.7	44.9	1.684	1.0	22.7	0.836	1.7	44.7	
United Kingdom	1.349	0.2	19.0	0.545	0.6	49.3	1.852	-0.3	26.1	0.748	0.1	58.3	
Japan	158.4	0.1	17.1	87.4	0.1	31.6	1.438	-0.2	12.2	0.793	-0.2	26.1	
Canada	1.403	-0.7	32.5	0.925	-1.1	46.4	1.108	-1.3	38.3	0.730	-1.6	52.8	
United States	0.839	0.6	45.4	0.709	0.7	57.6	0.839	0.6	45.4	0.709	0.7	57.6	
AUTOMOTIVE DIESEL FOR NON COMMERCIAL USE (per litre)													
France	1.447	1.0	20.1	0.597	2.1	51.1	1.703	1.0	19.9	0.703	2.1	51.0	
Germany	1.413	1.7	34.4	0.717	2.9	64.4	1.663	1.8	34.3	0.844	2.9	64.2	
Italy	1.513	0.5	19.0	0.623	1.0	46.6	1.781	0.6	18.9	0.733	1.0	46.4	
Spain	1.277	0.9	22.9	0.676	1.3	40.8	1.503	0.9	22.8	0.796	1.4	40.7	
United Kingdom	1.375	0.4	16.3	0.566	0.7	39.8	1.888	-0.1	23.3	0.777	0.2	48.1	
Japan	138.4	0.1	19.5	93.8	0.1	28.0	1.257	-0.2	14.5	0.852	-0.2	22.6	
Canada	1.343	1.7	37.5	0.917	2.2	51.6	1.060	1.2	43.5	0.724	1.7	58.2	
United States	0.894	1.0	40.1	0.744	1.2	51.8	0.894	1.0	40.1	0.744	1.2	51.8	
DOMESTIC HEATING OIL (per litre)													
France	0.914	2.3	31.9	0.605	2.9	43.7	1.075	2.3	31.7	0.712	2.9	43.6	
Germany	0.780	3.7	69.8	0.594	4.1	77.5	0.918	3.7	69.6	0.699	4.1	77.3	
Italy	1.307	1.4	19.9	0.668	2.2	36.2	1.538	1.4	19.7	0.786	2.2	36.1	
Spain	0.754	2.2	45.4	0.526	2.6	58.6	0.887	2.2	45.2	0.619	2.6	58.4	
United Kingdom	0.614	6.0	42.1	0.473	7.6	57.7	0.842	5.5	50.6	0.649	7.1	67.1	
Japan ²	97.8	0.2	23.1	86.1	0.2	24.0	0.888	-0.1	17.9	0.782	-0.1	18.8	
Canada	1.235	1.1	42.2	1.071	1.2	41.9	0.975	0.6	48.4	0.846	0.6	48.1	
United States	-	-	-	-	-	-	-	-	-	-	-	-	
LOW SULPHUR FUEL OIL FOR INDUSTRY ³ (per kg)													
France	0.623	4.4	41.4	0.483	5.8	60.6	0.733	4.5	41.2	0.569	5.8	60.4	
Germany	-	-	-	-	-	-	-	-	-	-	-	-	
Italy	0.554	4.9	57.7	0.522	5.2	63.3	0.652	4.9	57.5	0.615	5.3	63.1	
Spain	0.468	1.2	52.6	0.451	1.3	55.7	0.551	1.3	52.4	0.531	1.3	55.5	
United Kingdom	-	-	-	-	-	-	-	-	-	-	-	-	
Japan	-	-	-	-	-	-	-	-	-	-	-	-	
Canada	-	-	-	-	-	-	-	-	-	-	-	-	
United States	-	-	-	-	-	-	-	-	-	-	-	-	

¹ Unleaded premium (95 RON) for France, Germany, Italy, Spain, UK; regular unleaded for Canada, Japan and the United States.

² Kerosene for Japan.

³ VAT excluded from prices for low sulphur fuel oil when refunded to industry.

* Prices for France, Germany, Italy and Spain are in Euros; UK in British Pounds, Japan in Yen, Canada in Canadian Dollars.

Table 15
IEA/KBC Global Indicator Refining Margins¹
 (\$/bbl)

	Monthly Average					Change	Average for week ending:				
	Jun 21	Jul 21	Aug 21	Sep 21		Sep-Aug	10 Sep	17 Sep	24 Sep	01 Oct	08 Oct
NW Europe											
Brent (Cracking)	1.25	1.89	4.09	5.11	↑	1.02	5.69	5.53	4.63	4.84	5.69
Urals (Cracking)	1.94	3.07	4.85	5.84	↑	0.99	5.29	6.52	5.96	6.31	7.17
Brent (Hydroskimming)	-1.13	-0.79	1.23	2.60	↑	1.37	2.95	2.87	2.50	2.50	2.96
Urals (Hydroskimming)	-2.02	-1.53	0.17	1.23	↑	1.05	0.51	1.76	1.62	1.87	2.80
Mediterranean											
Es Sider (Cracking)	2.47	3.42	5.48	6.65	↑	1.17	7.10	6.95	6.30	6.76	7.27
Urals (Cracking)	0.94	1.77	4.69	5.38	↑	0.69	5.32	5.42	5.33	5.77	6.76
Es Sider (Hydroskimming)	0.88	1.70	3.78	4.88	↑	1.10	5.29	5.07	4.71	4.96	5.13
Urals (Hydroskimming)	-3.19	-2.74	0.24	0.76	↑	0.52	0.77	0.75	0.81	1.02	2.03
US Gulf Coast											
Mars (Cracking)	4.22	6.32	9.86	8.10	↓	-1.77	8.14	8.34	7.72	7.91	10.07
50/50 HLS/LLS (Coking)	12.41	14.47	17.31	16.25	↓	-1.07	16.71	16.87	15.89	15.21	17.79
50/50 Maya/Mars (Coking)	7.66	9.34	12.64	11.22	↓	-1.42	11.89	11.63	10.34	10.34	12.58
ASCI (Coking)	9.26	11.64	14.57	12.91	↓	-1.66	13.24	13.20	12.42	12.46	14.71
US Midwest											
30/70 WCS/Bakken (Cracking)	14.84	14.80	16.90	14.03	↓	-2.87	15.55	14.48	12.81	12.96	15.58
Bakken (Cracking)	17.36	17.33	19.23	16.55	↓	-2.69	17.91	17.25	15.44	15.28	17.88
WTI (Coking)	17.24	17.82	20.00	17.29	↓	-2.70	18.90	18.04	15.98	16.05	19.64
30/70 WCS/Bakken (Coking)	18.34	18.44	20.13	17.12	↓	-3.01	18.56	17.78	15.87	15.92	18.89
Singapore											
Dubai (Hydroskimming)	-4.01	-3.58	-2.34	0.03	↑	2.38	0.37	-0.06	0.23	0.35	1.52
Tapis (Hydroskimming)	0.78	-0.34	1.45	2.25	↑	0.79	2.48	3.04	2.27	1.57	1.59
Dubai (Hydrocracking)	2.33	3.38	3.78	5.18	↑	1.39	5.12	5.02	5.31	5.86	6.94
Tapis (Hydrocracking)	0.33	-0.42	1.53	2.22	↑	0.69	2.25	2.90	2.31	2.09	2.70

¹ Global Indicator Refining Margins are calculated for various complexity configurations, each optimised for processing the specific crude(s) in a specific refining centre. Margins include energy cost, but exclude other variable costs, depreciation and amortisation. Consequently, reported margins should be taken as an indication, or proxy, of changes in profitability for a given refining centre. No attempt is made to model or otherwise comment upon the relative economics of specific refineries running individual crude slates and producing custom product sales, nor are these calculations intended to infer the marginal values of crude for pricing purposes.

Source: IEA, KBC Advanced Technologies (KBC)

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

	May-21	Jun-21	Jul-21	Jul-20	Jul 21 vs Previous Month	Jul 21 vs Previous Year	Jul 21 vs 5 Year Average	5 Year Average
OECD Americas								
Naphtha	1.3	1.2	1.2	1.4	0.0	-0.2	-0.3	1.5
Motor gasoline	45.7	44.6	44.9	45.8	0.3	-0.9	0.0	45.0
Jet/kerosene	7.2	7.3	7.7	5.1	0.4	2.6	-1.1	8.8
Gasoil/diesel oil	27.6	27.9	27.7	30.2	-0.2	-2.5	-0.6	28.3
Residual fuel oil	2.9	2.6	2.7	2.4	0.0	0.2	-0.5	3.1
Petroleum coke	4.3	4.4	4.2	4.5	-0.1	-0.3	-0.3	4.6
Other products	14.0	14.5	14.4	13.9	-0.1	0.5	1.2	13.2
OECD Europe								
Naphtha	8.0	8.0	8.2	8.6	0.3	-0.4	0.4	7.8
Motor gasoline	20.5	20.5	21.5	20.3	1.0	1.2	1.1	20.4
Jet/kerosene	5.4	5.9	6.0	4.4	0.1	1.6	-2.3	8.3
Gasoil/diesel oil	41.0	41.7	41.0	44.1	-0.7	-3.2	0.5	40.5
Residual fuel oil	9.0	8.0	7.6	6.8	-0.5	0.7	-1.0	8.6
Petroleum coke	1.4	1.5	1.5	1.5	0.0	0.1	0.2	1.3
Other products	17.5	17.1	17.3	16.8	0.2	0.5	1.6	15.6
OECD Asia Oceania								
Naphtha	16.2	15.0	15.0	16.3	0.0	-1.3	-0.3	15.3
Motor gasoline	21.6	22.7	23.1	21.4	0.3	1.7	1.2	21.9
Jet/kerosene	12.1	11.8	12.2	12.3	0.3	-0.1	-2.3	14.5
Gasoil/diesel oil	30.9	31.3	30.3	31.9	-1.0	-1.6	0.2	30.1
Residual fuel oil	7.8	7.9	8.3	7.1	0.4	1.2	1.4	6.9
Petroleum coke	0.4	0.4	0.4	0.4	0.0	0.0	0.0	0.4
Other products	12.8	13.4	13.1	13.3	-0.3	-0.2	0.4	12.7
OECD Total								
Naphtha	5.9	5.5	5.7	6.3	0.2	-0.6	-0.3	6.0
Motor gasoline	33.8	33.7	34.0	33.4	0.2	0.6	1.0	33.0
Jet/kerosene	7.4	7.6	7.9	6.1	0.3	1.7	-1.7	9.6
Gasoil/diesel oil	32.3	32.7	32.4	35.0	-0.3	-2.7	-0.2	32.6
Residual fuel oil	5.6	5.1	5.1	4.7	0.0	0.5	-0.4	5.6
Petroleum coke	2.8	2.9	2.8	2.8	-0.1	-0.1	0.0	2.8
Other products	14.9	15.1	15.1	14.7	-0.1	0.4	1.2	13.9

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	1Q21	2Q21	3Q21	Jul 21	Aug 21	Sep 21
ETHANOL									
OECD Americas¹	1060	936	1000	932	1021	1016	1045	1045	957
United States	1029	906	968	901	991	985	1014	1013	925
Other	31	30	31	31	31	31			
OECD Europe²	97	90	102	86	111	110	130	101	101
France	20	16	17	15	21	19	32	13	13
Germany	12	11	12	13	20	10	20	5	5
Spain	9	8	9	6	7	11	7	12	12
United Kingdom	4	4	11	9	12	12	12	11	11
Other	51	50	53	43	52	59			
OECD Asia Oceania³	5	4	5	4	5	4	4	5	5
Australia	4	3	3	4	4	3	3	3	3
Other	1	1	1	1	1	1			
Total OECD Ethanol	1163	1030	1106	1023	1137	1131	1178	1150	1062
Total Non-OECD Ethanol	813	743	795	320	904	1160	1174	1183	1120
Brazil	621	560	575	99	683	939	954	963	900
China	67	69	76	76	76	76			
Argentina	19	15	18	18	18	18			
Other	106	99	126	126	126	126	220	220	220
TOTAL ETHANOL	1976	1774	1901	1342	2040	2291	2352	2334	2183
BIODIESEL									
OECD Americas¹	119	125	155	103	114	191	186	193	193
United States	113	118	148	99	110	182	182	182	182
Other	7	6	7	4	4	9			
OECD Europe²	281	261	290	256	289	301	278	313	313
France	42	41	43	44	48	43	56	36	36
Germany	66	60	66	54	61	72	64	76	76
Italy	18	28	31	28	30	30			
Spain	38	34	39	33	34	42	33	47	47
Other	116	99	112	98	116	114	104	119	119
OECD Asia Oceania³	15	20	23	14	23	26	19	29	29
Australia	2	3	4	2	2	5	2	6	6
Other	13	17	19	12	21	21			
Total OECD Biodiesel	415	405	469	374	427	518	483	535	535
Total Non-OECD Biodiesel	388	405	425	424	425	425	425	425	425
Brazil	102	111	116	117	117	115	114	116	116
Argentina*	42	27	36	36	36	36			
Other	245	267	273	271	272	274			
TOTAL BIODIESEL	803	810	893	798	852	943	908	961	961
GLOBAL BIOFUELS	2779	2584	2794	2140	2893	3234	3261	3294	3143

* monthly data not available.

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Next Issue: 16 November 2021

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