

Energy Tidbits

Netanyahu tells Congress it's not if but when Israel takes action to prevent Iran from developing nuclear weapons

Produced by: Dan Tsubouchi

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Executive Summary

May 2024

Summary

In May 2024, the United States exported 646.3 Bcf and imported 247.8 Bcf of natural gas, which resulted in 398.5 Bcf of net exports.

U.S. LNG Exports

The United States exported 367.7 Bcf (56.9% of total U.S. natural gas exports) of natural gas in the form of liquefied natural gas (LNG) to 32 countries.

- Asia (186.6 Bcf, 50.8%), Europe (140.7 Bcf, 38.3%), Latin America/ Caribbean (40.4 Bcf, 11.0%)
- 21.0% increase from April 2024
- 0.3% increase from May 2023
- 84.8% of total LNG exports went to non-Free Trade Agreement countries (nFTA), while the remaining 15.2% went to Free Trade Agreement countries (FTA).

U.S. LNG exports to the top five countries of destination accounted for 48.6% of total U.S. LNG exports.

- India (45.3 Bcf, 12.3%), Japan (41.2 Bcf, 11.2%), Netherlands (37.7 Bcf, 10.3%), South Korea (28.4 Bcf, 7.7%), and Germany (26.2 Bcf, 7.1%).

U.S. Imports and Exports by Pipeline and Truck with Mexico

The United States exported 211.5 Bcf of natural gas to Mexico and imported less than 0.1 Bcf of natural gas from Mexico, which resulted in 211.5 Bcf of net exports.

- 11.1% increase from April 2024
- 9.2% increase from May 2023

U.S. Imports and Exports by Pipeline and Truck with Canada

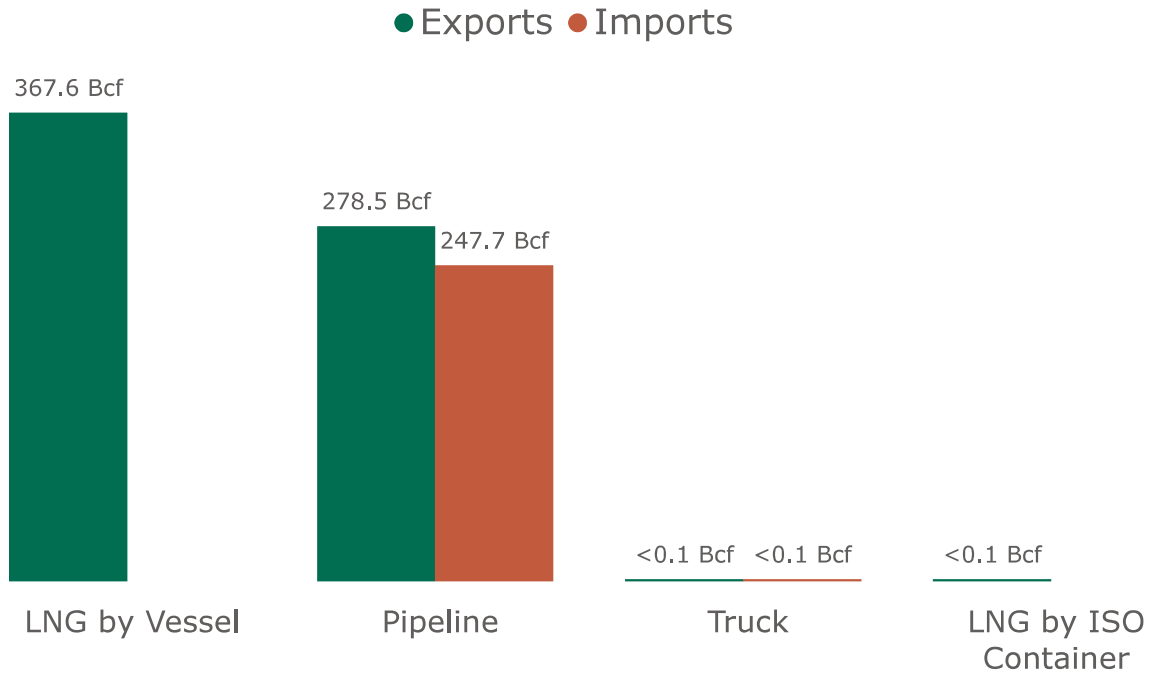
The United States exported 67.1 Bcf of natural gas to Canada and imported 247.7 Bcf of natural gas from Canada, which resulted in 180.7 Bcf of net imports.

- 14.9% increase from April 2024
- 24.8% increase from May 2023

U.S. Natural Gas Imports & Exports

Monthly Summary

U.S. Natural Gas Imports & Exports by Mode of Transport (May 2024)



1a. Monthly Summary: U.S. Natural Gas Imports & Exports by Mode of Transport

Volume (Bcf)	Monthly			Percentage Change		
	Mode of Transport	May 2024	Apr 2024	May 2023	May 2024 vs. Apr 2024	May 2024 vs. May 2023
Exports						
LNG by Vessel	367.6	303.7	366.7	21%	<1%	
Pipeline	278.5	263.4	271.6	6%	3%	
Truck	<0.1	<0.1	<0.1	28%	-14%	
LNG by ISO Container	<0.1	<0.1	<0.1	21%	29%	
Total	646.3	567.2	638.4	14%	1%	
Imports						
LNG by Vessel	0	0	1.4	-	-100%	
Pipeline	247.7	230.3	222.5	8%	11%	
Truck	<0.1	<0.1	0.3	-28%	-81%	
LNG by ISO Container	0	0	0	-	-	
Total	247.8	230.4	224.2	8%	11%	
Net Exports	398.5	336.8	414.2	18%	-4%	

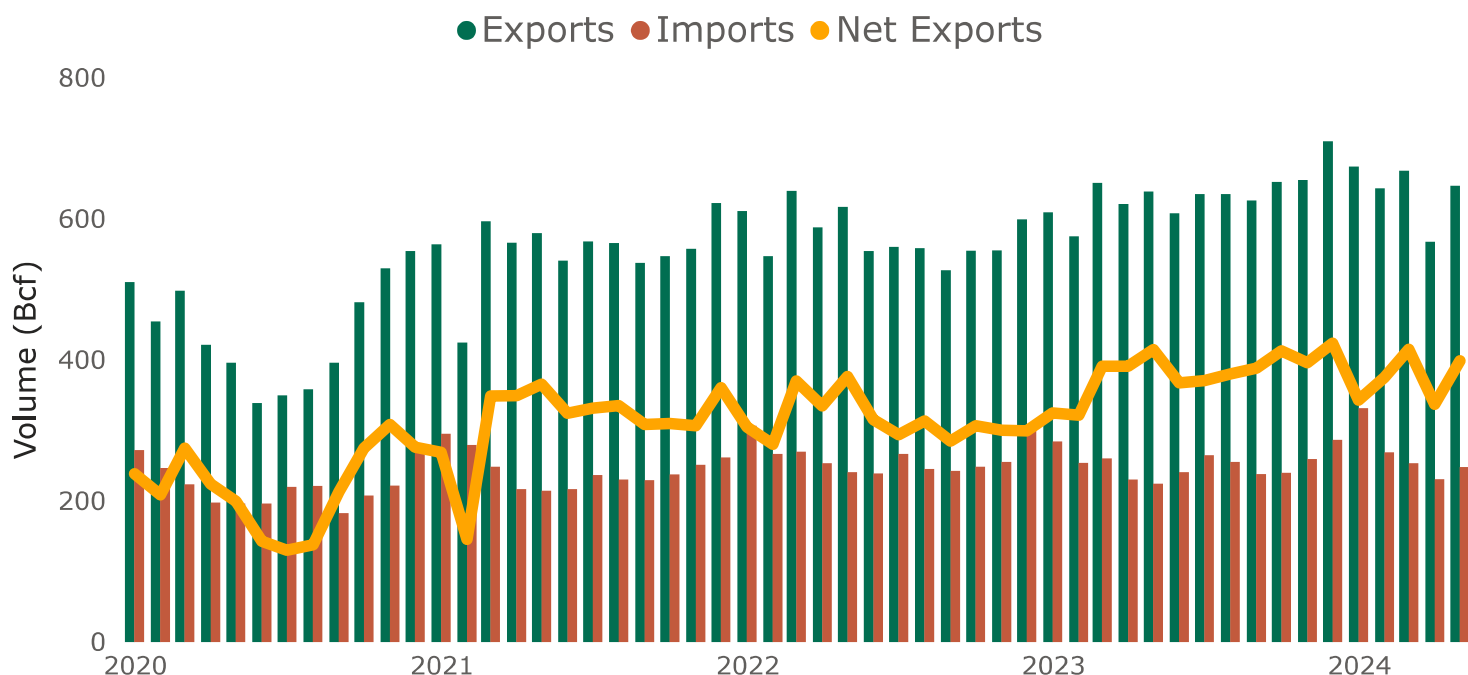
Notes

- Natural gas imports & exports by truck included compressed natural gas (CNG) and liquefied natural gas (LNG).
- Does not include LNG Re-Exports or Puerto Rico LNG Imports or Exports. See Table 6 for LNG Re-Exports and Table 8 for Puerto Rico LNG Imports and Exports.
- Totals may not equal sum of components because of independent rounding.
- not applicable(-).

U.S. Natural Gas Imports & Exports

Year-to-Date and Annual Summary

U.S. Natural Gas Imports & Exports



1b. Year-to-Date and Annual Summary: U.S. Natural Gas Imports & Exports by Mode of Transport

Volume (Bcf)	Year-to-Date (Jan-May)			Annual		
Mode of Transport	YTD 2024	YTD 2023	% Change	2023	2022	% Change
Exports						
LNG by Vessel	1,796.1	1,771.5	1%	4,341.2	3,861.9	12%
Pipeline	1,401.6	1,320.2	6%	3,267.7	3,040.8	7%
Truck	<0.1	0.4	-78%	0.7	1.6	-58%
LNG by ISO Container	0.4	0.7	-44%	1.1	2.1	-48%
Total	3,198.2	3,092.8	3%	7,610.7	6,906.4	10%
Imports						
LNG by Vessel	11.5	9.3	24%	13.2	23.5	-44%
Pipeline	1,318.8	1,241.0	6%	3,016.8	3,104.0	-3%
Truck	0.6	0.8	-32%	2.4	2.1	14%
LNG by ISO Container	0	0	-	0	0	-
Total	1,330.9	1,251.0	6%	3,032.4	3,129.6	-3%
Net Exports	1,867.9	1,841.8	1%	4,578.3	3,776.8	21%

Notes

- Does not include LNG Re-Exports or Puerto Rico LNG Imports or Exports. See Table 6 for LNG Re-Exports and Table 8 for Puerto Rico LNG Imports and Exports.
- Totals may not equal sum of components because of independent rounding.
- not applicable(-).

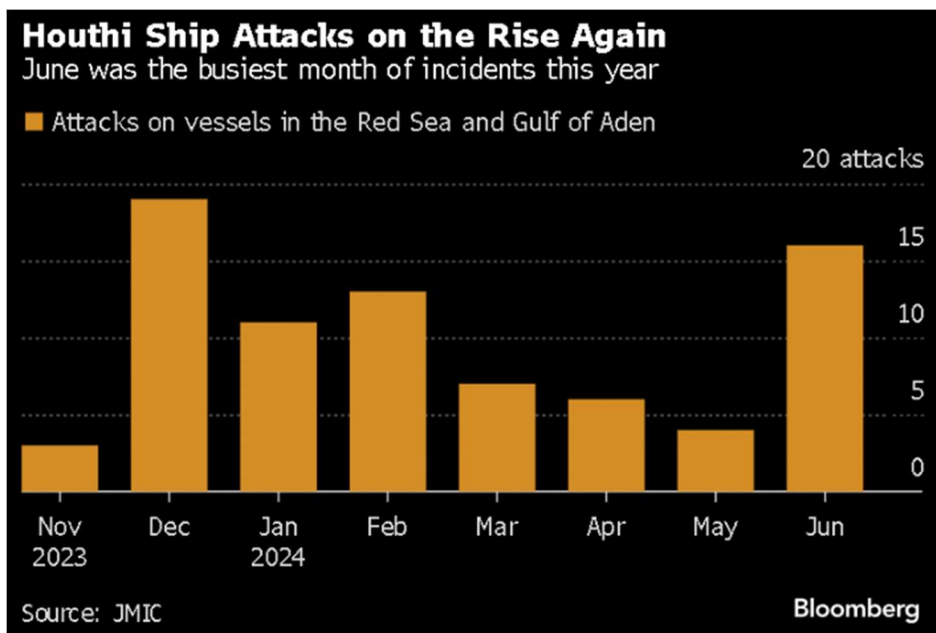
Houthis Mount Biggest Month of Attacks on Ships This Year

2024-07-02 15:28:34.847 GMT

By Alex Longley

(Bloomberg) -- Yemen's Houthi rebels conducted the largest number of attacks on commercial ships so far in 2024 in June, fresh proof that the group's threat to trade intensified in recent weeks.

There were 16 confirmed attacks on ships in June, according to figures published by the naval forces operating in the region. That's the most for any single month in 2024, and was only eclipsed in December when more vessels were still sailing through the region. Separate figures published by the Washington Institute show a similar trend.



Attacks by the Houthis ramped up in June, having shown signs of diminishing in the preceding months. The incidents included the second confirmed sinking of a vessel, as well as the first successful attack with a seaborne drone. The attacks are helping to contribute to the second-largest increase in a gauge of global sea transport on record as vessels sail thousands of miles extra around Africa.

Tracking the exact number of incidents can be tricky as different agencies use different definitions for attacks. Some may also go unreported.

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To view this story in Bloomberg click here:

<https://blinks.bloomberg.com/news/stories/SFZWG5DWX2PS>

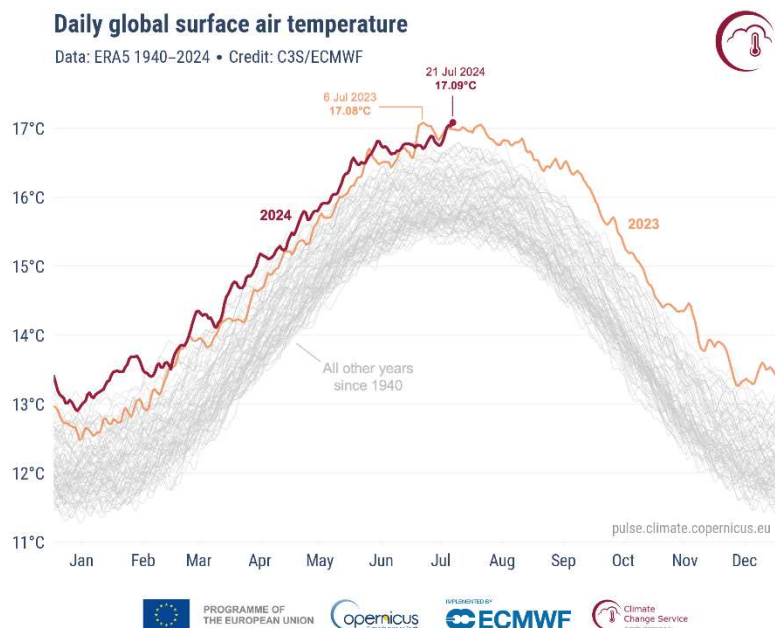
<https://climate.copernicus.eu/new-record-daily-global-average-temperature-reached-july-2024>

New record daily global average temperature reached in July 2024

23rd July 2024

The Earth has just experienced its warmest day in recent history, according to the Copernicus Climate Change Service (C3S) data. On 21 July 2024, the daily global average temperature reached a new record high* in the ERA5 dataset, at 17.09°C, slightly exceeding the previous record of 17.08°C from 6 July 2023.**

Based on preliminary data released by C3S on 23 July, Sunday 21 July was the hottest day since at least 1940, by a small margin of 0.01°C. While it is almost indistinguishable from the previous record, what really stands out is the difference between the temperatures since July 2023 and all previous years. The data can be explored in [Climate Pulse](#), the C3S application that provides historical and near real-time temperature data from the ERA5 reanalysis dataset.



Daily global average surface air temperature for 2024 (red), 2023 (orange), and all years between 1940 and 2022 (grey). Data for 21 July 2024 is preliminary. Data source: ERA5, via Climate Pulse. Credit: C3S/ECMWF

Before July 2023, the previous daily global average temperature record was 16.8°C, on 13 August 2016. Since 3 July 2023 there have been 57 days that have exceeded that previous record, distributed between July and August 2023, and during June and July so far in 2024.

According to **C3S Director Carlo Buontempo**: "On July 21st, C3S recorded a new record for the daily global mean temperature. What is truly staggering is how large the difference is between the temperature of the last 13 months and the previous temperature records. We are now in truly uncharted territory and as the climate keeps warming, we are bound to see new records being broken in future months and years."

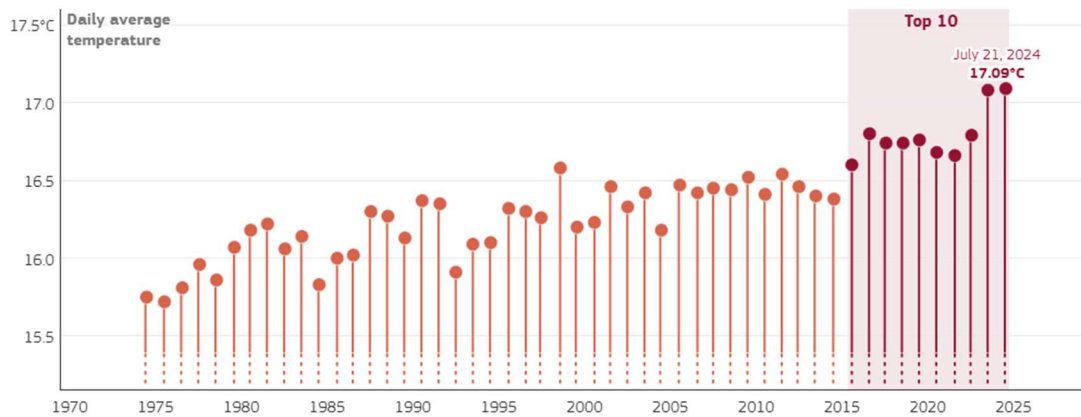
Analysis of the years with the highest annual maximum daily global temperatures shows that both 2023 and 2024 have seen annual highs substantially above those recorded in previous years.

Another sign of the global warming trend is the fact that the ten years with the highest daily average temperatures are the last ten years, from 2015 to 2024.

The difference in the highest daily average temperature between the lowest ranked of those ten years (2015) and the previous record before 2023 (13 August 2016) was 0.2°C. The jump from the 2016 record to 2023/2024 is about 0.3°C, highlighting how substantial the warmth of 2023 and 2024 is (see the chart below).

Highest global average temperatures

The ten highest maximum global-average daily temperatures of the last 50 years have all occurred since 2015



Data for 2024 shown up to 21 July. Data for 21 July 2024 is preliminary. The y-axis does not start at zero.

Data source: ERA5 • Credit: Copernicus Climate Change Service/ECMWF



Annual maximum daily global average temperatures in the ERA5 record for the past 50 years (1974 to 2024). The ten highest annual maximum temperatures are highlighted in dark red. Data for 21 July 2024 is preliminary, and data for 2024 is available up to 21 July 2024. Data source: ERA5. Credit: C3S/ECMWF.

What caused this new record global average temperature?

The global average temperature tends to reach its annual peak between late June and early August, coinciding with the northern hemisphere summer. This is because the seasonal patterns of the northern hemisphere drive the overall global temperatures. The large land masses of the northern hemisphere warm up faster than the oceans of the southern hemisphere can cool down during the northern summer months.

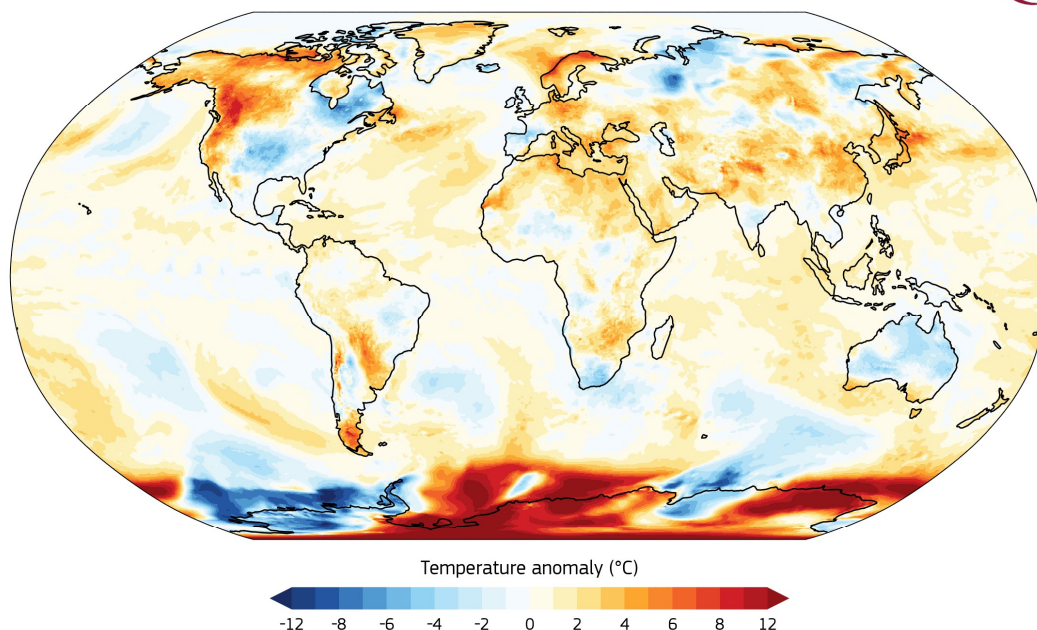
The global average temperature was already at near-record levels in recent days, slightly below the levels of 2023, after being at record levels for the time of year for more than a year.

Our analysis suggests that the sudden rise in daily global average temperature is related to much above-average temperatures over large parts of Antarctica. Such large anomalies are not unusual during the Antarctic winter months, and also contributed to the [record global temperatures in early July 2023](#).

What's more, Antarctic sea ice extent is almost as low as it was [at this time last year](#), leading to much above-average temperatures over parts of the Southern Ocean.

SURFACE AIR TEMPERATURE ANOMALY • 21 JUL 2024

Data: ERA5 • Reference period: 1991–2020 • Credit: C3S/ECMWF



PROGRAMME OF
THE EUROPEAN UNION



Surface air temperature anomalies on 21 July 2024, relative to the average for the 1991–2020 reference period. Data source: ERA5, via Climate Pulse. Preliminary data. Credit: C3S/ECMWF

Was this expected?

As the global average temperature was already at near-record levels during the first half of July, close to the temperatures seen at this time of year in 2023, and the global average temperature typically reaches its peak at this time of year, it is not completely unexpected that we are seeing a similar, if marginally higher, global average temperature.

What can be expected in the coming days and weeks?

In the coming days, we are expecting the daily global average temperature to further increase and peak around 22 or 23 July 2024 and then go down, but with possible further fluctuations in the coming weeks.

As the annual maximum global average temperature typically occurs between late June and early August, these conclusions are preliminary as we follow the evolution of the climate in near real-time. In 2023, there was a second peak in the daily global average temperature on 4 August (reaching 17.05°C) that came close to the record set on 6 July 2023. C3S will continue monitoring the situation, providing more information in further updates.

Is 2024 likely to be the warmest year on record?

The ranking for 2024 will largely depend on the development and intensity of the next phase of the El Niño Southern Oscillation (ENSO) (i.e. when and how strongly La Niña develops). To date, 2024 has been sufficiently warm for it to be quite possible that the full year will be warmer than 2023, but the exceptional warmth of the last four months of 2023 makes it too early to predict with confidence which year will be the warmer.

What was the previous record?

The previous highest daily global average temperature was 17.08°C, a record set on 6 July 2023 as part of a long streak of record-breaking daily global average temperatures in July and August 2023. Prior to the long streak of record-breaking temperatures in July and August 2023, the highest daily global average temperature in the ERA5 dataset was 16.80°C, on 13 August 2016.

*Data for 21 July 2024 is currently preliminary, and final values may differ very slightly. For more information, see 'How are daily averages calculated?' in the [Climate Pulse FAQs](#).

**ERA5 is the fifth generation of the ECMWF reanalysis dataset. It covers the period from 1940 to the present day.

https://www.linkedin.com/posts/conocophillips_today-conocophillips-announced-the-signing-activity-7221628742970867713-vrMG?utm_source=share&utm_medium=member_desktop



ConocoPhillips
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Today ConocoPhillips announced the signing of two new strategic LNG agreements to supply Europe and Asia. A long-term capacity booking at Fluxys' terminal in Zeebrugge, Belgium will allow ConocoPhillips to import and regasify 0.75 MTPA of LNG for delivery in Belgium and throughout Europe starting in April 2027. A long-term LNG sales and purchase agreement to supply the Asian market will begin the same year.



794

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23 July, 03:05,

Updated 23 July, 03:29

In 2025, the Russian Federation will increase gas supplies through the Power of Siberia to China to 38 billion cubic meters

Russia in 2023 exceeded the plan for gas supplies to China through the pipeline by 800 million cubic meters

MOSCOW, July 23. /TASS/. In 2023, Russia exceeded the plan for gas supplies to China through the Power of Siberia pipeline by 800 million cubic meters, in 2025 supplies will reach 38 billion cubic meters, said Deputy Minister of Energy of the Russian Federation Sergei Mochalnikov at a meeting of the Russian-Chinese intergovernmental commission on energy.

"In 2023, the plan for the supply [of gas via the Power of Siberia] was exceeded by 800 million cubic meters, they amounted to 22.7 billion cubic meters.

Mochalnikov noted that in total, as of July 1, 2024, 68 billion cubic meters have been pumped through the Power of Siberia since the launch of the gas pipeline.

The Power of Siberia is the largest gas transportation system in eastern Russia. In the coming years, the total volume of Gazprom's exports to China will reach 48 billion cubic meters of gas per year (due to the implementation of the project for gas supplies to China along the Far Eastern route), and taking into account the transit gas pipeline through Mongolia - almost 100 billion cubic meters per year, said the head of Gazprom Alexei Miller. Later, Miller said that China is considering the possibility of increasing Russian gas supplies through the Power of Siberia in excess of the design capacity of 38 billion cubic meters.

Tags:

[RussiaChina](#)

<https://www.ft.com/content/f7a34e3e-bce9-4db9-ac49-a092f382c526>

Russia-China gas pipeline deal stalls over Beijing's price demands

Power of Siberia 2 project would offer lifeline to exporter Gazprom as Moscow's dependence on its neighbour grows



A deal on the pipeline was one of Russian President Vladimir Putin's top requests for Chinese leader Xi Jinping when they met last month, according to people familiar with the issue © Alexandr Demyanchuk/Sputnik/Pool/AP

Max Seddon in Riga, Anastasia Stognei in Tbilisi, Henry Foy in Brussels and Joe Leahy in Beijing YESTERDAY

Russia's attempts to conclude a major gas pipeline deal with China have run aground over what Moscow sees as Beijing's unreasonable demands on price and supply levels, according to three people familiar with the matter.

Beijing's tough stance on the Power of Siberia 2 pipeline underscores how Russia's invasion of Ukraine has left President Vladimir Putin increasingly dependent on Chinese leader Xi Jinping for economic support.

The people familiar with the matter said China had asked to pay close to Russia's heavily subsidised domestic prices and would only commit to buying a small fraction of the pipeline's planned annual capacity of 50bn cubic metres of gas.

Approval for the pipeline would transform the dire fortunes of Gazprom, Russia's state gas export monopoly, by linking the Chinese market to gasfields in western Russia that once supplied Europe.

Gazprom suffered a loss of Rbs629bn (\$6.9bn) last year, its biggest in at least a quarter of a century, amid plummeting gas sales to Europe, which has had greater success than expected in diversifying away from Russian energy.

While Russia has insisted it is confident of agreement on Power of Siberia 2 "in the near future", two of the people said the impasse was the reason Alexei Miller, Gazprom's chief executive, had not joined Putin on the Russian leader's state visit to Beijing last month.

Miller, who was instead on a trip to Iran, would have been essential for any serious negotiations with China and his absence was "highly symbolic", said Tatiana Mitrova, a research fellow at Columbia University's Center on Global Energy Policy.



A deal on the pipeline was one of three main requests Putin made to Xi when they met, according to the people familiar with the matter, along with more Chinese bank activity in Russia and for China to snub a peace conference being organised by Ukraine this month.

China announced on Friday it would skip Ukraine's summit in Switzerland. Two of the people said Beijing and Moscow were discussing ringfencing one or more banks that would finance trade in components for Russia's defence industry — all but certainly incurring US sanctions that would cut any such bank out of the broader global financial system.

An agreement on the pipeline, however, remains distant, while the proposed co-operation with Chinese banks remains at a far smaller scale than Russia had requested, the people added.

Dmitry Peskov, Putin's spokesman, said Russia and China were still in talks on the pipeline.

"It's totally normal for each side to defend their own interests. Negotiations will continue, because the leaders of both countries have the political will for it, and commercial issues will continue to be worked out, and we have no doubt all the necessary agreements will be made," Peskov told reporters on Monday.

"As far as aspects of ongoing commercial negotiations go, they are, of course, not public," Peskov added. Gazprom declined to comment.

Asked about the gas talks, the Chinese foreign ministry said only that "the presidents of China and Russia agreed to look for areas where our interests converge . . . and enable each other's success".

China would "work with Russia to deliver on important common understandings reached between our two leaders and deepen our all-round cooperation [for] mutual benefit", the ministry said.

Russia's failure to secure the deal underscores how the war in Ukraine has made China the senior partner in the countries' relationship, according to Alexander Gabuev, director of the Carnegie Russia Eurasia Center in Berlin.

"China could need Russian gas strategically as a secure source of supply not based on maritime routes that would be affected in case of a maritime conflict around Taiwan or the South China Sea," Gabuev said. "But to make that worthwhile, China really needs a very cheap price and flexible obligations."

China's demand for imported gas is expected to reach about 250 bcm by 2030, up from less than 170 bcm in 2023, according to a paper published by Columbia's CGEP in May.

That paper said the 2030 level of demand could still be largely or entirely met through existing contracts for pipeline supply and for liquefied natural gas. However, by 2040, the gap between China's import demand and existing commitments would reach 150 bcm, it said.

Russia's lack of an alternative overland route for its gas exports means Gazprom would probably have to accept China's conditions, Gabuev said.

"China believes time's on its side. It has room to wait to squeeze the best conditions out of the Russians and wait for attention on the China-Russia relationship to move elsewhere," he said. "The pipeline can be built rather quickly, since the gasfields are already developed. Ultimately the Russians don't have any other option to market this gas."

Before the war in Ukraine, Gazprom relied on selling gas to Europe at high prices in order to subsidise Russia's domestic market.

China already pays Russia less for gas than to its other suppliers, with an average price of \$4.4 per million British thermal units, compared with \$10 for Myanmar and \$5 for Uzbekistan, the CGEP researchers calculated from 2019-21 customs data.

During the same years Russia exported gas to Europe at about \$10 per million Btu, according to data published by the Russian central bank.

Gazprom's exports to Europe fell to 22 bcm in 2023 from an average 230 bcm a year in the decade before the full-scale invasion of Ukraine. These are likely to dwindle further once a trans-shipment agreement with Ukraine expires at the end of this year.

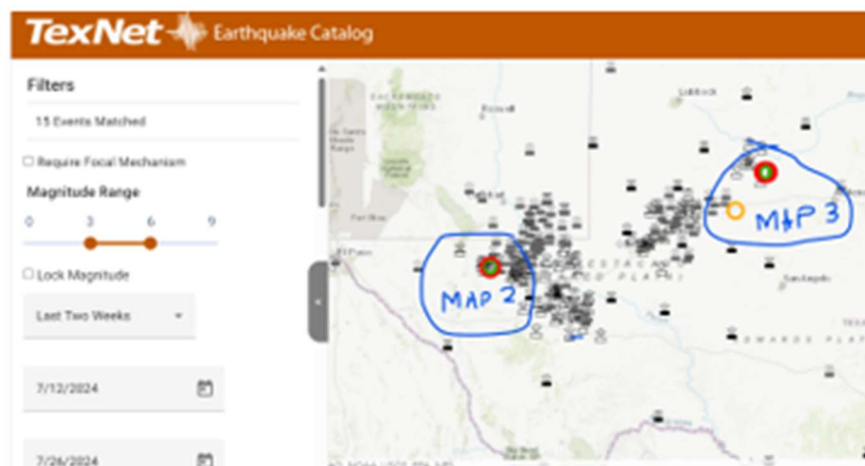
Failure to agree increased supplies to China would be a hefty further blow. An unreleased report by a major Russian bank, seen by the Financial Times, recently excluded Power of Siberia 2 from its baseline forecast for Gazprom. That reduced the company's expected profit for 2029 — when the bank expected the project to launch — by almost 15 per cent.

China did not immediately respond to a request for comment.

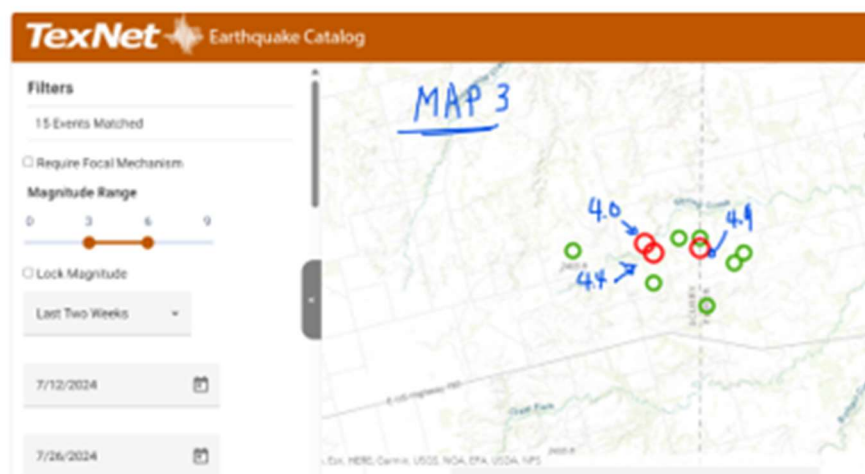
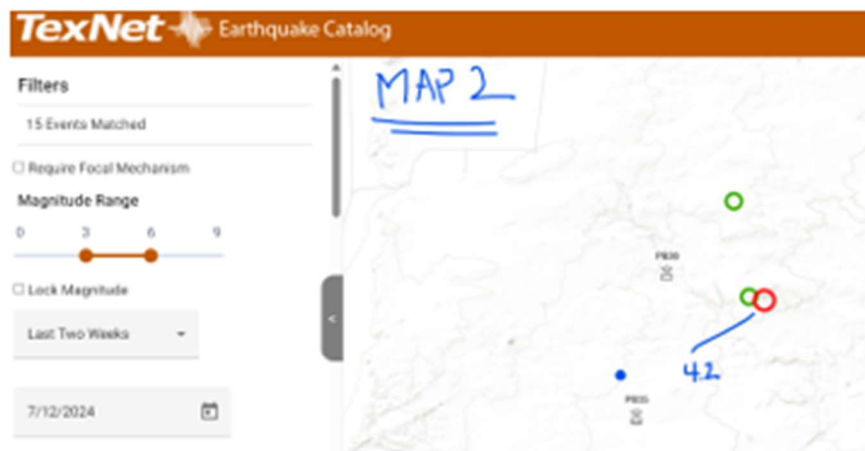
This article has been amended since initial publication to reflect that the Ukraine peace summit is taking place at the Bürgenstock resort in Switzerland, not Geneva

Maps pulled as of 8:30pm MT on July 26, 2024

<https://www.beg.utexas.edu/texnet/catalog>



15 earthquakes >3 since July 12, 2024



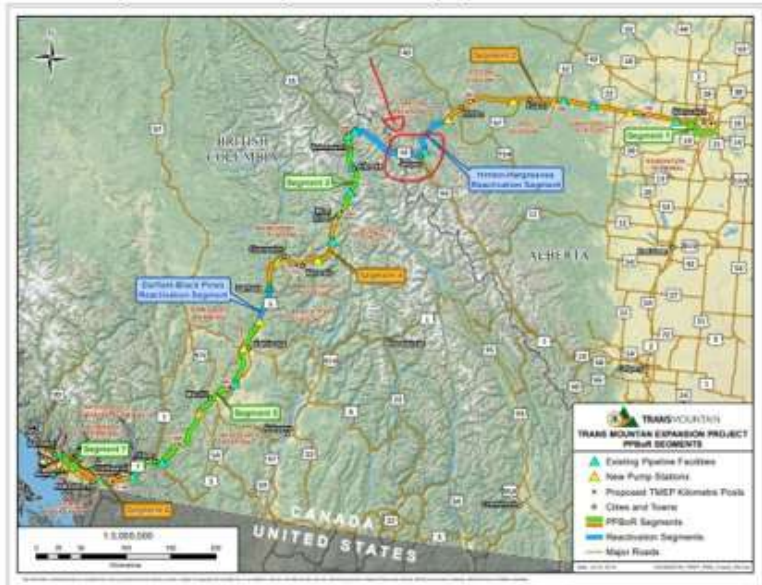
Google Maps of wildfire by Jasper as of 5am MT



TMX Expansion Pipeline map (also Trans Mountain route)



TMX Expansion Pipeline map (also Trans Mountain route)



<https://www.sodir.no/en/whats-new/news/general-news/2024/high-price-to-pay-for-halting-exploration-for-oil-and-gas/>

High price to pay for halting exploration for oil and gas

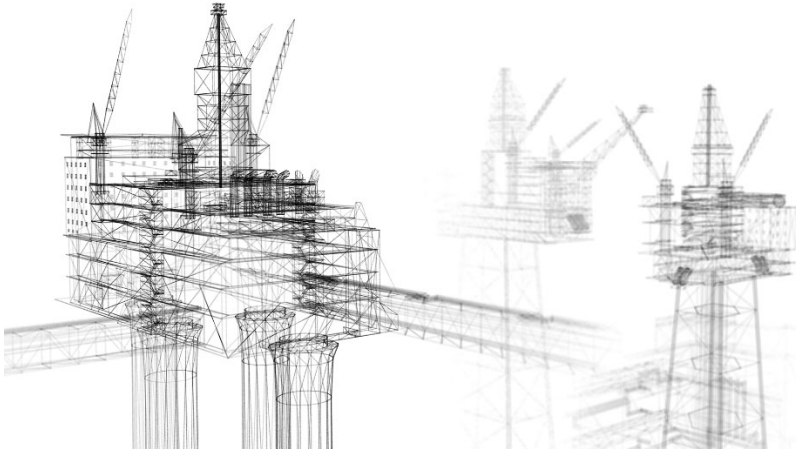


Illustration of a production facility on the Norwegian Continental Shelf.

11/03/2024 Stopping exploration activity on the Norwegian shelf will accelerate the scale-down of the oil and gas industry.

The Climate Change Committee's report was broadly covered when it was published last autumn. The deadline for comments regarding the report has now expired, and the Norwegian Offshore Directorate has submitted a comprehensive consultation response in which we point out significant deficiencies in this report. In light of this, Torgeir Stordal, Director General of the Norwegian Offshore Directorate, wrote this article, which was first published on [aitinget.no](https://www.aitinget.no) on 11 March.

This will be very harmful for the Norwegian economy and will complicate Europe's situation. Is that truly what we want?

Among other things, the Committee has proposed the development of a strategy for the tail-end phase of Norwegian petroleum activities. Until this strategy is in place, the Committee recommends not awarding new licences for exploration, production or installation and operation.

The Norwegian Offshore Directorate just submitted its input on the report. We believe that the Committee's proposals will have a substantial socio-economic impact if they are adopted. The purpose of a tail-end phase strategy is to discontinue profitable activity faster than what would otherwise have been the case.

The Committee has not addressed the major consequences this will have for value creation, employment around the country and state revenues. It could also weaken the EU's security of supply.

A temporary hiatus will immediately result in reduced exploration activity on the Norwegian shelf, and will weaken the basis for new discoveries that can be developed. Time-critical and profitable oil and gas resources could be lost and existing infrastructure will be shut down earlier than planned.

The 2050 Climate Change Committee has bolstered its mandate and is advocating for an amendment to the Climate Act when it proposes to cut emissions from Norwegian territory by 90-95 per cent by 2050 compared with 1990. This means disregarding the possibility of purchasing emission credits - which are among the most

effective ways to attempt to reach climate targets. The cost of domestic cuts can be much higher than equivalent cuts in the EU.

163,000 jobs in play

Exploration activity on the Norwegian shelf has provided substantial values to society over the last 20 years. Overall net revenues are estimated at more than NOK 3000 billion.

163,000 people were directly or indirectly employed by the petroleum industry in 2020, which means about 6 per cent of total employment in Norway. The industry creates jobs throughout the country and helps maintain less centralised population patterns.

Production is declining on its own

The Committee presumes that activity in the oil and gas industry on the Norwegian shelf is too high leading up to 2050, which means that measures must be implemented to cut production.

On the other hand, the Norwegian Offshore Directorate expects activity in the industry to naturally decline following a production peak in 2025. The production decline towards 2050 is within what the Intergovernmental Panel on Climate Change and the IEA have projected is in line with successfully following up the Paris Agreement.

Despite the decline in activity, the Norwegian Offshore Directorate expects the industry to continue creating significant values leading up to 2050. The net cash flow in 2030-2050 is expected to amount to 4.5 thousand billion 2024-NOK. While the estimate is uncertain, the State's revenues in the form of taxes and ownership will account for close to 90 per cent of this.

Significant values could be lost

The Committee does not want to build new infrastructure that commits us to emissions toward 2050 and beyond. This means that no new export capacity will be built in the Barents Sea. If so, society will be losing out on substantial values.

The Norwegian Offshore Directorate projects that there are significant resources left to discover in the Barents Sea, but the LNG plant on Melkøya has no available export capacity beyond the gas from Snøhvit. This lack of capacity affects the companies' interest in exploration. Gas discoveries are of little value if the gas cannot be transported to the market. Without increased capacity, all other gas resources in the Barents Sea will remain stranded for a long time, which means that society can lose out on substantial values. At the same time, the energy situation in Europe indicates that there will be a need for gas for a long time to come.

Security for Europe

The energy crisis following Russia's invasion of Ukraine demonstrates the importance of stable gas deliveries from Norway to Europe. In 2022, Norway increased its gas exports by about 100 TWh of energy, the equivalent of about 65 per cent of all Norwegian power generation that year. Without Norwegian gas, it would have been more difficult to cover Europe's demand for gas, and the price of energy would have been higher for all Europeans. Norway can be a safe and stable supplier to Europe for many years to come, but security of supply and geopolitics are crucial considerations that the 2050 Climate Change Committee does not appear to emphasise in its assessments.

The Norwegian Offshore Directorate would like to see calculations of the cost of these proposed measures for the petroleum industry for the broader society. As no such calculations have been made, the Committee's recommendations are deficient and misleading, given that socio-economically profitable measures are being replaced by more costly measures.

Updated: 11/03/2024

07/23/2024 09:23:41 [BN] Bloomberg News

Russia's Crude Exports Slide Again to Hit a Seven-Month Low

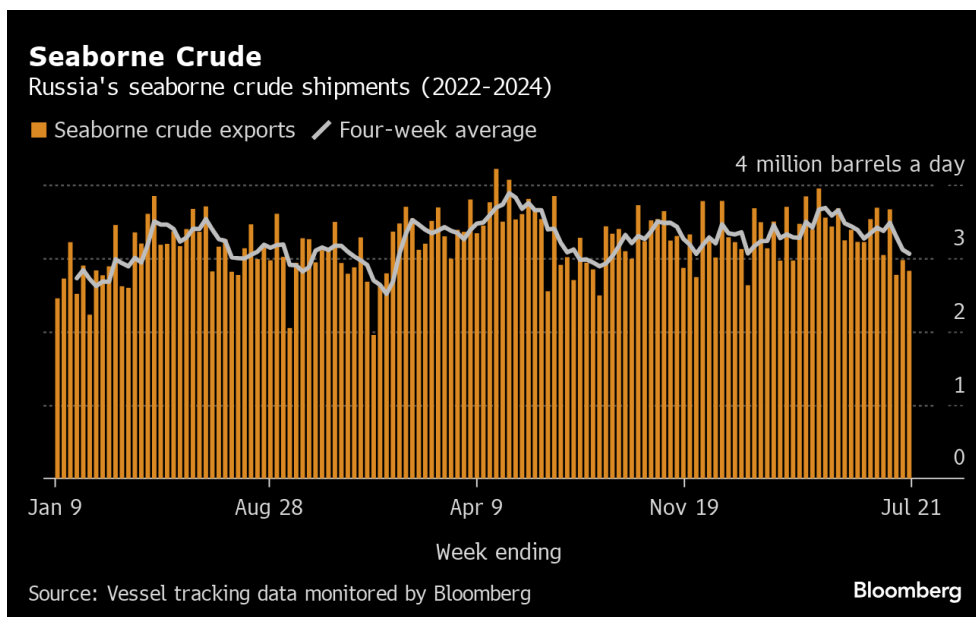
Shipments from Baltic ports are down by 41% since mid-June

By Julian Lee

(Bloomberg) -- Russia's four-week average crude exports fell for a third week, dropping to the lowest since December amid a plunge that cut 620,000 barrels a day from the recent peak in April. Flow are set to dip further.

Weekly shipments from the country's Baltic ports of Primorsk and Ust-Luga have shrunk by 41% in the five weeks since mid-June. The decline likely stems from Russia's improving compliance with an OPEC+ output target, coupled with a recovery in domestic refining that's on course to reach a six-month high in July. A Ukrainian drone attack on Rosneft's Tuapse refinery may undermine some of that progress.

There is no evidence of maintenance work or storms to explain the most recent slump, but a five-day gap in the loading program for Ust-Luga, covering most of this week, suggests that maintenance will cut into flows in the seven days to July 28.



Separately, Ukraine has toughened sanctions on Russia's Lukoil PJSC, preventing it from supplying piped crude to refineries in Central Europe across Ukrainian territory. Lukoil will divert about 90,000 barrels a day of crude that it is unable to deliver to Hungary and Slovakia to other destinations, which could, in time, raise seaborne exports.

The UK has sanctioned another 11 tankers involved in shipping Russian oil as part of a broader move to tackle the shadow fleet used by Moscow to get its oil to buyers in Asia. With two of those vessels already targeted by the European Union, it brings the total number of ships designated by the West to 62, most of which have remained idle

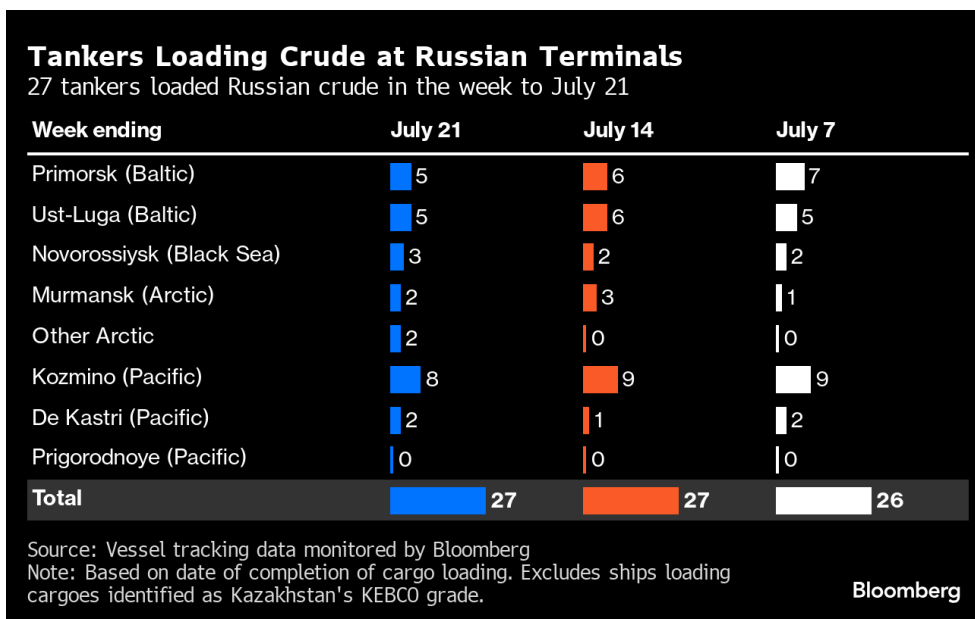
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since being cited.

Only three cargoes have been lifted by tankers sanctioned by the US, the UK or the European Union since October for their involvement in the Russian oil trade. The first to load, the SCF Primorye, subsequently transferred its cargo onto the Ocean Hermana in the Riau archipelago in early June. The oil may have been moved onto a third ship, according to TankerTrackers.com Inc., which specializes in detecting secretive cargo movements. The other two, the Bratsk and the Belgorod, disappeared from automated tracking systems for several weeks before reappearing off the coast of Oman, heading back toward the Red Sea. Both vessels appear to have transferred their cargoes onto the VLCC Oxis in the Gulf of Oman and the crude is now heading for the Strait of Malacca.

Crude Shipments

A total of 27 tankers loaded 19.78 million barrels of Russian crude in the week to July 21, vessel-tracking data and port agent reports show. That was down from 20.8 million barrels on 27 ships the previous week. The total includes one of the Arctic Gates shuttle tankers that's heading directly to China via the Northern Sea Route and another small tanker that loaded the first cargo in at least a year from the small oil field on Kolguyev Island.



It means Russia's seaborne daily crude flows in the week to July 21 fell by about 150,000 barrels to 2.83 million, giving up about three-quarters of the previous week's gain. The less volatile four-week average continued to fall, dropping by another 55,000 barrels a day to 3.06 million, its lowest since December.

A small increase in shipments from the Black Sea was more than offset by lower shipments from the Baltic. Flows will almost certainly fall further in the coming week, with no tankers scheduled to berth at Ust-Luga until Friday. Gaps of this duration in loading programs typically indicate maintenance work at the port or on the pipeline supplying it.

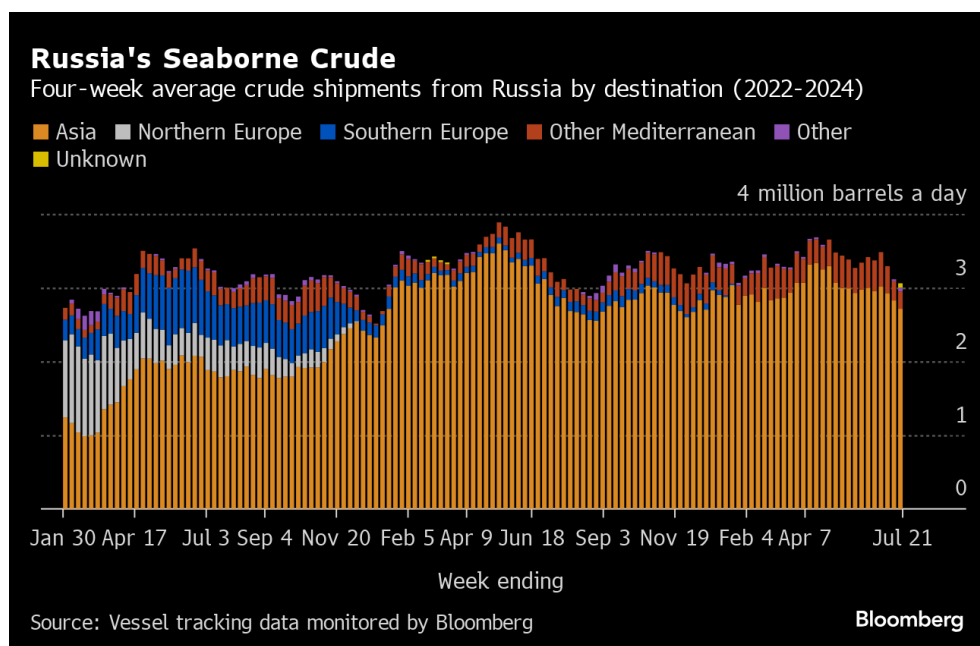
The Sakhalin Island terminal of Prigorodnoye saw no shipments for a fourth week.

Two small cargoes have been shipped from Arctic ports. One of the shuttle tankers that normally hauls crude from

Gazprom Neft's Arctic Gates terminal to Murmansk is heading via the Northern Sea Route to China, the first oil tanker to make the trip this year.

Separately, a small cargo of crude has been loaded from Kolguyev Island, about 400 miles east of Murmansk and 46 miles off the coast of the Nenets Autonomous Okrug, whose coastline stretches 1,200 miles along the Baltic Sea. The Minerva Vaso, an 18-year-old, Greek flagged tanker, left the island on Thursday and is now heading for the Mediterranean.

Crude shipments so far this year are about 30,000 barrels a day below the average for the whole of 2023.



Russia terminated its export targets at the end of May, opting instead to restrict production, in line with its partners in the OPEC+ oil producers' group. The country's output target is set at 8.978 million barrels a day until the end of September, after which it is scheduled to rise at a rate of 39,000 barrels a day each month until September 2025, as long as market conditions allow.

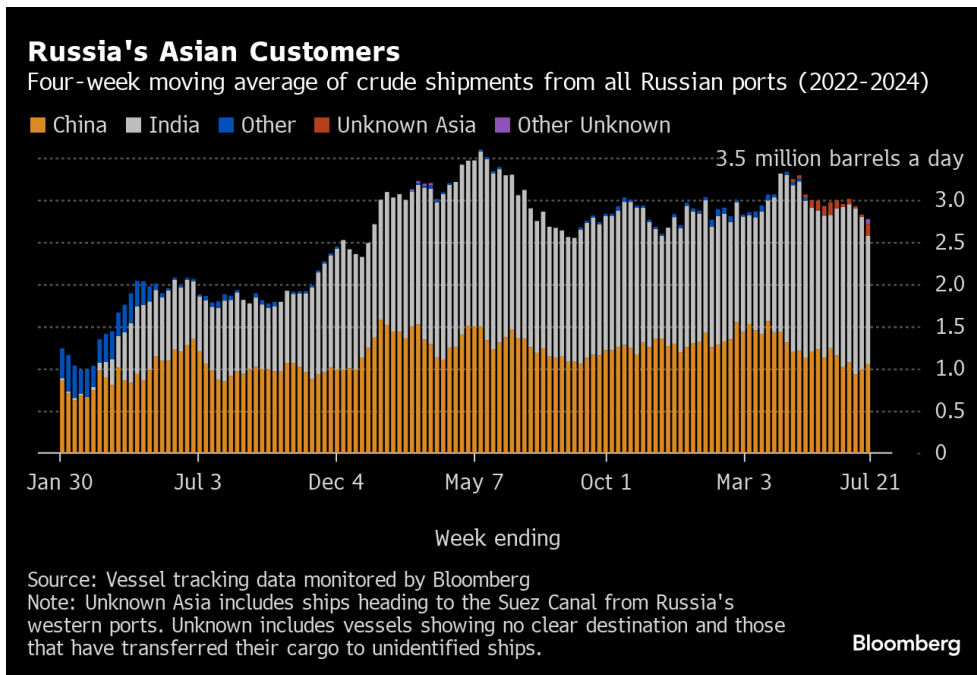
Two cargoes of Kazakhstan's KEBCO were loaded at Novorossiysk during the week.

Flows by Destination

- **Asia**

Observed shipments to Russia's Asian customers, including those showing no final destination, fell to a six-month low of 2.77 million barrels a day in the four weeks to July 21.

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About 1.05 million barrels a day of crude was loaded onto tankers heading to China. The Asian nation’s seaborne imports are boosted by about 800,000 barrels a day of crude delivered from Russia by pipeline, either directly, or via Kazakhstan.

Flows on ships signaling destinations in India averaged about 1.55 million barrels a day, down from the revised figure of 1.84 million for the period to July 14.

Both the Chinese and Indian figures are likely to rise as the discharge ports become clear for vessels that are not currently showing final destinations.

The equivalent of about 140,000 barrels a day was on vessels signaling Port Said or Suez in Egypt. Those voyages typically end at ports in India or China and show up as “Unknown Asia” until a final destination becomes apparent.

Most shipments from Russia’s western ports go on to transit the Suez Canal, but some could end up in Turkey. Others may be moved from one vessel to another, with the majority of such transfers now taking place in the Mediterranean, most recently off Morocco, or near Sohar in Oman.

The “Other Unknown” volumes, running at about 30,000 barrels a day in the four weeks to July 21, are those on tankers showing no clear destination. Most originate from Russia’s western ports and go on to transit the Suez Canal, but some could end up in Turkey. Others may be moved from one vessel to another, with the majority of such transfers now taking place in the Mediterranean, most recently off Morocco, or near Sohar in Oman.

Russia’s oil flows continue to be complicated by the Greek navy carrying out exercises in an area that’s become associated with the transfer of the nation’s crude. These activities have now been extended to Sep. 15.

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Crude Shipments to Asia

Shipments of Russian crude to Asian buyers in million barrels a day

4 weeks ending	China	India	Other	Unknown Asia	Other Unknown	Total
June 16, 2024	1.16	1.74	0.00	0.10	0.00	3.00
June 23, 2024	1.02	1.89	0.00	0.04	0.00	2.95
June 30, 2024	1.08	1.90	0.00	0.04	0.00	3.01
July 7, 2024	0.93	2.00	0.00	0.00	0.00	2.93
July 14, 2024	0.99	1.84	0.00	0.00	0.00	2.83
July 21, 2024	1.05	1.55	0.00	0.14	0.03	2.77

Source: Vessel tracking data compiled by Bloomberg

Bloomberg

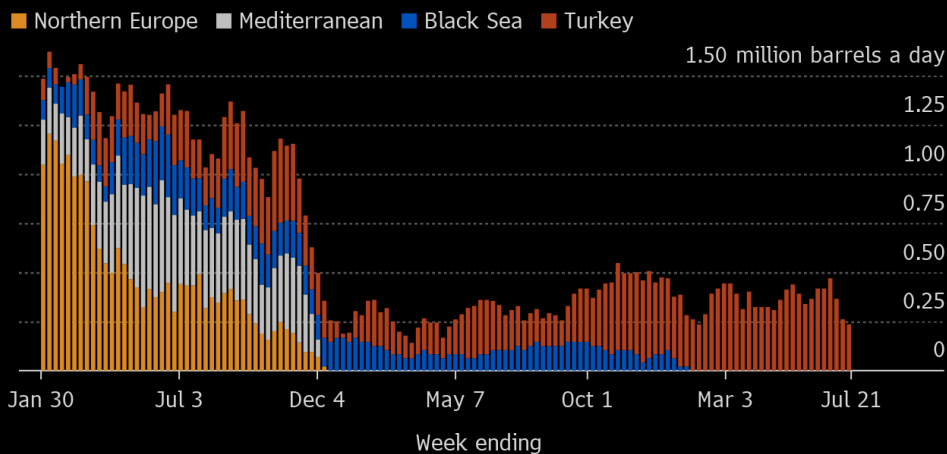
- **Europe and Turkey**

Russia's seaborne crude exports to European countries have ceased, with flows to Bulgaria halted at the end of last year. Moscow also lost about 500,000 barrels a day of pipeline exports to Poland and Germany at the start of 2023, when those countries stopped purchases.

Turkey is now the only short-haul market for shipments from Russia's western ports, with flows in the 28 days to July 21 falling to about 235,000 barrels a day, their lowest since February.

Russia's Crude Shipments to Europe and Turkey

Four-week average crude shipments from Russia (2022-2024)



Source: Vessel tracking data monitored by Bloomberg
 Note: Four-week moving average of crude shipments from all Russian ports.

Bloomberg

Export Value

The gross value of Russia's crude exports fell back to \$1.48 billion in the seven days to July 21, from \$1.58 billion in

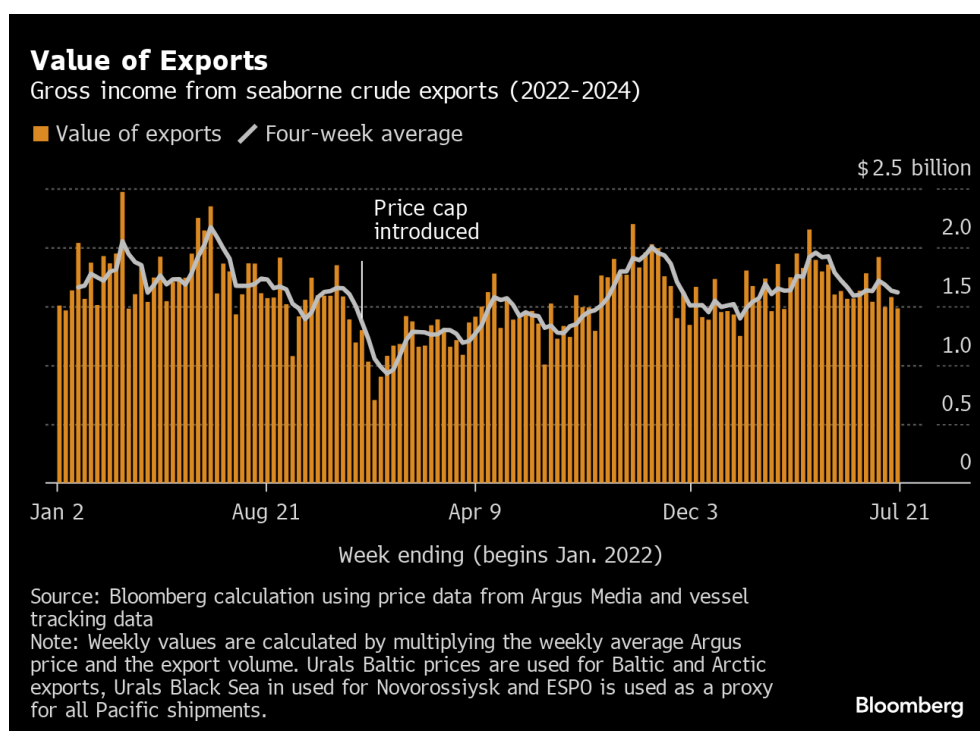
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the period to July 14. The lower flows were exacerbated by a second weekly drop in prices for Russia’s major crude streams to increase the size of the decline in revenues.

Export values at Baltic ports were down week-on-week by about 90 cents a barrel, while shipments from the Black Sea fell by \$1.36 a barrel and key Pacific grade ESPO fell by about \$1.30 a barrel. Delivered prices in India also dropped, down by about \$1.10 a barrel, all according to numbers from Argus Media.

Four-week average income was also down again, falling by about \$15 million to \$1.62 billion a week. The four-week average peak of \$2.17 billion a week was reached in the period to June 19, 2022.

During the first four weeks after the Group of Seven nations’ price cap on Russian crude exports came into effect in early December 2022, the value of seaborne flows fell to a low of \$930 million a week, but soon recovered.



NOTES

This story forms part of a weekly series tracking shipments of crude from Russian export terminals and the gross value of those flows. The next update will be on Tuesday, July 30.

All figures exclude cargoes identified as Kazakhstan’s KEBCO grade. Those are shipments made by KazTransoil JSC that transit Russia for export through Novorossiysk and Ust-Luga and are not subject to European Union sanctions or a price cap. The Kazakh barrels are blended with crude of Russian origin to create a uniform export stream. Since Russia’s invasion of Ukraine, Kazakhstan has rebranded its cargoes to distinguish them from those shipped by Russian companies.

Vessel-tracking data are cross-checked against port agent reports as well as flows and ship movements reported by

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other information providers including Kpler and Vortexa Ltd.

If you are reading this story on the Bloomberg terminal, click for a [link to a PDF file of four-week average flows from Russia to key destinations.](#)

--With assistance from [Sherry Su.](#)

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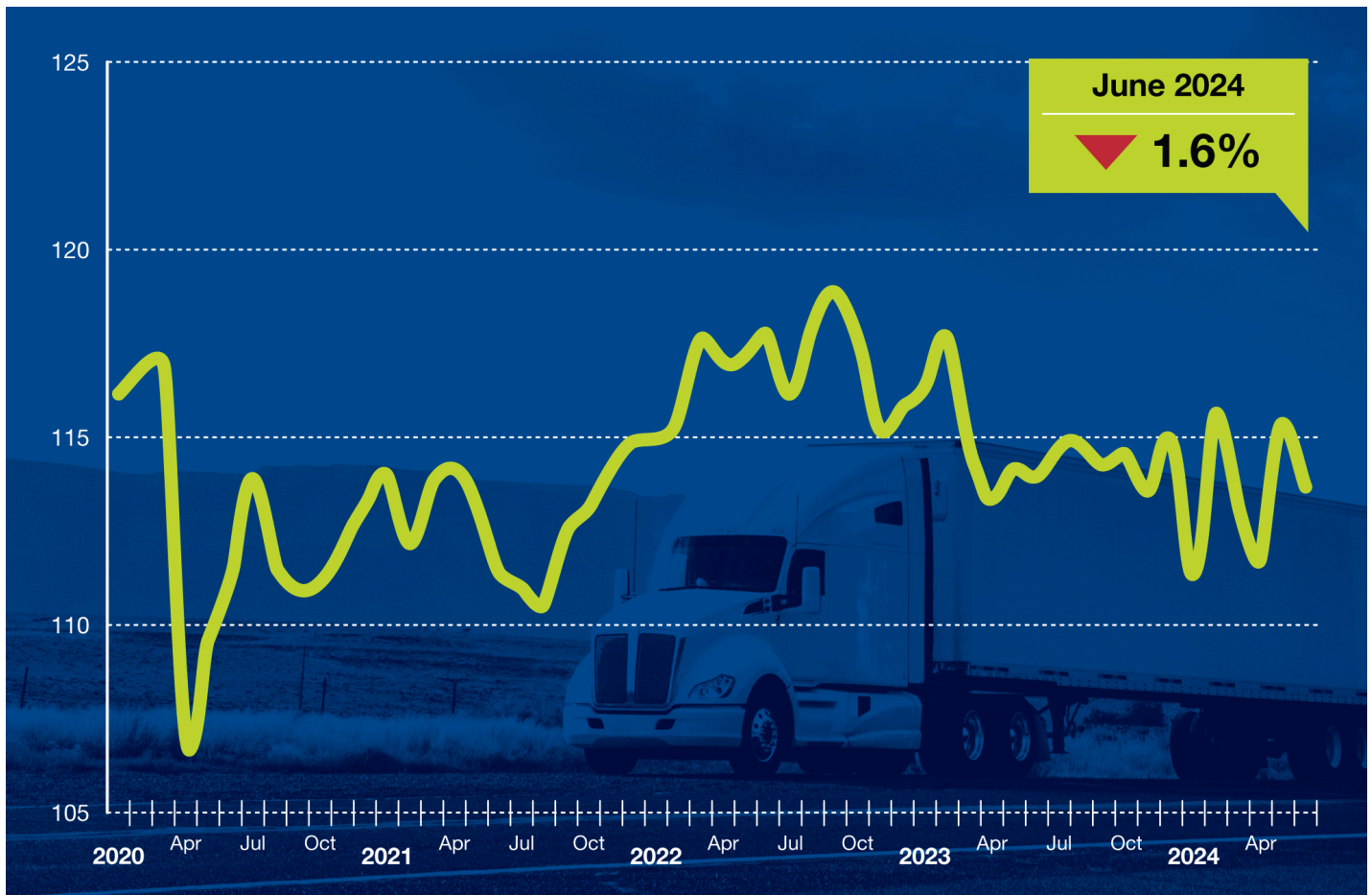
[John Deane at jdeane3@bloomberg.net](#)

Press Release

ATA Truck Tonnage Index Fell 1.6% in June

Jul 23, 2024

Washington—American Trucking Associations’ advanced seasonally adjusted For-Hire Truck Tonnage Index decreased 1.6% in June after increasing 3% in May. In June, the index equaled 113.5 (2015=100) compared with 115.3 in May.



“While giving back some of the gain from May, it appears that truck freight tonnage is slowly going in the right direction since hitting a recent low in January,” said **ATA Chief Economist Bob Costello**. “Despite June’s decline, the second quarter average was 0.2% above the first quarter and only 0.2% below the second quarter in 2023, which are good signs that truck freight might be finally turning the corner.”

May’s increase was revised down from our June 18 press release.

Compared with June 2023, the index decreased 0.4%. In May, the index was up 1% from a year earlier, which was the first year-over-year gain since February 2023.

The not seasonally adjusted index, which represents the change in tonnage actually hauled by the fleets before any seasonal adjustment, equaled 113.1 in June, 5.5% below May. ATA’s For-Hire Truck Tonnage Index is dominated by contract freight as opposed to traditional spot market freight.

In calculating the index, 100 represents 2015.

Trucking serves as a barometer of the U.S. economy, representing 72.6% of tonnage carried by all modes of domestic freight transportation, including manufactured and retail goods. Trucks hauled 11.46 billion tons of freight in 2022. Motor carriers collected \$940.8 billion, or 80.7% of total revenue earned by all transport modes.

ATA calculates the tonnage index based on surveys from its membership and has been doing so since the 1970s. This is a preliminary figure and subject to change in the final report issued around the 5th day of each month. The report includes month-to-month and year-over-year results, relevant economic comparisons, and key financial indicators.

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Virgin Atlantic passengers to pay green levy on every flight

Christopher Jasper

Tue, July 23, 2024 at 10:10 AM MDT · 3 min read



Shai Weiss, chief executive of Virgin Atlantic, says the green levy aims to cover the costs of using sustainable aviation fuel - Hollie Adams/Bloomberg

Virgin Atlantic is to charge passengers a green levy on every flight as it seeks to cover the costs of using sustainable aviation fuel (Saf).

Shai Weiss, the chief executive of the UK airline, confirmed [plans for the environmental surcharge](#), which he said will come into force over the next 18 months.

It comes as airlines [gear up for the mandated use of Saf](#), which costs three times as much as kerosene.

Mr Weiss told The Telegraph: "Prices will have to go up to account for the fact that flying with Saf in greater and greater volumes is materially more expensive."

British Airways owner IAG has also warned that prices will increase owing to the costs of Saf, though it hasn't yet decided whether to introduce a specific levy.

Saf, which is [made from used cooking oil](#), is viewed as the most practical route towards reducing the aviation sector's emissions.

Mr Weiss said Virgin, which recently ordered seven Airbus A330 wide-body jets, favours the introduction of green surcharges so that travellers are aware why prices are rising.

He said: "If you do it, you need to do it transparently in the form of something consumers understand."

Lufthansa has so far been the only major operator to go public with its plans for Saf-related fees, which they announced last month.

The German carrier will include a surcharge of between €31 (£29) and €72 (£61) per ticket starting next year to help cover the costs of the European Union's Saf mandates.

Brussels will introduce a statutory quota of 2pc Saf for flights starting in January, rising to 6pc from 2030 and 20pc from 2035.

Virgin faces an even more challenging timetable, with the UK Government requiring airlines switch to 10pc Saf by 2030.

Mr Weiss said: "The mandates are starting to come into force so airlines are having to take action. This is the year that you will start to see the impact of this, just like Lufthansa did."

The Virgin boss predicted in May that Saf charges of between around £40 per flight would need to be imposed by 2030, adjusted for inflation, given the current high price of Saf.

Virgin has so far been at the forefront of exploring the use of green fuel in existing aircraft, carrying out the world's first-ever transatlantic flight powered by Saf earlier this year.

The threat of higher fares caused by government mandates was also highlighted by Luis Gallego, the chief executive of IAG.

Speaking at the Farnborough International Airshow, he said: "If we put it explicitly in the fare or not, it doesn't change the issue. Flying is going to be more expensive. That's the reality."

IAG is the world's biggest consumer of Saf, buying up 12pc of the world's supply last year, Mr Gallego said.

"But it's not enough," he said. "And the Saf that is available is very expensive."

BA currently sources all of its Saf from refineries in the US, although Mr Gallego welcomed a recent commitment in the King's Speech to encourage the domestic production of Saf.

<https://www.telegraph.co.uk/business/2024/07/04/flying-more-expensive-planes-go-green/>

Flights to cost more because of net zero, warns British Airways owner

Airlines will pass on the cost of more expensive green fuel, according to the boss of IAG [Christopher Jasper](#), TRANSPORT INDUSTRY EDITOR 4 July 2024 • 11:28am

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The boss of British Airways owner IAG has warned that air fares are poised to rise across Europe as carriers pass on the cost of net zero to passengers.

Plans to offer low-carbon flights reliant upon sustainable aviation fuel (SAF), which costs up to six times as much as traditional kerosene, will have a "big impact" on prices, said Luis Gallego. He said: "Flying is going to be more expensive. We are trying to improve efficiency to mitigate that, but it will have an impact on demand."

Targets set by Brussels indicate that European airlines must use at least 6pc sustainable fuel by 2030, with this rising to 10pc for carriers operating in the UK.

This is part of a push to achieve net zero carbon emissions across the industry by 2050.

Mr Gallego's comments come after British Airways rival Lufthansa last month announced a surcharge on tickets to fund decarbonisation.

The German airline said the levy will add between €1 and €72 (85p-£61) per ticket from next year.



Shai Weiss, Virgin Atlantic chief executive, says introduction of sustainable aviation fuel could increase cost of a return trip to New York by £40 CREDIT: Luke MacGregor/Bloomberg

Shai Weiss, the Virgin Atlantic chief executive, told [The Telegraph](#) in May that the introduction of SAF will mean the cost of a return trip to New York will rise by £40 based on current prices.

Mr Gallego said that the mandatory targets in Europe risk putting carriers in the region at a competitive disadvantage compared with those in other parts of the world.

He told the Financial Times: “We need to do it in a consistent way worldwide not to jeopardise European aviation. The reality is we do not have enough SAF, and the SAF we have is very expensive.”

Less than 1pc of total aviation fuel consumption came from sustainable sources last year, prompting airlines such as British Airways to demand government intervention to help increase the supply of SAF.

The fuel, made from used cooking oil and animal fat, is viewed as the most practical route towards reducing aviation’s net CO2 emission before new technologies, such as hydrogen propulsion, become available in the future.

IAG said decisions on pricing are a matter for its individual airlines, which also include Spain’s Iberia and Aer Lingus of Ireland, but that there are no immediate plans to impose decarbonisation-related surcharges.

Mr Gallego said a decision by Brussels on Wednesday to clear Lufthansa’s purchase of a 41pc stake in ITA, the Italian flag carrier and successor to bankrupt Alitalia, was “positive news”.

IAG shares rose following the announcement amid hopes Brussels will soon also clear its own bid for Spanish leisure carrier Air Europa.

Opportunity Knocks

Mid-Year Outlook for 2024

Despite intensifying political uncertainty, heightened geopolitical tensions, and volatile commodity prices, we continue to see compelling investment opportunities across the global macro landscape. Accelerating AI demand for electricity, reorientation of global supply chains, improving labor productivity, and retirement security all represent important macro themes behind which to invest. We also remain really encouraged by the technical backdrop, as net issuance of Equities and Credit remains well below trend. However, it is definitely not business as usual in the world of macro and asset allocation, as our *Regime Change* thesis requires a different approach to portfolio management. To build upon this view, we have done more analysis to underscore the value of adding more non-traditional assets to one's portfolio. Indeed, unlike in the past, today's volatility in portfolios is being driven by stock-bond correlation, not by single asset volatility. Importantly, most of today's CIOs have not invested in this type of environment. In terms of areas to lean in, we think that the current vintage will be a strong one for Private Equity, especially opportunities linked to value creation by operational improvement and/or corporate carve-outs. Meanwhile, we continue to pound the table on many parts of Real Assets, including Real Estate Credit, Infrastructure, and Asset-Based Finance. Finally, we see a lot of potential in Opportunistic Credit and Capital Solutions. On the risk side, we believe higher rates – especially if productivity should tail off – are a more challenging scenario than lower rates and slower earnings. We are also keeping an eye on employment trends. Our bottom line: *Opportunity Knocks*, as we still think the current economic cycle has further to run, a backdrop that should accrue to the benefit of long-term investors, especially ones who have dry powder to lean into the inevitable periodic dislocations that are likely to occur during a *Regime Change*.

A pessimist complains about the noise
when opportunity knocks.

– Oscar Wilde, Irish poet and playwright

We are often asked, especially heading into the second half of 2024, if we still believe that the glass is half full for global allocators when it comes to deployment opportunities, particularly in an environment of heightened complexity, ‘sticky’ inflation, and higher for longer interest rates. (See *Glass Half Full Outlook for 2024*). With an uncertain presidential election around the corner in the United States, and many other important elections taking place across the world, there is certainly a lot to consider. On the more cautious side, equity markets are now nicely higher, and credit spreads are now sharply tighter since late December 2023 when we laid out our thesis that investors might regret looking at the glass as half empty. In fact, our KKR proprietary market-implied default model suggests HY spreads are pricing in about a two percent default rate today, compared with about three percent at the beginning of the year and a historical average of 5.7%.

Exhibit 1: Equity Markets Have Withstood Substantial Volatility to Enjoy Glass Half Full Returns and Then Some in the 1H24...

Equity Performance Across Regions, YTD Performance

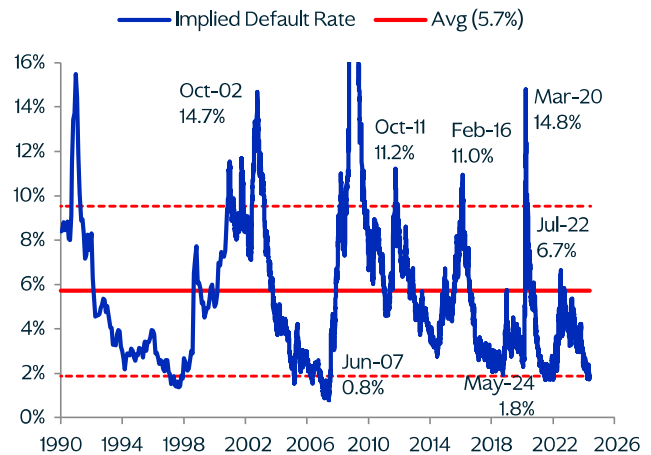


Data as at June 7, 2024. Source: Bloomberg.

Indeed, unlike in the past, today’s volatility in portfolios is being driven by stock-bond correlation, not by single asset volatility.

Exhibit 2: ...While Investors Have Also Gotten More Optimistic About the Outlook for Credit, High Yield in Particular

U.S. High Yield Implied Default Rate, %



Data as at May 24, 2024. Source: Bloomberg.

Exhibit 3: Risk Assets Have Responded Favorably to the Idea That There Will Be Fewer Tightenings and More Easings

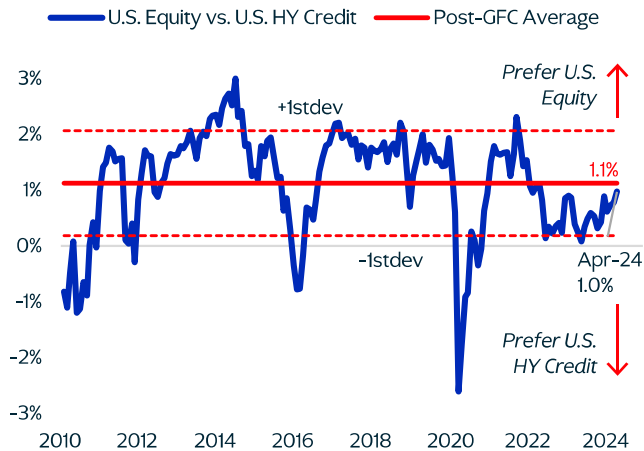
Consensus Forecast: % of Global Central Banks Hiking Rates



Hiking rates is defined as an increase in rates over the past three months. Data for U.S., JP, CN, AU, CA, E2, NZ, NO, SE, GB, JP, CH, IN, ID, KR, PH, TW, TH, VN, BR, CL, ZA, TR, IL, CZ, HU, PL. Data as at May 31, 2024. Source: Bloomberg, KKR Global Macro & Asset Allocation analysis.

Exhibit 4: Overall, Our Models Still Favor Credit, But Now Only at the Margin

Relative Value: Equities vs. Credit, Internal Rate of Return for Equities vs. HY YTW



Data as at May 24, 2024. Source: Bloomberg.

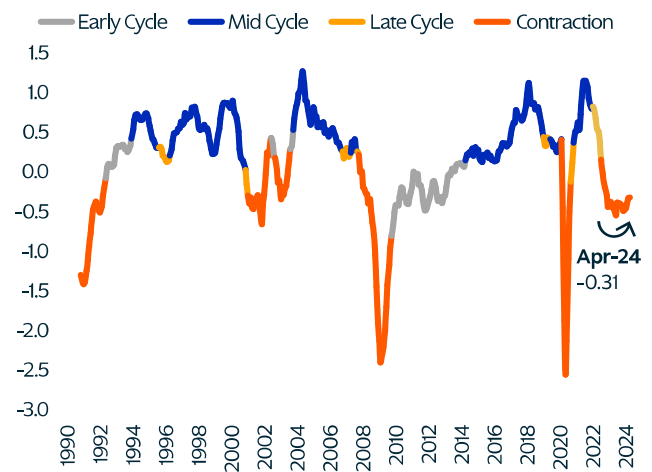
However, perhaps more important for long-term investors, there are a lot of political and social crosscurrents that are increasingly bleeding their way into markets. Not surprisingly, the introduction of social media into our political process has created more discord. This type of disruption is like other post-industrial revolutions where technological change ushered in periods of social and political unrest. As our colleague Ken Mehlman explains, just as the invention of the printing press around 1440 introduced years of political, religious, social, and scientific disruption, the combination of the Internet and social media is a ‘Gutenberg 2’ moment that has produced and portends similar disturbances.

At the same time, complicated issues around immigration and inequality are also driving tense debates across the Western world that increasingly seem to push the left and right further apart. See Section IV, question #3 for a full discussion, but the upcoming U.S. presidential election only increases our conviction that policy from either a Trump or a Biden administration is likely to maintain an inflationary bent (which further heightens discord), given the threat of tariffs and the need for security spending, contributing to an increasing ‘normalization’ of wider than usual deficits. Finally, great power rivalries around the globe have intensified notably in recent quarters. As such, investors should expect more barriers to trade and capital

flows in the coming years under almost all scenarios. Key to our collective thinking is that the intensifying focus on ‘homeland economics’ is a post-COVID, post-Ukraine global phenomenon that is likely to continue almost regardless of electoral outcomes in most countries.

Exhibit 5: After Two Years of Being in Late Cycle and Contraction, Our Proprietary KKR Cycle Indicator Is About to Move Into Its Early Cycle Phase

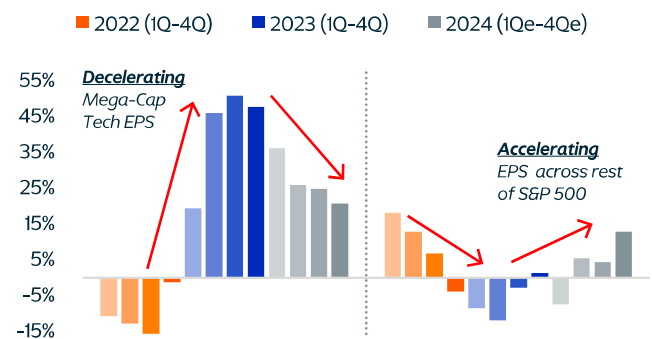
KKR Cycle Indicator (1990-Present, Z-Score)



Data as at April 30, 2024. Source: Bloomberg, KKR Global Macro & Asset Allocation analysis.

Exhibit 6: We Think Earnings Growth Is Set to Broaden Beyond Mega Cap Technology and Become More Balanced in Coming Quarters, Driven by Positive Operating Leverage and Margin Growth in Other Sectors

S&P 500 EPS Growth Disaggregation



Data as at April 30, 2024. Source: Bloomberg, KKR Global Macro & Asset Allocation analysis.

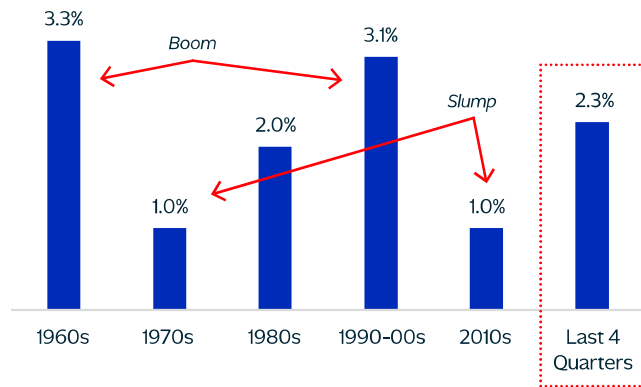
Exhibit 7: Long Periods of Equity Outperformance Have Been Driven by Productivity and/or Central Bank Intervention...

Productivity vs. Equity Markets		Labor Productivity, %QoQ, SAAR	S&P 500 Average Annual Return	Average U.S. Budget Deficit as a % of Nominal GDP	Average Fed Balance Sheet as a % of Nominal GDP
High Productivity Period	1960s	3.3%	8.4%	-1.0%	5.4%
	1990s-2000s	3.1%	8.8%	-0.8%	6.0%
Low Productivity Period	1970s	1.0%	-0.9%	-2.3%	6.4%
	2010s	1.0%	11.8%	-4.8%	20.9%
All Periods	1958-2018	2.1%	7.20%	-2.6%	8.3%
Today	4Q22-1Q24	2.2%	8.5%	-5.7%	29.8%

Note: 1960s and 90s-00s are the 'high' productivity growth (>3%) periods, referring to 1958-1968 and 1995-2005, respectively. 1970s and 2010s are the 'low' productivity growth (<1.0%) periods, referring to 1973-1979 and 2010-2019, respectively. Data as at April 30, 2024. Source: Bloomberg, KKR Global Macro & Asset Allocation analysis.

Exhibit 8: ...As We Look Forward, Our Thesis Is That Productivity Is Again Set to Reaccelerate, Which Would Be Quite Positive for Capital Markets

U.S. Annual Labor Productivity Growth, %



Note: 1960s refers to 1958-68; 1990s-00s refers to 1995-05; 1970s refer to 1973-79; 2010s refer to 2010-19; 1980s refers to 1980-88. Data as at March 31, 2024. Source: Bloomberg, Federal Reserve Bank of San Francisco.

On the positive side of the ledger, growth and earnings – as our models have been suggesting for some time – are all performing better than the consensus expected in a higher nominal GDP growth environment. True, the U.S. consumer is not driving massive demand growth the way he or she was post-COVID, but unemployment

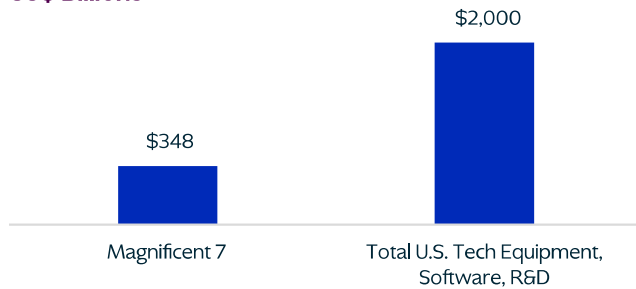
has stayed low (*Exhibit 10*), inventories are in check, and housing activity is stabilizing. Also, we have seen a massive capex cycle being led by the Technology sector (*Exhibit 9*). Our view is that, similar to the Internet boom in the 1990s (and the corresponding period of solid economic growth leading up to 2000), the AI boom will drive a sustained period of higher capex before it is actually reflected in corporate profitability results. Implicit in what we are saying, though, is that the recent ongoing surge in productivity has actually occurred *before* AI benefits have been realized at scale, further underscoring our view that the corporate sector could enjoy a longer-tailed profitability renaissance. Importantly, though, unlike the dot-com bubble 20+ years ago, the companies financing this spending this cycle have bullet proof balance sheets, lower costs of capital, and a more consolidated market.

As we look ahead, we also want to signal another positive: Corporate earnings growth is beginning to broaden beyond just the Technology sector. One can see this in *Exhibit 6*. We think this increased breadth should create a more balanced tone within the liquid Equity markets. In addition, the technical picture remains quite compelling, with a lack of both *net* equity and corporate debt issuance (*Exhibit 11*), which generally bodes well for returns (*Exhibit 12*), especially in Private Equity.

Our view is that, similar to the Internet boom in the 1990s (and the corresponding period of solid economic growth leading up to 2000), the AI boom will drive a sustained period of higher capex before it is actually reflected in corporate profitability results.

Exhibit 9: The Magnificent 7 Reinvests 61% of Their Operating Free Cash Flow Back Into Capex and R&D. They Now Also Account for Almost 20% of Total Capex

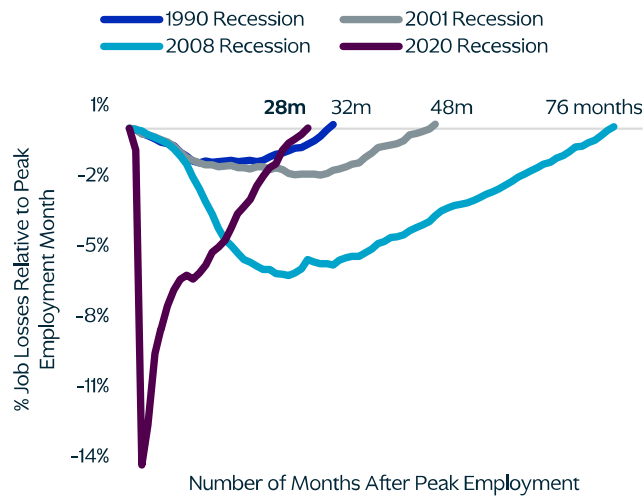
2024 Capex by Tech Magnificent 7 Compared to Total for U.S. Tech Equipment, Software, and R&D, US\$ Billions



Data as at May 20, 2024. Source: Goldman Sachs.

Exhibit 10: We Think the Jobs Environment Is Much More Akin to the 1990s Than Post-GFC

Historic U.S. Job Losses and Recovery Trajectories



Data as at December 31, 2023. Source: U.S. Bureau of Labor Statistics, Haver Analytics.

At the same time, we think that many investors are still actually underweight their target allocations, including holding too much Cash at a time when most central banks have finished raising rates (*Exhibit 3*). Our proprietary survey work within the Family Office (see [Loud and Clear](#)) and Insurance (see [No Turning Back](#)) segments supports this view, while money market/cash balances in the individual investor market are also quite high relative to trend.

Exhibit 11: Our Liquidity Indicator Is Still Recovering From Near-Trough Levels

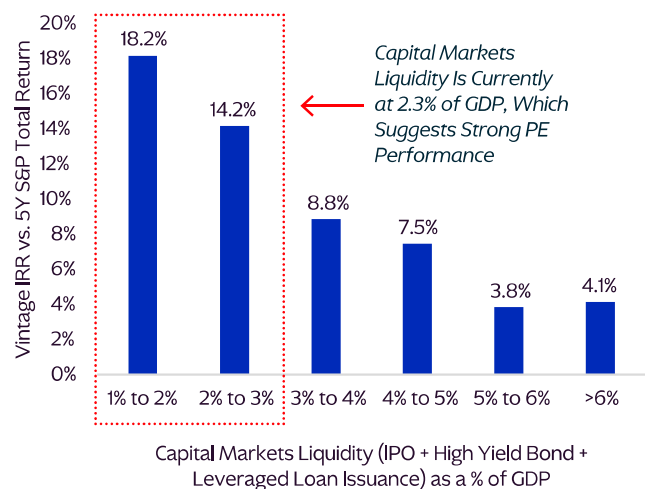
Capital Markets Liquidity Trailing 12 Months as a % of GDP (IPO, HY Bond, Leveraged Loan Issuance)



Data as at March 31, 2024. Source: Preqin, Bank of America, Bloomberg, KKR Global Macro & Asset Allocation analysis.

Exhibit 12: Private Equity Tends to Outperform Public Markets in Low Liquidity Environments

Private Equity Outperformance Across Liquidity Regimes, 1997-2023

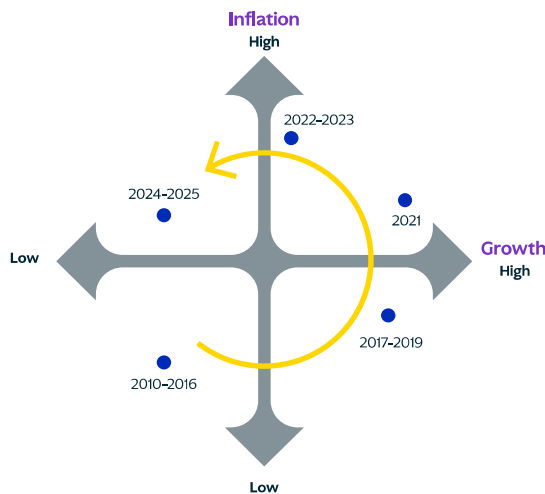


PE returns from Preqin on a 5-year forward returns from 1997 - 2019 basis. Data as at December 31, 2023. Source: Preqin, Bank of America, Bloomberg, KKR Global Macro & Asset Allocation analysis.

Against this unique macroeconomic backdrop, however, we continue to argue that as investors we are experiencing a *Regime Change*. There remain four pillars to our original thesis: ongoing fiscal stimulus, heightened geopolitics, a messy energy transition, and stickier wages (driven largely by a shortage of skilled workers). If we are right, then global allocators and macro investors need to view their portfolios through a different lens. In particular, we think that more diversification across asset classes as well as less dependence on global sovereign bonds is warranted, especially given correlations between stocks and bonds have turned decidedly positive (*Exhibit 14*).

Exhibit 13: While Inflation Should Continue to Cool, We Don't Think It Will Return to Previous Levels. As a Result, We Maintain Our Regime Change Thesis

Low and High Growth and Inflation Regimes



Data as at June 14, 2024. Source: KKR Global Macro & Asset Allocation analysis.

So, where do we land as we look ahead to the second half of the year and into 2025 and beyond?

Most importantly, we retain our optimistic viewpoint for the following four reasons:

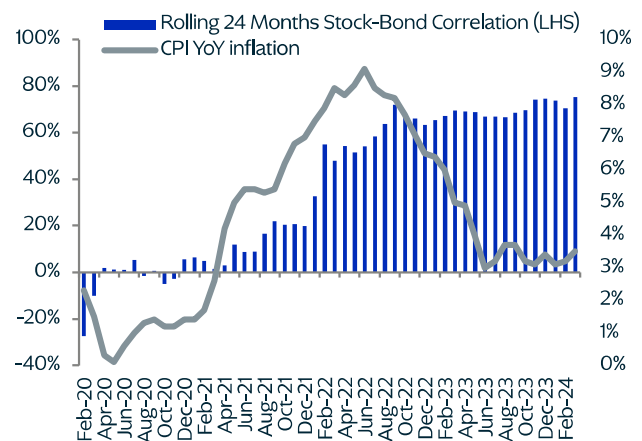
1. **We think that we have entered a structurally higher level of productivity in the United States, a backdrop that we believe will benefit capital markets globally.** We were not around for the 1960s, but the surge in productivity that followed tech investment in the 1990s is likely an apt parallel, we believe. Importantly,

this increase in productivity will at least partially offset some of our concerns about wider deficits in the near-term. As we detail below in Section II, we are also raising our long-term run rate for U.S. GDP to two percent from 1.5%, signaling a structural improvement in growth that we believe warrants investor attention.

2. **We think that central banks, especially the Bank of Japan and the U.S. Federal Reserve, have adopted policies that are actually not that restrictive from a historical perspective.** For one thing, the Fed and other central banks' steady states for balance sheets are still plump relative to history (*Exhibit 15*). If we are right that U.S. real rates peak at two percent in the coming quarters and decline below one percent over time (note: we forecast one Fed cut in 2024 and an additional four in 2025), then this Fed tightening cycle will have been a fairly mild one by historical standards. One can see this in *Exhibit 16*, which shows that, if our forecasts are correct, the real fed funds rate will not spend a very long time in truly restrictive territory this cycle (i.e., at or above the level of potential GDP growth).

Exhibit 14: Despite Inflation Falling on a Cyclical Basis, the 'New' Positive Relationship Between Stocks and Bonds Remains Strong

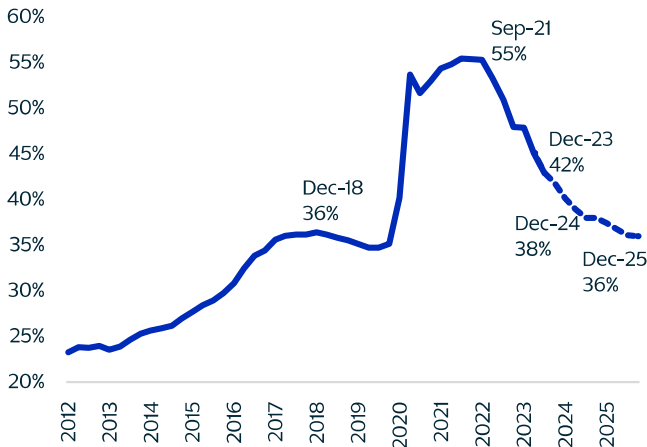
U.S. Stock-Bond Correlation and U.S. CPI, %



Data as at March 31, 2024. Source: Bloomberg, KKR GBR analysis.

Exhibit 15: Despite Record Tightening at the Front End, Central Bank Balance Sheets Will Remain Plump With Assets

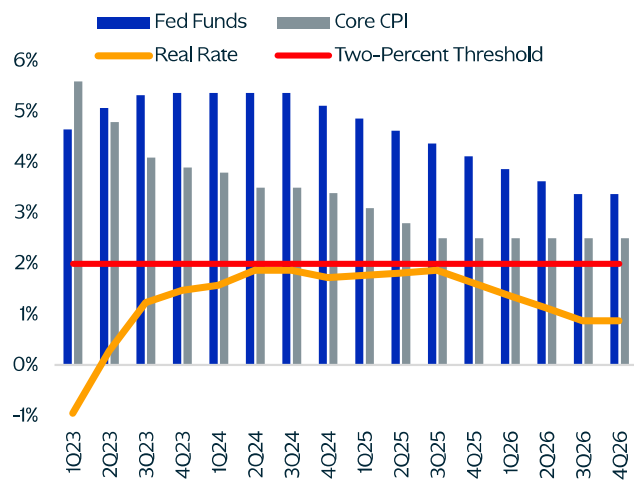
G4 Central Bank Balance Sheets as % of GDP, Dollar-Weighted



G4 = Federal Reserve, the ECB, the Bank of England, and the Bank of Japan. Data as at September 30, 2023. Source: Haver Analytics, national central banks and statistical agencies, KKR Global Macro & Asset Allocation analysis.

Exhibit 16: We Think The Fed Will Bring Real Rates to Two Percent This Cycle, But No Higher

GMAA Base Case: Real Rates



Data as at June 12, 2024. Source: Bloomberg, KKR Global Macro & Asset Allocation analysis.

Exhibit 17: Annual Spending on the U.S. Debt Service Burden Is Now More Than Spending on National Defense or Medicare, and More Than the U.S. Spends on Veterans, Education, and Transportation Combined

Overall Spending, US\$ Billions



Data as at April 30, 2024. Source: CBO.

Traditional Macro Relationships Are No Longer Behaving the Same as in the Past

- 1 Japan is experiencing inflation, while China has disinflationary headwinds.
- 2 U.S. Treasuries and the Japanese yen are no longer the 'risk-off' assets of choice. They are, in fact, driving much of the volatility in the capital markets during periods of uncertainty.
- 3 European growth is coming from the periphery, not the core, this cycle.
- 4 The interest rate easing cycle has started in Europe, not in the U.S., for the first time.
- 5 We have actually raised our long-term forecast for U.S. GDP growth, despite an inverted yield curve and a low savings rate. In the past, these two macro variables were recession signals.
- 6 It is the government, not the consumer or corporates, that is most leveraged this cycle.

At the same time, we think that many investors are still actually underweight their target allocations, including holding too much Cash at a time when most central banks have finished raising rates.

3. **Third, we think that the employment market holds up better this cycle.** Some of our optimism is actually driven by demographics, especially given the exit that we have seen of aged 55+ workers from the workforce since the onset of COVID. While we do expect immigration in the U.S. to create more slack in some sectors, we think this is a positive development for growth as unemployment from excess supply feels very different from the 'typical' cyclical dynamics of over-hiring and layoffs.

Exhibit 18: The U.S. Has Been Able to Grow Its Workforce Through Demographic Growth; Meanwhile, Europe and Japan Have Offset Aging Populations by Improving Participation Rates. Looking Ahead, We Think That Aging Demographics Will Require a Rethink of Both Workforce Participation and Immigration

Contributions to Workforce Growth, Millions

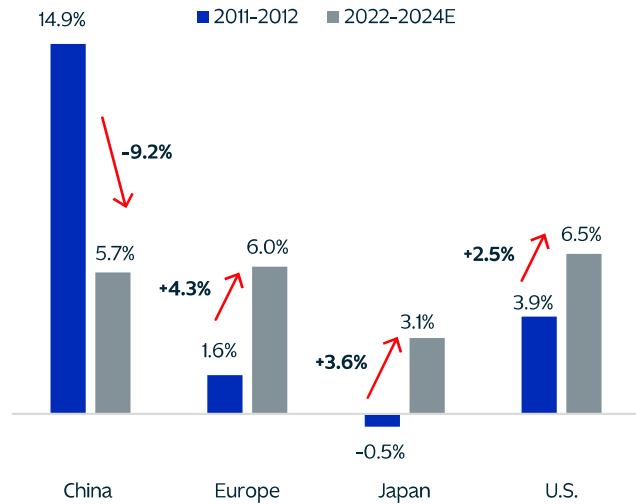
	U.S.	Europe	Japan
1Q2010 Workforce	153.7	159.8	65.7
Demographics	11.3	-3.0	-3.4
Change in Participation	2.7	14.8	7.0
Change in Prime-Age Male Participation	-0.3	0.1	0.0
Change in Prime-Age Female Participation	1.3	3.0	2.7
Change in 55-64 Participation	0.5	9.6	2.0
Change in 65+ Participation	1.2	2.2	2.3
4Q23 Workforce	167.8	171.5	69.4

Europe data based on the 'Euro-Area 19' subset of E.U. members. Latest available data as at December 31, 2023. Source: U.S. Bureau of Labor Statistics, Eurostat, Japan Statistics Bureau.

4. **Finally, consistent with our Regime Change thesis, and because we are mostly living in a higher nominal GDP environment,** we retain our conviction that a hard landing is not in the cards. The most cyclical areas of the global economy already dipped in 2022-23 and are now improving from below-trend levels. We are becoming more constructive around the potential for cyclical wage dynamics, as well as structural considerations related to technology and automation, to drive higher and faster nominal GDP growth globally.

Exhibit 19: Besides China, Most Economies Are Experiencing Higher Nominal GDP This Cycle

Annual Nominal GDP Growth, %

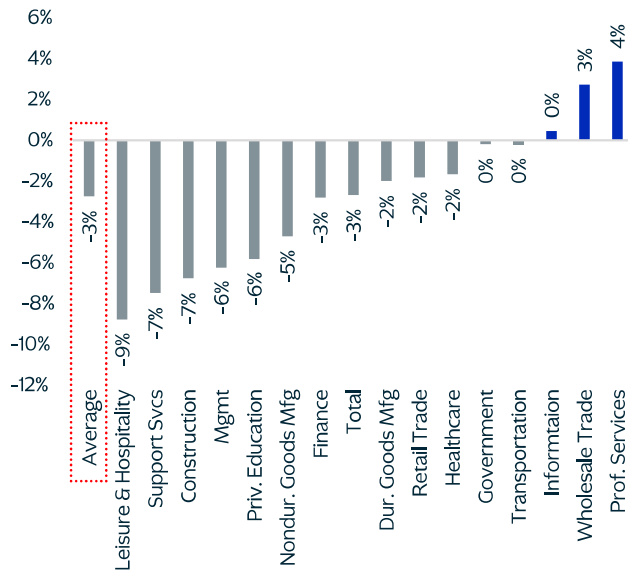


2024 are KKR GMAA estimates. Data as at May 31, 2024. Source: China National Bureau of Statistics, Statistical Office of the European Union, Cabinet Office of Japan, U.S. Bureau of Economic Analysis, KKR Global Macro & Asset Allocation analysis.

Against this unique macroeconomic backdrop, however, we continue to argue that as investors we are experiencing a *Regime Change*. There remain four pillars to our original thesis: ongoing fiscal stimulus, heightened geopolitics, a messy energy transition, and stickier wages (driven largely by a shortage of skilled workers).

Exhibit 20: Pent-Up Demand in Key Pandemic-Affected Services Sectors Continues to Fuel Above-Average Job Growth in the U.S.

Employment vs. Pre-COVID Trend, May-24



Pre-COVID trend based on linear extrapolation of 2014-19. Data as at May 31, 2024. Source: U.S. Bureau of Economic Affairs, Haver Analytics, KKR Global Macro & Asset Allocation analysis.

As our colleague Ken Mehlman explains, just as the invention of the printing press around 1440 introduced years of political, religious, social, and scientific disruption, the combination of the Internet and social media is a ‘Gutenberg 2’ moment that has produced and portends similar disturbances.

However, while our longer-term thesis remains largely intact, we are constantly refining and evolving our convictions. To this end, we wanted to highlight what’s changed since December and why we think adding more ballast to portfolios is warranted, particularly given the optimism being priced by markets during an asynchronous cycle where some sectors are slowing more quickly and inflation remains too sticky. So, as part of the next chapter of our *Regime Change* framework, we note the following:

What Is Changing or Being Amplified Since Our Outlook for 2024?

1

Increasing Importance of Non-Correlated Assets

After two major deep dive surveys across the Family Office and Insurance universes, we have even greater conviction in our thesis around owning more non-correlated assets. Key to our thinking is that, in a world where the efficient frontier for expected returns is now flatter, the importance of diversification increases. As a result, CIOs need more diversifiers in their portfolios so that they do not get whipsawed, especially when short-term performance can be quite volatile. One can see this in *Exhibit 27*. If we are right, then our insight has significant implications for allocators, particularly CIOs who have embraced long-duration bonds and/or VC on the equity side, or that do not believe in linear deployment.

2

Portfolio Volatility Is Increasing Because of the Changing Relationship Between Stocks and Bonds, Not an Increase in Single-Asset Volatility

There is another important influence to consider as well. Specifically, given all the movement around interest rates these days, the changing nature of government bonds in a portfolio, and greater use of concentrated ETFs by market participants (e.g., 40% of the High Yield market is now daily liquidity), the volatility of most benchmarks we track is surging to the upside, which increases the risk that a portfolio allocation change can be made at the wrong time. Some great work by Racim Allouani and Rachel Li suggests that today's heightened portfolio volatility is actually driven more by stock/bond correlation than by a surge in single-asset volatility, which was typically the case pre-COVID. This new reality is a big deal as it adds risk to a typical 60/40 portfolio, and it speaks to our view that we are indeed in a *Regime Change* when it comes to portfolio construction.

3

We Are More Focused On the Positive Path of Productivity, Especially in the U.S.

Given increasing debt loads amidst larger government deficits, we are now extremely focused on the one catalyst that is best equipped to keep stagflation at bay: Productivity. As we detail in *Exhibits 7 and 49*, the best decades of equity performance are usually linked to periods of strong productivity gains. Against today's backdrop of stickier wages, we think that strong productivity will be needed to allow corporate margins to

hold. Were productivity to slip, we likely would take a more defensive stance on risk assets, a reality that is new to our macro thinking in 2024.

4

The Mismatch Between Energy Supply and Demand Is More Pronounced

The mismatch between energy demand and energy supply seems even bigger than our previously bullish view. Demand is once again rising on electrification trends for EVs and heat pumps and the explosive growth in energy-intensive users such as data centers, semi fabs, EV battery plants, and steel mills. In the U.S., for example, overall electricity demand is poised to grow 2.4% annually, compared to essentially zero in prior years. We believe as much as one-third of this growth could come from data centers, and that data centers could account for 7-10% percent of total electricity demand in the next few years, compared to two to three percent at the end of 2023. While demand is increasing, our work shows that most developed market economies don't have the infrastructure in place to meet this need. Moreover, a lot of the power demand is not where the power supply is currently located. We view this current set-up as a major opportunity for investors, especially on the Infrastructure side.

5

A Broadening of Earnings Growth Across Sectors and Geographies

As we show in *Exhibit 76*, we have raised our 2024 and 2025 S&P 500 EPS forecasts to \$250 and \$270, respectively. What is changing in our data is that corporate earnings growth is set to broaden beyond mega-cap

Tech in coming quarters. We think this shift will represent more balance in the equity markets, and as a result, we are raising our 2024 target to 5,700 from 5,400 previously, which is roughly 10% above the 'top-down' consensus estimate of 5,172. Our 2025 target of 6,130 implies about 13% of upside from today's level of around 5,414. Meanwhile, in Europe, we think the economy is bottoming at a time when most investors are underweight the region. Stronger tourism, rebounding sentiment, and an increase in real wages (at last) will lead to a perkier consumer in the coming quarters. As part of this improvement in growth, the services economy is accelerating nicely. Additionally, the end of quantitative easing breathed life back into, and produced strong returns for, the financial services sector. We expect this trend to continue as valuations normalize.

6

More Sustained Deficits Amid Election Volatility Reinforces Our Regime Change Thesis

Regardless of the electoral outcome, the 2024 U.S. election is likely to further strengthen our *Regime Change* thesis. Though actual fiscal policy under Biden or Trump is not likely to loosen much given the expiration of some 2017 tax cuts or the imposition of tariffs, we continue to think that under either administration the deficit will stabilize at historically wide levels. As a result, we think Treasury term premium will stabilize at wider levels, too - which will make it harder for bonds to rally the way they did in past cycles. That said, there are also several policy proposals that could skew inflationary under a second Trump presidency, including writing stimulus checks for households, deporting undocumented immigrants (which would aggravate labor shortages), cutting off Iranian and Venezuelan oil, and potentially pressing for a more dovish Fed.

7

The Labor Supply and Demand Mismatch Could Create Unprecedented Demand for Worker Retraining

We think the U.S. labor force is in the early innings of an inflow of about four million additional potential workers amidst a record surge in immigration. However, our best guess is that limited formal skills training means the overwhelming majority of these workers will be competing to fill a small portion (perhaps about two million) of the 8.1 million open jobs in the U.S. As a result, we think the opportunity set for worker retraining may be as large as it has ever been, in part because there will be a lot of pressure to bring unemployed workers from low-skilled sectors (where we expect more of a labor glut in some cases) into high-skilled jobs left open by COVID-era retirements.

So, while we certainly believe in the opportunity set and our glass half full perspective, we do want to acknowledge that we are entering a volatile period in the second half of 2024 at a time when spreads are already very tight. To be sure, we are not signaling a more sustained bearish tilt the way we did in 2022 (see [Walk, Don't Run](#)). Rather - if we could steal a page from our [Outlook for 2023: Keep It Simple](#) - now is not a time to get over-extended when it comes to leverage or liquidity. The current environment, we believe, is more akin to the Oscar Wilde quote when he says that, "A pessimist complains about the noise when opportunity knocks." Said differently, if *Opportunity Knocks* in the form of a capital markets draw-down linked to election uncertainty, then you should have your portfolio in position to 'answer the door.' Don't just be the 'pessimist', particularly when many of today's macroeconomic headwinds can be overcome through a combination of thoughtful asset allocation and directed thematic investing.

Six Areas Where We Differ From Consensus

#1: Bumpy, But Faster Growth

Across all regions, we are again more bullish on growth than the consensus. In the U.S., stronger assumptions around both job growth and productivity lead us to raise our 2024 forecast to 2.5%, 10 basis points ahead of the consensus, and our 2025 forecast at 2.0%, 20 basis points above consensus. More importantly, we have raised our long-term forecast for U.S. structural GDP growth to two percent from 1.5% in the past. In Europe, data surprises are no longer lagging the U.S. as economic momentum turns positive. We are increasing our 2024 GDP growth forecast to 0.8% from 0.5% versus a consensus estimate of 0.7%. For 2025, our growth forecast is 1.4%, the same as consensus. We think growth in China is bottoming and likely in the early recovery stage. Our 2024 forecast is at 5.0% versus 4.7% at the beginning of the year and a consensus of 4.9%, while 2025 is at 4.6%, 10 basis points above consensus. In Japan, we forecast 0.6% GDP growth in 2024 and 1.2% in 2025, 20 basis points and 10 basis points above consensus, respectively.

#4: Better EPS, Driven By Higher Margins

We believe the cycle has further room to run, with margin expansion (as opposed to multiple re-rating) powering the next leg of the recovery. Our 2024 S&P 500 price target of 5,700 remains 10% above the 'top-down' consensus estimate of 5,172. For 2025, our target of 6,130 implies about 13% of upside from today's level of around 5,414. For 2024 and 2025 EPS, our targets are \$250 and \$270, versus the top-down consensus of \$240 and \$253, respectively. Our framework linking real GDP growth and unit labor costs to operating margins points to 20-30 basis points of margin expansion this year and next so long as labor productivity stays supportive.

#2: We Are Not as Worried About a Lower U.S. Savings Rate Signaling an Over-Extended Consumer This Cycle

While we do think U.S. consumer spending will slow in coming quarters, we are not seeing the type of imbalances that were observed in the run-up to past recessions. Specifically, although savings rates today are at the lowest levels since the GFC (currently around four percent, versus two to three percent in 2005-2006), we think this simple comparison doesn't account for the increase in the 65+ population over the last two decades (17% today versus around 12% prior to the GFC). Personal savings rates become sharply negative once households retire, meaning aging demographics likely explain some of the savings pullback. In fact, our estimates suggest that the 'neutral' savings rate has actually fallen to around 5.6%, down from 9-10% in the mid-2000s, implying that savings rates today are just 100-200 basis points below 'normal', while the savings rates that prevailed before the GFC were actually 700-800 basis points too low. Therefore, while we do expect some retrenchment, households do not look nearly as overspent as they have in the lead-up to past downturns.

#5: Oil - \$80 is the New \$60

We expect oil prices to settle in the mid-\$70-80s range in 2024 amid slower global demand and better global supply. Longer term, though, we still think '\$80 is the new \$60.' As such, our longer-term forecasts remain well above futures, which continue to embed prices falling to the mid-\$60-70s in 2025 and beyond.

#3: Bigger Regional Differences in Interest Rates. In the U.S., What's the Rush?

In the U.S., we are above consensus on interest rates this year as part of our higher for longer thesis. We see the Fed cutting rates just once this year, to 5.125% (which puts our forecasts about 25 basis points above market forwards) before falling to 4.125% in 2025 (also about 25 basis points above market pricing). For the U.S. 10-year, we stick to our forecast of 4.25% for year-end 2024 and four percent for year-end 2025, which remains a bit more hawkish than consensus of 4.2% for 2024 and 3.9% for 2025. In Europe, we have the bund at 2.6% for end-2024 (above consensus of 2.2%) and 2.8% in end-2025 (also above consensus of 2.2%). We think sustained higher inflation volatility means a return to a longer-term average term premium of approximately 50 basis points, leading to a long-term bund yield target of approximately 3.0%. In China, by comparison, we are actually below consensus for the 10-year for both 2024 and 2025 at 2.2% vs. 2.4%, and 2.0% vs. 2.4%, respectively. Against this backdrop, we think FX volatility will remain elevated and will serve as an important source of information for markets alongside the yield on government bonds.

#6: Where Could We Be Wrong?

Our base view is that there is an asymmetric risk for the economy and markets if rates go higher versus lower. We still see six percent short rates as somewhat of a tipping point, given this level limits operating cash flow for most levered entities as well as encourages more deposit flight from traditional financial intermediaries. Also, because policymakers did not remove as much stimulus from the markets this cycle, we continue to caution that the currency markets could be a source of unexpected stress for investors to consider in their portfolios. Finally, an extreme spike in unemployment, which is not our base case (as we think unemployment stays lower this cycle) would likely be unsettling for both our thesis and the markets, we believe.

6

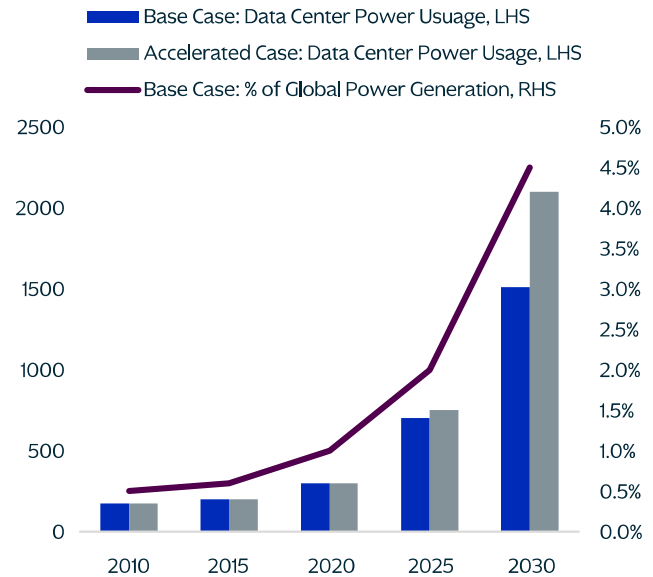
Intersection of AI and Energy Supply

In recent months we spent a substantial amount of time with internal and external constituents digging into whether we have the power supply to handle all the bullish demand sentiment we are now seeing. Our conclusion is that the constraint is on the supply side, not on the demand side, and that this mismatch will be one of the biggest investment stories over the next few years across North America, Europe, and Asia. All told, our best estimate is that power demand in the U.S. will increase at a CAGR of 2.0-2.5% over the next five years, compared to zero for the past five years. **As this growth accelerates, data centers alone are expected to account for 7-10% of total energy demand by 2029, compared to two to three percent today.** If we are right, then billions of dollars will be required across natural gas, renewables, transmission, and other forms of infrastructure. As part of our thesis, we expect energy efficiency, including cooling procedures, to become a significant area of growth. A recent trip to Spain in early June to drill down on this topic not only reinforced our conviction about the growing demand side of the equation, but also the emerging bottleneck in production that will need to be met in Europe through more supply of renewables as well as additional grid upgrades.

All told, our best estimate is that power demand in the U.S. will increase at a CAGR of 2.0-2.5% over the next five years.

Exhibit 36: By 2030, Data Centers Could Account for 4.5% of Global Energy Power Generation

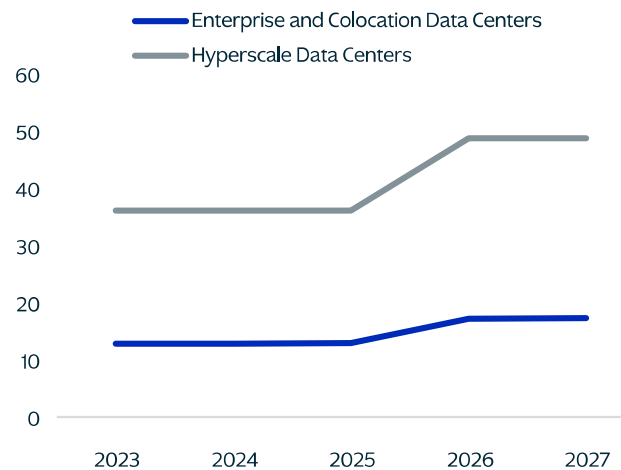
Global Data Center Power Usage Per Year, TWh



Data as at March 31, 2024. Source: SemiAnalysis.

Exhibit 37: Hyperscalers, Which Are the Biggest and Fastest Growing Part of the Market, Require More Energy, Racks, and Cooling Systems

Rack Density, KW/Rack



Data as at March 31, 2024. Source: JLL.

Executive summary

I The EU is committed to becoming climate neutral by 2050, meaning that all sectors that emit greenhouse gases are called on to decarbonise. The Commission saw renewable hydrogen as one way to decarbonise hard-to-electrify industries in particular. It published an [EU Hydrogen Strategy](#) in mid-2020 and updated it with its [REPowerEU plan](#) in 2022. The Commission also set the course for creating a renewable hydrogen market in the EU through setting targets for hydrogen production and import. It also recognised that low-carbon hydrogen could play a role in the transition towards climate neutrality.

II For the 2021-2027 period, total EU funding for hydrogen-related projects is currently estimated at €18.8 billion. This financial support is allocated through multiple programmes. Two major funding sources are the Recovery and Resilience Facility and the Innovation Fund.

III We decided to carry out an audit on how effective the Commission has been in creating the right conditions for the emerging renewable and low-carbon hydrogen markets, given the significant implications of this transition for the future of key EU industries. To this end, we assessed whether the EU is on track for achieving its targets and whether it has adopted the necessary legal acts to effectively provide timely support for the hydrogen market. We also assessed whether the EU has a comprehensive set of funding programmes to allow the hydrogen value chain to develop across the EU. Lastly, we assessed whether the Commission has appropriately coordinated market creation between its own services, with member states and with industry.

IV Overall, we conclude that the Commission was partially successful in creating the necessary conditions for the emerging hydrogen market and the hydrogen value chain in the EU. We are calling for a reality check now as nearly 4 years have passed since the publication of the Hydrogen Strategy and first lessons can be drawn.

V The Commission did not undertake robust analyses before setting the EU's renewable hydrogen **production and import targets**. These were not broken down into binding targets for member states and not all member states set their own targets. When they did so, these national targets were not necessarily aligned with the Commission's targets. In fact, the EU targets turned out to be overly ambitious: based on the available information from member states and industry, the EU is unlikely to meet them by 2030. The Commission did not set any EU targets for low-carbon hydrogen.

VI The renewable hydrogen **legal framework** is now mostly complete, while for low-carbon hydrogen some acts still need to be proposed and adopted. However, the renewable hydrogen production rules, which are key for market development, were set by a directive and supplemented by a delegated act without prior assessment of their impact (for example on production cost). Agreeing on the renewable hydrogen rules took time and many investment decisions were deferred during this period. In 2023, the EU adopted measures to increase the cost competitiveness of renewable and low-carbon hydrogen, but the effect of these measures will not be immediate and certain aspects were not included.

VII Work on standardisation and certification is still required. Progress in market development will depend on several factors, including whether member states will (i) meet the demand targets which in turn depends on progress made by industry, and (ii) manage to reduce permitting timelines for renewable hydrogen and renewable energy projects.

VIII Investment needs are huge, but the Commission does not have a complete overview of these **needs or the public funding** available. Industry is faced by a set of different EU funding programmes with different rules, making it difficult to determine the best-suited programme for a given project. There is still no guarantee that the EU's hydrogen production potential can be fully harnessed. So far, those member states with a high share of hard-to-decarbonise industry are more advanced in terms of planned projects (either at an advanced or in the feasibility study stage).

IX The Commission took steps to **coordinate** the ramp-up of the hydrogen value chain, but has not yet used the existing fora to discuss important strategic issues, such as how best to move forwards without creating new strategic dependencies.

X We recommend that the Commission:

- (1) following a reality check, make strategic choices on the way ahead without creating new strategic dependencies;
- (2) set out an EU roadmap and monitor progress;
- (3) obtain reliable national funding data and assess the appropriateness of EU funding arrangements accordingly;
- (4) monitor the permitting process in the member states;
- (5) take a clear decision on support and coordination actions with and for the hydrogen industry.

Conclusions and recommendations

120 With the publication of the Hydrogen Strategy for the EU, for the first time the Commission had a central role to play in creating a new market. Our overall conclusion is that the Commission was partially successful in creating the necessary conditions for this market. While the Commission took a number of positive steps, challenges remain all along the hydrogen value chain.

121 With its 2020 Hydrogen Strategy and the 2022 REPowerEU plan, the Commission set targets at EU level for renewable hydrogen production and for importing renewable hydrogen. Both documents are Commission communications, and as such are therefore non-binding. There was less focus on low-carbon hydrogen at the time: although it was mentioned, no targets were set (see paragraph 24).

122 We found that the renewable hydrogen targets were not clearly defined. Moreover, they were driven by political will rather than being based on robust analyses. In addition, at the time of writing, it is unlikely that these targets for 2030 can be achieved (see paragraphs 25-30 and 38-45).

123 It is not mandatory for member states to prepare hydrogen strategies, but they did have to provide updated national energy and climate plans by mid-2023 (final versions have to be submitted by mid-2024), including reporting on measures to achieve the non-binding EU targets. The Commission reviewed the draft national plans and issued recommendations to member states. However, it did not ask them to set targets in line with the EU's targets. The Commission did not establish a coordination process with member states to ensure a certain degree of alignment. In fact, member states did not necessarily align their targets and measures with those of the EU. They are not all moving at the same speed or with the same level of ambition. In late 2023, the Commission president announced that the Commission will assess how member states plan to implement the national hydrogen commitments to provide a clear roadmap towards 2030 in each member state (see paragraphs 31-37).

124 Within a relatively short period of time, the Commission has proposed most of the legal acts to regulate the hydrogen market. An act defining the methodology for assessing greenhouse gas emissions savings for low-carbon hydrogen is still outstanding. Work on standardisation and certification is still required (see paragraphs 47-50).

125 Industry representatives indicated to us that they had deferred investment decisions until the rules for producing renewable hydrogen (Delegated Act) were published in June 2023. Once published, these rules delivered the much needed legal certainty. However, the Commission had not yet assessed the impact of these rules on either the cost or the timing for rolling out renewable hydrogen. The Commission is now required to carry out such an assessment before mid-2028. In fact, several public studies show that the temporal correlation (hourly correlation) rule increases the production cost for renewable hydrogen, thereby reducing its competitiveness compared to fossil-based hydrogen (see paragraphs [42](#) and [61](#)).

126 On the positive side, we found the following.

- Targets for the use of renewable hydrogen in industry and transport as introduced by several EU legal acts boost demand (see paragraphs [28](#) and [63](#)).
- The Commission asked member states to address the slowness of domestic permitting processes in their national energy and climate plans and took several legislative measures requiring member states to accelerate the process (see paragraphs [64-66](#)).

127 The timelines established in the various legal acts relating to the permitting process varied. The Commission has not yet established a plan to monitor member states' implementation of permitting process reforms (see paragraphs [66-68](#)).

128 The speed and degree of implementation of the legal requirements relating to demand targets and permitting depend on the member states. For example, some member states consider that certain demand targets are unrealistic and very difficult to achieve. Apart from lengthy and time-consuming infringement proceedings, the Commission has no means to ensure that member states adhere to these targets or requirements (see paragraphs [63](#) and [68](#)).

129 The Commission estimated the amount of investment that would be needed to create a market for renewable hydrogen, but did not consider all parts of the hydrogen value chain. Our analysis showed that the demand side was not properly considered and that the Commission's estimates across different documents were not consistent (see paragraphs [80-82](#)).

130 The Commission does not have complete data on allocated or planned national public funding for renewable hydrogen. For the 2021-2027 period, total EU funding for hydrogen-related projects is currently estimated at €18.8 billion, mostly funded by the

Recovery and Resilience Facility. EU funding is available for the supply and demand side of the hydrogen value chain. On the demand side, the Commission has not yet developed the key scheme announced in its Hydrogen Strategy, namely “Carbon Contracts for Difference”. Regarding the innovative Hydrogen Bank, there is still no clarity in terms of the budget that will be available beyond 2024 (see paragraphs [83-86](#), [91-97](#) and [106](#)).

131 EU funding is scattered over several programmes with different funding rules. This makes it difficult for hydrogen project developers to determine which programme is best suited to their project. The Commission has developed a webpage to provide information on various EU funding programmes, but at the time of our audit this webpage was not yet fully operational. In late 2023, the Commission president announced that the Commission would relaunch a one-stop shop solution to guide project developers on EU funding (see paragraphs [83-90](#)).

132 In the years to come, large amounts of investments will be required all along the hydrogen value chain, the bulk of which will have to be provided by the private sector. In an emerging market like hydrogen, there is a case to incentivise and support industry in making these investments, be it through national and EU public funding or through public authorities that build the essential infrastructure.

- The Commission amended certain state aid rules to ease the provision of state aid and support the green transition. However, long approval times for state aid, which was the case for some notifications, can negatively affect projects’ planned costs and start dates (see paragraphs [69-77](#)).
- Furthermore, even when the Commission allows state aid to be provided, it does not mean that member states actually have to deliver it (see paragraphs [76](#) and [103](#)).
- Member states set their own priorities on how to use some of the most important EU funding sources for hydrogen, namely the Recovery and Resilience Facility and cohesion policy funding. Given their specific situation and the importance they attach to renewable hydrogen, some member states use the Facility significantly more than others (see paragraphs [93-94](#), [101-102](#) and [104](#)).
- While the eastern and central EU member states (plus Portugal and Greece) can use the Modernisation Fund, so far only two member states have put multi-technology grant schemes in place, which can include hydrogen projects (see paragraph [104](#)).

133 So far, planned projects (at an advanced and in the feasibility study stage) for renewable hydrogen (production and networks) have been concentrated in a limited number of member states, in particular those where hard-to-decarbonise industries are primarily located. The same applies to the bulk of the EU funding allocated. However, not all of the member states which are currently more advanced with regard to renewable hydrogen have sufficient potential for renewable energy production and consequently renewable hydrogen production. As yet, there is therefore no guarantee that available public funding allows the EU to (i) fully harness member states' hydrogen production potential and (ii) transport hydrogen across the EU (see paragraphs [98-106](#)).

134 The Commission took steps to coordinate the ramp-up of the hydrogen value chain, but coordination within the Commission and between the Commission and member states does not yet ensure that all parties are moving in the same direction. Numerous Commission directorates-general are responsible for specific aspects of the hydrogen value chain and pursue objectives which are not always aligned. The Commission has not yet used the existing fora to discuss key strategic issues on the future of the hydrogen value chain in the EU with member states. Moreover, the Commission did not provide guidance or support to member states about how to establish their national hydrogen strategies. With regard to coordination with industry, the Commission set up the European Clean Hydrogen Alliance, but after a promising start, momentum slowed (see paragraphs [107-119](#)).

Recommendation 1 – Following a reality check, make strategic choices on the way ahead without creating new strategic dependencies

In close collaboration with the member states, the Commission should decide on the strategic way forward towards decarbonisation without altering the competitive situation of key EU industries, which could potentially result in further deindustrialisation. In particular, the Commission should

- (a) update its Hydrogen Strategy based on a careful assessment of the following aspects:
 - (i) how to calibrate market incentives for renewable and low-carbon hydrogen production and use, taking recent legislative changes into account,
 - (ii) how to prioritise scarce EU funding (e.g. focusing on which parts of the value chain),
 - (iii) the geopolitical implications of EU production compared to imports from non-EU countries (i.e. which industries does the EU want to keep and at what price),
- (b) update the renewable hydrogen production and import targets set by the REPowerEU plan so that they are ambitious but realistic. In so doing, it should consider regional and industrial sector specificities and the role of low-carbon hydrogen.

Target implementation date: end-2025

Recommendation 2 – Set out an EU roadmap and monitor progress

In close collaboration with the member states, the Commission should

- (a) set out and publish an EU roadmap for the development of a hydrogen value chain towards 2030 and beyond, based on its assessment of the national energy and climate plans and its updated Hydrogen Strategy,
- (b) monitor the EU's and member states' progress in achieving binding and non-binding targets by means of a scoreboard.

Target implementation date: mid-2026

Recommendation 3 – Obtain reliable national funding data and assess the appropriateness of EU funding arrangements accordingly

The Commission should do the following.

- (a) Work in close cooperation with member states and if necessary, propose reporting obligations to obtain information on investment plans and on planned and actual national public funding for the market ramp-up – at least for the industries to be identified under Recommendation 1. It should report on this overview, for example in the reports on the state of the Energy Union. The overview should cover all parts of the hydrogen value chain.
- (b) Assess whether the current EU funding arrangements are appropriate for the future development of the hydrogen value chain across the EU.

Target implementation date: end-2025

Recommendation 4 – Monitor permitting processes in the member states

The Commission should monitor permitting processes in the member states and check whether they adhere to the timelines set in various legal acts, potentially including this aspect in the European Semester process.

Target implementation date: end-2025 (or later if the relevant legal acts set deadlines for transposing the legislation into national law that are after the end of 2025)

Recommendation 5 – Take a clear decision on support and coordination actions with and for the hydrogen industry

The Commission should do the following.

- (a) Create a one-stop shop solution for stakeholders under the European Hydrogen Bank and guide hydrogen project developers on available EU funding.
- (b) Decide on the future of the Clean Hydrogen Alliance in terms of its scope and number of roundtables and adopt a clear and time-bound mandate for its future work.

Target implementation date: mid-2025

This report was adopted by Chamber II, headed by Mrs Annemie Turtelboom, Member of the Court of Auditors, in Luxembourg at its meeting of 5 June 2024.

For the Court of Auditors

Tony Murphy
President

Annexes

Annex I – Support for renewable hydrogen in the United States

The US adopted two legal acts which are particularly relevant to renewable hydrogen:

- the [Bipartisan Infrastructure Law](#) (2021) includes \$9.5 billion for clean hydrogen initiatives, of which \$8 billion is for regional clean hydrogen hubs and \$1 billion is for a clean hydrogen electrolysis programme;
- the [Inflation Reduction Act](#) (2022) provides for a hydrogen production and investment tax credit.

The Inflation Reduction Act provides the following relating to hydrogen production.

- A tax credit⁶⁰ for the production of clean hydrogen, which is uncapped and available for 10 years from the moment a production facility comes into operation, but construction must start before 1 January 2033.
- Technology-neutral support, which is based on carbon intensity, meaning that the higher the carbon intensity, the lower the support. The highest carbon intensity for which support can be obtained is 4 kilogrammes (kg) of CO₂ equivalent per kilogramme of hydrogen. The amount of support ranges from \$0.6 to \$3 per kg of hydrogen produced. According to a study⁶¹ by the *Institut der deutschen Wirtschaft*, the defined carbon intensity is such that (i) hydrogen produced using the current electricity mix in the grid is not within the carbon intensity range for which support can be obtained, and (ii) the highest support is currently only possible by operating using exclusively renewable electricity.
- A tax credit for carbon oxide sequestration⁶².
- Local content requirements: a 10 % increase in the tax credit is possible where an electrolyser is manufactured with US materials.

⁶⁰ See [Article 45V](#) of the Internal Revenue Code.

⁶¹ Küper, Malte, 2023, *Wasserstoff im Inflation Reduction Act. Was ist drin für Deutschland und die EU?*, *IW-Kurzbericht*, Nr. 8, Köln.

⁶² See [Article 45Q](#) of the Internal Revenue Code.

Annex II – Renewable Energy Directive (RED III): targets

The Directive sets targets for the use of renewable fuels of non-biological origin (RFNBOs) (including renewable hydrogen) in industry and in the transport sector, as shown in the following table.

2030 and 2035 targets

Sector	Targets
Overall	Increase the share of renewable energy in the EU's overall energy consumption to 42.5 % by 2030, with an additional 2.5 % indicative top-up so that the 45 % target can be achieved.
Industry	<p>Industry will need to annually increase its use of renewable energy by 1.6 %.</p> <p>42 % of the hydrogen used in industry should come from RFNBOs by 2030 and 60 % from this source by 2035.</p> <p>Member states will be able to discount the RFNBOs' contribution for industrial use by 20 % if:</p> <ul style="list-style-type: none"> ○ the member state's national contribution to the binding overall EU target tallies with their expected contribution; ○ the share of hydrogen from fossil fuels consumed in the member state does not exceed 23 % in 2030 and 20 % in 2035.
Transport	<p>Member states will have the possibility to choose between:</p> <ul style="list-style-type: none"> ○ a binding target of a 14.5 % cut in greenhouse gas intensity from transport by using renewables (by 2030); or ○ a binding share of at least 29 % from renewables in the transport sector's final energy consumption (by 2030). <p>The new rules establish a binding combined sub-target of 5.5 % for advanced biofuels (generally derived from non-food-based feedstocks) and RFNBOs (mostly renewable hydrogen and hydrogen-based synthetic fuels) in the share of renewable energies supplied to the transport sector.</p> <p>Within this target, there is a minimum requirement of 1 % from RFNBOs in the share of renewable energy supplied to the transport sector in 2030.</p>

Source: EU legal acts.

Public Service Commission

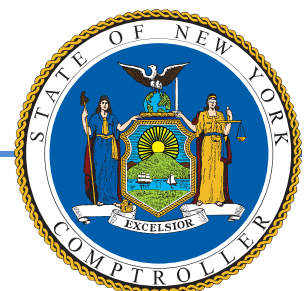
New York State Energy Research and Development Authority

Climate Act Goals – Planning, Procurements, and Progress Tracking

Report 2022-S-4 | July 2024

OFFICE OF THE NEW YORK STATE COMPTROLLER
Thomas P. DiNapoli, State Comptroller

Division of State Government Accountability



Audit Findings and Recommendations

For Climate Act implementation to be successful, the following are all essential: proper procurement, assessment of progress toward goals, development of alternate plans in the event goals are not achievable according to established time frames, reasonable estimation of costs and identification of funding sources, and identification of existing and emerging risks.

While PSC and NYSEERDA have taken considerable steps to plan for the transition to renewable energy in accordance with the Climate Act, their plans did not include all essential components. PSC is using outdated data for planning purposes and has not adequately addressed all current and emerging issues, such as increased push to transition to electric vehicles and the switch to use of electric for all residential heating and cooling, which will likely increase electricity demand significantly. Further, PSC is relying on yet-undeveloped technology that will be required to store renewable energy long term to meet 2040 goals and did not correctly take into consideration the historical cancellation rate for renewable energy contracts (between 2005 and 2023, 12% of contracted large-scale renewable projects were canceled) when projecting electricity generation estimates, increasing the risk that decision-makers are not using the most accurate information to support the achievement of program goals.

When we asked PSC officials what they were currently doing to assess issues that could affect Climate Act goals, they noted that they are not required to issue a formal assessment until July 2024 and did not provide any documentation to show that they have begun assessing the State's transition to renewable energy or potential obstacles to achieving goals. However, waiting to conduct a formal assessment of all efforts and costs of the transition to renewable energy might leave too little time to sufficiently plan to meet the Climate Act's ambitious goals.

Additionally, the costs of transitioning to renewable energy are not known or have not been reasonably estimated by PSC, nor has PSC verified the cost estimates developed by other entities that they use for analyses. Further, funding sources to cover those costs have not been identified, leaving the ratepayers as the primary source of funding. According to data from the U.S. Energy Information Administration, utility costs have already risen sharply over the last two decades. Governor Hochul issued a press statement in March 2022 about efforts her administration is taking due to the high number of New Yorkers having difficulty paying their utility bills.

Further, a formal backup plan has not been established in the event that Climate Act goals are found to be unachievable within the prescribed time frames, other than PSC suspending or modifying the obligations under the Climate Act and relying on fossil fuels. However, the default plan to rely on fossil fuels not only fails to address Climate Act goals, but it also means that, in addition to maintaining and growing the existing infrastructure for the transmission of renewable energy, the infrastructure for safely transporting fossil fuels must be maintained, which also may present costs to ratepayers.

Lastly, while we found that, overall, NYSEERDA's procurements followed the Orders issued by PSC, areas of the procurement process could be improved. Our sample

review of large-scale renewable projects found that NYSERDA did not always fully document the rationale for scores awarded to proposers or for scores that deviated from the established guidelines. While NYSERDA asserts that all scores were appropriate, documenting the rationale is important for explaining decisions to bidders that did not win projects. When information that supports the evaluation and scoring of the proposal is not documented during the evaluation, the basis for important decisions could be lost and NYSERDA might not be able to adequately support that the appropriate contracts were awarded.

Climate Act Planning and Progress

PSC and NYSERDA have taken considerable steps to plan for Climate Act implementation, but insufficient analysis of the impact of emerging issues and other factors could have an effect on the implementation of Climate Act goals.

Planning and Assessments

NYISO is responsible for managing New York’s electric grid and its competitive wholesale electric marketplace and for conducting comprehensive long-term planning for the State’s electric power system. After the Climate Act was signed into law, NYISO was asked to provide relevant information on the grid’s ability and readiness to handle the additional capacity within the Climate Act’s time frame. According to NYISO, after the Council was created, NYISO met with the Council and provided relevant information. However, NYISO said this information was not used in establishing the Climate Act goals or time frames for implementation.

Nonetheless, NYISO officials stated that the grid is on track to be able to handle the Climate Act goal of 70% of the State’s electric needs generated from renewable sources by 2030 based on the production data reported by PSC and NYSERDA. However, meeting the Climate Act’s 70% goal by 2030 is contingent on the provided data being complete, accurate, and updated. PSC’s most current projections of energy demand and generation were completed in 2020 based on 2019 data, meaning the data and projections are, therefore, outdated in terms of recent legislation and regulations that may increase electrical demand, including:

- A September 2022 regulation to eliminate the sale of new passenger cars, pick-up trucks, and SUVs that are not zero-emission vehicles by 2035.
- The 2022 Environmental Bond Act funding green building projects for State-owned buildings and public schools.
- 2023 legislation prohibiting the installation of fossil fuel equipment and building systems in certain new buildings beginning in 2026.

Further, we reviewed and discussed the projections with PSC officials, who also agreed that they contained calculation errors—the most notable being the allowance for a 0.2% capacity cushion to mitigate the risk of project cancellations instead of the intended 20%. When further questioned about these calculation errors, PSC officials stated the spreadsheet originally provided was not support for their application of

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Further, we reviewed and discussed the projections with PSC officials, who also agreed that they contained calculation errors—the most notable being the allowance for a 0.2% capacity cushion to mitigate the risk of project cancellations instead of the intended 20%. When further questioned about these calculation errors, PSC officials stated the spreadsheet originally provided was not support for their application of

the 20% capacity cushion. Additionally, DPS provided a PowerPoint presentation on the projections to PSC, but this also contained errors related to the Climate Act goals. PSC already does projections of energy demand every 6 months to help identify peak demand during summer and winter months, but does not utilize those projections to update the analysis of projected consumption versus projected supply of renewable energy. Decision-makers need accurate, complete, and current data to make the best decisions; without it, it is less likely that Climate Act goals will be achieved, especially within the currently required time frames.

As part of its duties, NYISO prepares an annual Reliability Needs Assessment (Assessment) that evaluates electric system reliability according to resource adequacy and transmission security criteria. The 2022 Assessment evaluated the reliability of the New York bulk electric grid from 2026 through 2032, taking into consideration forecasts of peak power demand, planned upgrades to the transmission system, and changes to the generation mix over the next 10 years. While the Assessment did not find any long-term actionable reliability needs for the New York State Bulk Power Transmission facilities, significant shifts are expected in both the demand and supply sides of the electric grid due to New York State clean energy policies and goals, such as the electrification of buildings, restrictions on fossil fuel use in certain new buildings, and increased requirements to get more electric vehicles on the road—as, by 2035, only new passenger cars, pick-up trucks, and SUVs that are zero-emission vehicles will be able to be sold in New York. These shifts will affect how the current power system is planned and operated.

Within its 2022 Assessment, NYISO states that the New York City area faces the greatest reliability risk due to limited generation and transmission to serve forecasted demand. The reliability reserve margins within New York City may not be sufficient, even for expected weather conditions, if forecasted demand in the City increases by as little as 60 MWh in 2025—if the approved (but not yet operable) Champlain Hudson Power Express line to bring electricity from Quebec to New York City experiences a significant delay or there are additional generator deactivations beyond what is already planned. In 2023, NYISO reported that the peak daily load in NYC was 10,372 MWh on September 6.

While the potential risks and resource needs identified in the analyses may be resolved by new resources coming into service, construction of additional transmission facilities, and/or increased energy efficiency and integration of demand-side resources, this illustrates the potential issues that could result from lack of planning to proactively address risk and other issues. The current plan to address these issues is to keep “peaker plants” (fossil fuel power plants that grid operators generally call upon only at times of high demand) operating until the Champlain Hudson Power Express project is completed. However, these peaker plants generally come at a higher cost, both monetarily and environmentally.

It is also important to note that there is not just one plan guiding the State to achieving the goals of the Climate Act. There is a complex coordination of several plans and programs to accomplish this ambitious target.

Energy Storage and Transmission Constraints

NYISO officials stated that they believe the 2030 Climate Act goals might be achievable. NYISO also stated that the 2040 goal will be far more difficult to meet and that a technology that has not yet been developed or approved will be necessary to achieve that goal. According to NYISO's 2022 Power Trends report (a publication that summarizes key grid issues), NYISO concluded that the grid of the future will require significant amounts of on-demand, zero-emission, flexible resources that can account for the weather-related intermittency of renewables. Another challenge to future grid planning is the constraints of the existing transmission system, which limit the ability to deliver renewable energy to consumers. Additional transmission capability would maximize the potential contribution of these renewable resources to meet electric demand and achieve public policy goals. However, this additional transmission capability needs to be planned, constructed, and put into service in a timely manner, which could be a difficult task—even with the progress PSC and NYSEERDA have made with planning—as any delays could significantly impact reaching the Climate Act goals in the established time frames.

According to PSC, fossil fuel resources will primarily be used for reliability until on-demand emission-free resources become available as effective replacements. NYISO reports that current dispatchable emission-free technologies under development include green hydrogen and renewable natural gas. These resources must have long-term energy output capabilities and the ability to be dispatched immediately for extended time periods, and would need to be developed and deployed on a large scale well before 2040. Currently, storage capacity for renewable energy is short term (i.e., 4 to 8 hours according to the 2020 Energy Storage Annual Report), and NYISO experts don't believe this will be rectified in the short term. As PSC said at the beginning of the audit, it can procure and generate energy, but it's worthless if it can't go on the grid. Long-term energy storage is necessary when relying on intermittent weather-dependent renewable energy sources. This need means the State's emission-free electricity system must not only produce enough power to meet demand but must also provide sufficient charging capability to meet the large amount of storage required. The risk of failing to meet Climate Act goals increases when having to rely on an undeveloped technology that might take years to advance to its ultimate usable form. The State has taken steps to increase the amount of energy that can be stored for future use, but the issue of how long that energy can be stored is the most limiting factor.

Project Cancellations

Project cancellations have already slowed progress toward meeting Climate Act goals. Per NYSEERDA reporting, between 2005 and 2023, 28 projects totaling 1,319 MW were canceled—12% of contracted large-scale renewable projects. PSC officials stated they included a 20% capacity cushion to mitigate project cancellations. However, this 20% capacity cushion only applies to Tier 1 projects, which are the expected source of less than half of the renewable energy procured to meet the 70% Climate Act goal. Therefore, this cushion may not be sufficient to cover the

historical project cancellation rate. Not correctly factoring in the potential cancellation of projects deprives decision-makers of the best or most accurate data on which to base important decisions.

As of July 2023, NYSERDA had executed four contracts for offshore wind generation to produce 4,230 MW of renewable energy. NYSERDA issued the first RFP to procure ORECs over 5 years ago on November 8, 2018. However, due to a variety of delays, generators have not produced a single OREC. In early June 2023, the developers responsible for constructing New York's offshore wind projects filed a petition with PSC seeking inflation adjustments to contracts already in place. This petition was denied by PSC in October 2023. One generator, a party to a joint venture, sold its stake in the project. Two other projects resubmitted bids under the 2023 solicitation for offshore winds projects and were provisionally awarded contracts. The amount of energy they proposed to provide (between 1.65 GW and 1.82 GW) was the same, but the price increased over 30% and the projects' operational dates were pushed back from 2024 to 2026. Additionally, as of April 2024, it was announced that three other offshore wind projects totaling over 4 GW of capacity that were provisionally awarded under the 2022 solicitation could not reach a final agreement and will not be entering into a contract. Such projects also face public opposition for various reasons, which can cause significant delays. A large portion of New York City's renewable energy is expected to come from offshore wind, so these issues could dramatically affect the achievement of Climate Act goals and will impact ratepayer costs.

Expiring Contracts and REC Price Agreements

When contracts for renewable energy sources were first approved, some sources were contracted for a 10- to 20-year span. After the contracts expire, facilities will need market revenues to support continued operation, and this is understood by facility proposers upon application. Revenue could come from wholesale market sales, or facilities would be free to contract with any individual energy consumer for both energy and RECs at an agreed-upon price. When contracts expire, there is no guarantee that the energy produced by those New York facilities will stay in New York, threatening Climate Act goals. Between 2007 and 2029, 81 contracts expired or will expire with a production capacity of 1,431 MW and a bid quantity (the amount of energy the contractor commits to generating for the contract) of 4.8 million MWh. To put this in context, New York's average annual electricity consumption from 2018 to 2022 was 154.4 million MWh. Consumption is expected to steadily increase every year and reach 204.0 million MWh by 2040. This could lead to New York paying more than the originally contracted price once the contracts expire because of additional competition for that renewable energy and RECs. Again, these potential situations should be factored into the determination of whether New York will meet Climate Act goals.

Other Issues Affecting State's Ability to Meet Goals

Several additional existing and emerging issues that may affect New York's ability to meet Climate Act goals should be considered, including:

- Severe weather dangers are becoming more common, and they affect renewable energy electric systems/grids. The State is not immune to such events, which could lead to greater electricity demand and more forced outages than currently forecasted. Heating and cooling needs in the State make it increasingly important for energy to be available during peak demand times. According to the National Centers for Environmental Information, between 1980 and June 2024, there have been 90 confirmed weather/climate disaster events with losses exceeding \$1 billion each in New York. The 1980–2023 annual average is 1.9 events, with the annual average for the last 5 years (2019–2023) at 4.4 events. The increasing risk of severe weather puts the availability of necessary electricity in jeopardy during and after these events, especially with growing supplies of intermittent generation that may not be available when needed.
- California is, at times, able to generate enough renewable electricity to cover 100% of its demand. However, because of the inability to store renewable energy long enough to use it as an on-demand source—a challenge New York also faces—California is still reliant on fossil fuels to produce the energy necessary to meet demand. Sometimes, because of timing, there isn't enough energy to meet peak demand. Despite California adding more renewable energy, it is still having issues during peak demand times, which has led the state to ask residents not to charge their cars or lower the temperature on their air conditioning.
- New York has approved the Champlain Hudson Power Express line to bring electricity from Quebec to New York City. However, there are concerns this hydroelectric power might not be available during the winter months because Canadian needs take priority over New York's. This means that as New York increases its winter electric demand by increasing the electrification of building heating systems, it will need to find additional sources of emission-free electricity. Further, more recent studies show that Quebec's surplus of electricity could be eliminated as soon as 2033 by increasing demand within the province, a situation that could undercut New York's ability to rely on this source of electricity. Hydro-Quebec (the utility generating and selling this energy) is searching for ways to increase its renewable energy production.
- Recently enacted or proposed legislation could have the potential to increase electric demand in New York State. This includes the requirement to transition to zero-emission vehicles and the electrification of housing. If Climate Act goals are not reached, fossil fuels will continue to be used to produce the necessary energy. This would either put increased pressure on the aging infrastructure or increase costs even more to maintain the fossil fuel infrastructure. Further, this could potentially continue the negative effect on the environment, as fossil fuels would be needed to produce the additional electricity.

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- Replacement of solar panels and wind turbines at the end of their useful life ensures the continuation of renewable energy. However, delays could result from supply chain issues as well as availability of materials, leading to lower generation of renewable energy.

While PSC is not solely responsible for ensuring the State is prepared to meet Climate Act goals, as the entity tasked with establishing and reviewing the State's renewable energy program, PSC should discuss the potential effects of these issues with the agencies responsible for ensuring a smooth transition and should ensure all parties are aware of the impacts to their area of responsibilities. PSC should then determine the effect these concerns could have on energy demand and include that information in its projections to provide the best possible chances of meeting Climate Act goals.

Gap Between Renewable Energy Projections and Current Generation

As of November 2021, the State needed to more than double its renewable energy generation to meet the 70% by 2030 goal. According to data from the U.S. Energy Information Administration, for November 2021, total net electricity generation in New York was 10,096 thousand MWh, of which about 30.1% (3,039 thousand MWh) came from renewables with another 23.6% (2,383 thousand MWh) from nuclear. (For the purposes of the Climate Act, nuclear energy isn't considered renewable energy but is counted toward the 2030 and 2040 goals as zero emissions.) The single largest source of electricity (45.7%) came from natural gas.

The Council's Scoping Plan anticipates annual electricity demand will more than double by 2050, depending on the scale and timing of electrification and whether there are other clean alternatives for the transportation and building sectors. The increase in demand is due in part to changes or expected changes in the electrification of buildings and transportation.

According to Open NY, as of April 2023, there were 230 total large-scale renewable projects (facilities) awarded within the Climate Act program. Twenty-eight of these projects were canceled at various stages, leaving 202 facilities. Of these, only 40 (20%) were operational. As of April 2023, Open NY listed 101 (50%) as under development; however, this status can mean anything, including a contract with final terms still being negotiated, a contract without final site approval, a developer still finalizing financing, or actual construction. Finally, 61 projects (30%) were listed as completed and the contract duration for RECs had ended. Currently, less than 6 years remain until 2030 to finalize all these projects to meet the 2030 goal and, on average, it takes 5 years to complete a large-scale renewable project. See Table 1 for details.

Table 1 – Large-Scale Renewable Project Status as of April 2023

Category	Description	Project Status
Tier 1	Primary method for acquiring renewable energy	114 total projects with 20 (18%) operational
Tier 2	Baseline resources: facilities already in the generation stage, but upgrades or repairs may be needed. May be competitive or maintenance based.	13 total projects with 6 (46%) operational
Tier 3	ZECs are related to nuclear power generation	No new projects
Tier 4	Renewable energy into New York City	2 total projects with 0 operational
Offshore Wind	Related to offshore wind	4 total NYSERDA projects with 0 operational (Long Island Power Authority has 1 additional project under construction)

Note: This chart details only the projects using the Tier system (133) that we discuss throughout the report. The other 69 projects were in place before the Climate Act and are not in a Tier.

New York has a long way to go to meet its renewable energy goals, complicated by failure to use the most accurate data available for demand forecasts and the history of project cancellation in planning. The goals may be more difficult to achieve given the challenges presented by New York City energy needs and the obstacles involved in the transmission of renewable energy to the City.

PSC has taken some steps to address these issues, such as using the Power Grid Study and Accelerated Renewable Energy Growth Act to implement the transmission plan, which led to the approval of several transmission projects to ensure the electric grid is ready to meet the growing electricity demand. Further, PSC officials stated they included a 20% cushion to address project cancellations. However, this 20% capacity cushion only applies to Tier 1 projects, which are the expected source of less than half of the renewable energy procured to meet the 70% Climate Act goal. While PSC has taken actions to examine and resolve issues, more actions and planning are necessary. PSC must ensure construction time lines are accurate and that the facilities will be able to produce the amount of electricity they are contracted to provide.

When we asked PSC officials what they were currently doing to assess the risks and impacts of current and emerging issues that could affect Climate Act goals, they noted that they are not required to issue a formal assessment until 2024 and did not provide any documentation to show that they have begun assessing the State’s transition to renewable energy or potential obstacles to achieving goals. Further, PSC has stated that:

For those efforts overseen by the PSC, we apply an ongoing monitoring and continuous improvement approach that includes a detailed review of annual achievements made under every applicable effort, followed by recognizing and acting on any necessary changes moving forward. The Department and Commission have established successful processes that allow us to be

flexible to changing market conditions, incorporate stakeholder feedback into its decisions, and ensure we continue to take advantage of innovation and leveraging of private sector investments. In sum, we are not waiting until the benchmark dates to determine if the goals are achieved. Instead, we are taking action now to mitigate the risk of not meeting any of the statutory deadlines set forth in the CLCPA [Climate Act], including a multifaceted strategy where we are implementing clean energy initiatives across virtually every sector of the State's economy.

While the Climate Act does not require PSC to formally assess these impacts until July 2024, at that point it might be too late to make sufficient changes to meet the established goals. PSC stated it does evaluate the performance and cost of specific renewable energy programs, but this is not done for all efforts and costs of the transition to renewable energy. Undertaking a project without identifying and assessing potential risks, including estimating the costs to complete that project, increases the risk that the project's goals will not be successfully achieved.

In October 2023, the Executive announced a 10-point plan with steps that address some of the issues cited above regarding Climate Act planning. For example, the plan indicates NYSERDA would announce "historic awards" of renewable energy projects and expedite the assessment of the impacts of the Large-Scale Renewable Program and the projects' ability to meet obligations, and the State will otherwise seek more public engagement, expand the offshore wind supply chain, build out transmission infrastructure to connect Long Island with the rest of the State, and seek federal support in the form of offshore wind tax credits and revenue sharing with other states.

Additional proactive steps to improve project planning would improve the State's chances of meeting ambitious Climate Act goals, and identifying potential problem areas as early as possible would leave more time to pursue alternative strategies for implementing renewable energy.

Incomplete Cost Assessment and Ratepayer Burden

In addition to ensuring a sufficient supply of renewable energy and the electric grid's ability to handle the transmission of renewable energy, successful implementation of the Climate Act requires recognition of the cost to achieve and maintain these goals. PSC emphasizes that the consideration of cost was not required in the Climate Act, nor were any sources of funding identified in it. The only source of funding available for PSC comes directly from the ratepayers. A report from the Council indicated that implementing and meeting Climate Act goals will cost between \$280 and \$340 billion. The Council has also estimated the benefits of the Climate Act to be between \$420 and \$430 billion, with roughly half of the presumed benefits coming from global reductions in harm caused by climate change. During the 2022 budget process, about \$559 million was allocated. However, this money was not used to offset the cost of procuring renewable electricity for ratepayers, but instead was used for other

clean energy programs such as the electrification of building systems and to promote and improve energy efficiency in schools.

PSC Orders show that stakeholder feedback was solicited and reviewed after the Climate Act was enacted and that those Orders authorized funding for the CES and Climate Act to be borne by the ratepayers. However, at least one PSC Commissioner stated the cost of the renewable energy conversion is greater than the capacity to finance it through ratepayers.

Compared to the 50 states and the District of Columbia, New York had the ninth highest price for electricity, at 21.2 cents per kilowatt hour (kWh) as of November 2022. Ten states have a price above 20 cents per kWh, including northeastern states such as New Hampshire, Massachusetts, Connecticut, Rhode Island, Maine, and Vermont. However, during the roughly 6-year period between the adoption of the CES in 2016 and September 2022, the average electricity prices in New York increased by 45%, while the average electricity price across the U.S. has only increased by 36%. This is not to imply that the CES is the sole contributor to increasing electric rates, but to show that electric prices are increasing substantially, which should be a concern for PSC.

Prior to the COVID-19 pandemic, there were almost 1 million customers in the State with unpaid utility bills, totaling over \$800 million. As of March 2022, that number was 1.2 million customers, owing a total of \$1.8 billion. While some of this can be attributed to the pandemic and the State's moratorium on energy shutoffs, some can also be attributed to the rising cost of utility services and supply. Most of these unpaid bills are being paid for by the remaining ratepayers through a surcharge on their utility bills or by State taxpayers through on-budget funding approved by the Executive and Legislature to assist residents and small business customers with the bills in arrears. Further, the Enacted Budget for State Fiscal Year 2023-24 included a provision to hold to 6% of household income the electric bills of low-income customers who participate in State programs to electrify home heating and appliances and undertake efficiency upgrades.

As New York pursues clean energy programs to fulfill the obligations of the Climate Act, it is imperative to identify sources of funding other than increased utility rates to mitigate impacts on ratepayers. Relying primarily on customer rate assessments to pay for these programs may increase the number of utility customers in arrears on their utility bills and/or Climate Act goals will not be met timely due to the lack of availability of resources.

The 10-point plan announced in October 2023 indicates that cost savings realized through federal support may be shared with ratepayers; however, PSC may need to pursue additional ideas to address expected rate increases as the State pursues Climate Act goals.

Reliance on Fossil Fuels

PSC asserted that New York is on track to reach the 2030 goal of 70% of the State's electric needs generated from renewable sources. However, this depended on the renewable energy projects under contract being completed in a timely manner and operating at or near capacity and on no other issues arising, such as an unforeseen or unplanned spike in demand or contracts being canceled (or the entity being otherwise unable to fulfill its obligations under the contract). In DPS's Draft Clean Energy Standard Biennial Review issued July 1, 2024, DPS states that it is behind in projects to achieve the 70% goal by 2030, which is now projected to be achievable in 2033.

When asked what the plan is in the event that Climate Act goals cannot be achieved, PSC responded:

The Clean Energy Standard (CES) programs fund the addition and continued operation of eligible technologies and does not require the retirement of the existing firm generators. It should also be noted that the CLCPA [Climate Act] provides the Commission with the authority to suspend or modify the CES (referred to as the "Renewable Energy Program" in the CLCPA – Section 4, Public Service Law § 66-p) if it determines the programs "impedes the provision of safe and adequate electric service." Therefore, if the reliability planning processes described above identify an emergent or imminent reliability concern, the Commission has the legal authority to temporarily suspend or modify the CLCPA programs where necessary.

We also note that there are current requirements in place for dual [sic] fuel/interruptible customers in utility tariffs to ensure that backup fuel supply is available in the event of any supply disruptions/outages. Similar requirements will be developed as needed though the statewide gas planning proceeding as we continue to transition the gas system to meet the CLCPA goals.

While PSC noted it can simply suspend or modify requirements of the renewable energy program to maintain a safe and adequate electric supply, that does not come without consequences, including potential additional increases in the cost of electricity. Further, the default plan is to rely on fossil fuels. This means that, in addition to the costs of incentivizing new renewable generation and building new required transmission infrastructure, fossil-fuel generation must be kept available, which may increase costs to ratepayers. Again, this adds to the growing costs of the transition, which so far have been almost totally borne by the ratepayers.

Undertaking a project without knowing the costs increases the risk that the project will not succeed. The absence of cost estimates also makes it difficult, if not impossible, to assess its impact on New Yorkers, including those who are currently struggling to pay their utility bills and who have faced rising costs over the past two decades. PSC officials stated that they expect the cost for renewable energy to decrease as time goes on, but that is not a certainty at this point. Further, PSC has not established a time line for decreasing costs of renewable energy.

Procurement Process Inconsistencies

Regarding the Large-Scale Renewable Program, NYSERDA issues RFPs that specify resource eligibility, price and non-price evaluation criteria, and the number of RECs or ORECs NYSERDA seeks to procure.

We reviewed projects in four of the five areas for which NYSERDA issued RFPs for procurement: Tier 1 - Primary method for acquiring renewable energy; Tier 2 - Baseline resources: facilities already in the generation stage, but upgrades or repairs may be needed (competitive or maintenance based); Tier 4 - Renewable energy into New York City; and Offshore Wind. We did not review projects for Tier 3, as ZECs are related to nuclear energy generation, and nuclear energy is not considered to be renewable for the purposes of the Climate Act, although it is counted as zero emissions.

Overall, we found that NYSERDA's procurements followed the Orders issued by PSC. However, we found NYSERDA did not always ensure the guidelines used from the RFP complied with internal procurement guidelines, and areas of the procurement process could be improved. During our review of the large-scale renewable projects, we found the rationales provided for the scores awarded to proposers and for scores that deviated from the established guidelines were not fully or consistently documented. While NYSERDA asserts that all scores were appropriate, documented rationale is important for explaining decisions to bidders whose proposals were not selected. When information that supports the evaluation and scoring of the proposal is not documented during the evaluation, the basis for important decisions could be lost and NYSERDA might not be able to adequately support that the appropriate contracts were awarded. NYSERDA did not follow certain aspects of its internal procurement guidelines when developing the RFPs, with instances of vague scoring guidance that could have led to inconsistent scoring of proposals.

During Tier 1, Tier 4, and Offshore Wind procurements, evaluators review and score proposals and identify a preliminary award group. A Panel of NYSERDA and DPS senior management then conduct a portfolio risk assessment of the preliminary award group, reach a final consensus score through discussion, and select the final award group for the procurement. If the Panel determines non-standard evaluation practices led to an anomaly in results, they may request the evaluators review and resubmit scores, if necessary. Ultimately, the Panel approves the final results and award contracts.

Our review of Tier 1 procurement RFPs issued in 2017 and 2018 found they did not fully comply with NYSERDA's internal procurement guidelines. NYSERDA produced emails explaining that the internal scoring guidance was found not to conform to the RFPs (the public-facing source of authority on how scoring should be performed) and that it deemed a change was necessary. After extensive discussions, NYSERDA used the RFP guidelines to score the proposals received in response to the 2017 and 2018 RFPs but did not officially amend the internal procurement guidelines until

2019. The discrepancy involved NYSERDA averaging the scores awarded by each evaluator in this category to conform to the RFPs' language instead of using the sum of ranks to calculate and award final scores, as required by the internal guidance.

NYSERDA's scoresheets include reference scores (suggested score based on meeting specific evaluation criteria, which NYSERDA provides to evaluators via procurement scoring sheets) and a matrix based on RFP guidance to help Panel members adhere to the evaluation methodology. Both the scoresheet and scoring guidelines allow Panel members to deviate from the reference scores up to the maximum allowable score in each project's subcategory. See Table 2 for scoresheet subcategory descriptions.

Table 2 – NYSERDA Scoresheet Subcategories

Subcategory	Description
Project Viability	Considers a series of factors that demonstrate whether the proposed project can reasonably be expected to be in service on or before the proposed commercial operation date.
Operational Flexibility and Peak Coincidence	Evaluates a generation facility's ability to produce energy at times and in locations where production can be problematic, and the facility's ability to mitigate future system integration burdens.
Incremental Economic Benefits	Evaluates the amount and type of economic benefits to NY which as the result of an REC contract and that would not have accrued but for the award of a contract.
Percent of Site Control	Evaluated according to the proportion of the project and interconnection site under a proposer's control through ownership, executed lease or executed binding option for ownership or lease, and the progress towards right-of way control the proposer has achieved through ownership, executed lease, or executed option.
Resource Assessment	Evaluates the level of progress in assessing the quality and accessibility of the renewable resource for the proposed bid facility.
Project Labor Agreement (PLA)	Considers the proposer's commitment to entering into a PLA and whether the PLA covers all necessary infrastructure.

According to the guidelines, deviation from reference scores should occur only when evaluators disagree with underlying data provided by the proposer, and evaluators must provide a rationale for any scoring deviation. However, neither the guidelines nor the scoresheets explained the number of fractional points (tenths and/or hundredths of a point awarded when evaluators believe a proposer has met and surpassed the criteria for the lower of two reference scores and has not met the criteria for the higher of the two reference scores) an evaluator should award when deviating from a reference score.

From the four project areas, we reviewed the 48 scoresheets that six evaluators completed while evaluating the eight proposals included in our review and found:

- 23 (5%) of the 432 scores awarded for Project Viability deviated from reference scores.
- Evaluators failed to provide sufficient rationale for 20 (87%) of the 23 deviations.

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- 15 of the 23 deviations did not express disagreement with the underlying data, although all reviewer and consensus notes included related commentary in varying degree of detail.

We also identified variability in scores created by vague and easily misinterpreted scoring guidance in two scoresheet subcategories. We recognize that these scoresheets record preliminary individual scores that inform the Panel's final consensus score, which is reached through discussion, but this issue reflects a need for further clarity in NYSERDA scoring guidance. For instance, while evaluating the Percent of Site Control subcategory, six evaluators awarded two different scores using two different interpretations of the scoring guidance.

Similarly, NYSERDA provided vague scoring guidance for the Resource Assessment subcategory. The RFP established a minimum threshold and a standard for the subcategory. The scoresheet instructed evaluators to use professional judgment to award a score within a specific points range to determine if the proposer had an assessment done determining the availability of the resource (sun or wind) to produce renewable energy. While one evaluator believed the proposer had met the criteria for receiving one point, the other five evaluators awarded a different score.

In accordance with the relevant PSC orders, the RFP also allowed proposers to earn up to 10 points for the Project Viability subcategory and up to another 10 for the Operational Flexibility and Peak Coincidence subcategory. The evaluation protocol for the procurement required Panel members to evaluate and score the non-price components of each proposal. Once Panel members completed their individual evaluations, they met to discuss the scores awarded to each proposal. The award model used Panel scores to generate a total score for each proposal, which NYSERDA converted to points. Our review of NYSERDA's scoring of the Project Viability and Operational Flexibility and Peak Coincidence subcategories found that it calculated both scores by summing the average of the Panel scores (not the consensus scores) awarded in each subcategory and failed to convert the scores to points using the award model, as required by the guidelines. This could change the score the proposer received for this subcategory, which could potentially change the ranking. However, NYSERDA asserts that this did not occur in this instance. NYSERDA acknowledges that it populated the award model using the individual reviewer's scores within the Incremental Economic Benefits subcategory, and that the scoring committee also made consensus decisions on the dollar amount of benefits that informed consensus scores but disagrees that this was out of alignment with the scoring guidance. However, NYSERDA agrees that the process by which Panel members provided final scores to award economic benefit scores in accordance with the established guidelines could have been clearer. The process of translating eligible economic benefit dollars to a points score was completed, but the process would benefit from a clearer description in the guidelines and clearer sequence of scores resulting in a final consensus score in the award model.

We did not have any findings for our review of Tier 2 projects. For Tier 4, we reviewed one successful proposal from the 37 proposals from the award model and determined the evaluators did not fully document support for five (25%) of the

20 factors for Project Viability and Operational Flexibility and Peak Coincidence subcategories evaluated. NYSERDA management asserts that the consensus score supports the final score given but agreed more documentation is needed regarding how the Panel reached that consensus. Additionally, NYSERDA management stated that they reviewed these instances of unsupported scores and determined the correct score was given. However, the documentation supporting the score should have been recorded at the time the scorers reviewed the proposal. This would not only document the basis for their score but would aid NYSERDA when it communicates results with unsuccessful proposers.

NYSERDA also provided vague scoring criteria for evaluators to use while evaluating the Project Labor Agreement (PLA) subcategory. The guidance required evaluators to award points depending on the specificity of the documentation provided and extent of the commitment made to a PLA. However, the guidance provided did not explain the difference between, for example, an affirmation of intent and a firm commitment to enter into a PLA, nor did the guidance specify whether letters of intent demonstrate an affirmation or a commitment.

We found evaluators interpreted and applied the PLA criteria inconsistently. For example:

- Three of the six evaluators awarded different points based on review of the same information in the proposal. One evaluator commented the proposer was committed to PLAs across the entire project, while the two evaluators commented that a statement in the proposal, “we will require ... to negotiate and sign a PLA,” demonstrated a firm commitment.
- One evaluator awarded the number of points appropriate for providing an affirmation of intent, even though this evaluator determined the proposal did not reference PLAs.
- One evaluator mentioned letters of intent to execute PLAs but awarded 0 points.
- One evaluator awarded the points appropriate for a proposer who provided memoranda of understanding to execute a PLA without comments or an explanation.

NYSERDA acknowledged that the guidance could have been clearer and stated it would better define PLA scoring guidance should another Tier 4 solicitation be issued in the future. However, NYSERDA stated that any inconsistencies regarding scoring guidance interpretation among individual evaluator scores did not affect the scoring committee consensus scores that counted toward project selection because, as part of scoring committee sessions, the scoring committee adopted consensus scores based on shared and consistent interpretation of the guidance.

PSC issued its Order Establishing Offshore Wind Standard and Framework for Phase 1 Procurement in July 2018. This Order adopted the goal of procuring ORECs associated with 2.4 GW of offshore wind capacity by 2030 and authorized NYSERDA to implement Phase 1 of the program. Phase 1 required the procurement of ORECs

associated with approximately 800 MW of offshore wind to be contracted in 2018 and 2019. Accordingly, NYSERDA released an RFP on November 8, 2018 to procure ORECs produced by one or more offshore wind generation facilities located in the ocean waters of the United States and evaluated proposals based on price and non-price factors.

We compared the 20 consensus scores (20 categories for three different projects) awarded to three proposers for offshore wind projects to the scoring guideline guidance and determined that support or basis for the consensus scores was not fully documented in 12 of the 60 scores. Although NYSERDA stated that it, in response to our findings, reran the model and, as a result, found no changes, unsupported scores could result in other scores changing in the future. NYSERDA officials stated they reviewed the issues for offshore wind projects that we identified in the scoring and determined all the scores awarded were appropriate.

In summary, without fully documenting the Panel's decision-making process and discussions, NYSERDA may not be able to fully support how contracts were awarded or that the State has received the greatest amount of economic and environmental benefits intended through the RFP process for large-scale renewable projects.

In response to our audit, NYSERDA stated it has taken or plans to take steps to improve the procurement process deficiencies we identified, including:

- Developing streamlined, complete, and specific scoring guidelines for evaluators.
- Utilizing an aggregation of the scorers' individual preliminary scoresheets to populate the scoring rubric used for consensus scoring.
- Eliminating the use of the reference score.
- Requiring NYSERDA to capture any deviations from the scoring guidance, which should be rare, in the Team Memo or other memo to file.
- Reviewing preliminary scores and consensus scores for all RFPs to verify evaluators adhered to scoring guidelines, justified deviations, and only awarded points for eligible economic benefits.
- Requiring all scorers to certify in affirmation of the final consensus score.
- Including specific language in an appendix to the RFPs, providing additional details for eligible economic benefits.
- Requiring detailed consensus meeting notes describing all discussions for each non-price criteria, including the Project Viability criteria.
- Engaging an external auditor to evaluate alignment among all RFP documentation and processes for the 2022 Tier 1 and Offshore Wind awards.
- Hiring a dedicated Contracts Manager to support the large-scale renewables portfolio.

Further, the 10-point plan announced in October 2023 includes a point to accelerate and streamline the bidding process, which may have an effect on some of the concerns detailed above.

Any steps taken to address inconsistencies and vague guidelines in the proposal scoring process would provide greater assurance that proposals are being scored consistently and that projects are being awarded appropriately, promoting the chances of the State's success in reaching Climate Act emission reduction goals through carefully procured renewable energy projects.

Recommendations

For PSC:

1. Begin the required comprehensive review of the Climate Act, including assessment of progress toward the goals, distribution of systems by load and size, and annual funding commitments and expenditures.
2. Continuously analyze the existing and emerging risks and known issues to ensure they are evaluated and addressed to minimize impact on the State's ability to meet Climate Act goals.
3. Analyze the expected renewable energy generation of projects that are not yet operable, taking into consideration the possibility of project cancellation (e.g., using the known historic cancellation rate) to provide a more accurate representation of the likelihood of and progress toward achieving Climate Act goals. Additionally, update the expected dates for when the projects under construction will be operational.
4. Conduct a detailed analysis of cost estimates to transition to renewable energy sources and meet Climate Act goals. Periodically update and report the results of the analysis to the public.
5. Assess the extent to which ratepayers can reasonably assume the responsibility for covering Climate Act implementation costs. Identify potential alternative funding sources.

For NYSERDA:

6. Take steps to ensure proposals are evaluated consistently and contracts are awarded to the most qualified proposers, including:
 - Adequately documenting the scoring process.
 - Requiring all evaluators to provide justification for their individual and consensus scores.
 - Developing more complete and specific scoring guidelines for evaluators.

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News

24 July 2024



Despite the rapid expansion of renewables, the huge growth of electricity demand in key economies indicates the world's consumption of coal will stay largely stable this year and next

Global coal demand is set to remain broadly unchanged in both 2024 and 2025 as surging electricity demand in some major economies offsets the impacts of a gradual recovery in hydropower and the rapid expansion of solar and wind, according to the IEA's latest update on coal market trends worldwide.

The world's use of coal rose by 2.6% in 2023 to reach an all-time high, driven by strong growth in China and India, the two largest coal consumers globally, the IEA's [Coal Mid-Year Update](#) finds. While coal demand grew in both the electricity and industrial sectors, the main driver was the use of coal to fill the gap created by low hydropower output and rapidly rising [electricity demand](#).

In China, which accounts for more than half of global coal consumption, electricity generation from hydropower has been recovering in 2024 from last year's exceptionally low levels. This, alongside the continued rapid deployment of solar and wind, is significantly slowing down the growth in coal use in 2024. But another major annual increase in China's electricity demand, forecast at 6.5% in 2024, makes a decline in the country's coal consumption unlikely. In India, coal demand growth is set to decelerate in the second half of 2024 as weather conditions return to seasonal averages. In the first half of the year, India's coal consumption rose sharply as a result of low hydropower output and a massive increase in electricity demand due to extreme heatwaves and strong economic growth.

Coal demand in Europe is continuing on the downward trend that began in the late 2000s, largely due to emissions reduction efforts in power generation. After having fallen by more than 25% in 2023, coal power generation in the European Union is forecast to drop by almost as much again this year. Coal use has also been contracting significantly in the United States in recent years, but stronger electricity demand and less switching from coal to natural gas threaten to slow this trend in 2024. Japan and Korea continue to reduce their reliance on coal, although at a slower pace than Europe.

“Our analysis shows that global coal demand is likely to remain broadly flat through 2025, based on today’s policy settings and market trends,” said **Keisuke Sadamori, IEA Director of Energy Markets and Security**. “The continued rapid deployment of solar and wind, combined with the recovery of hydropower in China, is putting significant pressure on coal use. But the electricity sector is the main driver of global coal demand, and electricity consumption is growing very strongly in several major economies. Without such rapid growth in electricity demand, we would be seeing a decline in global coal use this year. And the structural trends at work mean that global coal demand is set to reach a turning point and start declining soon.”

On the supply side, global coal production is expected to decrease slightly in 2024 after steady growth the year before. In 2024, coal production in China is moderating after two years of staggering growth. In India, the push to boost coal production continues, with a supply increase of around 10% expected in 2024. In advanced economies, coal production is in decline, broadly reflecting demand.

The report finds that trade volumes are at the highest levels ever seen despite the collapse of imports in Europe and the decline in imports in Northeast Asia (Japan, Korea and Chinese Taipei) since 2017. However, other countries are stepping in to take up available supply. In 2024, Vietnam is set to become the fifth largest coal importer, surpassing Chinese Taipei. Imports to China and India remain at all-time highs.

Despite declining domestic production in China in the first half of this year, tighter sanctions on Russian producers and disruptions in a few exporting countries, the global coal market is well supplied, according to the report. With more stable natural gas prices than in recent years, coal prices remained range-bound in the first half of 2024. They have returned to levels last seen before the global energy crisis but remain elevated due to inflationary pressures.

Coal Mid-Year Update - July 2024

About this report

Coal markets are stabilising following recent years of uncertainty unleashed by the global energy crisis. Coal remains the primary global energy source for electricity generation, and increased demand for electricity continues to fuel global coal demand. Clean energy technologies such as solar, wind and hydropower are gaining traction but what impact have recent world events had on their uptake, and are we yet at the point of a structural decline in coal demand?

This Coal Market Update, which provides the latest analysis of coal demand, production, trade and prices, finds that coal demand, supply and trade volumes reached an all-time high in 2023, confirming previous forecasts. It also provides preliminary estimates for the first half of 2024 and outlooks for the full year 2024 and towards 2025, based on recent trends, data and forecasts for economic growth across regions.

Coal continues to be the largest source of carbon dioxide (CO₂) emissions and, while carbon capture, utilisation and storage technologies can help reduce coal-related CO₂ emissions, the ongoing use of coal has major implications for efforts to reach international energy and climate goals.

Overview

Demand

Global coal demand in 2023 grew by 2.6% to reach an all-time high

Driven mainly by strong growth in the People's Republic of China and Hong Kong (hereafter, "China") of 6%, or 276 million tonnes (Mt), and in India (9.2% or 105 Mt), global coal demand grew by 2.6% in 2023, to reach a new record of 8.7 billion tonnes. The increases in China and India more than offset significant declines in the European Union (-22.5% or -103 Mt) and the United States (-17.3% or -81 Mt)

Coal consumption grew in both electricity generation and industrial sectors, where the iron and steel industry is the largest consumer. Power generation from coal increased by 1.9% in 2023 to 10 690 terawatt-hours (TWh), setting a new record. As a result, coal continues to be the largest source of global electricity generation globally.

In 2024, global coal demand is expected to stay broadly flat

A recovery in hydropower in China combined with significant expansion of wind and solar is expected to slow the growth of coal power generation globally in 2024, albeit with contrasting trends across different regions. Since April, hydropower production in China has rebounded, but electricity consumption in China has grown strongly due to robust increases in demand both in the services sector and industry. At the same time, coal-intensive heavy industries in China (i.e. cement and steel) continue to struggle due to the sluggish real estate sector.

Coal demand increased in both India and Viet Nam in the first half of 2024 due to strong electricity demand and low hydropower output. Meanwhile, India's economy is growing rapidly, pushing up industrial coal consumption. However, India's coal demand growth is expected to slow in the second half of 2024, as the unusually strong increase in demand in the first half of the year was driven by exceptional weather conditions.

In the United States, where coal use has been in decline since 2008, coal demand remained almost unchanged year-on-year in the first half of 2024 due to lower switching from coal to natural gas in the electricity sector. In the European Union, after a 22% decline in coal demand in 2023, we expect a decrease of 19% in 2024, mostly driven by the electricity sector, where the expansion of renewables continues while demand remains relatively weak.

Based on our current assumptions, we expect global coal demand to remain broadly flat for the full year. However, weather, economic activity, natural gas prices and other factors could still result in slight fluctuations. This is particularly true for China's electricity, sector which accounts for one-third of global coal demand.

In 2025, global coal demand is forecast remain on a plateau

The electricity sector accounts for two-thirds of global coal demand. In most countries, coal demand in the power sector fluctuates more significantly than in industrial sectors, largely because there are fewer substitution options for industrial coal use. As such, changes in global coal demand trends are mainly driven by the electricity sector. At the same time, the increasing impacts of unforeseen extreme weather events is making electricity demand harder to predict in the short term.

At a regional level, coal demand in advanced economies is clearly on a downward trend – while in some emerging economies, further growth in demand is very likely. This leaves China as the key variable. Given the most recent data, global coal demand is expected to remain broadly unchanged in 2025 compared with 2024, at around 8.7 billion tonnes.

Supply

Global coal production reached an all-time high in 2023, close to 9 billion tonnes

In 2023, production by the three largest coal producers, accounting for 70% of global output, grew considerably: China (3.4%), India (12%) and Indonesia (13%). As a result, global coal production reached an all-time high of 8.9 billion tonnes.

China expanded coal production to guarantee energy security and reduce price volatility. In India, energy security is also a high priority, as frequent shortages in the past have turned attention toward reducing imports. Indonesia's production, despite the increasing domestic need, is export oriented. As such, its production grew in 2023 to meet demand in international markets. In the United States, the fourth largest producer, coal output declined by 2.8%, much less than demand, due to higher exports and stock building. In the Russian Federation (hereafter, 'Russia') data show only a slight decline in production, despite exports being subject to sanctions.

Production levels in 2024 are expected to be similar to 2023

Our analysis for the first half of 2024 shows a slight decline in global coal production of 0.7% year-on-year, driven mostly by China, which recorded a decline of 1.7%. Responsible for half of global coal output, China has intensified safety checks in Shanxi province, the country's largest producing region, which accounted for 1.3 billion tonnes of coal output in 2023. Pressure to increase domestic production has declined due to slowing demand growth, healthy stocks across the supply chain, and higher imports. India continues to encourage production to avoid coal shortages and reduce imports. Meanwhile, Indonesia aims to produce 720 Mt in 2024, but has mining approvals for more than 900 Mt. Indonesia's coal production will ultimately depend on international demand, in particular, that of China.

Assuming no new safety inspection programmes, Chinese production is set to recover partially in the second half of 2024 to result in a slight decrease of 0.8%. In India, the strong push to increase production continues and even intensifies. Coal India, the cornerstone of domestic production, is increasing

production at growth rates close to 10%. However, production by captive blocks and commercial mines is growing much faster. In Indonesia, we expect little growth after last year's surge.

In the United States, coal production is estimated to have declined 17% in the first half of 2024, partially due to a higher comparison base in 2023 and high stocks in power plants. Despite coal demand in the United States remaining flat in the first half of 2024 rather than decreasing, US coal production is set to continue to decline because of high stocks. In Russia, production is forecast to remain stable in 2024, with domestic demand still robust and exports expected to decline slightly. In Europe, coal production is set to decline. Against this backdrop, our analysis indicates a marginal decrease in global coal production in 2024.

Trade

Global coal trade volumes reached an all-time high in 2023

The decrease of around 50 Mt in two key importing areas, Europe and Northeast Asia (Japan, Korea and Chinese Taipei) was more than offset by growth in India, Southeast Asia and China in 2023. Chinese imports reached unprecedented levels of 480 Mt, surpassing the former record by 140 Mt or 40%. This was due to strong demand, stock building, and lower prices than in 2021-2022, which made imports more attractive despite China's boost in domestic coal production since October 2021. This pushed the global international coal trade volume above 2019 highs, surpassing 1.5 billion tonnes for the first time. Seaborne coal trade also reached an all-time high of 1.38 billion tonnes.

All major exporters increased volumes in 2023, except for Russia, due to sanctions. Indonesia became the first exporting country to exceed 500 Mt in a year, demonstrating its unmatched flexibility to ramp up production and exports. Mongolia increased exports to 70 Mt, more than doubling the 2022 figure and more than quadrupling 2021 exports, propelled by improvements in infrastructure and the demand in China for cheap coal.

Trade volumes are expected to reach a new high in 2024

The weak coal demand in Europe and Northeast Asia will result in lower coal imports. Japan, Korea, Chinese Taipei, Germany and other countries in the European Union (EU) are among those in which coal imports, in particular thermal coal, are expected to decline. By contrast, in China, India and Viet Nam, we expect coal imports to increase. The analysis shows trade volumes in 2024 will surpass 2023 volumes marginally and hit a new record. However, this comes with an important caveat, notably the potential for volatile swings in China's import volumes if there are policy changes.

On the supply side, Indonesia, and to a lesser extent, Australia, Colombia and the United States, are expected to supply the additional volumes required to meet others' import demand and offset reduced Russian exports. Mongolian exports to China, mostly coking coal, are expected to grow.

Prices

More stability in prices after recent volatility

The unusual market conditions of recent years, due to the Covid-19 pandemic, the economic rebound, Russia's invasion of Ukraine, and the subsequent energy crisis, have led to unprecedented energy price fluctuations. The impact on coal was significant, resulting in very high prices and volatility as well as exceptional differences between qualities and geographical regions. Since 2023, coal prices have remained higher than before the Covid-19 pandemic but remain in a normal range. During the last year, thermal coal prices have been less stable than in the 2017-2019 period. Generally, they have been slightly higher, pushed up by cost inflation and some disruption due to sanctions affecting Russia, which remains the world's third largest coal exporter.

Demand

Global coal demand saw another all-time high in 2023

In line with our estimates in [Coal 2023](#), global coal demand reached a new record of 8.70 billion tonnes (Bt) in 2023, surpassing the previous year's record by 2.6%. Once again, global coal consumption was led by Asia where more than 80% of coal consumption took place. Conversely, Europe and the United States saw significant declines in coal consumption in 2023.

China, the world's largest producer, importer, and consumer of coal, was recorded with growth in both power (8%) and non-power (2.5%) use of coal. After severe energy shortages and overall weak economic performance in 2022, electricity demand in China rebounded in 2023 growing by 7%. Despite accelerating deployment of wind and solar, most of this growth was met by coal-fired power generation due to low availability of hydroelectric plants, as coal is the main source of flexibility. Together with moderate growth in metallurgical (met) coal consumption and almost flat demand for non-power uses of thermal coal, China's coal consumption increased by 276 Mt, reaching a total of 4 883 Mt in 2023. The overall energy consumption growth rate of coal was slightly lower due to a quality deterioration following a leap in the domestic production of coal.

India has been the second largest source of growth in global coal consumption. Its strong economic performance has propelled power demand, and in turn, demand for coal in power generation (+10%). Unlike in many other parts of the world, in India, growth in renewable energy sources is unable to keep pace with the growth in power demand. Moreover, India's focus on infrastructure has led to more consumption of cement and steel, materials typically produced with coal. As a result, overall coal consumption aggregated to 1 251 Mt in 2023, an increase of 9% compared to the previous year.

Coal consumption in the United States and European Union plunged by 17% and 23% respectively in 2023, representing their most significant annual decline of this century apart from the reduction caused by Covid-19. In the United States, coal consumption decreased because of the retirement of coal plants, decreasing power demand and low gas prices. At the same time, after high coal consumption in 2022, coal demand in Europe returned to a decline, the trend for most of this century.

Beyond that, there were significant regional differences in coal demand. While coal consumption in the ASEAN region mostly increased (+38 Mt), countries like Japan, Korea and Australia saw moderate declines below 10%.

Growth in global coal demand is expected to flatline in 2024

During the first six months of 2024 we expect global coal consumption to have grown by 1.0% to a total of 4 308 Mt. This is despite consumption of coal being expected to remain unchanged in non-power applications. However, coal consumption in the power sector is expected to have grown by 1.4%. The major contributors to growth within the power sector have been India (+44 Mt) and China (+22 Mt), while the European Union is estimated to exhibit the strongest decline (-2 Mt).

In the second half of 2024, we expect a decline in coal-fired power generation to partially offset gains from the first half, resulting in coal consumption in the power sector of 5 886 Mt for the full year, up 0.5%. Together with stable consumption of coal in non-power applications in the second half of 2024, this would imply a slight increase in global coal consumption. We expect it to reach 8 737 Mt (+0.4%) for the full year 2024.

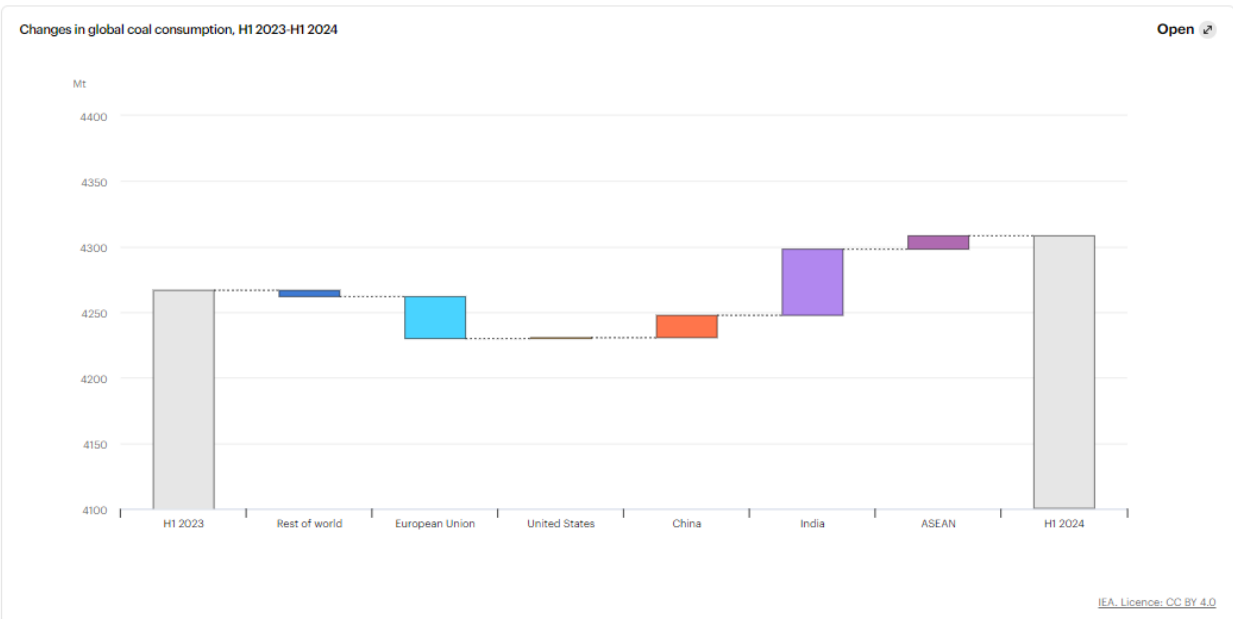
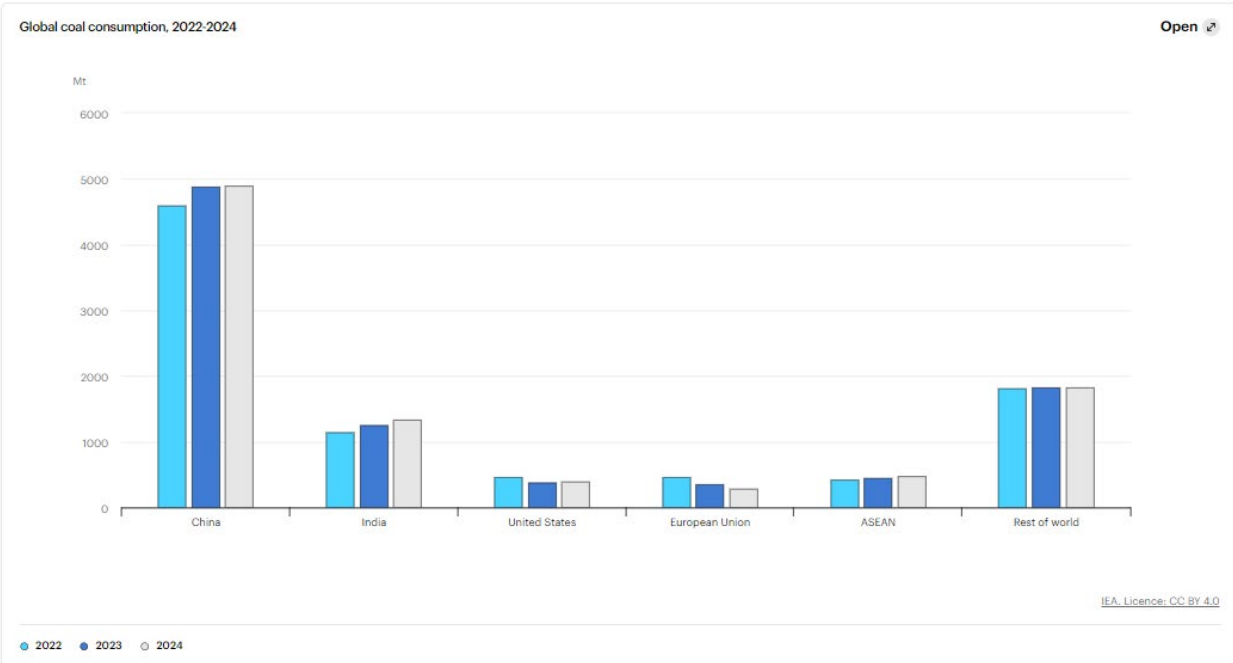
In our last publication we forecasted coal demand would decrease in 2024 with a moderate decline thereafter. However, this forecast was subject to two important caveats: a recovery of hydropower generation in China after years of low rainfall, and a slowdown in Chinese electricity demand growth. While hydropower has made a strong recovery since April 2024, growth in electricity demand in China

has remained robust. In India, the second largest coal consumer, heatwaves and low availability of hydropower in the first half of 2024 have increased the use of coal for power generation and therefore, coal demand. In addition, countries like Viet Nam and the United States have contributed to the adjustment in our forecast for 2024 due to weather incidents and reduced switch to gas.

Following the EU's major drop in coal consumption in 2023, we expect the European Union to show another significant reduction in 2024. After the difficulties of the 2022 energy crisis, and despite the unprecedented rise in gas prices being largely overcome, the European Union continues to show weak industrial activity and stagnating growth in power demand. Here, the rise of renewables combined with improved performance of nuclear is expected to significantly affect coal demand. We estimate the EU's coal demand will shrink by 19% down to 287 Mt, making it the first time in IEA records that the coal demand of EU countries falls below 300 Mt. Conversely, we estimate the United States to show no significant changes in coal consumption in 2024 after last year's big decline. Last year, we forecast a decline, but the growth in power demand is higher than expected and the coal-to-gas switch has reduced.

In China, we estimate that coal-fired power generation increased about 1.5% during the first half of 2024. High precipitation starting in April 2024 increased the availability of hydroelectric power. Given the accelerating deployment of renewables, particularly solar PV, we estimate Chinese coal demand in the power sector will grow by 0.9% in 2024. This would be the lowest growth rate since 2015. However, there is significant uncertainty concerning the availability of hydropower and the growth in power demand, which are key determinants for coal demand in China. Coal is used for many different applications beyond the power sector in China. The iron and steel industry, consuming mostly met coal, is the largest non-power consumer. Production of building materials (mainly cement) and chemicals (mostly through coal gasification) are the main consumers of thermal coal. Overall, we expect non-power demand to remain flat amid declining use in the building sector owing to a dragging real estate market, whereas consumption of coal used for coal gasification is expected to increase.

In India, for the first half of 2024 we estimate the consumption of thermal coal for power generation to have increased almost 10% and met coal consumption in India to have increased by just over 2%. Heat waves have escalated electricity demand while hydropower output has been very low. With this trend likely to decline during the second half of the year, we estimate a coal demand of 1 330 Mt in 2024, up 6% compared to 2023. Weak performance of hydropower and strong growth in power demand are also causing significant growth in coal demand in Viet Nam during 2024 (+12%).



Coal demand is estimated to decline marginally in 2025

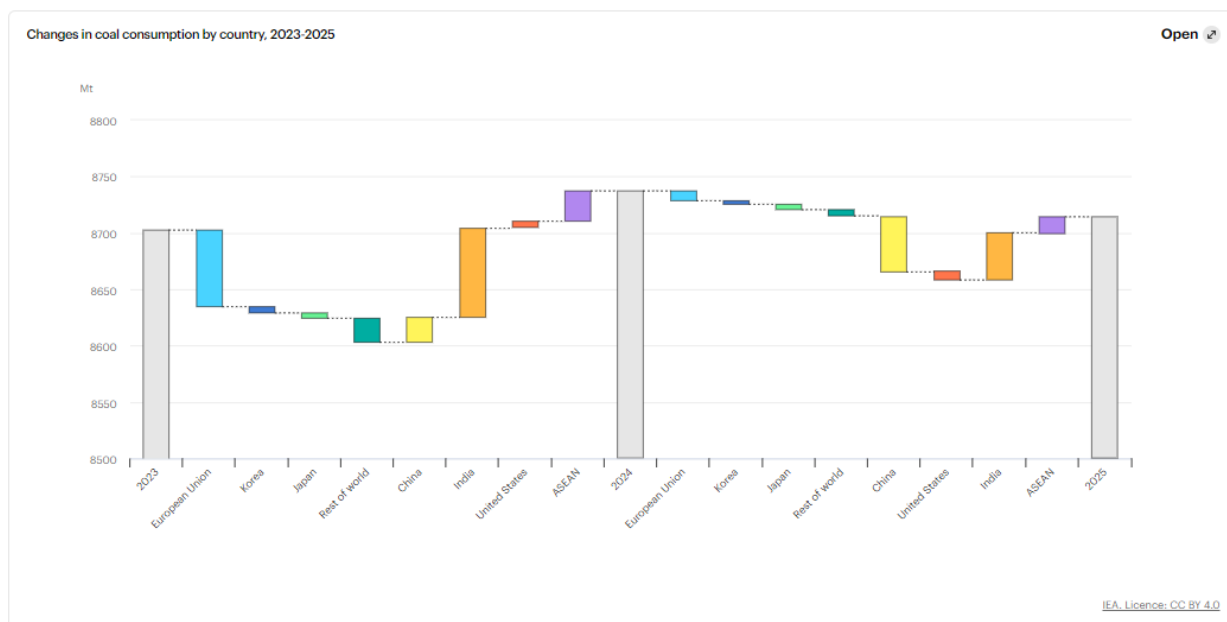
In 2025, we estimate global coal demand to enter a trend reversal after four years of growth, decreasing slightly by 0.3% to a total of 8 714 Mt. A key reason for this is that China, which has traditionally driven coal demand growth, is likely to show its first decline in coal demand since 2016. This combined with ongoing declines in the European Union, United States, Japan, Korea, and other parts of the world, is expected to outweigh continuous growth in India and ASEAN.

Global coal consumption is highly driven by developments in the power sector, which currently accounts for more than two-thirds of global coal use. Within the power sector, coal demand is highly affected by weather. Fluctuations in weather conditions influence both the supply and demand side, particularly relating to the growing capacities of weather-dependent renewable energy sources and ongoing

electrification. Additionally, fundamental drivers, such as the production of clean energy technologies like electric vehicles or global trends like AI propelling demand from data centres, will have a significant impact on electricity demand, and in turn, coal demand in the coming years. Indeed, policies to phase out coal and reduced support for coal from institutions like banks or insurers in many parts of the world are going to put further pressure on coal demand. Regionally, the expected decline in coal demand in developed economies and the growth in some emerging countries seems certain, leaving China as the largest source of uncertainty, potentially deciding the global trend for coal demand.

For 2025, we estimate Chinese coal demand in the power sector to decline by 1.1%, since renewables are likely to outgrow power demand. However, this forecast comes with caveats regarding electricity demand, hydropower output and solar PV curtailment rates. If there are no remarkable changes in coal demand for non-power applications, China is estimated to show a reduction by 49 Mt in 2025, contributing the most to the reduction in global coal demand. On 15 July, 2024, China issued the Action Plan for Low-Carbon Coal Power Transformation (2024-2027), which supports three key technologies to reduce CO₂ emissions from coal plants: biomass, ammonia co-firing and Carbon, Capture, Utilisation and Storage. This Plan will affect coal consumption in China from 2025 onwards, but it is too early to make a detailed assessment of the impact, so it is not included in this report. Further reductions in coal demand are estimated to occur in the United States (-8 Mt or -2.0%) and in the European Union (-9 Mt or -3.0%) given the region's ongoing efforts to phase out coal.

In India, the rise of renewables will likely not cover the growth in power demand. Therefore, we expect coal plants to capture part of the growth. Given India's rising demand for coal in industrial applications, we estimate aggregate coal demand to increase by 3.1% to 1 371 Mt in 2025. In 2024, India aims to commission 14 GW of new coal-fired capacity, more than four times the annual average in the last five years. Likewise, coal demand in ASEAN is estimated to grow by 3.0% in 2025.



Supply

Global coal production in 2023 grew close to 9 Bt

Global coal production in 2023 grew by 3.1% to 8 970 Mt, an all-time high, driven by a push from the top three coal producers China, India and Indonesia. Their combined total coal output increased by about 356 Mt, compared to 2022, resulting in a share of 72% of global coal production. At the beginning of this

century, this share stood at slightly more than a third of global production, underscoring the substantial shift in global coal production over the last two decades.

After supply shortages in 2021, Chinese officials called for a boost in production, which resulted in a significant increase in 2022, and continuous growth throughout 2023. Nonetheless, the rise in production came with a higher rate of mine accidents and a notable deterioration of quality. Given China's growing coal output and growing import volumes, it has shown a total supply of coal totalling more than 5 Bt, which dramatically exceeds any other country or region.

In Indonesia, production reached 775 Mt, significantly exceeding the production target of close to 700 Mt for 2023. Growth in domestic requirement as well as demand from China and other importers in that region have propelled the surge in Indonesian coal production.

As expected in our previous forecast, India has surpassed the mark of 1 Bt of coal production in 2023, showing a growth of 12% or 116 Mt. In India, recent investment in infrastructure and in mine expansions has supported increased coal production.

In 2023, Australian production grew by about 3.8% to 450 Mt. In Australia, a change in weather pattern from La Niña to El Niño during 2023 improved overall mining conditions, although bushfires and labour shortages diminished the favourable conditions. In the United States, production declined by 2.8% in 2023, as domestic demand slipped amid low gas prices. However, that decline is much lower than demand, owing to higher exports and strong stock building. Likewise, a slight decrease in coal output has been observed in Russia (-1.1%), where sanctions are affecting exports.

Global coal production is expected to flatten in 2024

We expect global coal production in 2024 to decrease very slightly by 0.3% to 8 939 Mt. At a regional level, we expect growth in India and Indonesia, which are overcompensated by declines in China and in the United States.

In China, security issues in mining in the Shanxi region and subsequent stricter security checks reduced the production of coal in the first half of 2024. Shanxi is the largest coal producing region in China, surpassing 1.3Bt, and therefore, producing more than any country. However, we expect the decrease of 1.7% in the first six months to be moderated in the second half, as security checks are relaxed. For the full year of 2024, we expect a moderate decrease of 38 Mt to a total of 4 572 Mt in Chinese coal production. June 2024 already recorded a year-on-year increase of 3.6%. Given an anticipated slowdown in Chinese coal demand growth in the second half of 2024, we note that a recovery in production will have implications for imports and already ample stocks.

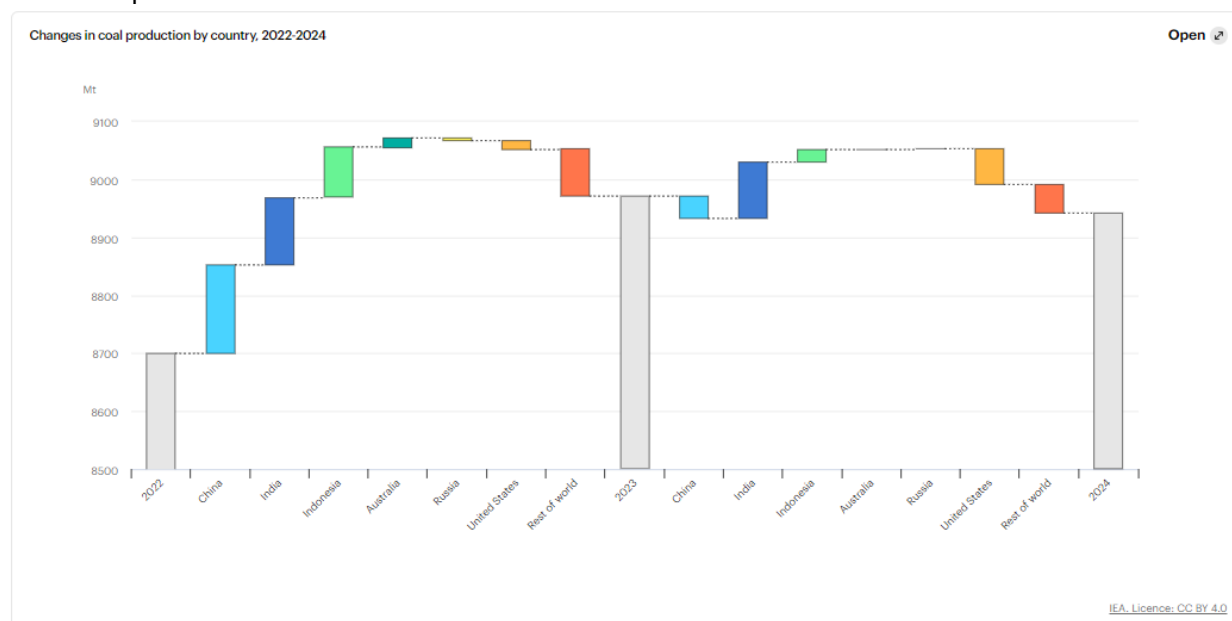
In Indonesia, we expect coal production to show slight growth during 2024. Indonesia's Ministry of Energy and Mineral Resources has raised the coal production quota for 2024, also known as RKAB, by nearly 30% to 922 Mt. However, this number assumes operation at full capacity and typically producers reach usage of around 80%. Despite heavy rains in Sumatra and South Kalimantan in the first quarter of 2024, coal production in the first four months of 2024 has already gained 8.6%. In addition, domestic demand for coal is expected to increase, fuelled by electricity, the nickel industry and others. Nonetheless, close to 30% of Indonesian production is consumed in China, whose demand is estimated will flatten for the rest of the year. Against this background, we estimate a production of around 800 Mt in Indonesia for the full year 2024, growing by 2.9%.

In the United States, coal production in the first six months of 2024 was down 17% compared to the first half of 2023. Despite a slight increase in demand in 2024, coal production is expected to decrease by 12% down to 463 Mt in 2024, due to strong stock building in US power plants in 2023.

Aggregate coal production in Russia shows no sign of significant change in 2024. Nonetheless, there is some shift between producers within Russia. For example, Elga showed a growth of 31% during the first five months in 2024 to more than 10 Mt, but Russia's biggest producer SUEK, currently under US sanctions, records a reduction of 4%. It is worth noticing that Elga was included in the US sanction list in June 2024, so it is yet to be seen how this impacts its production.

India continues to push coal production, as highlighted by a growth of almost 10% in the first half of 2024, with June exhibiting an outstanding growth of more than 14% compared to the same period in 2023. Given India's intensified efforts to overcome energy shortages and, at the same time, reduce import quantities, we expect its production to gain 9% for the full year. Thus, India is expected to contribute the most to global coal production growth, under the assumption that China will not trigger its production in the second half.

Coal production in Australia showed no significant variation in the first quarter of 2024 compared to the first quarter of 2023. In June 2024, an underground fire in the Grosvenor mine reduced the production of met coal, however, we do not expect this to significantly affect Australia's annual output. Thus, we expect Australian production to remain flat in 2024 at about 450 Mt.



Trade

Global coal trade was at an all-time high in 2023

Following significant shifts in trade flows during 2022, global coal trade saw a new record in 2023 with growth in both thermal (+7%) and met coal (+15%) exports. Both seaborne trade, which stood at about 1.38 Bt in 2023 and total trade, slightly surpassing the mark of 1.5 Bt, reported historical highs. Indonesia has once again driven the growth in thermal coal exports, largely catering to rising demand in China. Despite high stock inventories and significant growth in domestic production, Chinese imports from Indonesia surged by 29%, reaching approximately 220 Mt, equivalent to about 15% of global coal trade. As Indonesian exports to its second largest buyer, India, remained rather flat, almost all the growth in Indonesian exports can be attributed to Chinese imports.

Australia's thermal coal exports rose by more than 10% during 2023, after China ended its unofficial ban of Australian coal and the end of La Niña improved mining conditions. In contrast, Australian met coal exports faced a decline after operational problems in some mines. Thermal and met coal exports from the United States have grown by 17% on aggregate in 2023, despite international coal prices falling since

2022. The decline in domestic coal consumption left the opportunity for some thermal coal to be sold in international markets.

The surge in global met coal trade was largely driven by Mongolia, which more than doubled its exports during 2023 to around 54 Mt. China is almost the only buyer of Mongolian met coal, although other countries are exploring the possibility of receiving Mongolian coal. A new railway between Talvan Tolgoi in southern Mongolia and Gashuunsukhait-Gantmod at the border with China commenced operation in late 2022 and supported Mongolia's rising exports to China.

Developments in Russia are less clear since its invasion of Ukraine. However, based on the changes in importer's demand and rearranging trade routes, we estimate Russian met coal exports to have recovered from 2022, while thermal coal exports have likely decreased.

In conclusion, all major exporters including Colombia and South Africa have increased their exports during 2023, except Russia.

Trade in 2024 will set another record if Chinese demand continues

Global coal trade in 2024 is projected to see a modest increase of 1.0%. However, this forecast is highly sensitive to developments in China, which is the destination of almost every third tonne of coal traded globally. In the first six months of 2024, Chinese imports grew by 12% despite healthy stocks, which is remarkable considering that imports in 2023 were 140 Mt higher than the former record. Nonetheless, for the remainder of the year, we expect Chinese imports to remain flat as a recovery in hydropower is expected to reduce growth in coal demand and an increase in production is likely once safety inspections in Shanxi have been relaxed, resulting in a small annual growth.

India, the second largest importer globally, showed a remarkable growth of about 21% in seaborne coal imports during the first four months of 2024. India extended the obligation to blend imported coal in plants designed to use domestic coal until at least October 2024, despite significant growth being observed in the domestic production of coal. This underscores India's goal to guarantee security of supply amid fast growing demand. In addition, the extension of the blending obligation is another indication that strong imports by India will persist throughout 2024. Even though India seeks to reduce the quantity of imports, new routes are being established such as the railway from Russia to India via Iran, and a trial of met coal deliveries from Mongolia.

Japan, Korea and Chinese Taipei recorded decreasing imports in 2023 and are expected to continue to lower their imports slightly during 2024. Conversely, Viet Nam exhibits a remarkable change in coal imports, growing 43% in the first four months of 2024 owing mainly to low hydropower availability and strong and continuing growth in power demand. However, this increase is expected to flatten for the rest of the year.

Considering significant demand for imports in China, India and other countries in the region such as Viet Nam, we expect Indonesia to meet a large proportion of the additional demand. In 2024, we forecast Indonesia to export 534 Mt, growing 3% year-on-year. Against this background, Indonesia is set to account for almost half of global thermal coal exports in 2024. This share is lower when measured in energy terms, as the share of low calorific value (CV) coal in Indonesia's exports is larger than the other major exporters.

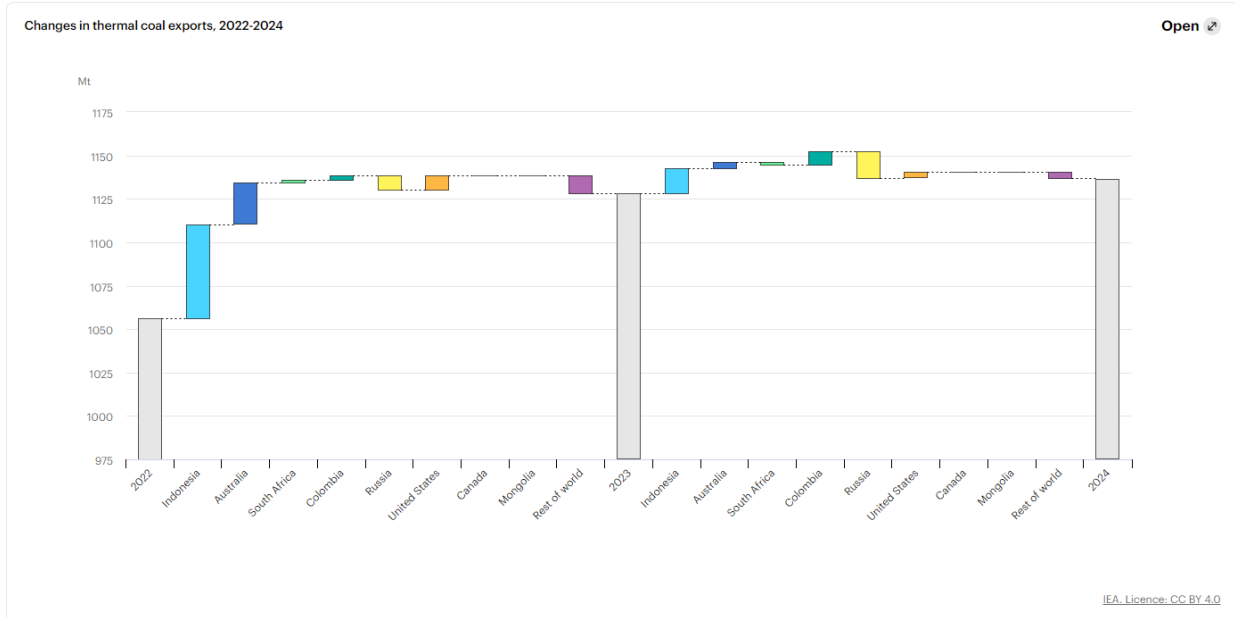
We expect the biggest decline in coal exports to take place in Russia in 2024 (-16 Mt). After sanctions following Russia's invasion of Ukraine, Russia faces further difficulty because of US bans on major Russian producers which, in turn, signalled other importers with trade relations with the United States, to reduce Russian coal imports. Russian producers are also encountering national railway transport issues in the east and export duties that can limit their international competitiveness given their price sensitive buyer base.

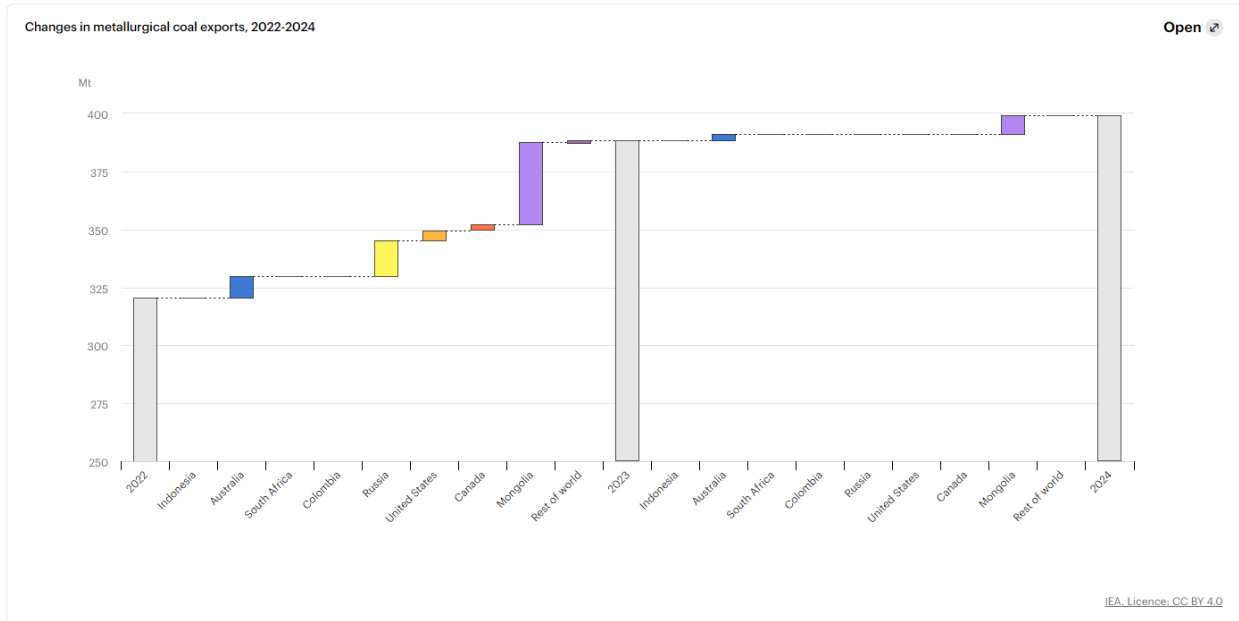
Australia, the largest exporter of met coal and second largest exporter of thermal coal, is expected to see modest growth of 1.8% in 2024. In the first five months of 2024, Australia showed growth of about 5% compared to the same period last year. Nonetheless, in anticipation of moderate demand from most of its major importers, we expect Australian exports to flatten for the rest of the year.

We expect Mongolian met coal exports to continue to grow in 2024 to a total of 58 Mt. As a result, Mongolia is likely to become the second largest exporter of met coal and the fifth largest exporter of coal, surpassing Colombia and South Africa.

In the United States, the decrease in coal demand has outpaced the reduction in coal production in 2023, leaving surplus for more exports. In 2024, this is expected to switch, owing to abundant stocks in US power plants. Moreover, some coal exports from the United States have been restricted owing to the collapse of Francis Scott Key Bridge in Baltimore in March 2024.

In summary, global trade in both thermal and met coal are expected to show a slight increase gaining 0.7% and 2.0% respectively in 2024.

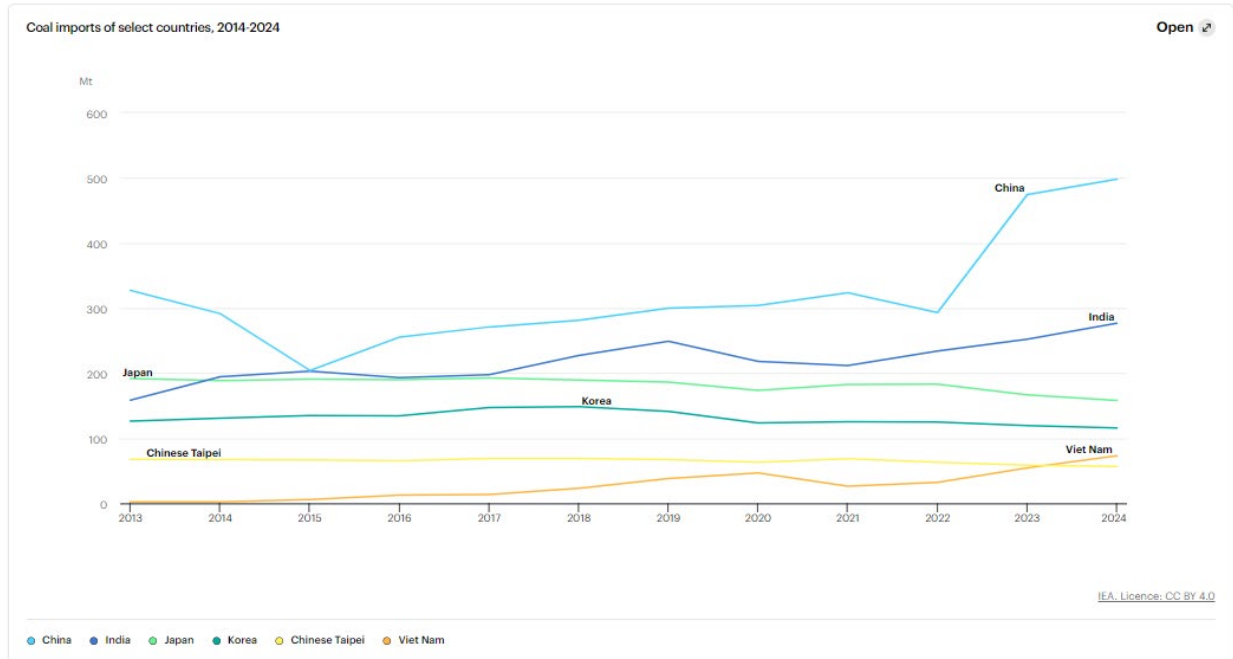




Viet Nam is set to join the top five global coal importer

For the last ten years, China, India, Japan, Korea and Chinese Taipei consistently ranked as the world's top five coal importers in that order, highlighting Asia's dominant role in global coal trade. This period witnessed notable economic growth in China and India which fuelled coal imports. Simultaneously, coal imports in Japan, Korea, and Chinese Taipei remained relatively stable. Now, Viet Nam, which recorded remarkable growth in imports in 2023, is set to surpass Chinese Taipei as the fifth largest coal importer in 2024. Its growing demand for coal is primarily driven by developments in the power sector. In the short term, low availability of hydroelectric plants and strong growth in power demand drive the need for coal. While Viet Nam is traditionally reliant on seaborne coal, it has intensified coal imports from Laos over the past two years and plans to further increase this trade. Looking ahead to 2030, Viet Nam aimed to build five new coal-fired power plants that could further increase the demand for coal. However, the announced cancellation of the Song Hau 2 project casts doubt over the others.

Contrary to growing imports in Asia, monthly coal imports into the European Union and United Kingdom have declined to their lowest level of the 21st century. In 2024, we expect Türkiye, which only recently surpassed Germany as the largest importer outside the Asia Pacific region, to import more coal than the European Union, emphasising Europe's decreasing involvement in global coal trade.



Prices

The met and thermal coal price relationship shows a return to normal conditions

During the energy crisis in 2022, thermal coal traded at much higher prices than ever before, pushed by tight fundamentals, very high prices of the main competing fuel (natural gas), and a war premium. Prices of several thermal coal price markers surpassed the USD 400/t threshold, significantly above former highs. Additionally, for more than half a year, thermal coal prices were above coking coal prices, which was unprecedented. With coal markets easing in 2023, in line with other energy commodities, the coking coal price returned to being higher than that of thermal coal, and the average annual premium increased to USD 120/t, in line with historical levels. Thus, the relationship between different coal prices shows a return to normal conditions in the market, with fluctuations based on fundamentals. For example, an elevated price for met coal between September 2023 and March 2024 was observed because of weak supply from Australia. Likewise, the price of Indonesian low-grade thermal coal had been slightly higher during 2022 and approached moderate territory during 2023 and the first half of 2024, but overall shows lower price volatility.



International thermal coal prices have stabilised

Following high volatility that sent coal prices soaring to historic highs in all key markets in October 2021, Russia's invasion of Ukraine further increased prices and volatility. However, 2023 marked a significant downturn in global thermal coal prices because of supply outgrowing demand, easing gas prices, diminishing energy security concerns, and trade flows having adjusted to Russian sanctions following its invasion of Ukraine.

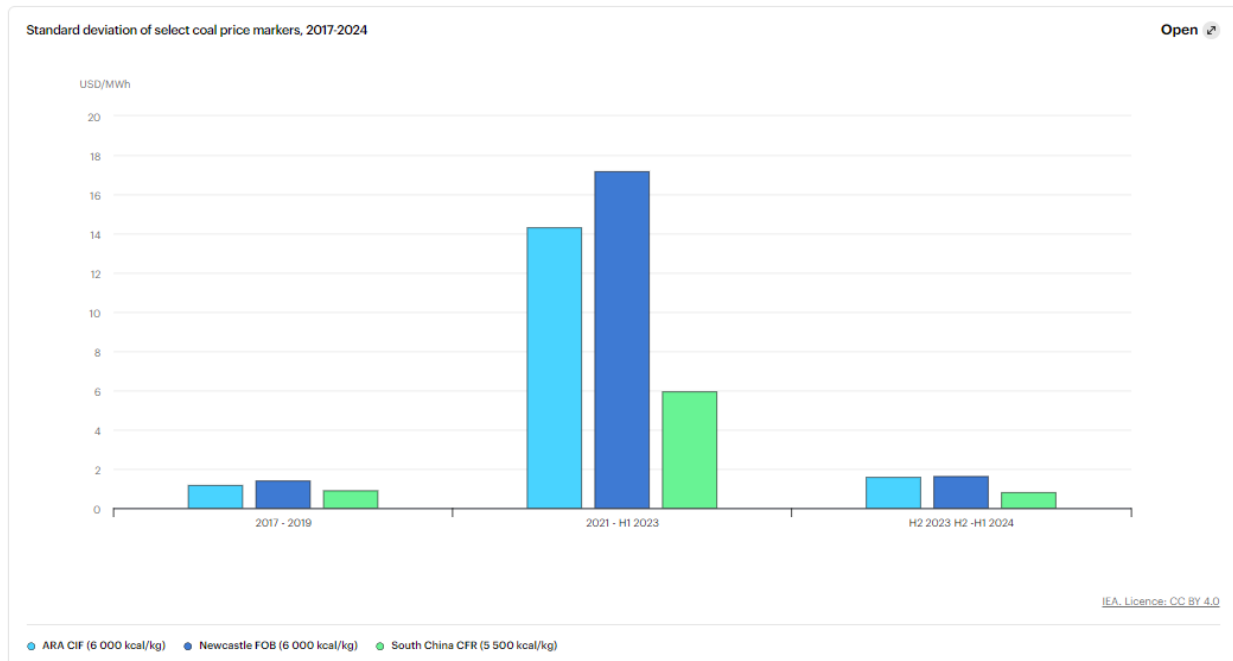
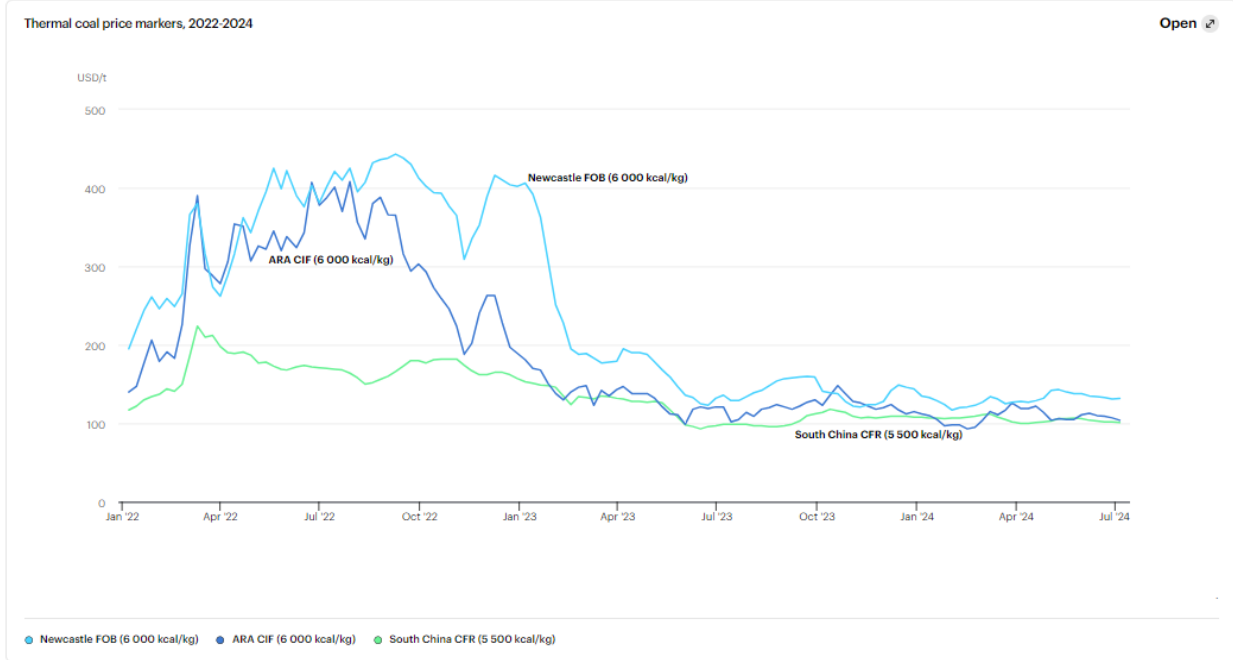
The Amsterdam Rotterdam Antwerp (ARA) thermal coal price marker started its downward trend from late 2022 onwards. The decline in Newcastle free on board (FOB) prices lagged European prices owing to adverse weather conditions in mining and overall tight supply. The difficulty of substituting high quality Australian coal in certain neighbouring markets supported this price level for longer. The South China CFR 5 500 kcal/kg price marker historically correlates with its European and Australian equivalent. However, during the energy crisis the Chinese prices were less affected amid ample domestic supply, stabilising mostly under USD 200/t.

Compared to the preceding period, thermal coal prices remained stable from mid-2023 to mid-2024. The highest prices for thermal coal were observed at Australian ports at around USD 160/t, whereas the lowest were recorded at European ports at USD 93/t. The premium for Newcastle FOB 6 000 kcal/kg came down to USD 20/t in that period compared to an average of about USD 90/t from July 2022 to July 2023.

With European coal-fired energy generation cheaper than gas in the second half of 2023, ARA CIF price markers increased close to USD 150/t in October, overtaking Newcastle FOB. However, this did not last long as prices decreased during the mild winter. Since then, prices have been stable despite supply disruptions in a few exporting countries, including rail collisions in South Africa, rail transport interruptions in Colombia and the collapse of Francis Scott Key Bridge in Baltimore. A short-lived rise in European and Australian thermal coal prices occurred from February 2024, following US sanctions on Russian producers SUEK and Mechel, although the increase in gas prices during the same period suggests that other factors were driving the increase rather than the sanctions. While traditionally Europe shows lower demand for thermal coal during its summer season reducing prices, Australian price markers saw an

increase in May 2024 when heatwaves in Southeast Asia boosted demand. At the same time, Japan was in negotiations for a term contract of Australian high CV coal which supported Australian prices.

Prices for high CV thermal coal showed moderate volatility in the second half of 2023 and the first half of 2024, as indicated by the standard deviation in prices which was slightly above those observed between 2017 and 2019. This supports the finding that coal markets have re-entered a period of stability unknown for some years.

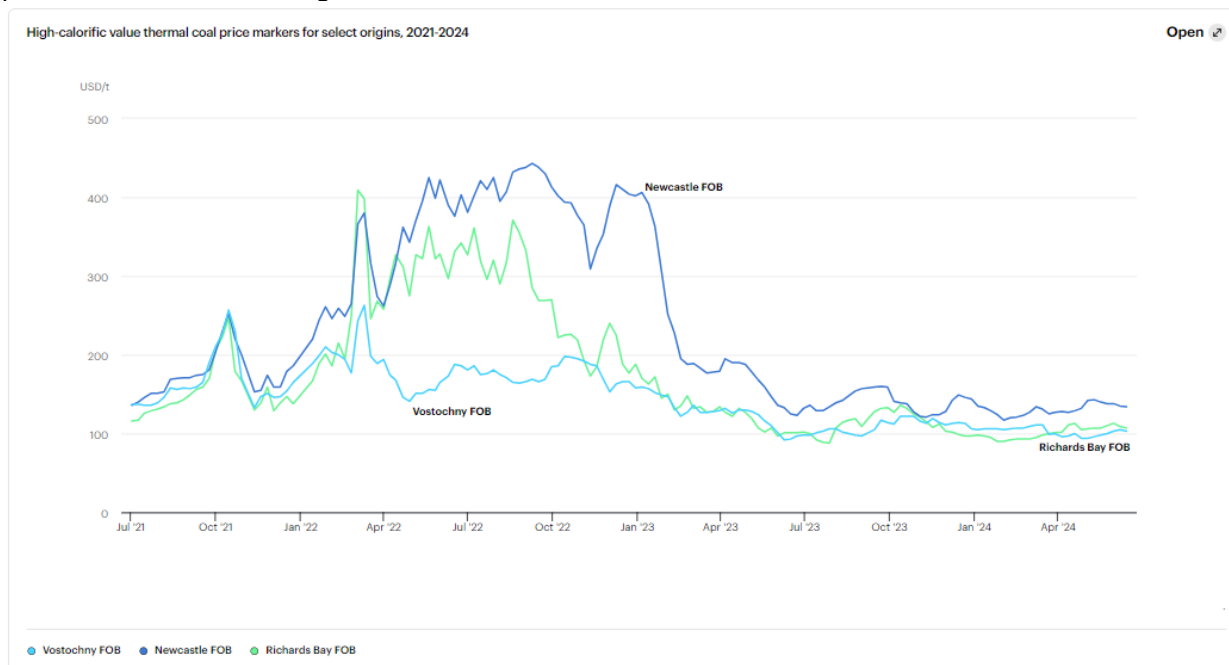


With lower prices, the Russian coal discount shrinks

Historically, thermal coal prices from Australia and South Africa have been generally aligned with Russian prices. This correlation altered, following Russia's invasion of Ukraine, when numerous western countries

enacted sanctions against Russia. Coal markets responded quickly, since the exclusion from international payment system SWIFT and overall uncertainty associated with Russia put a risk premium on Russian coal, resulting in significant discounts compared to coal prices from other origins.

As prices started to recover in the final quarter of 2022, price spreads narrowed, and the Russian discount at its eastern ports vanished. There was a reshuffling of trade routes during 2022 in response to sanctions. Volumes which had typically been bought by countries like Japan, found other buyers in that area, causing prices for coal from Russia's East (Vostochny) to stabilise. Some Russian producers face challenges regarding profitability because of the discounts and lower prices, and the export duty introduced by the Russian government from 1st October 2023, removed on 31st December and reintroduced on 1st March 2024. The relationship between the price of Russian and Australian coal is also a result of quality preferences, location, supply tightness in Australia and war-induced premiums. Prices at Russia's Black Sea ports exhibit stronger discounts, being on average USD 60/t lower than Newcastle FOB and USD 40/t lower than Richards Bay FOB between mid-2023 and mid-2024. High CV thermal coal price markers for select origins, 2021-2024

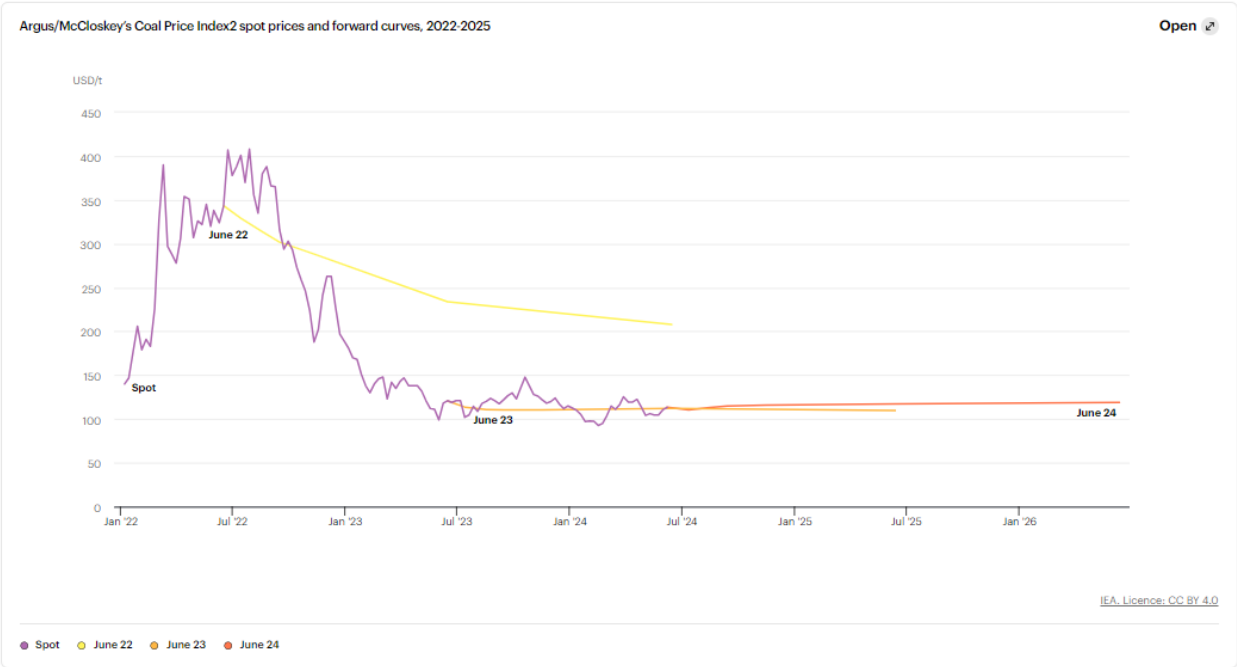


Forward prices indicate stable future market conditions

During 2022, API2 Spot prices (a price index for coal deliveries to Europe, CIF) experienced significant volatility at an extremely high level. Market tightness together with high-risk premiums associated with Russia's invasion of Ukraine and subsequent rearrangement of trade routes, caused high levels of uncertainty in the short term. However, coal markets anticipated an easing of this situation, which is evident in future prices taking a downwards trajectory. This backwardation (when spot prices are higher than future prices) could be observed throughout 2022.

With spot prices approaching levels driven by fundamentals in early 2023, backwardation vanished. Instead, the expectation was for future API2 prices to remain rather flat, slightly over USD 100/t. This did not change significantly until June 2024, when the forward curve showed a slight increase over the next two years. In summary, following the tumultuous conditions of recent years, the financial market now shows stability similar to the physical market.

However, given the close connection between coal and gas markets, and the influence of third parties that are not part of the physical market, such as hedge funds and others, any episode of volatility in the gas market will to some extent be mirrored in the coal market.



Q2 2024 Letter to Shareholders

Tue, July 23, 2024

July 23, 2024

To Our Shareholders,

I want to begin by thanking the GM team, as well as our dealers, suppliers and other business partners, for helping us deliver strong second quarter and first half results, including record revenue in both periods. This has paved the way for us to increase our guidance for full-year earnings, free cash flow and earnings per share.

There are four key drivers of our performance that I'd like to highlight.

- In North America, we have a consistently high performing portfolio of ICE trucks and SUVs on a volume, share and margin basis.
- Our EV portfolio is scaling well, and we're encouraged by the early sales results, including record second-quarter deliveries and improving market share.
- We continue to deliver strong and stable pricing with lower incentives than the industry average.
- And with our new investments, we have an even stronger focus on margins and capital efficiency.

Great vehicles and better execution will continue to differentiate us. In SUVs, we're in the process of launching eight all-new or redesigned compact, mid-size and full-size ICE models in North America, including high volume vehicles like the Chevrolet Equinox and our family of mid-size SUVs, which all have higher margins than the outgoing models.

To unleash the next cycle of EV growth, we're scaling production of the Chevrolet Equinox EV, with its unique combination of performance, technology, range and affordability. We think it's a game changer and product reviewers agree. One said, "Chevy seems positioned to grab a piece of the pie that no one else has quite grabbed onto yet." Then over the next several months, GMC will launch the Sierra EV and the Cadillac LYRIQ will be joined by the OPTIQ, Escalade IQ and CELESTIQ.

As excited as we are about our EVs and our early success, we are committed to disciplined volume growth, which is the key to earning positive variable profits from our portfolio in the fourth quarter, which remains our goal.

I also want to recognize the progress Cruise has made over the last several months. Our vision to transform mobility using autonomous technology is unchanged, and every mile traveled, and every simulation, brings us closer because Cruise is an AI-first company.

As you know, Cruise has returned to the road in Houston, Phoenix and Dallas and we recently made several significant leadership appointments, including hiring Marc Whitten as CEO. Marc has decades of experience on the frontlines of technology transformations.

The Cruise team will also simplify their path to scale by focusing their next autonomous vehicle on the next-generation Chevrolet Bolt, instead of the Origin. This addresses the regulatory uncertainty we faced with the Origin because of its unique design. In addition, per-unit costs will be much lower, which will help Cruise optimize its resources.

As I hope you can see from our results, our new products, the progress at Cruise and our higher guidance, we are making the most of every opportunity.

It was truly a great first half. And we have the products, discipline and strategies to drive future success.

Thank you for your confidence in GM.

A handwritten signature in black ink that reads "Mary Barra". The signature is written in a cursive, flowing style with a long horizontal line extending from the end of the name.

More Than Half of Teslas Are Being Traded In for Gas Cars

But those numbers are changing

written by [Will Kaufman](#)
Senior Editor and Content Strategist, CarMax

edited by [Steven Ewing](#)
Director, Editorial Content

- 7/23/2024
- People trading in Teslas tend to switch them out for, oddly enough, gas vehicles.
- Edmunds data shows that more than half of Tesla trade-ins this year are for gas cars.
- Only 32% of Teslas were traded in for other EVs.

Photo: Brandon Bell | Getty Images

More than half of [Teslas traded in at dealerships](#) so far in 2024 were traded in for a gas vehicle. According to Edmunds data, from January to July of 2024, 51% of used Teslas were traded for gas, and 32% were traded for an EV. If you factor in hybrids, that first number grows to 57%.

This is a big change from the situation five years ago, and suggests a few significant trends. Back in 2019, a whopping 71% of Teslas were traded in for gas cars, while 18% were traded in for hybrids. Only 10% were traded for another EV. Basically, if you were trading in your Tesla in 2019, you were doing it to get the heck out of an EV and back into a car that only needed gas.

Tesla Trade-In Data

 edmunds

Year	ICE	EV	Hybrid	PHEV
2019	71%	10%	18%	0%
2020	76%	9%	14%	2%
2021	72%	13%	8%	7%
2022	66%	21%	7%	6%
2023	55%	29%	8%	8%
2024 (year to date)	51%	32%	10%	6%

If you look at our handy table, you can see that trade-ins for hybrids have declined, while trade-ins for plug-in hybrids have picked up the slack in almost exact proportion. On the whole, PHEVs make up a pretty small percentage of total cars sold. When we checked [in May of this year](#), less than 2% of new cars sold were PHEVs. Conventional wisdom is that PHEVs are a potential transitional step for buyers going from gas to an EV, giving them a reason to install a charger and do some of their driving solely on electricity, so they can dip a toe into the EV world. But this data shows the pipeline is effectively in the other direction. If you've bought an EV, you've probably installed a charger, so you're

already set up to take advantage of a PHEV. It's interesting to see Tesla trade-ins going to PHEVs at three times the rate of the market as a whole.

But the big news is that more and more people are opting to trade their Teslas for an EV from a legacy automaker. That makes a lot of sense: Five years ago, legacy automakers just didn't have vehicles that could compete with Teslas. In fact, the Tesla Model 3 won Edmunds Top Rated Electric Car in 2020, 2021 and 2022, only being unseated in 2023. And while legacy automakers have been catching up to and surpassing Tesla in terms of their offerings, Tesla has been standing still. When we [reviewed the refreshed Model 3 Highland](#), we noted that it made only minor changes to the formula, and for every improvement, there was also a [liability](#).

Edmunds says

We'll be watching these numbers with interest over the next few years. Especially as legacy automakers opt in to NACS (North American charging standard) and gain access to the Supercharger network — arguably the last remaining practical advantage of a Tesla over any other EV — we expect to see the trend of Tesla trade-ins shifting away from EV flight and toward legacy-automaker EV purchase continue.

Shipping Gets Even Dirtier as Houthi Attacks Fuel Longer Voyages

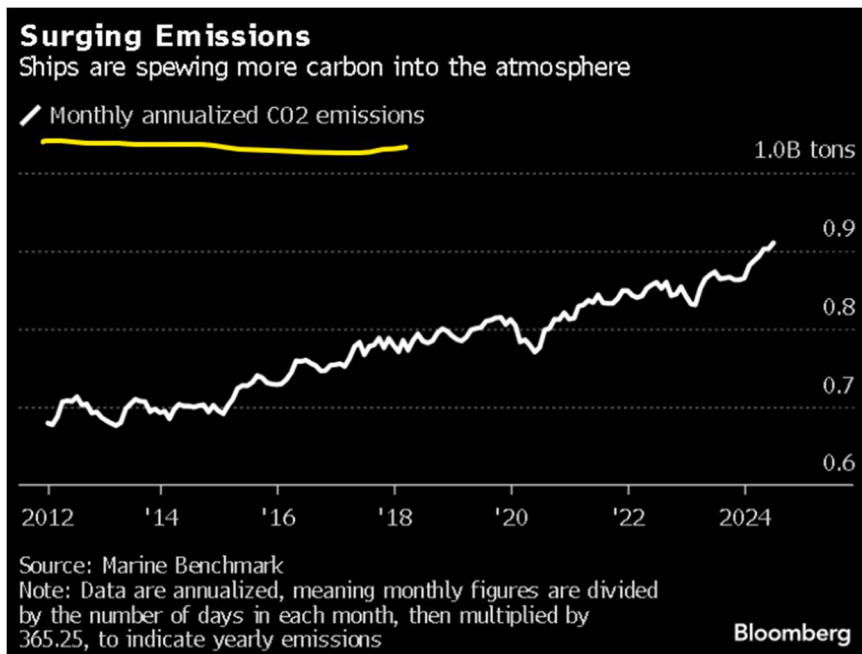
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By Jack Wittels

(Bloomberg) -- Shipping's carbon emissions climbed by 23 million tons in the first half of this year, partly as vessels took longer routes to avoid attacks in the Red Sea.

The 6% increase from a year earlier — equal to the annual amount spewed out by six coal-fired power plants — pushed the industry's emissions to about 450 million tons, according to data from Marine Benchmark, which uses ship-tracking data to calculate the figures. The jump was biggest among container vessels, which emitted roughly 15% more over the period.

The data highlight how hard it will be for ships, which carry more than 80% of world trade, to hit emissions targets set by their global regulator. While the sector has repeatedly said it wants to become greener, the latest jump extends a long-term trend — though some drivers are beyond the industry's control.



One of the contributing factors has been attacks by Yemen's Houthi militants, who for months have targeted vessels in the Red Sea area in protest at Israel's war with Hamas. That has forced ships to sail around South Africa instead of through the Suez Canal, adding thousands of miles to voyages.

There are other examples of cargoes now sailing longer distances, due to sanctions imposed on Russia over its invasion of Ukraine. Huge volumes of crude and fuel that were historically sent to the European Union are instead being hauled much farther to nations still willing to take those supplies, such as India, China and Brazil.

The International Maritime Organization has set a non-

binding goal for the sector to hit net zero greenhouse gas emissions by mid-century. But reaching that target will require a big transformation of an industry that still largely relies on fossil fuels.

Separate figures from the IMO have previously pegged shipping's annual CO2 emissions at more than 1 billion tons as of 2018 — though the methodology was different to Marine Benchmark's.

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Taming Shipping's One Billion Tons of CO2 Emissions: QuickTake

Shippers Bet Billions on Ammonia Tankers Eyeing Green Efforts

World Marks Full Year of Average Temperatures Above 1.5C Target

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Cold Feet: Homebuyers Backed Out of Deals at a Record Rate in June

Redfin reports about 56,000 home purchases were canceled, equal to 15% of homes that went under contract—the highest percentage of any June on record

SEATTLE--(BUSINESS WIRE)-- (NASDAQ: RDFN) — Deals to purchase homes are falling through at a record rate as high housing costs give buyers cold feet, according to a new [report](#) from Redfin ([redfin.com](#)), the technology-powered real estate brokerage. Nearly 56,000 home-purchase agreements were canceled in June, equal to 14.9% of homes that went under contract that month—the highest percentage of any June on record.

House hunters are having trouble committing because buying a home is more expensive than ever. The median home sale price rose 4% year over year to a record \$442,525 in June, and the average interest rate on a 30-year mortgage was 6.92%. While that's down slightly from 7.06% the prior month, it's still more than double the all-time low hit during the pandemic.

“Buyers are getting more and more selective,” said [Julie Zubiate](#), a [Redfin Premier](#) real estate agent in the San Francisco Bay Area. “They’re backing out due to minor issues because the monthly costs associated with buying a home today are just too high to rationalize not getting everything on their must-have list.”

June 2024 Housing Market Highlights: United States

	June 2024	Month-over-month change	Year-over-year change
Median sale price	\$442,525	0.9%	4.0%
Homes sold, seasonally adjusted	417,179	-0.5%	-1.1%
Total homes for sale, seasonally adjusted (active listings)	1,636,110	-0.1%	12.8%
Months of supply	2.6	0.2	0.7
Median days on market	32	1	3
Share of for-sale homes with a price drop	19.8%	1.7 ppts	5.4 ppts
Share of homes sold above final list price	35.1%	0.0 ppts	-4.5 ppts
Average sale-to-final-list-price ratio	99.9%	0.1 ppts	-0.4 ppts
Pending sales that fell out of contract, as % of overall pending sales	14.9%	0.3 ppts	0.2 ppts
Average 30-year fixed mortgage rate	6.92%	-0.14 ppts	0.21 ppts

Three Florida Metros Led the Nation in Home-Purchase Cancellations

In Orlando, about 900 home-purchase agreements were canceled in June, equal to 20.8% of homes that went under contract that month—the highest percentage among the 50 most populous U.S. metropolitan areas. Next came Jacksonville (20.5%), Tampa (20.5%), Las Vegas (20.2%) and San Antonio (19.9%).

“We’re seeing nightmare scenarios where deals are getting canceled at the last minute for the most minute reasons,” said [Rafael Corrales](#), a [Redfin Premier](#) agent in Miami, where roughly 2,500 home purchases were canceled in June—equal to 17.6% of homes that went under contract. “Buyers often back out during the inspection period because they find something they don’t like, but affordability is really the underlying issue. I don’t want my buyers to be surprised by all of the expenses that come with owning a home in Florida, so I advise them to proactively research the hefty costs of insurance, property taxes and HOA fees, in addition to the cost of their mortgage payment.”

Nearly 1 in 5 Sellers Dropped Their Asking Price as Homes Sat on the Market—the Highest June Rate on Record

Roughly one in five (19.8%) homes for sale in June had a price cut—the highest level of any June on record. That’s up from 14.4% a year earlier and is just shy of the 21.7% record high set in October 2022.

Some sellers are reducing their prices because their homes are sitting on the market and getting stale—the result of an ongoing affordability crisis impacting buyers. The typical home that sold in June spent 32 days on the market, the longest of any June since 2020. That’s up three days from a year earlier—the biggest annual increase since last summer. Listings are piling up as a result; active listings, or the total number of homes for sale, were little changed from a month earlier but jumped 12.8% from a year earlier—the largest annual gain on record.

U.S. Home Sales Posted the Biggest Monthly Decline Since October

Home sales fell 0.5% month over month in June on a seasonally adjusted basis. While that may seem like a small decline, it’s the biggest since October 2023. Home sales dropped 1.1% from a year earlier and were 21.5% below pre-pandemic (June 2019) levels.

Sales are sluggish because many Americans can’t afford to buy homes. While mortgage rates ticked down in June (and have fallen further this month), some buyers are waiting on the sidelines in hopes that they’ll drop even more. But those buyers may be waiting in vain, said Redfin Economics Research Lead Chen Zhao, as rates are unlikely to fall much in the next few months, and markets have already priced in a September rate cut.

Metro-Level Highlights: June 2024

- **Prices:** Median sale prices rose most from a year earlier in Anaheim, CA (13.2%) Newark, NJ (12.6%) and Nassau County, NY (12%). They fell in four metros, all of which are in Texas: Austin (-5.5%), Dallas (-1.6%), San Antonio (-1.3%) and Fort Worth (-0.2%).
- **Price cuts:** In Indianapolis, 49.2% of listings had a price drop—a higher share than any other metro Redfin analyzed. Next came Denver (46.6%) and Tampa (43%). The lowest shares were in Newark (15.2%), Chicago (16.3%) and Milwaukee (17%).
- **Active listings:** Active listings rose most in Tampa (47%), Fort Lauderdale, FL (45.3%) and Orlando (41.4%). They fell most in Chicago (-7.4%), New Brunswick, NJ (-7%), Chicago (-7.3%) and New York (-5.8%).
- **Closed home sales:** Home sales rose in just one metro: San Jose, CA (1.8%). They fell least in Portland, OR (-3.2%), Oakland, CA (-3.7%) and San Diego (-5%), and fell

most in West Palm Beach, FL (-23.5%), Fort Lauderdale (-23%) and Virginia Beach, VA (-17.7%).

- **Sold above list price:** In San Jose, 72.1% of homes sold above their final list price, the highest share among the metros Redfin analyzed. Next came Newark (71.7%) and Oakland (63.1%). The shares were lowest in West Palm Beach (7.3%), Miami (11.4%) and Fort Lauderdale (12.3%).

To view the full report, including charts, please visit:

<https://www.redfin.com/news/home-purchase-cancellations-june-2024>

About Redfin

Redfin (www.redfin.com) is a technology-powered real estate company. We help people find a place to live with brokerage, rentals, lending, title insurance, and renovations services. We run the country's #1 real estate brokerage site. Our customers can save thousands in fees while working with a top agent. Our home-buying customers see homes first with on-demand tours, and our lending and title services help them close quickly. Customers selling a home can have our renovations crew fix it up to sell for top dollar. Our rentals business empowers millions nationwide to find apartments and houses for rent. Since launching in 2006, we've saved customers more than \$1.6 billion in commissions. We serve more than 100 markets across the U.S. and Canada and employ over 4,000 people.

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IFIC Monthly Investment Fund Statistics – June 2024

Mutual fund and exchange-traded fund (ETF) assets and sales

July 23, 2024 (Toronto) – The Investment Funds Institute of Canada (IFIC) today announced investment fund net sales and net assets for June 2024.

Mutual fund assets totalled \$2.073 trillion at the end of June, up by \$14.2 billion or 0.7 per cent since May. Mutual fund net redemptions were \$1.9 billion in June.

ETF assets totalled \$440.5 billion at the end of June, up by \$11.3 billion or 2.6 per cent since May. ETF net sales were \$10.1 billion in June.

June insights

- In the first six months of 2024, mutual fund assets grew by \$133.9 billion or 6.9 per cent.
- Mutual funds experienced positive flows across money market, bond, and specialty categories. Notably, money market mutual funds saw their largest inflows since March 2020, with 72 per cent of all money market funds reporting positive inflows.
- ETF sales were at an all-time high, with positive sales in every asset category.
- Bond funds accounted for over half of ETF net sales, marking the strongest sales month on record for this asset category.

Mutual fund net sales/net redemptions (\$ millions)*

Asset class	Jun 2024	May 2024	Jun 2023	YTD 2024	YTD 2023
Long-term funds					
Balanced	(4,045)	(3,334)	(4,421)	(18,955)	(21,680)
Equity	(2,614)	(881)	(2,339)	(1,606)	(9,584)
Bond	1,197	1,346	795	10,107	8,604
Specialty	473	623	264	3,783	2,014
Total long-term funds	(4,990)	(2,246)	(5,702)	(6,672)	(20,646)
Total money market funds	3,070	464	1,524	3,594	7,882
Total	(1,920)	(1,782)	(4,178)	(3,078)	(12,764)

Mutual fund net assets (\$ billions)*

Asset class	Jun 2024	May 2024	Jun 2023	Dec 2023
Long-term funds				
Balanced	936.8	934.3	898.1	904.4
Equity	792.5	787.8	693.9	714.4
Bond	255.4	252.3	235.0	242.3
Specialty	32.6	31.7	24.6	27.0
Total long-term funds	2,017.3	2,006.2	1,851.7	1,888.1

Total money market funds	55.8	52.7	43.0	51.0
Total	2,073.1	2,058.8	1,894.7	1,939.1

* See below for important information about this data.

ETF net sales/net redemptions (\$ millions)*

Asset class	Jun 2024	May 2024	Jun 2023	YTD 2024	YTD 2023
Long-term funds					
Balanced	399	243	151	2,283	829
Equity	2,820	2,788	1,054	18,992	5,559
Bond	5,349	1,294	1,178	10,608	5,459
Specialty	387	14	438	49	1,289
Total long-term funds	8,956	4,339	2,820	31,931	13,135
Total money market funds	1,114	86	646	647	5,059
Total	10,070	4,425	3,467	32,579	18,194

ETF net assets (\$ billions)*

Asset class	Jun 2024	May 2024	Jun 2023	Dec 2023
Long-term funds				
Balanced	18.5	18.0	13.6	15.1
Equity	274.6	270.5	215.3	232.5
Bond	104.4	98.4	85.9	94.6
Specialty	17.0	17.3	12.2	14.4
Total long-term funds	414.4	404.2	326.9	356.6
Total money market funds	26.1	25.0	21.2	25.3
Total	440.5	429.2	348.1	382.0

* See below for important information about data.

IFIC direct survey data (which accounts for approximately 87 per cent of total mutual fund industry assets and approximately 80 per cent of total ETF industry assets) is complemented by estimated data to provide comprehensive industry totals.

IFIC makes every effort to verify the accuracy, currency, and completeness of the information, however, IFIC does not guarantee, warrant, represent or undertake that the information provided is correct, accurate or current.

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* Important information about investment fund data

1. Mutual fund data is adjusted to remove double counting arising from mutual funds that invest in other mutual funds.
2. Starting with January 2022 data, ETF data is adjusted to remove double counting arising from Canadian-listed ETFs that invest in units of other Canadian-listed ETFs. Any references to IFIC ETF assets and sales figures prior to 2022 data should indicate that the data has not been adjusted for ETF of ETF double counting.
3. The balanced funds category includes funds that invest directly in a mix of stocks and bonds or obtain exposure through investing in other funds.
4. Mutual fund data reflects the investment activity of Canadian retail investors.
5. ETF data reflects the investment activity of Canadian retail and institutional investors.

About IFIC

The Investment Funds Institute of Canada is the voice of Canada's investment funds industry. IFIC brings together 150 organizations, including fund managers, distributors and industry service organizations to foster a strong, stable investment sector where investors can realize their financial goals. By connecting Canada's savers to Canada's economy, our industry contributes significantly to Canadian economic growth and job creation. [Learn more about IFIC](#)

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07/25/2024 21:22:20 [BN] Bloomberg News

Billionaires Poised for Reprieve From South Korea’s Death Tax

- Proposal would mark the first reduction of levy since 1995
- If approved, move would boost richest controlling families

By Ainsley Thomson, Sangmi Cha and Filipe Pacheco

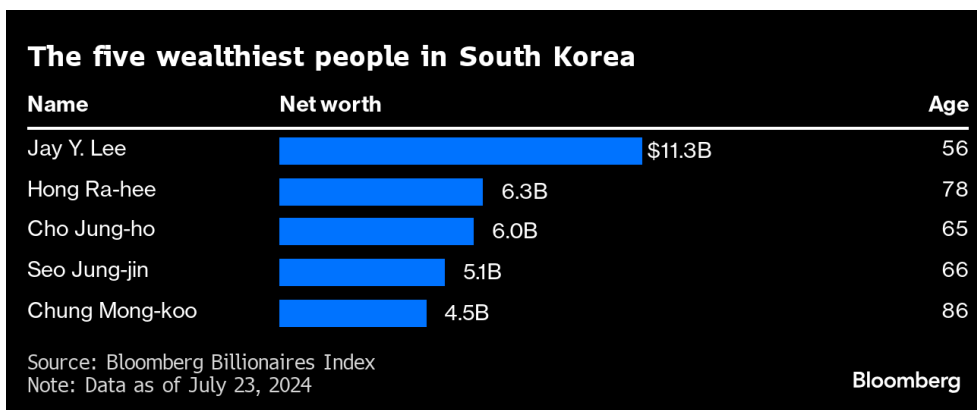
(Bloomberg) -- For decades, South Korea has levied an inheritance tax of as much as 60% on the controlling shareholders of firms like Samsung Electronics Co., forcing billionaire families to perform financial contortions in order to pay up.

Now the nation’s richest clans are a step closer to a controversial reprieve on the levies, which are among the highest in the world. President Yoon Suk Yeol plans to lower the ceiling on the inheritance tax to 40% from 50% and scrap the rule that requires owners to pay even more, the Finance Ministry said Thursday.

The idea behind the tax was to stop rich families that run the nation’s sprawling conglomerates, known as chaebols, from passing down their wealth and maintaining what critics say is a disproportionate influence over the economy. But the levies have also been unpopular with Korea’s army of retail investors, who say it created the “Korea discount” because controlling shareholders were incentivized to keep stock prices artificially low.

If approved by the opposition-controlled parliament, the proposal would mark the first reduction of the nation’s inheritance tax rate since 1995.

“The immediate beneficiaries are the controlling shareholders of large conglomerates like Samsung and Hyundai, who will see a significant reduction in their inheritance tax burden,” said Vikas Pershad, Asian equities portfolio manager at M&G Investments in Singapore. Still, the tax cuts “are expected to stimulate investment in the stock market, potentially leading to increased liquidity and higher valuations for Korean companies.”



Looming Bills

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The taxes have delivered a big financial hit to many of the nation's richest families. In 2021, the heirs of former Samsung Electronics Chairman Lee Kun-hee, who had an estimated fortune of \$20.7 billion when he died in October of 2020, were left with a tax bill of more than 12 trillion won (\$8.7 billion).



Lee Kun-hee in 2013.

At the time, the inheritance bill levied on the Lee clan was one of the largest ever in the nation and globally. The family announced a plan to pay it in six installments over five years, which included donating 1 trillion won for medical facilities and approximately 23,000 works of art as part of its payment.

The Lee family also substantially increased its share-backed borrowing, giving it the means to pay the duties and avoid ceding control. Still, such measures might now become less pressing.

Read More: [Samsung Heirs Reveal Plan to Pay Their \\$11 Billion Tax Bill](#)

"It's a significant move since excessively high inheritance taxes have been one of the key reasons for poor corporate governance in Korea," Douglas Kim, an analyst at Douglas Research Advisory who publishes on the SmartKarma platform, wrote in a note. "Although this proposal is likely to be met with some stiff opposition in the National Assembly, we believe that there is an increasing probability," it could be made into law in the fourth quarter, he said.

Controversial

Earlier this year, the president's thoughts on the tax – pointing to Germany as an example that might work – were welcomed by business lobby groups, but they brought a backlash from the main opposition Democratic Party.

Lee Gae-ho, the party's top policymaker, said at the time that he was "shocked" by Yoon's comments, adding the president was representing the interests of the ultra-rich and trying to fool ordinary citizens.

Read More: [South Korea Proposes Sweeping Tax Breaks to Help Stocks, Economy](#)

Even though the rich are set to benefit, the government is casting the reform as part of a broader strategy to stimulate economic growth and attract investment. South Korea's regular maximum inheritance levy is the second-highest among members of the Organisation for Economic Co-operation and Development, after 55% in Japan.

Read more: [Samsung Heirs Owe Billions in Taxes. Here's How They Might Pay](#)

In South Korea, there are high levels of nationalism which prevents powerful chaebol families from emigrating, unlike Sweden where ultra-high inheritance taxes – abolished about 20 years ago – prompted a wave of powerful billionaires to leave the country, such as the late IKEA founder [Ingvar Kamprad](#), according to Kim, the analyst.

Just last year, the family of [Kim Jung-ju](#), the late billionaire founder of online game developer [Nexon Co.](#), transferred some of its ownership in its parent, [NXC Corp.](#), to pay part of its inheritance tax bill, leaving the South Korean government as the second-largest NXC shareholder.

"Rather than emigrating, some of the chaebol members have chosen different ways to break up and merge companies that are in the best interests of the controlling shareholders but not in the best interests of the minority shareholders," Douglas Research Advisory's Kim said.

--With assistance from [Youkyung Lee](#), [Bernadette Toh](#), [Emily Yamamoto](#) and [Sam Kim](#).

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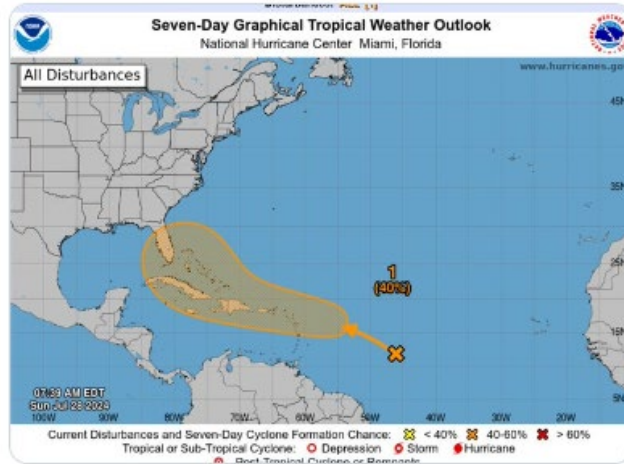
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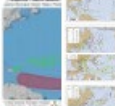
SAF Dan Tsubouchi @Energy_Tidbits · 1h
New @NHC_Atlantic 7-day outlook gives 40% chance for cyclone development.

Reminds of 06/27/24 tweet on a decent rule-of-thumb for tropical storms/hurricanes is if path takes it south of Dominican Republic it then normally hits Yucatan, Gulf Coast or both.

#OTT



SAF Dan Tsubouchi @Energy_Tidbits · Jun 27



Hurricane Track Map Rule of Thumb.

Hurricanes that move south of the Dominican Republic are the ones that are likely to hit Yucatan Peninsula or come into the GoM to hit Gulf Coast....

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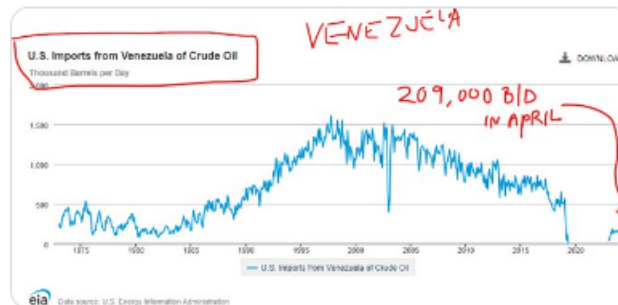
SAF Dan Tsubouchi @Energy_Tidbits · 2h
Venezuela voting has started.

Biden allowed reopening as Maduro agreed to have real elections.

So will Biden have now choice but to revoke #Oil licenses if there is any election manipulation or Maduro doesn't cede power if he loses?

US oil imports from VEN exceeded 200,000

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Dan Tsubouchi @Energy_Tidbits · 3h



Higher Pemex refinery runs = less #Oil for export.

Pemex Q2: new 340,000 b/d Olmeca refinery processed 100,000 b/d in July, will reach optimal processing level by Sept 30 ie. some higher level so less oil for export.

US #Oil imports from Mexico 355,000 b/d for July 19 wk down

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957



SAP Dan Tsubouchi @Energy_Tidbits · 16h
Unfortunately for everyone, it looks like today may be a pivot point to escalating Israel/Hezbollah conflict.

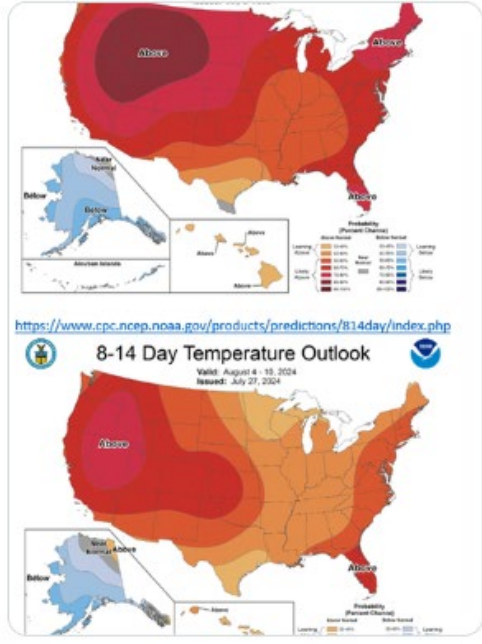
"Israeli foreign minister Israel Katz told Axios **"the Hezbollah attack crossed all red lines and the response will be accordingly"** reports @BarakRavid

#OOTT #Oil
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6 4 16 2.8K

SAP Dan Tsubouchi @Energy_Tidbits · 18h
HH #NatGas prices were -\$0.12 WoW to close at \$2.01.

@NOAA's updated 6-10 & 8-14 day temperature outlook covers Aug 2-10 forecasts hot weather across Lower 48.

BUT storage is still +249 bcf YoY & above the high end of 5-yr range.
#OOTT



3 1 4 1.8K

SAF

Dan Tsubouchi @Energy_Tidbits · 19h

How will Putin retaliate?

Ukrainian "drone hit the Tu-22M3 bomber parked at the Olenya airfield on the Kola Peninsula near the Finnish border, 1,100 miles from Ukraine."

@jkjourno

I used @googlemaps showing >1,800 km distance & zoom in on likely Olenya airfield.

#OOTT
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SAF

Dan Tsubouchi @Energy_Tidbits · 20h

Waha #NatGas -\$0.02 WoW to \$0.28 on July 25 close.

Better than recent negative prices but still very low.

Permian #Oil wells produce associated #NatGas. So low or negative Waha prices may not impact big Permian players drilling plans but cause some small Permian players to

Show more



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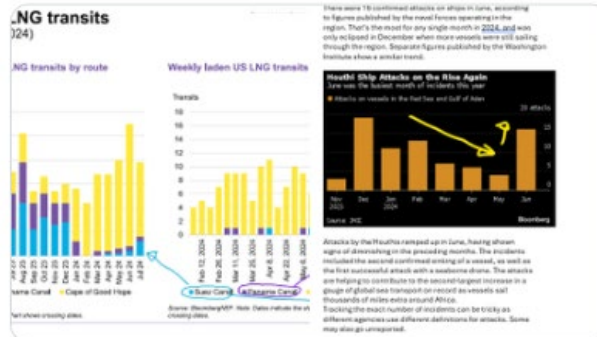
SAF

Dan Tsubouchi @Energy_Tidbits - 22h

Little surprised to see more US #LNG tankers going via Suez Canal.

June was Houthis most active drone/missile attack month and July is another active drone/missile attack month.

Thx @BloombergNEF #OOT



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SAF

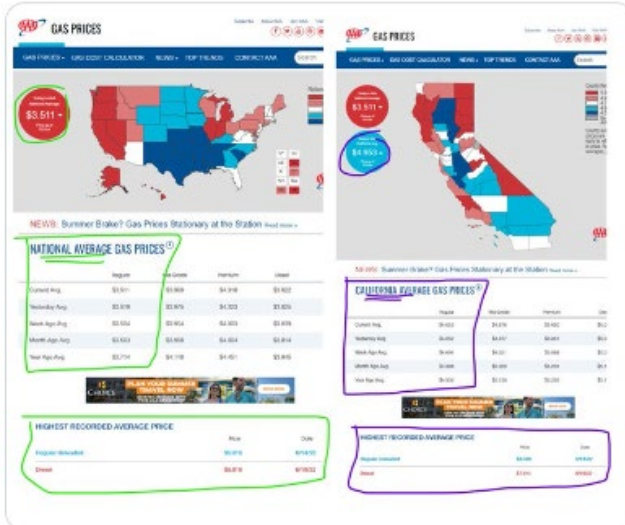
Dan Tsubouchi @Energy_Tidbits - 23h

AAA National average prices +\$0.01 WoW to \$3.51 on July 27, +\$0.01 MoM & -\$0.20 YoY.

California at \$4.65 on July 27, which was -\$0.04 WoW, -\$0.16 MoM & -\$0.29 YoY.

Thx @AAAnews

#OOT



1 3 918

SAF

Dan Tsubouchi @Energy_Tidbits · 23h

One of my Tesla Toronto friends reminded this % is for Tesla owners who trading away from Tesla to other EVs, hybrids or ICE at other brand dealers.

EV sales are growing but forecasts for EV sales growth don't specify any % of this factor where EV owners go back to ICE.

Dan Tsubouchi @Energy_Tidbits · Jul 25

"More Than Half of Teslas Are Being Traded In for Gas Cars" @edmunds Will Kaufman report.

Doubt if any EVs sales forecasts build in any significant % of EV owners switching back to ICE? ...

Show more

https://news.edmunds.com/car-news/tesla-trade-in-data-gas-cars.html

More Than Half of Teslas Are Being Traded In for Gas Cars

But those numbers are changing

written by Will Kaufman
edited by Steven Ewing
July 25, 2024

Document was last saved: Just now

- People trading in Teslas tend to switch them out for, oddly enough, gas vehicles.
- Edmunds data shows that more than half of Tesla trade ins this year are for gas cars.
- Only 32% of Teslas were traded in for other EVs.

Photo: Brandon Bell/Getty Images

More than half of Teslas traded in at dealerships so far in 2024 were traded in for a gas vehicle. According to Edmunds data, from January to July of 2024, 51% of used Teslas were traded for gas, and 32% were traded for an EV. If you factor in hybrids, that first number grows to 57%.

This is a big change from the situation five years ago, and suggests a few significant trends. Back in 2019, a whopping 71% of Teslas were traded in for gas cars, while 10% were traded in for hybrids. Only 10% were traded for another EV. Basically, if you were trading in your Tesla in 2019, you were doing it to get the heck out of an EV and back into a car that only needed gas.

Tesla Trade-In Data

Year	ICE	EV	Hybrid	PHEV
2019	71%	10%	10%	0%
2020	60%	9%	14%	2%
2021	52%	13%	8%	7%
2022	46%	21%	7%	6%
2023	55%	29%	8%	6%
2024 (year to date)	51%	32%	10%	6%

If you look at our handy table, you can see that trade-ins for hybrids have declined, while trade-ins for plug-in hybrids have picked up the slack in almost exact proportion. On the other side, PHEVs make up a pretty small percentage of total cars sold. When we checked in 2024, less than 2% of new cars sold were PHEVs. Conventional wisdom is that PHEVs are a potential transitional step for buyers going from gas to an EV, giving them a reason to install a charger and do some of their driving solely on electricity, so they can dip a toe into the EV world. But this data shows the pipeline is effectively in the other direction. If you've bought an EV, you've probably installed a charger, so you're

2 1 8 1.5K

SAF

Dan Tsubouchi @Energy_Tidbits · 23h

Daily Europe air traffic still stuck below pre-Covid

7-day moving average as of:
Jul 25: -2.2% below pre-Covid
Jul 18: -2.6%
Jul 11: -2.9%
Jul 4: -3.3%
Jun 27: -2.9%
Jun 20: -2.5%
Jun 13: -2.6% ...

Show more



5 941



Dan Tsubouchi @Energy_Tidbits · 23h



Vortexa #oil floating storage est +2.09 mmb WoW to 74.04 mmb at Jul 26.

2 weeks don't make a trend but haven't been down in mid 70's for 2 weeks since early May.

Hopefully, normal summer seasonal oil demand increase is kicking in.

Thx @vortexa @business

#OOTT



2



5



25



3.3K



SAF

Dan Tsubouchi @Energy_Tidbits · Jul 26

Worth watching!

Texas RRC "will evaluate next steps that can be taken to mitigate earthquakes" reports @DavidWethe.

Pulled TexNet earthquakes >3 in last two weeks. Thx @Bureau3E

Normal remedies tend to be moving wastewater disposal further away, or deeper zones.

...
[Show more](#)



David Wethe @DavidWethe · Jul 26

The Texas oil regulator said it's investigating after several earthquakes hit the Permian Basin this week. [bloomberg.com/news/articles/...](https://www.bloomberg.com/news/articles/...) via @climate

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3.4K

🔖

SAF

Dan Tsubouchi @EnergyTidbits · 3m

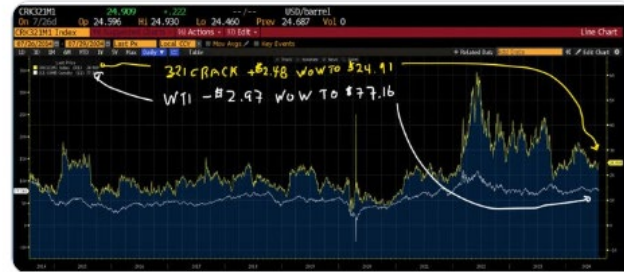
321 crack \$2.48 WoW to \$24.91 on Jul 26

Yet WTI was -\$2.97 WoW to \$77.16.

WTI dragged down with global #Oil prices with demand concerns ie. China, etc.

Hopefully, 321 cracks at \$24.91 provide some near term downside support for WTI.

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3 2 156

SAF

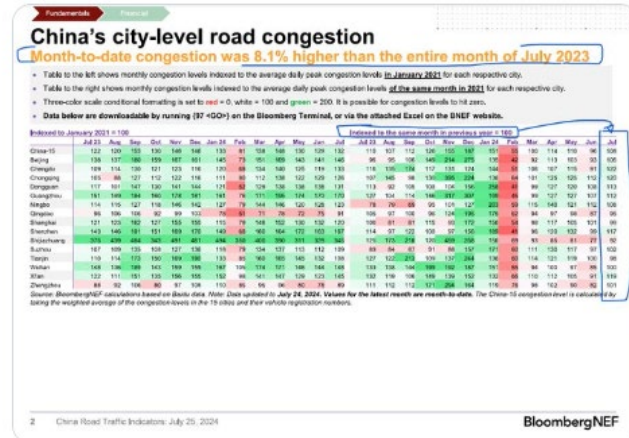
Dan Tsubouchi @EnergyTidbits · 4h

Chinese consumer still on sideline?

July is holiday time. But Baidu city-level road congestion is +8.1% YoY ie. more Chinese staying in cities rather than going on holiday.

Feels like staycation ie. what people do when they want to spend less.

Thx @BloombergNEF #OOT #Oil



3 1 1.1K

SAF Dan Tsubouchi @Energy_Tidbits · 11h
Key Chinese consumers not coming back for "at least 12, 18 months".
Mercedes Chairman Kaellenius.

Because of importance of real estate value to Chinese upper middle class.
Their savings has been the additional buy-to-let apartment that was just
going up and up.

See 📅 07/14
[Show more](#)

**MERCEDES
ON CHINA CONSUMER**

FINAL TRANSCRIPT
Mercedes-Benz Group AG (MBG GR Equity) 2024-07-26

Number two, the current macroeconomic environment in China is subdued. I think everybody knows that since we came out of the COVID restrictions beginning of last year, consumer sentiment, it didn't come back. It just didn't come back and you feel the pinch across the board but also in the luxury segment across industries.

How long will it take for the Chinese consumer to regain confidence and start buying again? One piece of it, I am sure, is related to the real estate sector. The savings for upper-middle class people has been that additional buy-to-let apartment that was just going up and up and up and up. That whole industry has been in restructure for years now.

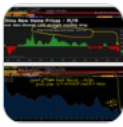
It feels a little bit like an American customer's 401k. You look at your 401k and if you feel flush, you buy a car. If you don't, you don't. And there you have the real estate sector in China.

We don't know how long it will take, what it will take for China's consumers to regain that confidence, for China's entrepreneurs to regain that confidence. It is affecting us. It is affecting others. The cautious view that we take now is that's not going to change quickly.

So we have to count on this being the marketplace here maybe in the next at least 12, 18 months, we shall see. Then comes the third piece and that goes into your strategic. How do you play it strategically? You have more than 100 players offering BEVs.

I haven't looked at the latest numbers, but I would guess more than 90 of the BEV players are burning cash, not generating cash. Maybe it's even more than that. Then you have the SOEs. They're also burning cash.

SAF Dan Tsubouchi @Energy_Tidbits · Jul 14



Continued big negative to getting Chinese back to spending - their home values keep going down.

June new home prices: 13th straight MoM drop, -0.67% M/M (May -0.71% M/M). ...

2 2 11 2.7K

SAF

Dan Tsubouchi @EnergyTidbits · 21h

"More Than Half of Teslas Are Being Traded In for Gas Cars" @edmunds Will Kaufman report.

Doubt if any EVs sales forecasts build in any significant % of EV owners switching back to ICE?

Another reason why EVs replacing ICE forecasts are too optimistic.

#OOTT #Oil

<https://www.edmunds.com/car-news/tesla-trade-in-data-gas-cars.html>

More Than Half of Teslas Are Being Traded In for Gas Cars

But those numbers are changing

written by Will Kaufman
Senior Editor and Content Strategist, CarMax

edited by Steven F. Witte
Director, Content, CarMax

7/23/2024

- People trading in Teslas tend to switch them out for, oddly enough, gas vehicles.
- Edmunds data shows that more than half of Tesla trade-ins this year are for gas cars.
- Only 32% of Teslas were traded in for other EVs.

Photo: Brandon Bell | Getty Images

More than half of Teslas traded in at dealerships so far in 2024 were traded in for a gas vehicle. According to Edmunds data, from January to July of 2024, 51% of used Teslas were traded for gas, and 32% were traded for an EV. If you factor in hybrids, that first number grows to 57%.

This is a big change from the situation five years ago, and suggests a few significant trends. Back in 2019, a whopping 71% of Teslas were traded in for gas cars, while 18% were traded in for hybrids. Only 10% were traded for another EV. Basically, if you were trading in your Tesla in 2019, you were doing it to get the heck out of an EV and back into a car that only needed gas.

Tesla Trade-In Data

Year	ICE	EV	Hybrid	PHEV
2019	71%	10%	18%	0%
2020	78%	8%	14%	2%
2021	72%	13%	8%	7%
2022	68%	21%	7%	8%
2023	55%	29%	8%	8%
2024 (year-to-date)	51%	32%	10%	8%

If you're a car enthusiast, you can see that trade-ins for hybrids have declined, while trade-ins for plug-in hybrids have picked up the slack in almost exact proportion. On the whole, PHEVs make up a pretty small percentage of total cars sold. When we checked in May of this year, less than 2% of new cars sold were PHEVs. Conventional wisdom is that PHEVs are a potential transitional step for buyers going from gas to an EV, giving them a reason to install a charger and do some of their driving solely on electricity, so they can dip a toe into the EV world. But this data shows the pipeline is effectively in the other direction. If you've bought an EV, you've probably installed a charger, so you're

20

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65K

🔖 ↗

SAF Dan Tsubouchi @Energy_Tidbits · 23h
Jasper wildfire.

...

"*at this time* there is no indication of damage to our infrastructure, and the pipelines continue to operate safe" says Trans Mountain.

#OTT

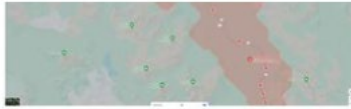
transmountain.com/news/2024/tran...

SAF Dan Tsubouchi @Energy_Tidbits · Jul 25

Re: Jasper wildfire.

Haven't seen any Trans Mountain postings of any potential risk or shutdown of 890,000 b/d.

...
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TMX Expansion Pipeline map (also Trans Mountain route)



TMX Expansion Pipeline map (also Trans Mountain route)



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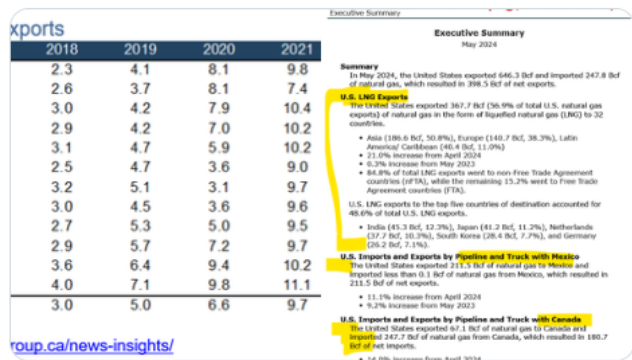
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Dan Tsubouchi @Energy_Tidbits · Jul 25
 US #Exports +1.8 bcf/d MoM to 11.9 bcf/d in May, basically flat YoY vs 11.8 bcf/d in May 2023.

MoM increase as Freeport LNG 2.1 bcf/d returned from maintenance on May 14.

Note this is from DOE, a week earlier than same data in EIA Natural Gas Monthly. EIA is part of DOE.
 #OOTT



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Dan Tsubouchi @Energy_Tidbits · Jul 25
 Huge, huge respect for firefighters & emergency people who risk their lives to save people & property! Thank you!

Parks Canada "Fire crews were witnessing 300 to 400 foot flames in a fully-involved, continuous crown fire and a fire spread rate of approximately 15 meters per minute."

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 1 6 962

SAF Dan Tsubouchi @Energy_Tidbits · Jul 25
Stellantis CEO makes it clear - blame politicians for EV sales expectations.

The EVs ramp up "is not happening as quickly as the political leadership had expected. what we are seeing in the western world right now is the consumers are not supporting as much the political
[Show more](#)



9 16 42 14K

SAF Dan Tsubouchi @Energy_Tidbits · Jul 25
2/2

Reality of moving from higher income early EV adopters to middle/lower income.

"political leadership, thru the regulations, thought consumers were able & willing to pay a higher price for EVs. And they are telling us, the consumers, that they don't agree with that".



3 4 13 3K

SAF Dan Tsubouchi @Energy_Tidbits · Jul 25
EV reality check

"it is true that the [EV] transition we are going thru is immensely challenging. this is a bump. there will be other bumps. This will last for a few years. This is not a short term turmoil" Stellantis CEO

EVs won't displace #Oil as fast as IEA forecast.
#OOTT



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SAF Dan Tsubouchi @Energy_Tidbits · Jul 25
AI Data Center 101

Comprehensive solution for massive AI demand "... intervention from some government policies to help facilitate buildout of some of this power infrastructure which ultimately is **THE** key component of this will be required". KKR's Szlezak to @annmarie
[Show more](#)



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Dan Tsubouchi  @Energy_Tidbits · Jul 25



Re: Jasper wildfire.

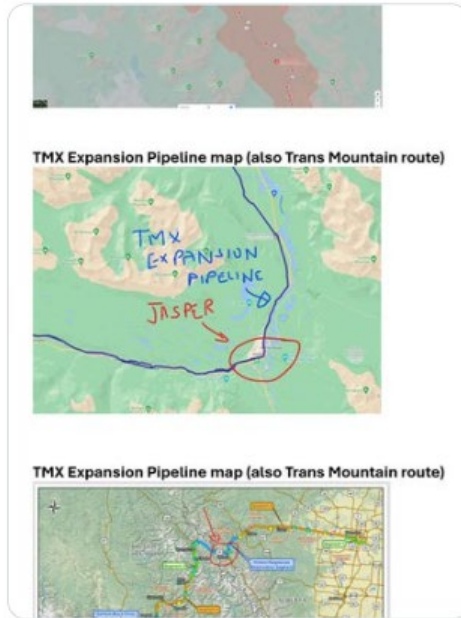
Haven't seen any Trans Mountain postings of any potential risk or shutdown of 890,000 b/d.

The wildfire must be right around the TMX pipeline + original Trans Mountain line.

Hope everyone can stay safe as their priority.

...

[Show more](#)



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7



4.1K



SAF Dan Tsubouchi @EnergyTidbits · Jul 25
crappy day for Alberta with reports that wildfire has hit with the Jasper townsite.

really hope people got to safety.

and always a big thank you to the firefighters, police, medical, etc. and volunteers for their amazing work in such a dangerous task to save Albertans.

Jasper National Park 6h

🚨🚨 Jasper Complex Wildfire 🚨🚨
Current as of: July 24, 10 pm, Mountain Time

Today has been an exceptionally difficult day for Jasperites, incident personnel and everyone who loves Jasper.

Structural firefighters continue to work to save as many structures as possible and to protect critical infrastructure. Many more structural firefighters are en route to provide assistance.

As the pictures and videos circulating online show, significant loss has occurred within the townsite. We are sensitive that residents, business owners, visitors, and those with connections to Jasper want to know the state of their homes, businesses, treasures and favourite places.

Our focus continues to be on saving as many structures as possible. Unfortunately, we can't report on the extent of damage to specific locations or neighbourhoods at this time.

We are grateful for the support, encouragement, care and kind words we have received from all over the country and world.

This will be the last update for tonight, July 24. We will provide further updates and information tomorrow.

660 2.3K

1 6 1.2K

SAF Dan Tsubouchi @EnergyTidbits · Jul 25
End of an era.

Southwest Airlines just announced "the airline is moving forward with plans to assign seats, offer premium seating options, redesign the boarding model, and introduce redeye flying."

Big price premium of premium seats can't be ignored and is here to stay #OOT

Southwest Airlines

July 25, 2024

Dear Customers,

At Southwest Airlines, we're committed to providing exceptional service and value to our customers. As we continue to evolve, we're excited to share some of the ways we're improving our service and value to our customers.

Assigning Seats: We're introducing assigned seating to give you more control over your travel experience. This includes the ability to select your seat in advance, ensuring you sit together and in your preferred location.

Premium Seating: We're introducing a new premium seating option, offering enhanced comfort and service for those who want to travel in style.

Boarding Model: We're introducing a new boarding model, designed to streamline the boarding process and reduce wait times.

Redeye Flying: We're introducing redeye flights, offering more flexibility and convenience for your travel needs.

Thank you for your continued support and loyalty. We're committed to providing the best possible experience for all our customers.

1 1 8 3K

SAP Dan Tsubouchi  @Energy_Tidbits · Jul 24 ...
Lower 48 rigs modestly lower to yr-end.

"latest survey indicates this group's year-end 2024 rig count will be modestly lower than the total at the end of the second quarter" Nabors survey of 16 operators accounting for ~47% of Lower 48 working rigs at end of Q2.

Supports
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FINAL TRANSCRIPT 2024-07-24
Nabors Industries Ltd (NBR US Equity)


and savings we demonstrated in the US, we see growing opportunity internationally. We expect to have the first three international units deployed by the end of the year. Traction in our energy transition portfolio remains strong in the US. On top of that, operators in our markets beyond the US are gaining interest.


Next, I will discuss the rig pricing environment. Our second quarter results in the Lower 48 showed resiliency in leading-edge market pricing, with a focus on operational excellence, continued pricing discipline remains our mantra. Our Drilling Solutions portfolio plays an important role in this approach. In the international market, we still have visibility to additional near-term rig awards. They are spread across geographies including Asia, MENA, and Latin America. These markets are seeking more than 30 rigs. Those are in countries where we work currently or that we consider attractive. With this volume, we can be selective when it comes to adding work.

And with the increasing tender activity, as you would expect, pricing is showing signs of firming. We surveyed the largest lower 48 clients at the end of the second quarter. Our survey covers 16 operators, which accounted for approximately 47% of the Lower 48 industry's working rigs at the end of the quarter. The latest survey indicates this group's year-end 2024 rig count will be modestly lower than the total at the end of the second quarter. Essentially, all of the projected decline relates to announced merger activity.

The operators not involved in mergers project activity to remain at current levels. Aside from the mergers, we believe that clients remain cautious about their plans for 2024, particularly in gas-focused spaces. At the same time, we expected the market to continue to exhibit a relatively high level of churn.

For the international market, our view remains bullish. We are on track to add an additional five rigs in the second half of 2024. This yields a 10-rig increase in rig count compared to the end of 2023. What is particularly satisfying is that we already have good visibility for 2025, namely nine scheduled deployments, including five rigs in Saudi Arabia, one in Argentina, and three in Kuwait.

SAP Dan Tsubouchi  @Energy_Tidbits · Jul 18



Flat US #Oil #NatGas production at best in H2.

Major US fracker, Liberty Energy CEO says:

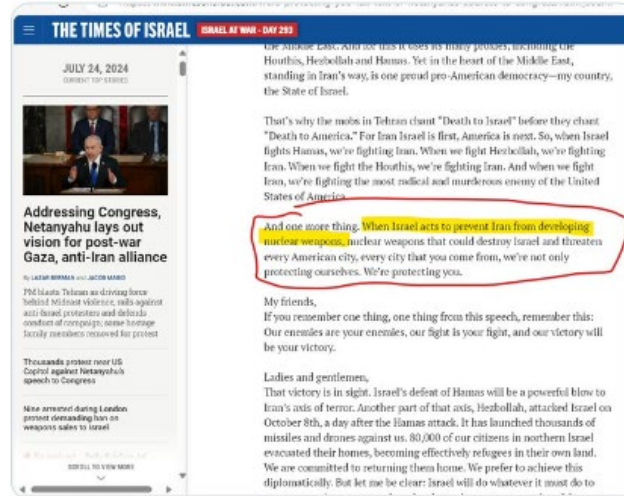
"got to have more activity to just keep US #NatGas ..."

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SAF Dan Tsubouchi @Energy_Tidbits · Jul 24
 Netanyahu tells congress. it's not if but when Israel takes action vs Iran nuclear program!

Overlooked geopolitical & #Oil wildcard/risk!

'And one more thing. When Israel acts to prevent Iran from developing nuclear weapons, nuclear weapons that could destroy Israel and
[Show more](#)



SAF Dan Tsubouchi @Energy_Tidbits · Jul 21
 Go Time for Israel?
 Overlooked major geopolitical and #Oil risk factor!
 Blinken: Iran now 1 or 2 weeks from breakout capacit...

SAF Dan Tsubouchi @Energy_Tidbits · 3h
 For those who aren't near their laptop, @EIAgov just released #Oil #Gasoline #Distillates inventory as of July 19 at 8:30am MT. Table below compares EIA data vs @businessexpectations and vs @APIenergy estimates yesterday. Prior to release, WTI was \$77.40. #OOTT

Oil/Products Inventory July 19: EIA, Bloomberg Survey Expectations, API			
(million barrels)	EIA	Expectations	API
Oil	-3.74	-2.84	-3.86
Gasoline	-5.57	1.00	-2.77
Distillates	-2.75	1.00	-1.50
	-12.06	-0.84	-8.13

Note: Oil is commercial. So excludes a +0.7mmb build in SPR for the July 19 week
 Note: Included in the oil data, Cushing had a 1.71 mmb draw for July 19 week
 Source EIA, Bloomberg
 Prepared by SAF Group <https://safgroup.ca/news-insights/>

10 927

Dan Tsubouchi @EnergyTidbits · 5h
There are other factors but the big one that has hurt Germany manufacturing/industrial base and competitiveness was the cutting off of cheap Russian #NatGas via Nord Stream 1 post Russia invasion of Ukraine.

#OOTT



3 5 1.1K

Dan Tsubouchi @EnergyTidbits · 6h
Americans still buying cars

"To us, it looks like the consumer is pretty healthy... gross margins on the new car side were almost flat sequentially where they had been declining..."
Don't see a drop off if rates don't move down. Group 1 Automotive CEO to @BeckyQuick.

Group 1
[Show more](#)



3 942

SAF Dan Tsubouchi @Energy_Tidbits · 19h
The heat wave is also hitting Calgary.

Car just ticked to 39C or 102F.

Can't ever remember temperatures anywhere near this high.

And of course, it's Calgary so it's a sunny day.

Hope people can escape the sun and heat.



7 7 1.3K

SAF Dan Tsubouchi @Energy_Tidbits · 18m
Sustainable Aviation Fuel is up to 6X cost of jet fuel.

"Plans to offer low-carbon flights reliant upon sustainable aviation fuel (SAF), which costs up to six times as much as traditional kerosene, will have a "big impact" on prices, said Luis Gallego. He said: "Flying is going

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SAF Dan Tsubouchi @Energy_Tidbits · 48m
Reality check for EU air travel.

Virgin Atlantic CEO Weiss " told The Telegraph "Prices will have to go up to account for the fact that flying with Saf[Sustainable Aviation Fuel] in greater and greater volumes is materially more expensive" reports ...

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SAF Dan Tsubouchi @Energy_Tidbits · 48m
Reality check for EU air travel.

Virgin Atlantic CEO Weiss " told The Telegraph "Prices will have to go up to account for the fact that flying with Saf[Sustainable Aviation Fuel] in greater and greater volumes is materially more expensive" reports

Christopher Jasper.

#OOTT

Telegraph Business @TeleBusiness · 1h
✈️ Virgin Atlantic passengers to pay green levy on every flight
[telegraph.co.uk/business/2024/...](https://www.telegraph.co.uk/business/2024/...)

2 1 1 2.2K

Dan Tsubouchi @Energy_Tidbits · 1h
Holdback to 2025 #LNG China imports & LNG prices.

Russia expects to increase Power of Siberia #NatGas pipeline exports to China to 3.7 bcf/d in 2025, which is +1.5 bcf/d vs 2.2 bcf/d in 2023.

Cheaper priced RUS pipeline gas win the day vs more expensive LNG imports.

#OOTT

<https://tass.ru/ekonomika/21426333>
23 July 03:05
Updated 25 July 03:26

In 2025, the Russian Federation will increase gas supplies through the Power of Siberia to China to 38 billion cubic meters

Russia in 2023 exceeded the plan for gas supplies to China through the pipeline by 800 million cubic meters

MOSCOW, July 23. /TASS/. In 2023, Russia exceeded the plan for gas supplies to China through the Power of Siberia pipeline by 800 million cubic meters, in 2025 supplies will reach 38 billion cubic meters, said Deputy Minister of Energy of the Russian Federation Sergei Mochalnikov at a meeting of the Russian-Chinese intergovernmental commission on energy.

In 2023, the plan for the supply [of gas via the Power of Siberia] was exceeded by 800 million cubic meters, they amounted to 22.7 billion cubic meters.

Mochalnikov noted that in total, as of July 1, 2024, 68 billion cubic meters have been pumped through the Power of Siberia since the launch of the gas pipeline.

The Power of Siberia is the largest gas transportation system in eastern Russia. In the coming years, the total volume of Gazprom's exports to China will reach 48 billion cubic meters of gas per year (due to the implementation of the project for gas supplies to China along the Far Eastern route), and taking into account the transit gas pipeline through Mongolia - almost 100 billion cubic meters per year, said the head of Gazprom Alexei Miller. Later, Miller said that China is considering the possibility of increasing Russian gas supplies through the Power of Siberia in excess of the design capacity of 38 billion cubic meters.

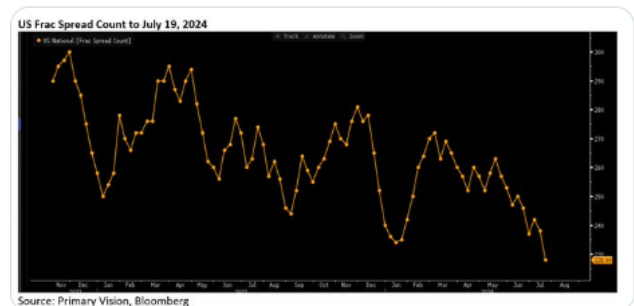
Handwritten notes:
2025
38 BCM = 3.7 bcf/d
+1.5 bcf/d
2023
22.7 BCM = 2.2 bcf/d

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Dan Tsubouchi @Energy_Tidbits · 20h
Frac spread count fits why Liberty Energy CEO 06/18 sees flat US #Oil #NatGas production at best in H2.

07/19/24 frac spreads per @PrimaryVision @business:
Total US: 228, -10 WoW, -46 YoY
Permian: 125, -8 WoW, -20 YoY.

#OOTT



Dan Tsubouchi @Energy_Tidbits · Jul 18

Flat US #Oil #NatGas production at best in H2.

Major US fracker, Liberty Energy CEO says:

"got to have more activity to just keep US #NatGas ..."

🗨️ 3 🗨️ 8 ❤️ 21 📊 5.1K 📌 📤



Dan Tsubouchi @EnergyTidbits · 22h



Slow ship steaming = less fuel consumption = less emissions.

But with avoiding Red Sea making longer voyages, ships/tankers don't want to make a longer trip take even longer by slow steaming.

See excerpt SAF Group Aug 6, 2023 Energy Tidbits memo.

#OOTT

Excerpt from SAF Group Aug 6, 2023 Energy Tidbits memo

Energy Transition - Slow ship steaming saves fuels and cuts emissions

Back prior to IMO 2020, it seemed like a regular update item was on how shipping companies were going to deal with IMO 2020 – with the two primary discussion actions were they going to install scrubbers or switch from HSFO to LSFO. And there was always the fallback option to go to slower steaming. We were reminded of slower steaming in Maersk Q2 report, although they were referencing it for the purpose reducing emissions. Rather it was used in the context of not seeing any significant recovery in container volumes. Maersk wrote “*Seaintel data shows that the share of the Global container fleet absorbed by delays decreased from a peak in January 2022 of almost 14% to a post-pandemic low of 3.6% in May 2023. Some of the available capacity is being absorbed by slower steaming and cancelled sailings.*” But going back to the IMO writeups, the advantage of slower steaming is a significant reduction in fuel consumption and also emissions. Here is what we wrote in our October 28, 2018 Energy Tidbits memo on fuel savings. “*Slow steaming can reduce fuel consumption by over 50%. Here is what Wikipedia wrote about the fuel saving from slow steaming [LINK]. “Rationale & History. Slow steaming was adopted in 2007 in the face of rapidly rising fuel oil costs (July 2007 to July 2008: 350 to 700 USD/tonne) [4] According to Maersk Line, who introduced the practice in 2009–2010, [5][6] slow steaming is conducted at 18 knots (33 km/h; 21 mph) [1][not in citation given] Speeds of 14 to 16 kn (26 to 30 km/h; 16 to 18 mph) were used on Asia-Europe backhaul routes in 2010, [7] Speeds under 18 kn (33 km/h; 21 mph) are called super slow steaming [1][not in citation given] Marine engine manufacturer Wärtsilä calculates that fuel consumption can be reduced by 50% by reducing cargo ship speed from 27 knots to 18 kn (33 km/h; 21 mph), at the cost of an additional week’s sailing time on Asia-Europe routes [8] It adds a comparable 4-7 days to trans-Pacific voyages [7] The large container ship Emma Maersk can save 4,000 metric tons of fuel oil on a Europe-Singapore voyage by slow steaming [5] At a typical 2008 price of USD 600-700 per tonne [4] this works out to USD 2.4-2.8 million fuel savings on a typical one-way voyage. Maersk’s Triple E class of ships was designed for slow steaming, with hulls optimized for lower speeds. Because of this, it has less powerful engines than its predecessors.[5]”*

Prepared by SAF Group <https://safgroup.ca/news-insights/>

SAF Dan Tsubouchi @EnergyTidbits · Jul 22

Blame the Houthis.

Shipping emissions +6% YoY in H1/24 partly by ships/tankers having to make longer voyages to avoid Red Sea. 📍 by @JWittels

...

2 2 3 3.9K



Dan Tsubouchi @EnergyTidbits · 14m



Blame the Houthis.

Shipping emissions +6% YoY in H1/24 partly by ships/tankers having to make longer voyages to avoid Red Sea. 📍 by @JWittels

Don't forget longer voyages means less will take more time to slow steam and slow steaming significantly reduces emissions.

#OOTT

Jack Wittels @JWittels · 7h

Carbon emissions from ships are soaring.

That's an uncomfortable truth for a sector that's said it wants to clean up -- even if factors beyond shippers' control, like Houthi attacks, have been making that harder. ...

Show more

1 1 565



Dan Tsubouchi @EnergyTidbits · 2h

Air travel in 🇨🇦 finally pulling back from post Covid travel rush?

#AirCanada. Record Q2 revenues, Q2 load factor above historical average.

BUT reducing 2024 guidance due to H2/24 lower yield environment (revenue) & lower than expected load factor (less passengers).

#OTT

AIR CANADA

Air Canada Provides Second Quarter 2024 Preliminary Results and Updates Full Year 2024 Guidance

MONTRÉAL, July 22, 2024 (CNA) - Air Canada today provided preliminary results for the second quarter of 2024 and updated its 2024 financial and capacity guidance.

Q2 2024 preliminary results

- Operating revenues of about \$5.5 billion, an 6.5% increase over the same period last year, as compared to about \$5.4 billion in Q2 2023.
- Operating income of \$488 million, with an operating margin of 8.9%, as compared to \$482 million in Q2 2023.
- Adjusted EBITDA* of \$514 million, as compared to about \$1.2 billion in Q2 2023.

2024 outlook

Air Canada is now updating its full year 2024 guidance as follows:

Metric	Prior FY 2024 Guidance	Updated FY 2024 Guidance
ASM capacity	8 to 9% increase versus 2023	5.5 to 6.5% increase versus 2023
Adjusted CASM	2.8 to 3.5% increase versus 2023	2.8 to 3.5% increase versus 2023
Adjusted EBITDA*	\$3.7 to \$4.2 billion	\$3.1 to \$3.4 billion

*Adjusted CASM, adjusted EBITDA (earnings before interest, taxes, depreciation, and amortization) and adjusted EBITDA margin are referred to in this news release. Such measures are non-GAAP financial measures, or non-GAAP ratios, and are not recognized measures for financial statement presentation under GAAP. As not having standardized meanings, they may not be comparable to similar measures presented by other entities and should not be considered a substitute for or superior to GAAP results. Refer to the "Non-GAAP Financial Measures" section of this news release for descriptions of these measures, and for a reconciliation of Air Canada non-GAAP measures used in this news release to the most comparable GAAP financial measures.

The updated 2024 adjusted EBITDA guidance range is largely driven by the lower yield environment, lower than expected load factors for the second half of the year and competitive pressures in international markets. It also reflects our assessments including those relating to the price of jet fuel and a weakened Canadian dollar against the US dollar.

The updated 2024 capacity guidance range accounts for sustained supply chain pressures, evolving market conditions and ongoing operational issues. The updated 2024 adjusted CASM range includes the impact of improved EBITDA in the guidance range. Air Canada is effectively managing costs through productivity, cost reductions and other cost discipline initiatives.

Air Canada continues to see a healthy demand environment. The second quarter operating revenues would represent a record for a second quarter, with load factors remaining above historical averages.

Air Canada will provide additional details when it releases its second quarter 2024 results on Wednesday, August 7, 2024.

Major assumptions

Air Canada made assumptions in providing its guidance — including moderate Canadian GDP growth for 2024. As part of its assumptions, Air Canada now assumes that the Canadian dollar will, on average, sit at C\$1.30 per U.S. dollar for the full year 2024 and continues to assume that the price of jet fuel will average C\$1.83 per litre for the full year 2024.

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H2/24
H1T →



Dan Tsubouchi  @Energy_Tidbits · 4h
Makes sense.



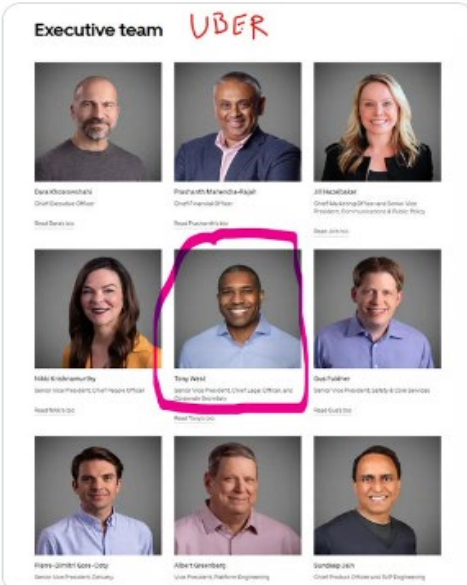
Just now, [@jimcramer](#) see Harris as better for mega cap tech vs Biden, Trump or Vance.

She understands tech, especially given her brother-in-law Tony West in Uber senior mgmt since 2017










Hope he is right.

...

[Show more](#)



Executive team **UBER**

 Dana Khazanchi Chief Executive Officer Read Dana's bio	 Prashant Malhotra-Rajal Chief Financial Officer Read Prashant's bio	 Jill Macfie Chief Marketing Officer and Senior Vice President, Communications & Public Policy Read Jill's bio
 Katie Siskind Senior Vice President, Chief People Officer Read Katie's bio	 Tony West Senior Vice President, Chief Legal Officer, and Corporate Secretary Read Tony's bio	 Dan Pallini Senior Vice President, Sales & CRM Services Read Dan's bio
 Eugene Dimitri Senior Vice President, Security Read Eugene's bio	 Albert Greenberg Vice President, Platform Engineering Read Albert's bio	 Sandip Jain Chief Product Officer and SVP Engineering Read Sandip's bio



1



1



2



1.3K





Dan Tsubouchi @EnergyTidbits - 6h

Negative EU air travel outlook.

Ryanair shares -14% on Q1/25.

Headline is Jul/Aug/Sep fares materially lower YoY.

Also Note: Vs yr ago. Both said too early to provide meaningful PAT guidance for current FY.

BUT today no subjective view of current FY, whereas yr ago incl a Show more

Ryanair Q1/25 (July 22, 2024) vs Q1/24 (July 24, 2023) Outlook

Excerpt
 RYANAIR REPORTS Q1 PROFITS DOWN 46% TO €360M AS TRAFFIC GROWS 10% TO 55.5M AT 15% LOWER AIR FARES
 0 news read
 July 22, 2024

OUTLOOK:
 FY25 traffic is expected to grow 8% (150m to 200m passengers), subject to no recurring Boeing delivery delays. As previously guided, we expect unit costs to rise modestly this year as ex-fuel costs (fuel pay & productivity increases, higher handling & ATC fees and the impact of multiple DT37 delivery delays) are substantially offset by our fuel hedge savings and rising oil related income, which widens Ryanair's cost advantage over its competitors. While Q2 demand is strong, pricing remains softer than we expected. **And we now expect Q2 fares to be materially lower than last summer (passenger expected to be flat to modestly up).** The final H1 outcome is, however, still dependent on crew on bookings and yields in Aug and Sept.

Excerpt
 RYANAIR REPORTS Q1 PROFITS OF €663M STRONG EASTER & WEAK PRIOR YEAR COMPS. DUE TO UKRAINE INVASION
 July 24, 2023

OUTLOOK:
 We expect FY24 traffic to grow to approx. 182.5m (up 9%), which is slower than the 185m originally expected, due to Boeing delivery delays in spring and in autumn 2023. While the cost gap between Ryanair and competitor airlines continues to widen, as previously guided, we expect to see an increase of expense. Q2 is expected to be costlier this year due to annualised crew pay restoration, higher crew prices, increased ATC & route charges and the impact of Gamache's delivery delays. While Q2 bookings are strong, the fare increase in Q2 will be much lower than in Q1 due to much stronger FY Q2 pricing in FY23 when peak summer travel snapped back strongly following the Ukraine invasion. We currently expect Q2 fares will be higher than the prior year Q2 but by a low double digit percentage. We noted a softening in close-in fares in late June and early July. The final H1 outcome is, therefore, highly dependent on close-in Aug. and Sept. bookings. As is normal at this time of year, we have very limited Q3 visibility and zero Q4 visibility. Having enjoyed a bumper Christmas and New Year travel period last year (the last festive travel season that wasn't curtailed by the Covid pandemic), we are conscious that consumers may require some fare stimulus to fill our 25% greater seat capacity this winter (compared to pre-Covid) following months of rising mortgage rates and consumer price inflation. If this transpires, then Ryanair's load-activated revenue strategy coupled with our industry leading cost base, will uniquely position our Group to capture further market share, albeit at lower fares this winter.

Despite uncertainty over H2 Boeing deliveries, accentuated recently by the collapse of a Yellowstone River bridge in Montana, a significantly higher fuel bill (up 47bn over last year), volatile oil prices for our unhedged fuel, very limited H2 visibility and the risk of higher consumer spend in the winter, we remain cautiously optimistic that Q2 fares will be materially higher than last year. However, we do expect to see a low double digit percentage increase in Q2 fares, which is expected to be in line with our last results in May.

2 3 2 1.6K



Dan Tsubouchi @Energy_Tidbits · 22h

Just checked. Still no Vortexa crude oil floating storage data as of July 19 posted on Bloomberg terminal as of 1:45pm MT.

Normally the weekly Friday Vortexa floating storage estimates are posted on the terminal by very early Sat morning.

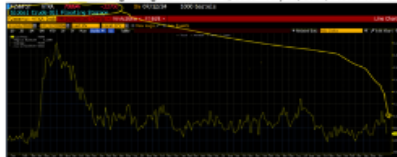
Dan Tsubouchi @Energy_Tidbits · Jul 14

Vortexa #oil floating storage est down huge -22.71 mmb WoW to 70.89 mmb at Jul 12.

BUT big upward revisions: Jul 5 +15.41 mmb (incl Asia revised +12.88), Jun 28 +12.92. Jun 21 +9.82 to 108.46 mmb, 1st >100 since Aug 2023....

[Show more](#)

Vortexa Crude Oil Floating Storage Estimate Jan 1, 2020 – July 12, 2024, Posted as of 9am MT, July 13, 2024



Source: Bloomberg, [Vortexa](#)

Posted July 13, 9am MT												July 6, 9am MT												June 29, 9am MT											
Region						Country						Region						Country						Region						Country					
EST	CHG	WEEK	YTD	EST	CHG	WEEK	YTD	EST	CHG	WEEK	YTD	EST	CHG	WEEK	YTD	EST	CHG	WEEK	YTD	EST	CHG	WEEK	YTD	EST	CHG	WEEK	YTD	EST	CHG	WEEK	YTD				
NA	0.00	0.00	0.00	NA	0.00	0.00	0.00	NA	0.00	0.00	0.00	NA	0.00	0.00	0.00	NA	0.00	0.00	0.00	NA	0.00	0.00	0.00	NA	0.00	0.00	0.00	NA	0.00	0.00	0.00				
EU	0.00	0.00	0.00	EU	0.00	0.00	0.00	EU	0.00	0.00	0.00	EU	0.00	0.00	0.00	EU	0.00	0.00	0.00	EU	0.00	0.00	0.00	EU	0.00	0.00	0.00	EU	0.00	0.00	0.00				
ASIA	0.00	0.00	0.00	ASIA	0.00	0.00	0.00	ASIA	0.00	0.00	0.00	ASIA	0.00	0.00	0.00	ASIA	0.00	0.00	0.00	ASIA	0.00	0.00	0.00	ASIA	0.00	0.00	0.00	ASIA	0.00	0.00	0.00				
AMERICAS	0.00	0.00	0.00	AMERICAS	0.00	0.00	0.00	AMERICAS	0.00	0.00	0.00	AMERICAS	0.00	0.00	0.00	AMERICAS	0.00	0.00	0.00	AMERICAS	0.00	0.00	0.00	AMERICAS	0.00	0.00	0.00	AMERICAS	0.00	0.00	0.00				
AFRICA	0.00	0.00	0.00	AFRICA	0.00	0.00	0.00	AFRICA	0.00	0.00	0.00	AFRICA	0.00	0.00	0.00	AFRICA	0.00	0.00	0.00	AFRICA	0.00	0.00	0.00	AFRICA	0.00	0.00	0.00	AFRICA	0.00	0.00	0.00				
Other	0.00	0.00	0.00	Other	0.00	0.00	0.00	Other	0.00	0.00	0.00	Other	0.00	0.00	0.00	Other	0.00	0.00	0.00	Other	0.00	0.00	0.00	Other	0.00	0.00	0.00	Other	0.00	0.00	0.00				
Total	0.00	0.00	0.00	Total	0.00	0.00	0.00	Total	0.00	0.00	0.00	Total	0.00	0.00	0.00	Total	0.00	0.00	0.00	Total	0.00	0.00	0.00	Total	0.00	0.00	0.00	Total	0.00	0.00	0.00				

Source: Bloomberg, [Vortexa](#)

Region	Jul 2024	Jul 2023	Peak	Original Peak	Recent Peak
NA	3.04	48.52	3.00	39.71	39.34
EU	3.38	4.24	4.00	4.34	4.32
ASIA	11.78	30.00	3.00	36.46	3.38
AMERICAS	11.21	11.80	6.00	23.08	6.78
AFRICA	2.67	1.02	0.00	8.00	1.02
Other	0.00	1.82	0.00	1.36	0.00
Total	33.08	99.40	12.00	74.93	53.44

Use raw crude oil floating storage posted on Bloomberg as of July 13

Source: Vortexa, Bloomberg

Prepared by SAF Group: <https://safgroup.com/news-insights/>

